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46

Parts 90 to 139

Revised as of October 1, 2000

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Cite this Code: CFR

To cite the regulations in this volume use title, part and section number. Thus, 46 CFR 90.01–1 *refers to title 46, part 90, section 01–1.*

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Each volume of the Code is revised at least once each calendar year and issued on a quarterly basis approximately as follows:

Title 1 through Title 16.....as of January 1
Title 17 through Title 27.....as of April 1
Title 28 through Title 41.....as of July 1
Title 42 through Title 50.....as of October 1

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RAYMOND A. MOSLEY,
Director,
Office of the Federal Register.

October 1, 2000.

THIS TITLE

Title 46—SHIPPING is composed of nine volumes. The parts in these volumes are arranged in the following order: Parts 1–40, 41–69, 70–89, 90–139, 140–155, 156–165, 166–199, 200–499 and 500 to End. The first seven volumes containing parts 1–199 comprise chapter I—Coast Guard, DOT. The eighth volume, containing parts 200 to 499, includes chapter II—Maritime Administration, DOT and chapter III—Coast Guard (Great Lakes Pilotage), DOT. The ninth volume, containing part 500 to End, includes chapter IV—Federal Maritime Commission. The contents of these volumes represent all current regulations codified under this title of the CFR as of October 1, 2000.

Subject indexes appear in subchapters A—I, I–A, J, K, L, and Q—W following the subchapters.

For this volume, Ann Worley was Chief Editor. The Code of Federal Regulations publication program is under the direction of Frances D. McDonald, assisted by Alomha S. Morris.

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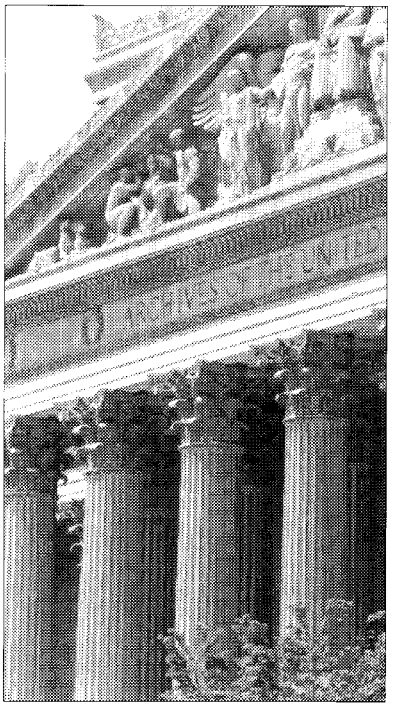

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Title 46—Shipping

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SUBCHAPTER I—CARGO AND MISCELLANEOUS VESSELS

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AUTHORITY: 46 U.S.C. 3306, 3307, 3703; 49 U.S.C. 5103, 5106; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGFR 65–50, 30 FR 16970, Dec. 30, 1965, unless otherwise noted.

Subpart 90.01—Authority and Purpose

§ 90.01–1 Purpose of regulations.

The purpose of the regulations in this subchapter is to set forth uniform minimum requirements for cargo and miscellaneous vessels, as listed in Column 5 of table 90.05–1(a).

[CGD 95–028, 62 FR 51205, Sept. 30, 1997]

§ 90.01–7 Right of appeal.

Any person directly affected by a decision or action taken under this subchapter, by or on behalf of the Coast Guard, may appeal therefrom in accordance with subpart 1.03 of this chapter.

[CGD 88–033, 54 FR 50380, Dec. 6, 1989]

§ 90.01–15 OMB control numbers assigned pursuant to the Paperwork Reduction Act.

(a) *Purpose.* This section collects and displays the control numbers assigned to information collection and recordkeeping requirements in this subchapter by the Office of Management and Budget (OMB) pursuant to the Paperwork Reduction Act of 1980 (44

U.S.C. 3501 *et seq.*). The Coast Guard intends that this section comply with the requirements of 44 U.S.C. 3507(f), which requires that agencies display a current control number assigned by the Director of the OMB for each approved agency information collection requirement.

(b) *Display.*

46 CFR part or section where identified or described	Current OMB control No.
§ 91.27–13	2115–0517
§ 91.40–3	2115–0554
§ 91.40–5	2115–0554
§ 97.15–7	2115–0589
§ 97.15–17	2115–0589

[CGD 88–072, 53 FR 34297, Sept. 6, 1988, as amended by CGD 82–004a, 55 FR 2525, Jan. 25, 1990; CGD 89–037, 57 FR 41822, Sept. 11, 1992]

Subpart 90.05—Application

§ 90.05–1 Vessels subject to requirements of this subchapter.

(a) This subchapter shall be applicable to all United States flag vessels indicated in Column 5 of Table 90.05–1(a) and to all such foreign vessels which carry 12 or less passengers from any port in the United States to the extent prescribed by law, except as follows:

(1) Any vessel of a foreign nation signatory to the International Convention for Safety of Life at Sea, 1974, and which has on board a current, valid safety equipment certificate.

(2) Any vessel operating exclusively on inland waters which are not navigable waters of the United States.

(3) Any vessel while laid up and dismantled and out of commission.

(4) With the exception of vessels of the U.S. Maritime Administration, any vessel with title vested in the United States and which is used for public purposes.

(b) Notwithstanding the exception previously noted in paragraph (a)(1) of this section, foreign vessels of novel design or construction or whose operation involves potential unusual risks shall be subject to inspection to the extent necessary to safeguard life and property in United States ports, as further provided by § 2.01–13 of subchapter A (Procedures Applicable to the Public) of this chapter.

(c) Notwithstanding the exception noted in paragraph (a)(1) of this section, each foreign vessel shall report marine casualties occurring while the vessel is in the navigable waters of the United States as required by Subpart 97.07.

TABLE 90.05–1(a)

[See footnotes at end of table]

Method of propulsion	Size or other limitations[1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations[1]					
Column 1	Column 2	Vessels inspected and certificated under Subchapter D—Tank Vessels[2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels[2345] or Subchapter T—Small Passenger Vessels[234]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels[25]	Vessels subject to provisions of Subchapter C—Uninspected Vessels[23678]	Vessels subject to provisions of Subchapter U—Oceanographic Vessels[25679]	Vessels subject to the provisions of Subchapter O—Certain Bulk Dangerous Cargoes[10]
		Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Steam	Vessels not over 65 feet in length.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers[7].	All tugboats and towboats.	All vessels except those covered by columns 3, 4, 5, and 7.	None	All vessels carrying in bulk the cargoes listed in table I of pt. 153 and table 4 of pt. 154.
	Vessels over 65 feet in length.	All vessels carrying combustible or flammable liquid cargo in bulk[5].	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels of not over 15 gross tons which carry more than 6 passengers[7] 3. All other vessels carrying passengers,[7] except: a. Yachts b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew	All vessels except those covered by columns 3 and 4.	None	All vessels engaged in oceanographic research.	Do.

TABLE 90.05–1(a)—Continued

[See footnotes at end of table]

Method of propulsion	Size or other limitations [1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations [1]					
Column 1	Column 2	Vessels inspected and certificated under Subchapter D—Tank Vessels [2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels [2345] or Subchapter T—Small Passenger Vessels [234]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels [25]	Vessels subject to provisions of Subchapter C—Uninspected Vessels [23678]	Vessels subject to provisions of Subchapter U—Oceanographic Vessels [25679]	Vessels subject to the provisions of Subchapter O—Certain Bulk Dangerous Cargoes [10]
		Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
			c. Towing and fishing vessels, in other than ocean and coastwise service, may carry persons on the legitimate business of the vessel, in addition to crew, but not to exceed one for each net ton of the vessel				
Motor	Vessels not over 15 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers [7].	Those vessels carrying dangerous cargoes when required by 46 CFR part 98 or 49 CFR parts 171–179.	All vessels except those covered by columns 3, 4, 5, and 7.	None	All vessels carrying in bulk the cargoes listed in table I of pt. 153 and table 4 of pt. 154.
	Vessels over 15 gross tons except seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk [5].	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels not over 65 feet in length which carry more than 6 passengers [7]	All vessels carrying freight for hire except those covered by columns 3 and 4.	.....do	.....do	Do.

			3. All other vessels of over 65 feet in length carrying passengers for hire except documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew					
Sail	Seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk[5].	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All other vessels carrying passengers,[7] except: a. Yachts b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels except those covered by columns 3 and 4, and those engaged in the fishing, oystering, clamming, crabbing, or any other branch of the fishery, kelp, or sponge industry.	All vessels except those covered by columns 3, 4, 5, and 7.	All vessels engaged in oceanographic research.	Do.	
	Vessels not over 700 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers[7].	Those vessels carrying dangerous cargoes when required by 46 CFR part 98 or 49 CFR parts 171–179.	None	None	Do.	
	Vessels over 700 gross tons.	.....do	All vessels carrying passengers for hire.	.....do	None	None	Do.	
Non-self propelled	Vessels less than 100 gross tons.	All vessels carrying combustible or liquid cargo in bulk.	All vessels carrying more than 6 passengers[7].	.....do	All barges carrying passengers except those covered by column 4.	None	All tank barges[11] carrying in bulk the cargoes listed in table 151.05 of this chapter.[11]	

TABLE 90.05–1(a)—Continued

[See footnotes at end of table]

Method of propulsion	Size or other limitations [1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations [1]					
Column 1	Column 2	Vessels inspected and certificated under Subchapter D—Tank Vessels [2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels [2345] or Subchapter T—Small Passenger Vessels [234]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels [25]	Vessels subject to provisions of Subchapter C—Uninspected Vessels [23678]	Vessels subject to provisions of Subchapter U—Oceanographic Vessels [25679]	Vessels subject to the provisions of Subchapter O—Certain Bulk Dangerous Cargoes [10]
		Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
	Vessels 100 gross tons or over.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying passengers for hire.	All seagoing barges except those covered by columns 3 and 4; and those inland barges carrying dangerous cargoes when required by 46 CFR part 98 or 49 CFR parts 171–179.	All barges carrying passengers except those covered by columns 4 and 7.	All seagoing barges engaged in oceanographic research.	All tank barges [11] carrying in bulk the cargoes listed in table 151.05 of this chapter. [11]

Footnotes to Table 90.05–1(a):

[1] Where length is used in this table it means the length measured from end to end over the deck, excluding sheer. This expression means a straight line measurement of the overall length from the foremost part of the vessel to the aftermost part of the vessel, measured parallel to the centerline.

[2] Subchapters E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Dangerous Cargoes) of this chapter may also be applicable under certain conditions. The provisions of 49 CFR parts 171–179 apply whenever hazardous materials are on board vessels (including motorboats), except when specifically exempted by law.

[3] Public nautical schoolships, other than vessels of the Navy and Coast Guard, shall meet the requirements of part 167 of subchapter R (Nautical Schools) of this chapter. Civilian nautical schoolships, as defined by 46 U.S.C. 1331, shall meet the requirements of subchapter H (Passenger Vessels) and part 168 of subchapter R (Nautical Schools) of this chapter.

[4] Subchapter H (Passenger Vessels) of this chapter covers only those vessels of 100 gross tons or more. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of less than 100 gross tons.

[5] Vessels covered by subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not for the carriage of liquid cargo, may be granted a permit to carry a limited amount of flammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the flammable or combustible liquid cargo shall meet the requirements of subchapter D (Tank Vessels) in addition to the requirements of subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

[6] Any vessel on an international voyage is subject to the requirements of the International Convention for Safety of Life at Sea, 1974.

[7] The meaning of the term "passenger" is as defined in the Act of May 10, 1956 (Sec. 1, 70 Stat. 151; 46 U.S.C. 390). On oceanographic vessels scientific personnel on board shall not be deemed to be passengers nor seamen, but for calculations of lifesaving equipment, etc., shall be counted as persons.

[8] Boilers and machinery are subject to examination on vessels over 40 feet in length.

[9] Under 46 U.S.C. 441 an "oceanographic research vessel" is a vessel "* * * being employed exclusively in instruction in oceanography or limnology, or both, or exclusively in oceanographic research, * * *," Under 46 U.S.C. 443, "an oceanographic research vessel shall not be deemed to be engaged in trade or commerce." If or when an oceanographic vessel engages in trade or commerce, such vessel cannot operate under its certificate of inspection as an oceanographic vessel, but shall be inspected and certificated for the service in which engaged, and the scientific personnel aboard then become persons employed in the business of the vessel.

[10] Bulk dangerous cargoes are cargoes specified in table 151.01–10(b), in table I of part 153, and in table 4 of part 154 of this chapter.

[11] For manned tank barges see § 151.01–10(c) of this chapter.

[CGFR 65–50, 30 FR 16970, Dec. 30, 1965, as amended by CGFR 67–83, 33 FR 1109, Jan. 27, 1968; CGFR 70–10, 35 FR 3711, Feb. 25, 1970; CGD 73–96, 42 FR 49025, Sept. 26, 1977; CGD 77–042, 42 FR 63643, Dec. 19, 1977; CGD 86–033, 53 FR 36025, Sept. 16, 1988; CGD 86–033, 53 FR 46871, Nov. 21, 1988; CGD 90–008, 55 FR 30661, July 26, 1990]

§ 90.05–5 Specific application noted in text.

(a) At the beginning of the various parts, subparts, and sections, a more specific application is generally given for the particular portion of the text involved. This application sets forth the types, sizes, or services or vessels to which the text pertains, and in many cases limits the application of the text to vessels contracted for before or after a specific date. As used in this subchapter, the term ''vessels contracted for'' includes not only the contracting for the construction of a vessel, but also the contracting for a material alteration to a vessel, the contracting for the conversion of a vessel to a cargo or miscellaneous vessel, and the changing of service or route of a vessel if such change increases or modifies the general requirements for the vessel or increases the hazards to which it might be subjected.

§ 90.05–7 Ocean or unlimited coastwise vessels on inland and Great Lakes routes.

(a) Vessels inspected and certificated for ocean or unlimited coastwise routes shall be considered suitable for navigation insofar as the provisions of this subchapter are concerned on any inland routes, including the Great Lakes.

§ 90.05–10 Application to vessels on an international voyage.

(a) Except for yachts and fishing vessels and as provided in paragraphs (b), (c), and (d) of this section, the regulations in this subchapter that apply to a vessel on an ''international voyage'' apply to a vessel that—

(1) Is mechanically propelled and of at least 500 gross tons; and

(2) Is engaged on a voyage—

(i) From a country to which the International Convention for Safety of Life at Sea, 1974, (SOLAS 74) applies, to a port outside that country or the reverse;

(ii) From any territory, including the Commonwealth of Puerto Rico, all possessions of the United States and all lands held by the United States under a protectorate or mandate, whose international relations are the responsibility of a contracting SOLAS 74 government, or which is administered by the United Nations, to a port outside the territory or the reverse; or

(iii) Between the contiguous states of the United States and the states of Hawaii or Alaska or between the states of Hawaii and Alaska.

(b) The regulations that apply to a vessel on an ''international voyage'' in this subchapter do not apply to ships engaged on a voyage solely on the Great Lakes and the St. Lawrence River as far east as a straight line drawn from Cap de Rosiers to West Point, Anticosti Island, the 63d Meridian;

(c) The Commandant or his authorized representative may exempt any vessel on an international voyage from the requirements of this subchapter if the vessel—

(1) Makes a single international voyage in exceptional circumstances; and

(2) Meets safety requirements prescribed for the voyage by the Commandant.

(d) The Commandant or his authorized representative may exempt any vessel from the construction requirements of this subchapter if the vessel does not proceed more than 20 nautical miles from the nearest land in the course of its voyage.

[CGD 72–131R, 38 FR 29320, Oct. 24, 1973, as amended by CGD 90–008, 55 FR 30661, July 26, 1990; CGD 84–069, 61 FR 25288, May 20, 1996]

§ 90.05–20 Applicability to offshore supply vessels.

(a) Existing offshore supply vessels as defined by § 90.10–40(b), if they are of 100 or more but of less than 500 gross tons, are subject to inspection under this subchapter. New offshore supply vessels as defined by § 90.10–40(c), are subject to inspection under subchapter L of this chapter.

(b) Each offshore supply vessel permitted grandfathering under paragraph (a) of this section must complete construction and have a Certificate of Inspection by March 16, 1998.

[CGD 82–004 and CGD 86–074, 62 FR 49321, Sept. 19, 1997]

§ 90.05–25 Seagoing barge.

(a) All nonself-propelled vessels of 100 gross tons and over that proceed on voyages on the high seas or ocean are

subject to inspection and certification as seagoing barges.

(b) In applying the laws and regulations to manned seagoing barges, one criterion for invocation of safety standards is the description of seagoing barges by relative size in gross tons. When it is determined by the Commandant that the gross register tonnage for a particular manned seagoing barge, which is attained by exemptions, reductions, or other devices in the basic gross tonnage formulation, will circumvent or be incompatible with the application of specific safety requirements in the regulations in this subchapter for a manned seagoing barge of such physical size, the Commandant shall prescribe the regulations to be made applicable to such seagoing barge. When the Commandant determines that the gross register tonnage is not a valid criterion for the invocation of safety requirements based on relative size, the parties involved will be informed of the determination and of the regulations applicable to such manner seagoing barges, and before being permitted to operate such seagoing barges, compliance therewith shall be required. Endorsements or notations on the seagoing barge's certificate of inspection may be made as appropriate.

§ 90.05–35 Flammable and combustible liquid cargo in bulk.

NOTE: Requirements for double hull construction for vessels carrying oil, as defined in 33 CFR 157.03, in bulk as cargo are found in 33 CFR 157.10d.

Vessels inspected and certificated under this subchapter may carry limited quantities of flammable and combustible liquid cargo in bulk in the grades indicated, provided the Certificate of Inspection is endorsed to permit such carriage:

(a) Cargo vessels:

(1) Grades D and E in an integral tank; and

(2) Grades D and E and certain specifically named Grade C in a portable tank, including a marine portable tank (MPT), in accordance with subpart 98.30 or 98.33 of this subchapter.

(b) Miscellaneous Vessels, such as cable, salvage, pile-driving, and oil-drilling-rig vessels:

(1) Grades B, C, D, and E in a fixed independent or integral tank authorized by the commandant;

(2) Grades D and E and certain specifically named Grade C in a portable tank, including an MPT, in accordance with subpart 98.30 or 98.33 of this subchapter.

[CGD 84–043, 55 FR 37410, Sept. 11, 1990, as amended by CGD 90–051, 57 FR 362146, Aug. 12, 1992]

Subpart 90.10—Definition of Terms Used in This Subchapter

§ 90.10–1 Anniversary date.

The term *anniversary date* means the day and the month of each year, which corresponds to the date of expiration of the Certificate of Inspection.

[USCG 1999–4976, 65 FR 6501, Feb. 9, 2000]

§ 90.10–2 Approved.

This term means approved by the Commandant unless otherwise stated.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965. Redesignated by USCG 1999–4976, 65 FR 6501, Feb. 9, 2000]

§ 90.10–3 Barge.

This term means any nonself-propelled vessel.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965. Redesignated by USCG 1999–4976, 65 FR 6501, Feb. 9, 2000]

§ 90.10–5 Carrying freight for hire.

The carriage of any goods, wares, or merchandise or any other freight for a valuable consideration whether directly or indirectly flowing to the owner, charterer, operator, agent, or any other person interested in the vessel.

§ 90.10–7 Commandant.

This term means the Commandant of the Coast Guard.

§ 90.10–9 Coast Guard District Commander.

This term means an officer of the Coast Guard designated as such by the Commandant to command all Coast Guard activities within the officer's district, which include the inspection, enforcement, and administration of

Subtitle II of Title 46, U.S. Code, Title 46 and Title 33 U.S. Code, and regulations issued under these statutes.

[CGD 95–028, 62 FR 51205, Sept. 30, 1997]

§ 90.10–11 Coastwise.

Under this designation shall be included all vessels normally navigating the waters of any ocean or the Gulf of Mexico 20 nautical miles or less offshore.

§ 90.10–12 Gas free.

This term means free from dangerous concentrations of flammable or toxic gases.

§ 90.10–13 Great Lakes.

Under this designation shall be included all vessels navigating the Great Lakes.

§ 90.10–14 Headquarters.

This term means the Office of the Commandant, U.S. Coast Guard, Washington, DC 20593–0001.

[CGFR 67–90, 33 FR 1015, Jan. 26, 1968, as amended by CGD 88–070, 53 FR 34534, Sept. 7, 1988]

§ 90.10–15 Industrial personnel.

This term means every person carried on board an industrial vessel for the sole purpose of carrying out the industrial business or functions of the industrial vessel. Examples of industrial personnel include tradesmen, such as mechanics, plumbers, electricians, and welders; laborers, such as wreckers and construction workers; and other persons, such as supervisors, engineers, technicians, drilling personnel, and divers.

[CGFR 67–90, 33 FR 1015, Jan. 26, 1968]

§ 90.10–16 Industrial vessel.

This term means every vessel which by reason of its special outfit, purpose, design, or function engages in certain industrial ventures. Included in this classification are such vessels as drill rigs, missile range ships, dredges, cable layers, derrick barges, pipe lay barges, construction and wrecking barges. Excluded from this classification are vessels carrying freight for hire or engaged in oceanography, limnology, or the fishing industry.

[CGFR 67–90, 33 FR 1015, Jan. 26, 1968]

§ 90.10–19 Lakes, bays, and sounds.

Under this designation shall be included all vessels navigating the waters of any of the lakes, bays, or sounds other than the waters of the Great Lakes.

§ 90.10–20 Liftboat.

Liftboat means an offshore supply vessel with moveable legs capable of raising it's hull above the surface of the sea.

[CGD 82–004a, 55 FR 2525, Jan. 25, 1990]

§ 90.10–21 Marine inspector or inspector.

These terms mean any person from the civilian or military branch of the Coast Guard assigned under the superintendence and direction of an Officer in Charge, Marine Inspection, or any other person as may be designated for the performance of duties with respect to inspection, enforcement, and administration of Subtitle II of Title 46, U.S. Code, Title 46 and Title 33 U.S. Code, and regulations issued under these statutes.

[CGD 95–028, 62 FR 51205, Sept. 30, 1997]

§ 90.10–23 Motorboat.

This term means any vessel indicated in Column 5 of table 90.05–1(a) 65 feet in length or less which is propelled by machinery (including steam). The length shall be measured from end to end over the deck excluding sheer. This term includes a boat temporarily or permanently equipped with a detachable motor. For the purpose of this subchapter, motorboats are included under the term ''vessel'' unless specifically noted otherwise. The various classes of motorboats are as follows:

Class A—Any motorboat less than 16 feet in length.

Class 1—Any motorboat 16 feet or over and less than 26 feet in length.

Class 2—Any motorboat 26 feet or over and less than 40 feet in length.

Class 3—Any motorboat 40 feet or over and not more than 65 feet in length.

[CGFR 65–50, 30 FR 16970, Dec. 30, 1965, as amended by CGD 95–028, 62 FR 51205, Sept. 30, 1997]

§ 90.10–25 Ocean.

Under this designation shall be included all vessels navigating the waters of any ocean or the Gulf of Mexico more than 20 nautical miles offshore.

§ 90.10–27 Officer in Charge, Marine Inspection (OCMI).

This term means any person from the civilian or military branch of the Coast Guard designated as such by the Commandant and who, under the superintendence and direction of the Coast Guard District Commander, is in charge of an inspection zone for the performance of duties with respect to the inspections, enforcement, and administration of Subtitle II of Title 46, U.S. Code, Title 46 and Title 33 U.S. Code, and regulations issued under these statutes.

[CGD 95–028, 62 FR 51205, Sept. 30, 1997]

§ 90.10–29 Passenger.

(a) The term *passenger* means—

(1) On an international voyage, every person other than—

(i) The master and the members of the crew or other persons employed or engaged in any capacity on board a vessel on the business of that vessel; and

(ii) A child under 1 year of age.

(2) On other than an international voyage, an individual carried on the vessel, except—

(i) The owner or an individual representative of the owner or, in the case of a vessel under charter, an individual charterer or individual representative of the charterer;

(ii) The master; or

(iii) A member of the crew engaged in the business of the vessel who has not contributed consideration for carriage and who is paid for onboard services.

(b) The term *passenger for hire* means a passenger for whom consideration is contributed as a condition of carriage on the vessel, whether directly or indirectly flowing to the owner, charterer, operator, agent, or any other person having an interest in the vessel.

[CGD 84–069, 61 FR 25288, May 20, 1996]

§ 90.10–30 Pilot boarding equipment and point of access.

(a) *Pilot Boarding Equipment* means a pilot ladder, accommodation ladder, pilot hoist, or combination of them as required by this subchapter.

(b) *Point of Access* means the place on deck of a vessel where a person steps onto or off of pilot boarding equipment.

[CGD 79–032, 49 FR 25455, June 21, 1984]

§ 90.10–33 Rivers.

Under this designation shall be included all vessels whose navigation is restricted to rivers and/or canals exclusively, and to such other waters as may be so designated by the Coast Guard District Commander.

§ 90.10–35 Recognized classification society.

The term *recognized classification society* means the American Bureau of Shipping or other classification society recognized by the Commandant.

§ 90.10–36 Seagoing barge.

A seagoing barge is a nonself-propelled vessel of at least 100 gross tons making voyages beyond the Boundary Line (as defined in 46 CFR part 7). The phrase *nonself-propelled vessel* means a vessel without sufficient means for self-propulsion and is required to be towed.

[CGFR 65–50, 30 FR 16970, Dec. 30, 1965, as amended by CGD 95–028, 62 FR 51206, Sept. 30, 1997]

§ 90.10–37 Vessel.

Where the word *vessel* is used in this subchapter, it shall be considered to include all vessels indicated in Column 5 of Table 90.05–1(a), except as otherwise noted in this subpart.

§ 90.10–38 Specially suitable for vehicles.

A space which is *specially suitable for vehicles* is one designed for the carriage of automobiles or other self-propelled vehicles with batteries connected and fuel tanks containing gasoline on vessels on ocean or unlimited coastwise

voyages. Requirements for the design and protection of spaces ''specially suitable for vehicles'' appear in subparts 92.15, 95.05, 95.15, 96.05, 97.36, 97.37, and 97.80 of this subchapter. In addition, preparation of automobiles prior to carriage, with the exception of disconnecting battery cables, must be in accordance with the applicable provisions of 49 CFR 176.905.

[CGFR 66–33, 31 FR 15284, Dec. 5, 1966, as amended by CGD 86–033, 53 FR 36025, Sept. 16, 1988]

§ 90.10–40 Offshore supply vessels.

(a) An offshore supply vessel is a vessel that is propelled by machinery other than steam, that is of 15 gross tons and less than 500 gross tons (as measured under the Standard, Dual, or Simplified Measurement System under part 69, subpart C, D, or E, of this chapter) or is less than 6,000 gross tons (as measured under the Convention Measurement System under part 69, subpart B, of this chapter) and that regularly carries goods, supplies or equipment in support of exploration, exploitation, or production of offshore mineral or energy resources.

(b) An existing offshore supply vessel is one contracted for, or the keel of which was laid, before March 15, 1996.

(c) A new offshore supply vessel is one—

(1) That was contracted for, or the keel of which was laid, on or after March 15, 1996; or

(2) That underwent a major conversion initiated on or after March 15, 1996.

[CGD 82–004 and CGD 86–074, 62 FR 49321, Sept. 19, 1997]

§ 90.10–42 Tankerman.

The following ratings are established in part 13 of this chapter. The terms for the ratings identify persons holding valid merchant mariners' documents for service in the ratings issued under that part:

(a) Tankerman-PIC.

(b) Tankerman-PIC (Barge).

(c) Restricted Tankerman-PIC.

(d) Restricted Tankerman-PIC (Barge)

(e) Tankerman-Assistant.

(f) Tankerman-Engineer.

[CGD 79–116, 60 FR 17157, Apr. 4, 1995]

Subpart 90.15—Equivalents

§ 90.15–1 Conditions under which equivalents may be used.

(a) Where in this subchapter it is provided that a particular fitting, material, appliance, apparatus, or equipment, or type thereof, shall be fitted or carried in a vessel, or that any particular provision shall be made or arrangement shall be adopted, the Commandant may accept in substitution therefor any other fitting, material, apparatus, or equipment, or type thereof, or any other arrangement: *Provided,* That he shall have been satisfied by suitable trials that the fitting, material, appliance, apparatus, or equipment, or type thereof, or the provision or arrangement is at least as effective as that specified in this subchapter.

(b) In any case where it is shown to the satisfaction of the Commandant that the use of any particular equipment, apparatus, or arrangement not specifically required by law is unreasonable or impracticable, the Commandant may permit the use of alternate equipment, apparatus, or arrangement to such an extent and upon such conditions as will insure, to his satisfaction, a degree of safety consistent with the minimum standards set forth in this subchapter.

Subpart 90.20—General Marine Engineering Requirements

§ 90.20–1 Marine engineering details.

(a) All marine engineering details such as piping, valves, fittings, boilers, pressure vessels, etc., and their appurtenances installed on the vessel, shall be designed, constructed, and installed in accordance with the provisions of subchapter F (Marine Engineering) of this chapter.

Subpart 90.25—General Electrical Engineering Requirements

§ 90.25–1 Electrical engineering details.

(a) All electrical engineering details and installations shall be designed and

installed in accordance with subchapter J (Electrical Engineering) of this chapter.

Subpart 90.27—Lifesaving Appliances and Arrangements

§ 90.27–1 Lifesaving appliances and arrangements.

All lifesaving appliances and arrangements must be in accordance with subchapter W (Lifesaving Appliances and Arrangements) of this chapter.

[CGD 84–069, 61 FR 25288, May 20, 1996]

Subpart 90.35—American Bureau of Shipping's Standards

§ 90.35–1 Standards to be used.

(a) Where in this subchapter an item, or method of construction, or testing is required to meet the standards established by the American Bureau of Shipping, the current standards in effect at the time of construction of the vessel, or otherwise as applicable, shall be used. The current standards of other recognized classification societies may also be accepted upon approval by the Commandant.

§ 90.35–5 Where obtainable.

(a) The standards established by the American Bureau of Shipping are usually published annually and may be purchased from the American Bureau of Shipping, ABS Plaza, 16855 Northchase Drive, Houston, TX 77060. These standards may be also examined at the Office of the Commandant (G—M), U.S. Coast Guard, Washington, DC 20593–0001, or at the Office of any Coast Guard District Commander or Officer in Charge, Marine Inspection.

[CGFR 65–50, 30 FR 1697, Dec. 30, 1965, as amended by CGFR 68–32, 33 FR 5718, Apr. 12, 1968; CGD 88–070, 53 FR 34534, Sept. 7, 1988; CGD 88–070, 53 FR 37570, Sept. 27, 1988; CGD 88–070, 53 FR 44011, Nov. 1, 1988; CGD 95–072, 60 FR 50464, Sept. 29, 1995; 60 FR 54106, Oct. 19, 1995; USCG–2000–7790, 65 FR 58461, Sept. 29, 2000]

PART 91—INSPECTION AND CERTIFICATION

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AUTHORITY: 33 U.S.C. 1321(j); 46 U.S.C. 3205, 3306, 3307; E.O. 12234; 45 FR 58801; 3 CFR, 1980 Comp., p. 277; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p. 351; 49 CFR 1.46.

SOURCE: CGFR 65–50, 30 FR 16974, Dec. 30, 1965, unless otherwise noted.

Subpart 91.01—Certificate of Inspection

§91.01–1 When required.

(a) Except as noted in this subpart or subpart 91.05, no vessel subject to inspection and certification shall be operated without a valid certificate of inspection.

§91.01–5 Posting.

(a) On vessels of over 25 gross tons, the original certificate of inspection shall, in general, be framed under glass and posted in a conspicuous place where it will be most likely to be observed. On vessels not over 25 gross tons, and on other vessels such as barges, where the framing of the certificate under glass would be impracticable, the original certificate of inspection shall be kept on board to be shown on demand.

§91.01–10 Period of validity for a Certificate of Inspection.

(a) Certificates of inspection will be issued for a period of 5 years. Application may be made by the master, owner, or agent for inspection and issuance of a new certificate of inspection at any time during the period of validity of the current certificate.

(b) Certificates of inspection may be revoked or suspended by the Coast Guard where such process is authorized by law. This may occur if the vessel does not meet the requirements of law or regulations in this chapter or if there is a failure to maintain the safety requirements requisite to the issuance of a certificate of inspection.

(c)(1) In the case of the following vessels, modification of the period of validity of the certificate of inspection will be permitted as set forth in this paragraph:

(i) Nonself-propelled vessels of 100 gross tons and over proceeding on the high seas or ocean for the sole purpose of changing place of employment.

(ii) Nonself-propelled vessels of 100 gross tons and over making rare or infrequent voyages on the high seas or

ocean and returning to the port of departure.

(2) The certificate of inspection may be issued for a specific period of time to cover a described situation or for one voyage only but in no case to exceed 5 years. The certificate of inspection will include the conditions under which the vessel must operate. Unless the vessel is in compliance with this Subchapter insofar as it applies to seagoing barges of 100 gross tons and over, such vessel shall not carry any person on board while underway, and the certificate of inspection will be endorsed as an unmanned seagoing barge.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by CGFR 68–82, 33 FR 18901, Dec. 18, 1968; CGD 95–012, 60 FR 48051, Sept. 18, 1995; USCG 1999–4976, 65 FR 6501, Feb. 9, 2000]

§ 91.01–15 Temporary certificate.

(a) If necessary to prevent delay of the vessel, a temporary certificate of inspection, Form CG–854, shall be issued pending the issuance and delivery of the regular certificate of inspection. Such temporary certificate shall be carried in the same manner as the regular certificate and shall in all ways be considered the same as the regular certificate of inspection which it represents.

§ 91.01–20 Expired certificate.

(a) Nothing in this subpart shall prevent a vessel upon a regularly established line from a port in the United States to a port of a foreign country not contiguous to the United States whose certificate of inspection expires at sea or while said vessel is in a foreign port or a port of Hawaii from lawfully completing her voyage without the valid certificate of inspection or temporary certificate required by this subpart: *Provided,* That the certificate of inspection did not expire within 15 days after the vessel left the last port of the United States, and that the voyage shall be completed within 30 days after the expiration of the certificate of inspection.

§ 91.01–25 Emergency carriage of more than 16 persons in addition to the crew on vessels not engaged in international voyages.

(a) When a District Commander finds that an emergency situation exists, he authorizes the local Officer in Charge, Marine Inspection, to issue amendments to vessels' certificates of inspection authorizing the carriage of more than 16 persons in addition to the crew.

(b) Upon receipt of an application from a vessel's owner or operator, the Local Officer in Charge, Marine Inspection, amends the vessel's certificate of inspection after—

(1) Additional lifesaving and firefighting equipment found necessary by the OCMI has been provided;

(2) A stability evaluation has been performed; and

(3) Any other conditions considered necessary by the OCMI have been satisfied.

[CGD 76–004, 41 FR 32744, Aug. 5, 1976]

Subpart 91.05—Permit To Proceed to Another Port for Repair

§ 91.05–1 When issued.

(a) The Officer in Charge, Marine Inspection, may issue a permit to proceed to another port for repair, Form CG–948 to a vessel, if in his judgment it can be done with safety, even if the certificate of inspection of the vessel has expired or is about to expire.

§ 91.05–5 To whom issued.

(a) Such permit will only be issued upon the written application of the master, owner, or agent of the vessel.

§ 91.05–10 Conditions of permit.

(a) The permit will state upon its face the conditions under which it is issued and whether or not the vessel is permitted to carry freight or passengers.

§ 91.05–15 Posting.

(a) The permit shall be carried in a manner similar to that described in §91.01–5 for a certificate of inspection.

Subpart 91.15—Inspection of Vessels

§ 91.15–1 Standards in inspection of hulls, boilers, and machinery.

In the inspection of hulls, boilers, and machinery of vessels, the standards established by the American Bureau of Shipping, see part 90, subpart 90.35 of this chapter, respecting material and inspection of hulls, boilers, and machinery, and the certificate of classification referring thereto, except where otherwise provided for by the rules and regulations in this subchapter, subchapter E (Load Lines), subchapter F (Marine Engineering), subchapter J (Electrical Engineering), and subchapter W (Lifesaving Appliances and Arrangements) of this chapter, shall be accepted as standard by the inspectors.

[CGD 84–069, 61 FR 25289, May 20, 1996]

§ 91.15–5 Alternate compliance.

(a) In place of compliance with other applicable provisions of this subchapter, the owner or operator of a vessel subject to plan review and inspection under this subchapter for initial issuance or renewal of a Certificate of Inspection may comply with the Alternate Compliance Program provisions of part 8 of this chapter.

(b) For the purposes of this section, a list of authorized classification societies, including information for ordering copies of approved classification society rules and supplements, is available from Commandant (G–MSE), 2100 Second St., SW., Washington, DC 20593–0001; telephone (202)267–6925; or fax (202)267–4816. Approved classification society rules and supplements are incorporated by reference into 46 CFR 8.110(b).

[CGD 95–010, 62 FR 67536, Dec. 24, 1997, as amended by USCG–1999–5004, 64 FR 30439, June 8, 1999]

Subpart 91.20—Initial Inspection

§ 91.20–1 Prerequisite of certificate of inspection.

(a) The initial inspection is a prerequisite of the issuance of the original certificate of inspection.

§ 91.20–5 When made.

(a) The original inspection will only be made upon the written application of the owner or builder of the vessel to the Officer in Charge, Marine Inspection, on Form CG–3752, Application for Inspection of U.S. Vessel, at or nearest the port where the vessel is located.

§ 91.20–10 Plans.

(a) Before application for inspection is made, and before construction is started, the owner or builder shall have plans approved by the Commandant indicating the proposed arrangement and construction of the vessel. The procedure for submitting plans and the list of plans to be supplied is set forth in subpart 91.55.

§ 91.20–15 Scope of inspection.

(a) The initial inspection, which may consist of a series of inspections during the construction of a vessel, shall include a complete inspection of the structure, including the outside of the vessel's bottom, the machinery, unfired pressure vessels, equipment and the inside and outside of the boilers. The inspection shall be such as to insure that the arrangements, material, and scantlings of the structure, boilers, and other pressure vessels and their appurtenances, piping, main and auxiliary machinery, electrical installations, lifesaving appliances, fire-detecting and extinguishing equipment, pilot boarding equipment, pollution prevention equipment, and other equipment fully comply with the applicable regulations for such vessel and are in accordance with approved plans, and determine that the vessel is in possession of a valid certificate issued by the Federal Communications Commission, if any. The inspection shall be such as to ensure that the workmanship of all parts of the vessel and its equipment is in all respects satisfactory and that the vessel is provided with lights, means of making sound signals, and distress signals as required by applicable statutes and regulations.

(b) When equipment is installed which is not required by applicable regulations in this subchapter, that equipment shall be inspected and tested as

required for such equipment by applicable regulations in subchapter H (Passenger Vessels) of this chapter. For example, fire-detecting systems shall be inspected and tested as required by subpart 71.20 of subchapter H (Passenger Vessels) of this chapter.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by CGFR 68–32, 33 FR 5718, Apr. 12, 1968; CGFR 68–82, 33 FR 18901, Dec. 18, 1968; CGD 71–161R, 37 FR 28262, Dec. 21, 1972; CGD 82–036, 48 FR 654, Jan. 6, 1983; CGD 79–032, 49 FR 25455, June 21, 1984; CGD 95–012, 60 FR 48051, Sept. 18, 1995]

§ 91.20–20 Specific tests and inspections.

The applicable tests and inspections as set forth in subpart 91.25 of this part shall be made at this time. In addition, the following specific tests and inspections shall be made by the inspector.

(a) For inspection procedures of lifesaving appliances and arrangements, see subchapter W (Lifesaving Appliances and Arrangements) of this chapter.

(b) Installation of carbon dioxide extinguishing piping—see §95.15–15 of this subchapter.

(c) For inspection procedures of marine engineering equipment and systems, see subchapter F (Marine Engineering) of this chapter.

(d) For inspection procedures of Electrical Engineering equipment and systems, see subchapter J (Electrical Engineering) of this chapter.

(e) For inspection and tests of tanks containing certain dangerous cargoes in bulk, see part 98 of this subchapter.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by CGD 84–069, 61 FR 25289, May 20, 1996]

Subpart 91.25—Inspection for Certification

§ 91.25–1 Prerequisite of reissuance of certificate of inspection.

(a) An inspection for certification is a prerequisite of the reissuance of a certificate of inspection.

§ 91.25–5 Application for a Certificate of Inspection.

You must submit a written application for an inspection for certification to the cognizant Officer in Charge, Marine Inspection. To renew a Certificate of Inspection, you must submit an application at least 30 days before the expiration of the tank vessel's current certificate. You must use Form CG–3752, Application for Inspection of U.S. Vessel, and submit it to the Officer in Charge, Marine Inspection at, or nearest to, the port where the vessel is located. When renewing a Certificate of Inspection, you must schedule an inspection for certification within the 3 months before the expiration date of the current Certificate of Inspection.

[USCG 1999–4976, 65 FR 6501, Feb. 9, 2000]

§ 91.25–10 Scope of inspection.

The inspection for certification shall include an inspection of the structure, boilers, and other pressure vessels, machinery, and equipment. The inspection shall be such as to insure that the vessel, as regards the structure, boilers and other pressure vessels, and their appurtenances, piping, main and auxiliary machinery, electrical installations, lifesaving appliances, fire-detecting and extinguishing equipment, pilot boarding equipment, pollution prevention equipment, and other equipment, is in satisfactory condition and fit for the service for which it is intended, and that it complies with the applicable regulations for such vessel and determine that the vessel is in possession of a valid certificate issued by the Federal Communications Commission, if required. The lights, means of making sound signals, and distress signals carried by the vessel shall also be subject to the above mentioned inspection for the purpose of ensuring that they comply with the requirements of the applicable statutes and regulations.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by CGFR 68–32, 33 FR 5718, Apr. 12, 1968; CGFR 68–82, 33 FR 18901, Dec. 18, 1968; CGD 71–161R, 37 FR 28262, Dec. 21, 1972; CGD 82–036, 48 FR 655, Jan. 6, 1983; CGD 79–032, 49 FR 25455, June 21, 1984; CGD 95–012, 60 FR 48051, Sept. 18, 1995]

§ 91.25–15 Lifesaving equipment.

For inspection procedures of Lifesaving appliances and arrangements,

see subchapter W (Lifesaving Appliances and Arrangements) of this chapter.

[CGD 84–069, 61 FR 25289, May 20, 1996]

§ 91.25–20 Fire-extinguishing equipment.

(a) At each inspection for certification, periodic inspection and at other times necessary, the inspector will determine that all fire-extinguishing equipment is in suitable condition and may require any tests necessary to determine the condition of the equipment. The inspector will determine if the tests and inspections required by § 97.15–60 of this subchapter have been conducted. At each inspection for certification and periodic inspection, the inspector will check fire-extinguishing equipment with the following tests and inspections:

(1) All hand portable fire extinguishers and semi-portable fire extinguishing systems shall be checked as noted in Table 91.25–20(a)(1). In addition, the hand portable fire extinguishers and semi-portable fire extinguishing systems shall be examined for excessive corrosion and general condition.

TABLE 91.25–20(a)(1)

Type unit	Test
Soda acid	Discharge. Clean hose and inside of extinguisher thoroughly. Recharge.
Foam	Discharge. Clean hose and inside of extinguisher thoroughly. Recharge.
Pump tank (water or antifreeze).	Discharge. Clean hose and inside of extinguisher thoroughly. Recharge with clean water or antifreeze.
Cartridge operated (water, antifreeze or loaded stream).	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Remove liquid. Clean hose and inside of extinguisher thoroughly. Recharge with clean water, solution, or antifreeze. Insert charged cartridge.
Carbon Dioxide	Weigh cylinders. Recharge if weight loss exceeds 10 percent of weight of charge. Inspect hose and nozzle to be sure they are clear. [1]
Dry chemical (cartridge-operated type).	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Inspect hose and nozzle to see they are clear. Insert charged cartridge. Be sure dry chemical is free-flowing (not caked) and chamber contains full charge.
Dry chemical (stored pressure type).	See that pressure gage is in operating range. If not, or if seal is broken, weigh or otherwise determine that full charge of dry chemical is in extinguisher. Recharge if pressure is low or if dry chemical is needed.
Vaporizing liquid [2] (pump type).	Pump a few strokes into clean pail and replace liquid. Keep water out of extinguisher or liquid. Keep extinguisher completely full of liquid.
Vaporizing liquid [2] (stored pressure type).	See that pressure gage is in operating range. Weigh or check liquid level to determine that full charge of liquid is in extinguisher. Recharge if pressure is low or if liquid is needed.

[1] Cylinders must be tested and marked, and all flexible connections and discharge hoses of semi-portable carbon dioxide and halon extinguishers must be tested or renewed, as required by §§ 147.60 and 147.65 of this chapter.

[2] Vaporizing-liquid type fire extinguishers containing carbon tetrachloride or chlorobromomethane or other toxic vaporizing liquids shall be removed from all vessels. (See § 95.50–5(e) of this subchapter.)

(2) Fixed fire-extinguishing systems shall be checked as noted in Table 91.25–20(a)(2). In addition, all parts of the fixed fire-extinguishing systems, shall be examined for excessive corrosion and general conditions.

TABLE 91.25–20(a)(2)

Type system	Test
Foam	Systems utilizing a soda solution shall have such solution replaced. In all cases, ascertain that powder is not caked.
Carbon dioxide	Weigh cylinders. Recharge if weight loss exceeds 10 percent of weight of charge. [1]

[1] Cylinders must be tested and marked, and all flexible connections on fixed carbon dioxide systems must be tested or renewed, as required by §§ 147.60 and 147.65 of this chapter.

(3) On all fire-extinguishing systems, all piping controls, valves, and alarms shall be checked to ascertain that the system is in operating condition. In this respect steam smothering lines shall be checked with at least a 50 p.s.i. air pressure with the ends capped or by blowing steam through the lines at the designed pressure.

(4) The fire main system shall be operated and the pressure checked at the most remote and highest outlets. All firehose shall be subjected to a test pressure equivalent to the maximum pressure to which they may be subjected in service, but not less than 100 p.s.i.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by CGFR 68–32, 33 FR 5718, Apr. 18, 1968; CGD 78–154, 44 FR 13491, Mar. 12, 1979; CGD 84–044, 53 FR 7748, Mar. 10, 1988; USCG 1999–4976, 65 FR 6501, Feb. 9, 2000; 65 FR 11904, Mar. 7, 2000]

§ 91.25–25 Hull equipment.

(a) At each inspection for certification and periodic inspection, the inspectors shall conduct the following tests and inspections of hull equipment:

(1) All watertight doors shall be operated locally by manual power and also by hydraulic or electric power if so fitted. Where remote control is fitted, the doors shall also be operated by the remote control apparatus.

(2) The remote controls of all valves shall be operated.

(3) The owner, operator or master shall provide the Officer in Charge, Marine Inspection with all current valid certificates and registers of cargo gear issued by an organization recognized by the Commandant under § 31.10–16.

(b) Every acceptable cargo gear certificate and/or register shall be properly executed by a person authorized to do so and shall:

(1) Certify as to the tests and examinations conducted;

(2) Show the dates on which the tests and examinations were conducted; and

(3) Indicate that the cargo gear described in the certificate or register complies with the standards of the organization or association authorized to issue the certificate or register.

(c) Competent persons for the purposes of this section are defined as—

(1) Surveyors of a classification society recognized by the Commandant under 46 U.S.C. 3316.

(2) Surveyors of a cargo gear organization recognized by the Commandant under § 31.10–16.

(3) Responsible officials or employees of the testing laboratories, companies, or organizations who conduct tests of pieces of loose cargo gear, wire rope, or the annealing of gear as may be required by the standards of the organization or association authorized to issue the certificate or register.

(d) The registers issued in connection with cargo gear certification must have all required entries fully completed as of the dates indicated, shall be kept current, and shall include the following:

(1) A register of the cargo handling machinery and the gear accessory thereto carried on the vessel named therein;

(2) Certification of the testing and examination of winches, derricks, and their accessory gear;

(3) Certification of the testing and examination of cranes, hoists, and their accessory gear;

(4) Certification of the testing and examination of chains, rings, hooks, shackles, swivels, and blocks;

(5) Certification of the testing and examination of wire rope;

(6) Certification of the heat-treatment of chains, rings, hooks, shackles, and swivels which require such treatment; and,

(7) Certification of the annual thorough examinations of gear not required to be periodically heat-treated.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by CGD 95–028, 62 FR 51206, Sept. 30, 1997; USCG 1999–4976, 65 FR 6501, Feb. 9, 2000]

§ 91.25–30 Electrical engineering equipment.

For inspection procedures of electrical engineering equipment and systems see subchapter J (Electrical Engineering) of this chapter.

§ 91.25–35 Marine engineering equipment.

(a) For inspection procedures of marine engineering equipment and systems, see subchapter F (Marine Engineering) of this chapter.

§ 91.25–37 Tanks containing dangerous cargoes.

(a) For inspection and tests of tanks containing certain dangerous cargoes in bulk, see part 98 of this subchapter.

§ 91.25–38 Pollution prevention.

At each inspection for certification and periodic inspection, the inspector shall examine the vessel to determine that it meets the vessel design and equipment requirements for pollution prevention in 33 CFR part 155, subpart B.

[CGD 71–161R, 37 FR 28262, Dec. 21, 1972, as amended by USCG 1999–4976, 65 FR 6501, Feb. 9, 2000]

§ 91.25–40 Sanitary inspection.

(a) At each inspection for certification and periodic inspection, the quarters, toilets, and washing spaces, galleys, serving pantries, lockers, etc., shall be examined by the inspector to be assured that they are in a sanitary condition.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by USCG 1999–4976, 65 FR 6501, Feb. 9, 2000]

§ 91.25–45 Fire hazards.

(a) At each inspection for certification and periodic inspection, the inspector shall examine the tank tops and bilges in the machinery spaces to see that there is no accumulation of oil which might create a fire hazard.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by USCG 1999–4976, 65 FR 6501, Feb. 9, 2000]

§ 91.25–50 Inspector not limited.

(a) Nothing in this subpart shall be construed as limiting the inspector from making such tests or inspections as he deems necessary to be assured of the safety and seaworthiness of the vessel.

Subpart 91.27—Annual and Periodic Inspections

§ 91.27–1 Annual and periodic inspections.

(a) *Annual inspection.* Your vessel must undergo an annual inspection within the 3 months before or after each anniversary date, except as required in paragraph (b) of this section.

(1) You must contact the cognizant Officer in Charge, Marine Inspection to schedule an inspection at a time and place which he or she approves. No written application is required.

(2) The scope of the annual inspection is the same as the inspection for certification as specified in § 91.25–10 but in less detail unless the cognizant marine inspector finds deficiencies or determines that a major change has occurred since the last inspection. If deficiencies are found or a major change to the vessel has occurred, the marine inspector will conduct an inspection more detailed in scope to ensure that the vessel is in satisfactory condition and fit for the service for which it is intended. If your vessel passes the annual inspection, the marine inspector will endorse your current Certificate of Inspection.

(3) If the annual inspection reveals deficiencies in your vessel's maintenance, you must make any or all repairs or improvements within the time period specified by the Officer in Charge, Marine Inspection.

(4) Nothing in this subpart limits the marine inspector from conducting such tests or inspections he or she deems necessary to be assured of the vessel's seaworthiness.

(b) *Periodic inspection.* Your vessel must undergo a periodic inspection within 3 months before or after the second or third anniversary of the date of your vessel's Certificate of Inspection. This periodic inspection will take the place of an annual inspection.

(1) You must contact the cognizant Officer in Charge, Marine Inspection to schedule an inspection at a time and place which he or she approves. No written application is required.

(2) The scope of the periodic inspection is the same as that for the inspection for certification, as specified in § 91.25–10. The Officer in Charge, Marine Inspection will insure that the vessel is in satisfactory condition and fit for the service for which it is intended. If your vessel passes the periodic inspection, the marine inspector will endorse your current Certificate of Inspection.

(3) If the periodic inspection reveals deficiencies in your vessel's maintenance, you must make any or all repairs or improvements within the time period specified by the Officer in Charge, Marine Inspection.

(4) Nothing in this subpart limits the marine inspector from conducting such tests or inspections he or she deems necessary to be assured of the vessel's seaworthiness.

[USCG 1999–4976, 65 FR 6501, Feb. 9, 2000]

§ 91.27–5 Certificate of Inspection: Conditions of validity.

To maintain a valid Certificate of Inspection, you must complete your annual and periodic inspections within the periods specified in § 91.27–1 (a) and (b) and your Certificate of Inspection must be endorsed.

[USCG 1999–4976, 65 FR 6502, Feb. 9, 2000]

§ 91.27–13 Alternative annual inspection for offshore supply vessels less than 400 gross tons in foreign ports.

(a) The owner or operator of an offshore supply vessel of less than 400 gross tons, except liftboats as defined in § 90.10–20 of this chapter, may request authorization to conduct an alternative annual inspection in place of the annual inspection described in § 91.27–1(a) of this chapter. You must submit your request to the Officer in Charge, Marine Inspection responsible for conducting inspections in the country in which the vessel is operating and will be examined. To qualify for the alternative annual inspection, you must meet the following requirements:

(1) The request for authorization must be in writing and received by the cognizant Officer in Charge, Marine Inspection before the end of the twelfth month of each COI anniversary year.

(2) The vessel is expected to be continuously employed outside of the United States during the 3 months before and after each anniversary date of the issuance of the COI.

(b) In determining whether to grant authorization for the alternative annual inspection, the Officer in Charge, Marine Inspection will consider the following:

(1) Information contained in previous inspection and drydock examination reports, including the Officer in Charge, Marine Inspection's recommendation for participation in the alternative midperiod examination program, and the alternative annual inspection program.

(2) The nature, number, and severity of any marine casualties or accidents, as defined in § 4.03–1 of this chapter, which the vessel has experienced in the last 3 years.

(3) The nature, number, and severity of any outstanding inspection requirements for the vessel.

(4) The owner or operator's history of compliance and cooperation in the alternative midperiod examination program and the alternative annual inspection program, which includes—

(i) The prompt correction of deficiencies;

(ii) The reliability of previously submitted alternative examination and annual inspection reports; and

(iii) The reliability of representations that the vessel under consideration will be, and other vessels previously examined under this section were, employed outside of the United States for the 3 month period before and after each anniversary date.

(c) If authorization is granted, the Officer in Charge, Marine Inspection must provide the applicant written authorization to proceed with the alternative annual inspection, including special instructions when appropriate.

(d) The following conditions must be met for the alternative annual inspection to be accepted by the Coast Guard in lieu of conducting an annual inspection in accordance with § 91.27–1(a) of this subpart.

(1) The alternative annual inspection must be conducted within 3 months before and after each anniversary date.

(2) The alternative annual inspection must be of the scope detailed in § 91.27–1(a) of this subpart and must be conducted by the vessel's master, operator, or a designated representative of the owner or operator.

(3) Upon completion of the alternative annual inspection, the person or persons conducting the inspection must prepare a comprehensive report describing the conditions found. This inspection report must contain sufficient detail to allow an evaluation to be made by the Officer in Charge, Marine Inspection to whom the report is submitted that the vessel is fit for the service and route specified on the Certificate of Inspection. The report must

include reports and receipts documenting the servicing of lifesaving and fire protection equipment, and any photographs or sketches necessary to clarify unusual circumstances. Each person preparing the report must sign it and certify that the information contained therein is complete and accurate.

(4) Unless the vessel's master participated in the alternative annual inspection and the preparation of the inspection report, the master must review the report for completeness and accuracy. The master must sign the report to indicate review and forward it to the vessel's owner or operator who requested authorization to conduct the inspection.

(5) The owner or operator of an offshore supply vessel inspected under this subpart must review and submit the report required by paragraph (d)(3) of this section to the Officer in Charge, Marine Inspection who authorized the owner or operator to conduct the alternative annual inspection. The inspection report must be received by the cognizant Officer in Charge, Marine Inspection before the first day of the fifth month following the anniversary date. The forwarding letter or endorsement must be certified and contain the following information—

(i) That the person or persons who conducted the inspection acted on behalf of the vessel's owner or operator;

(ii) That the inspection report was reviewed by the owner or operator;

(iii) That the discrepancies noted during the inspection have been corrected or will be corrected within a stated time frame; and

(iv) That the owner or operator has sufficient personal knowledge of conditions aboard the vessel at the time of the inspection or has made necessary inquiries to justify forming a belief that the inspection report is true and correct.

(e) The form of certification required under this subpart is as follows:

I certify that the above is true and complete to the best of my knowledge and belief.

(f) Deficiencies and hazards discovered during an alternative annual inspection conducted pursuant to this section must be corrected or eliminated, if practical, before the inspection report is submitted to the Officer in Charge, Marine Inspection in accordance with paragraph (d)(5) of this section. Deficiencies and hazards that are not corrected or eliminated by the time the inspection report is submitted must be listed in the report as ''outstanding.'' Upon receipt of an inspection report indicating outstanding deficiencies or hazards, the Officer in Charge, Marine Inspection will inform the owner or operator of the vessel in writing of the time period in which to correct or eliminate the deficiencies or hazards and the method for establishing that the corrections have been accomplished. Where a deficiency or hazard remains uncorrected or uneliminated after the expiration of the time specified for correction or elimination, the Officer in Charge, Marine Inspection will initiate appropriate enforcement measures.

(g) Upon receipt of the report required by paragraph (d)(3) of this section, the Officer in Charge, Marine Inspection must evaluate it and make the following determination:

(1) Whether the alternative annual inspection is accepted in lieu of the annual inspection required by §91.27–1(a) of this subpart.

(2) Whether the vessel is in satisfactory condition.

(3) Whether the vessel continues to be reasonably fit for its intended service and route. The Officer in Charge, Marine Inspection may request any additional information needed to make the determinations required by this section. The Officer in Charge, Marine Inspection will inform the owner or operator in writing of the determinations required by this section.

(h) If the Officer in Charge, Marine Inspection determines, in accordance with paragraph (g) of this section, that the alternative annual inspection is not accepted in lieu of the annual inspection required by §91.27–1(a) of this subpart, the vessel must be reinspected by the cognizant Officer in Charge, Marine Inspection as soon as practical.

(i) If the Officer in Charge, Marine Inspection determines, in accordance with paragraph (g) of this section, that the alternative annual inspection is accepted in lieu of the annual inspection

required by §91.27–1(a) of this subpart, the master must complete the applicable COI endorsement.

[USCG 1999–4976, 65 FR 6502, Feb. 9, 2000; 65 FR 11904, Mar. 7, 2000]

§ 91.27–15 Inspectors not limited.

(a) Nothing in this subpart shall be construed as limiting the inspector from making such tests or inspections as he deems necessary to be assured of the seaworthiness of the vessel.

Subpart 91.30—Inspection After Accident

§ 91.30–1 General or partial survey.

(a) A survey, either general or partial, according to the circumstances, shall be made every time an accident occurs or a defect is discovered which affects the safety of the vessel or the efficacy or completeness of its lifesaving appliances, fire-fighting or other equipment, or whenever any important repairs or renewals are made. The survey shall be such as to insure that the necessary repairs or renewals have been effectively made, that the material and the workmanship of such repairs or renewals are in all respects satisfactory, and that the vessel complies in all respects with the regulations in this subchapter.

Subpart 91.35—Sanitary Inspections

§ 91.35–1 When made.

(a) An inspection of quarters, toilet and washing spaces, serving pantries, galleys, etc., shall be made at least once in every month. If the route of the vessel is such that it is away from a United States port for more than one month, an inspection shall be conducted at least once every trip.

Subpart 91.40—Drydocking

§ 91.40–1 Definitions relating to hull examinations.

As used in this part—

(a) *Drydock examination* means hauling out a vessel or placing a vessel in a drydock or slipway for an examination of all accessible parts of the vessel's underwater body and all through-hull fittings.

(b) *Internal structural examination* means an examination of the vessel while afloat or in drydock and consists of a complete examination of the vessel's main strength members, including the major internal framing, the hull plating, voids, and ballast tanks, but not including cargo or fuel oil tanks.

(c) *Cargo tank internal examination* means an examination of the vessel while afloat or in drydock and consists of an examination of the internals of all cargo tanks; except, if the vessel is certificated to carry cargoes regulated under part 38 or subchapter O of this chapter, the cargo tank internal examination must be accomplished as specified in parts 38 and 151 of this chapter respectively.

(d) *Underwater survey* means the examination, while the vessel is afloat, of all accessible parts of the vessel's underwater body and all through-hull fittings.

[CGD 84–024, 52 FR 39653, Oct. 23, 1987, as amended by CGD 84–024, 53 FR 32231, Aug. 24, 1988; CGD 95–028, 62 FR 51206, Sept. 30, 1997]

§ 91.40–3 Drydock examination, internal structural examination, cargo tank internal examination, and underwater survey intervals.

(a) Except as provided in paragraphs (b) through (g) of this section, each vessel must undergo drydock, internal structural, and cargo tank internal examinations as follows:

(1) Except under paragraph (a)(2) of this section, vessels that operate in salt water must be examined in accordance with the intervals set forth in Table 91.40–3(a) of this section. Where Table 91.40–3(a) indicates a 2.5 year examination interval, it means a vessel must undergo two examinations within any five year period. No more than three years may elapse between any two examinations.

TABLE 91.40–3(a).—SALT WATER SERVICE VESSELS EXAMINATION INTERVALS IN YEARS

	Single hull ship and barge	Double hull barge with internal framing[1]	Double hull barge with external framing[2]	Single hull barge with independent tanks[3]	Wood hull ship and barge	Unmanned deck cargo barge[4]	Unmanned double hull freight barge[5]
Drydock	2.5	5.0	5.0	5.0	2.5	5.0	5.0
Internal structural	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Cargo tank internal	[6]2.5	[6]5.0	[6]10.0	[6]10.0	[6]2.5	.....	[6]5.0

Note:

[1] Applicable to double hull tank barges (double sides, ends, and bottoms) when the structural framing is on the internal tank surface.

[2] Applicable to double hull tank barges (double sides, ends, and bottoms) when the structural framing is on the external tank surface accessible for examination from voids, double bottoms, and other similar spaces.

[3] Applicable to single hull tank barges with independent cargo tanks which have a cargo containment envelope that is not a contiguous part of the hull structure and which has adequate clearance between the tanks and between the tanks and the vessel's hull to provide access for examination of all tank surfaces and the hull structure.

[4] Applicable to unmanned/non-permissively manned deck cargo barge which carries cargo only above the weather deck and which provides complete access for examination of the inside of the hull structure.

[5] Applicable to unmanned/non-permissively manned double hull freight barges (double sides, ends, and bottoms) the arrangement of which provides access for a complete internal structural examination as defined in § 91.40–1(b) without the necessity of entering cargo tanks or holds.

[6] Or as specified in Part 151.

(2) Vessels that operate in fresh water at least six months in every 12 month period since the last drydock examination must be examined in accordance with the intervals set forth in Table 91.40–3(b) of this section. Where Table 91.40–3(b) indicates a 2.5 year examination interval, it means a vessel must undergo two examinations within any five year period. No more than three years may elapse between any two examinations.

TABLE 91.40–3(b).—FRESH WATER SERVICE VESSELS EXAMINATION INTERVALS IN YEARS

	Single hull ship and barge	Double hull barge with internal framing[1]	Double hull barge with external framing[2]	Single hull barge with independent tanks[3]	Wood hull ship and barge	Unmanned deck cargo barge[4]	Unmanned double hull freight barge[5]
Drydock	5.0	10.0	10.0	10.0	2.5	10.0	10.0
Internal structural	5.0	5.0	5.0	5.0	2.5	5.0	5.0
Cargo tank internal	[6]5.0	[6]5.0	[6]10.0	[6]10.0	[6]2.5	.....	[6]5.0

Note:

[1] Applicable to double hull tank barges (double sides, ends, and bottoms) when the structural framing is on the internal tank surface.

[2] Applicable to double hull tank barges (double sides, ends, and bottoms) when the structural framing is on the external tank surface accessible for examination from voids, double bottoms, and other similar spaces.

[3] Applicable to single hull tank barges with independent cargo tanks which have a cargo containment envelope that is not a contiguous part of the hull structure and which has adequate clearance between the tanks and between the tanks and the vessel's hull to provide access for examination of all tank surfaces and the hull structure.

[4] Applicable to unmanned/non-permissively manned deck cargo barge which carries cargo only above the weather deck and which provides complete access for examination of the inside of the hull structure.

[5] Applicable to unmanned/non-permissively manned double hull freight barges (double sides, ends, and bottoms) the arrangement of which provides access for a complete internal structural examination as defined in § 91.40–1(b) without the necessity of entering cargo tanks or holds.

[6] Or as specified in Part 151.

(b) During each inspection or reinspection for certification, all wing voids, rakes, cofferdams, and other void spaces on barges must be opened and checked from on-deck for the presence of water or cargo indicating hull damage or cargo tank leakage. If water or cargo is not present, these spaces need not be gas freed, ventilated, cleaned, or otherwise prepared for personnel entry. If water or cargo is present, an internal structural examination may be required.

(c) If, during an internal structural, cargo tank internal examination, or underwater survey, damage or deterioration to the hull plating, structural members, or cargo tanks is discovered, the Officer in Charge, Marine Inspection, may require the vessel to be drydocked or otherwise taken out of service to further assess the extent of the damage and to effect permanent repairs.

(d) Vessels less than 15 years of age (except wooden hull vessels) that are in salt water service with a 2.5 year drydock interval (as indicated in Table 91.40–3(a) of this section) or that are in fresh water service with a five year drydock interval (as indicated in Table 91.40–3(b) of this section) may be considered for an underwater survey instead of alternate drydock examinations, provided the vessel is fitted with an effective hull protection system. Vessel owners or operators must apply to the Officer in Charge, Marine Inspection, for approval of underwater surveys instead of alternate drydock examinations for each vessel. The application must include the following information:

(1) The procedure to be followed in carrying out the underwater survey.

(2) The location where the underwater survey will be accomplished.

(3) The method to be used to accurately determine the diver location relative to the hull.

(4) The means that will be provided for examining through-hull fittings.

(5) The means that will be provided for taking shaft bearing clearances.

(6) The condition of the vessel, including the anticipated draft of the vessel at the time of the survey.

(7) A description of the hull protection system.

(e) Vessels otherwise qualifying under paragraph (d) of this section, that are 15 years of age or older, may be considered for continued participation in or entry into the underwater survey program on a case-by-case basis if—

(1) Before the vessel's next scheduled drydocking, the owner or operator submits a request for participation or continued participation to Commandant (G–MOC);

(2) During the vessel's next drydocking after the request is submitted, no appreciable hull deterioration is indicated as a result of a complete set of hull gaugings; and

(3) The results of the hull gauging and the results of the Coast Guard drydock examination together with the recommendation of the Officer in Charge, Marine Inspection, are submitted to Commandant (G–MOC) for final approval.

(f) Each vessel which has not met with the applicable examination schedules in paragraphs (a) through (e) of this section because it is on a voyage, must undergo the required examinations upon completion of the voyage.

(g) The Commandant (G–MOC) may authorize extensions to the examination intervals specified in paragraph (a) of this section.

[CGD 84–024, 52 FR 39653, Oct. 23, 1987, as amended by CGD 84–024, 53 FR 32231, Aug. 24, 1988; CGD 84–024, 53 FR 34872, Sept. 8, 1988; CGD 95–072, 60 FR 50464, Sept. 29, 1995; CGD 96–041, 61 FR 50729, Sept. 27, 1996; CGD 95–028, 62 FR 51206, Sept. 30, 1997]

§ 91.40–5 Notice and plans required.

(a) The master, owner, operator, or agent of the vessel shall notify the Officer in Charge, Marine Inspection, whenever the vessel is to be drydocked regardless of the reason for drydocking.

(b) Each vessel, except barges, that holds a Load Line Certificate must have on board a plan showing the vessel's scantlings. This plan must be made available to the Coast Guard marine inspector whenever the vessel undergoes a drydock examination, internal structural examination, cargo tank internal examination, or underwater survey or whenever repairs are made to the vessel's hull.

(c) Each barge that holds a Load Line Certificate must have a plan showing the barge's scantlings. The plan need not be maintained on board the barge but must be made available to the Coast Guard marine inspector whenever the barge undergoes a drydock examination, internal structural examination, or cargo tank internal examination, or underwater survey or whenever repairs are made to the barge's hull.

[CGD 84–024, 52 FR 39654, Oct. 23, 1987]

Subpart 91.43—Integral Fuel Oil Tank Examinations

§ 91.43–1 When required.

(a) Each fuel oil tank with at least one side integral to the vessel's hull and located within the hull (''integral fuel oil tank'') is subject to inspection as provided in this section. The owner or operator of the vessel shall have the tanks cleaned out and gas freed as necessary to permit internal examination of the tank or tanks designated by the marine inspector. The owner or operator shall arrange for an examination of the fuel tanks of each vessel during an internal structural examination at intervals not to exceed five years.

(b) Integral non-double-bottom fuel oil tanks need not be cleaned out and internally examined if the marine inspector is able to determine by external examination that the general condition of the tanks is satisfactory.

(c) Double-bottom fuel oil tanks on vessels less than 10 years of age need not be cleaned out and internally examined if the marine inspector is able to determine by external examination that the general condition of the tanks is satisfactory.

(d) All double-bottom fuel oil tanks on vessels 10 years of age or older but less than 15 years of age need not be cleaned out and internally examined if the marine inspector is able to determine by internal examination of at least one forward double-bottom fuel oil tank, and by external examination of all other double-bottom fuel oil tanks on the vessel, that the general condition of the tanks is satisfactory.

(e) All double-bottom fuel oil tanks on vessels 15 years of age or older but less than 25 years of age need not be cleaned out and internally examined if the marine inspector is able to determine by internal examination of at least one forward, one amidships, and one aft double-bottom fuel oil tank, and by external examination of all other double-bottom fuel oil tanks on the vessel, that the general condition of the tanks is satisfactory.

(f) All double-bottom fuel oil tanks on vessels 25 years of age or older need not be cleaned out and internally examined if the marine inspector is able to determine by internal examination of at least one double-bottom fuel oil tank in way of each cargo hold/tank, and by external examination of all other double-bottom fuel oil tanks, that the general condition of the tanks is satisfactory.

[CGD 84–024, 52 FR 39654, Oct. 23, 1987, as amended by CGD 84–024, 53 FR 32232, Aug. 24, 1988]

Subpart 91.45—Repairs and Alterations

§ 91.45–1 Notice required.

(a) No repairs or alterations affecting the safety of the vessel with regard to the hull, machinery, or equipment, shall be made without the knowledge of the Officer in Charge, Marine Inspection.

(b) Drawings of alterations shall be approved before work is started unless deemed unnecessary by the Officer in Charge, Marine Inspection.

(c) Drawings will not be required for repairs in kind.

§ 91.45–5 Inspection required.

(a) An inspection either general or partial depending upon the circumstances shall be made whenever any important repairs or alterations are undertaken.

Subpart 91.50—Special Operating Requirements

§ 91.50–1 Inspection and testing required when making alterations, repairs, or other such operations involving riveting, welding, burning or like fire-producing actions.

(a) The provisions of ''Standard for The Control of Gas Hazards on Vessels to be Repaired,'' NFPA No. 306, published by National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02669, shall be used as a guide in conducting the inspections and issuance of certificates required by this section.

(b) Until an inspection has been made to determine that such operation can be undertaken with safety, no alterations, repairs, or other such operations involving riveting, welding, burning, or like fire-producing actions shall be made:

(1) Within or on the boundaries of cargo tanks which have been used to carry combustible liquids or chemicals in bulk; or,

(2) Within spaces adjacent to cargo tanks which have been used to carry Grade D combustible liquid cargo, except where the distance between such cargo tanks and the work to be performed is not less than twenty-five (25) feet; or,

(3) Within or on the boundaries of fuel tanks; or,

(4) To pipelines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel tanks; or,

(5) On miscellaneous vessels such as cable, salvage, pile driving, and oil drilling rig vessels that have been specially authorized to carry Grade B or Grade C flammable liquid cargo in bulk by the Commandant, within or on the boundaries of such cargo tanks or within spaces adjacent to such cargo tanks.

(c) Such inspections shall be made and evidenced as follows:

(1) In ports or places in the United States or its territories and possessions the inspection shall be made by a marine chemist certificated by the National Fire Protection Association; however, if the services of such certified marine chemist are not reasonably available, the Officer in Charge, Marine Inspection, upon the recommendation of the vessel owner and his contractor or their representative, shall select a person who, in the case of an individual vessel, shall be authorized to make such inspection. If the inspection indicates that such operations can be undertaken with safety, a certificate setting forth the fact in writing and qualified as may be required, shall be issued by the certified marine chemist or the authorized person before the work is started. Such qualifications shall include any requirements as may be deemed necessary to maintain, insofar as can reasonably be done, the safe conditions in the spaces certified throughout the operation and shall include such additional tests and certifications as considered required. Such qualifications and requirements shall include precautions necessary to eliminate or minimize hazards that may be present from protective coatings or residues from cargoes.

(2) When not in such a port or place, and a marine chemist or such person authorized by the Officer in Charge, Marine Inspection, is not reasonably available, the inspection shall be made by the senior officer present and a proper entry shall be made in the vessel's logbook.

(d) It shall be the responsibility of the senior officer present to secure copies of certificates issued by the certified marine chemist or such person authorized by the Officer in Charge, Marine Inspection. It shall be the responsibility of the senior officer present, insofar as the persons under his control are concerned, to maintain a safe condition on the vessel by full observance of all qualifications and requirements listed by the marine chemist in the certificate.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by CGD 95–072, 60 FR 50464, Sept. 29, 1995]

Subpart 91.55—Plan Approval

§ 91.55–1 General.

(a) The following list of required plans is general in character, but includes all plans which normally show construction and safety features coming under the cognizance of the Coast Guard. In the case of a particular vessel, all of the plans enumerated may

not be applicable, and it is intended that only those plans and specifications be submitted as will clearly show the vessel's arrangement, construction and required equipment.

(b) In the following list of required plans, the items which must be approved by the American Bureau of Shipping for vessels classed by that organization are indicated by an asterisk. When prints bearing record of such approval by the American Bureau of Shipping are forwarded to the Coast Guard they will in general be accepted as satisfactory except insofar as the law or the Coast Guard regulations contain requirements which are not covered by the American Bureau of Shipping.

(c) Plans and specifications for cargo gear shall be approved by either a recognized classification society or a recognized cargo gear organization, as specified in §91.25–25.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by CGD 95–028, 62 FR 51206, Sept. 30, 1997]

§91.55–5 Plans and specifications required for new construction.

(a) *General.* (1) Specifications.

(2) General Arrangement Plan of decks, holds, inner bottoms, etc., and including inboard and outboard profile.

(b) *Hull structure.*[1] (1) *Inner Bottom Plating and Framing.

(2) *Midship Section.

(3) *Shell Plating and Framing.

(4) *Stem, Stern Frame, and Rudder.

(5) *Structural Deck Plans for Strength Decks.

(6) *Pillars and Girders.

(7) *Watertight and Oiltight Bulkheads.

(8) *Foundations for Main Machinery and Boilers.

(9) *Arrangement of Ports, Doors, and Airports in Shell Plating.

(10) *Hatch Coamings and Covers in Weather and Watertight Decks.

(11) *Details of Hinged Subdivision Watertight Doors and Operating Gear.

(12) *Scuppers and Drains Penetrating Shell Plating.

(13) *Arrangement of the cargo gear including a stress diagram. The principal details of the gear and the safe working load for each component part shall be shown.

(c) *Subdivision and stability.* Plans and calculations as required by Subchapter S of this chapter.

(d) *Fire control.* (1) General arrangement plans showing for each deck the control stations, the various fire sections enclosed by fire resisting bulkheads, the arrangement of the alarm and extinguishing systems, the fire extinguishers, means of access to different compartments and decks and the ventilation system including location of ventilation shutdowns, positions of dampers and the numbers identifying each system.

(2) Ventilation diagram including dampers and other fire control features.

(3) Details of alarm systems.

(4) Details of extinguishing systems, including fire mains, carbon dioxide, foam and sprinkling systems.

(e) *Marine engineering.* For plans required for marine engineering equipment and systems, see subchapter F (Marine Engineering) of this chapter.

(f) *Electrical engineering.* For plans required for electrical engineering, equipment and systems, see subchapter J (Electrical Engineering) of this chapter.

(g) *Lifesaving equipment.* (1) These plans are to show the location and arrangement of embarkation decks, all overboard discharges and projections in way of launching lifeboats, weights of lifeboats fully equipped and loaded, working loads of davits and winches, types and sizes of falls, the manufacturer's name and identification for all equipment, and all other relevant and necessary information.

(i) Arrangement of lifeboats.

(ii) Arrangement of davits.

(iii) Location and stowage of liferafts and buoyant apparatus.

(h) *Crew's accommodations.* (1) Arrangement plans showing accommodations, ventilation, escapes, hospital, and sanitary facilities for all crewmembers.

(i) *Navigation bridge visibility.* For vessels of 100 meters (328 feet) or more in

[1] The asterisk (*) indicates items which may require approval by the American Bureau of Shipping for vessels classed by that society.

length contracted for on or after September 7, 1990, a plan must be included which shows how visibility from the navigation bridge will meet the standards contained in §92.03–1 of this subchapter.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by CGD 79–023, 48 FR 51008, Nov. 4, 1983; CGD 85–099, 55 FR 32248, Aug. 8, 1990; CGD 85–099, 55 FR 40260, Oct. 2, 1990; CGD 88–032, 56 FR 35825, July 29, 1991; 56 FR 46354, Sept. 11, 1991]

§ 91.55–10 Plans required for alterations of existing vessels.

(a) In the event of alterations involving the safety of the vessel, the applicable plans shall be submitted for approval covering the proposed work except as modified by §91.45–1. The general scope of the plans shall be as noted in §91.55–5.

§ 91.55–15 Procedure for submittal of plans.

(a) As the relative location of shipyards, design offices, and Coast Guard offices vary throughout the country, no specific routing will be required in the submittal of plans. In general, one of the following procedures would apply, but in a particular case, if a more expeditious procedure can be used, there will be no objection to its adoption.

(1) The plans may be submitted to the Officer in Charge, Marine Inspection, in the district in which the vessel is to be built. This procedure will be most expeditious in the case of those offices where personnel and facilities are available for examination and approval of the plans locally.

(2) The plans may be submitted directly to the Commandant (G–MSE), U.S. Coast Guard, Washington, DC 20593–0001. In this case, the plans will be returned directly to the submitter, with a copy of the action being forwarded to the interested Officer in Charge, Marine Inspection.

(3) The plans may be submitted directly to Commanding Officer, U.S. Coast Guard Marine Safety Center, 400 Seventh St., SW., Washington, DC 20590–0001.

(4) In the case of classed vessels, upon specific request by the submitter, the American Bureau of Shipping will arrange to forward the necessary plans to the Coast Guard indicating its action thereon. In this case, the plans will be returned as noted in paragraph (a)(2) of this section.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by CGD 78–128, 47 FR 21204, May 17, 1982; CGD 82–063b, 48 FR 4781, Feb. 3, 1983; CGD 88–070, 53 FR 34534, Sept. 7, 1988; CGD 89–025, 54 FR 19571, May 8, 1989; CGD 96–041, 61 FR 50729, Sept. 27, 1996]

§ 91.55–20 Number of plans required.

(a) Three copies of each plan are normally required so that one can be returned to the submitter. If the submitter desires additional approved plans, a suitable number should be submitted to permit the required distribution.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by CGFR 69–116, 35 FR 6861, Apr. 30, 1970]

Subpart 91.60—Certificates Under International Convention for Safety of Life at Sea, 1974

§ 91.60–1 Application.

The provisions of this subpart shall apply to all cargo vessels on an international voyage. (See §91.05–10 of this chapter.)

[CGD 95–012, 60 FR 48051, Sept. 18, 1995, as amended by USCG 1999–4976, 65 FR 6503, Feb. 9, 2000]

§ 91.60–5 Cargo Ship Safety Construction Certificate.

(a) All vessels on an international voyage are required to have a Cargo Ship Safety Construction Certificate. This certificate shall be issued by the U.S. Coast Guard or the American Bureau of Shipping to certain vessels on behalf of the United States of America as provided in Regulation 12, chapter I, of the International Convention for Safety of Life at Sea, 1974.

(b) All such vessels shall meet the applicable requirements of this chapter for vessels on an international voyage.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by CGD 90–008, 55 FR 30661, July 26, 1990]

§ 91.60–10 Cargo Ship Safety Equipment Certificate.

(a) All vessels on an international voyage are required to have a Cargo Ship Safety Equipment Certificate.

(b) All such vessels shall meet the applicable requirements of this chapter for vessels on an international voyage.

§ 91.60–15 Cargo Ship Safety Radio Certificate.

Every vessel equipped with a radio installation on an international voyage must have a Cargo Ship Safety Radio Certificate. Each radio installation must meet the requirements of the Federal Communication Commission and the International Convention for Safety of Life at Sea.

[USCG 1999–4976, 65 FR 6503, Feb. 9, 2000]

§ 91.60–25 Exemption Certificate.

(a) A vessel may be exempted by the Commandant from complying with certain requirements of the Convention under his administration upon request made in writing to him and transmitted via the Officer in Charge, Marine Inspection.

(b) When an exemption is granted to a vessel by the Commandant under and in accordance with the Convention, an Exemption Certificate describing such exemption shall be issued through the appropriate Officer in Charge, Marine Inspection, in addition to other required certificates.

§ 91.60–30 Safety Management Certificate.

All vessels to which 33 CFR part 96 applies on an international voyage must have a valid Safety Management Certificate and a copy of their company's valid Document of Compliance certificate on board.

[CGD 95–073, 62 FR 67514, Dec. 24, 1997]

§ 91.60–35 Availability of Certificates.

The Convention certificates must be on board the vessel and readily available for examination at all times.

[USCG 1999–4976, 65 FR 6503, Feb. 9, 2000]

§ 91.60–40 Duration of Convention certificates.

(a) The following certificates are valid for a period of not more than 60 months.

(1) A Cargo Ship Safety Construction Certificate.

(2) A Cargo Ship Safety Equipment Certificate.

(3) A Safety Management Certificate.

(4) A Cargo Ship Safety Radio Certificate.

(b) An Exemption certificate must not be valid for longer than the period of the certificate to which it refers.

(c) A Convention certificate may be withdrawn, revoked, or suspended at any time when it is determined that the vessel is no longer in compliance with applicable requirements. (See § 2.01–70 of this chapter for procedures governing appeals.)

[USCG 1999–4976, 65 FR 6503, Feb. 9, 2000]

§ 91.60–45 American Bureau of Shipping.

(a) The American Bureau of Shipping, with its home office at ABS Plaza, 16855 Northchase Drive, Houston, TX 77060, is hereby designated as an organization duly authorized to issue the ''Cargo Ship Safety Construction Certificate'' to certain cargo ships on behalf of the United States of America as provided in Regulation 12, chapter I, of the International Convention for Safety of Life at Sea, 1974, and Executive Order 12234 and the certificate shall be subject to the requirements in this subpart. The American Bureau of Shipping is authorized to place the official seal of the United States of America on the certificate. This designation and delegation to the American Bureau of Shipping shall be in effect until terminated by proper authority and notice of cancellation is published in the FEDERAL REGISTER.

(b) At the option of the owner or agent of a vessel on an international voyage and on direct application to the American Bureau of Shipping, the Bureau may issue to such vessel a Cargo Ship Safety Construction Certificate, having a period of validity of not more than 60 months after ascertaining that the vessel:

(1) Has met the applicable requirements of the Convention; and,

(2) Is currently classed by the Bureau and classification requirements have been dealt with to the satisfaction of the Bureau.

(c) When the Bureau determines that a vessel to which it has issued a Cargo Ship Safety Construction Certificate no longer complies with the Bureau's applicable requirements for classification, the Bureau shall immediately furnish to the Coast Guard all relevant information, which will be used by the Coast Guard to determine whether or not to withdraw, revoke or suspend the Cargo Ship Safety Construction Certificate.

[CGFR 65–50, 30 FR 16974, Dec. 30, 1965, as amended by CGD 90–008, 55 FR 30661, July 26, 1990; CGD 96–041, 61 FR 50729, Sept. 27, 1996; USCG–2000–7790, 65 FR 58461, Sept. 29, 2000]

PART 92—CONSTRUCTION AND ARRANGEMENT

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AUTHORITY: 46 U.S.C. 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGFR 65–50, 30 FR 16983, Dec. 30, 1965, unless otherwise noted.

Subpart 92.01—Hull Structure

§ 92.01–1 Application.

(a) The provisions of this subpart, with the exception of § 92.01–90, shall apply to all vessels contracted for on or after November 19, 1952. Vessels contracted for prior to November 19, 1952, shall meet the requirements of § 92.01–90.

§ 92.01–5 Vessels subject to load line.

(a) For vessels assigned a load line, see subchapter E (Load Lines) of this

chapter, for special requirements as to strength, closure of openings, etc.

§ 92.01–10 Structural standards.

(a) In general, compliance with the standards established by the American Bureau of Shipping, see subpart 90.35 of this subchapter, will be considered as satisfactory evidence of the structural efficiency of the vessel. However, in special cases, a detailed analysis of the entire structure or some integral part may be made by the Coast Guard to determine the structural requirements.

§ 92.01–15 Special consideration.

(a) Special consideration will be given to the structural requirements for small vessels or vessels of an unusual design not contemplated by the rules of the American Bureau of Shipping.

§ 92.01–90 Vessels contracted for prior to November 19, 1952.

(a) Existing structure previously approved will be considered satisfactory so long as it is maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original construction.

Subpart 92.03—Navigation Bridge Visibility

§ 92.03–1 Navigation bridge visibility.

Each cargo and miscellaneous vessel which is 100 meters (328 feet) or more in length and contracted for on or after September 7, 1990, must meet the following requirements:

(a) The field of vision from the navigation bridge, whether the vessel is in a laden or unladen condition, must be such that:

(1) From the conning position, the view of the sea surface is not obscured forward of the bow by more than the lesser of two ship lengths or 500 meters (1,640 feet) from dead ahead to 10 degrees on either side of the vessel. Within this arc of visibility any blind sector caused by cargo, cargo gear, or other permanent obstruction must not exceed 5 degrees.

(2) From the conning position, the horizontal field of vision extends over an arc from at least 22.5 degrees abaft the beam on one side of the vessel, through dead ahead, to at least 22.5 degrees abaft the beam on the other side of the vessel. Blind sectors forward of the beam caused by cargo, cargo gear, or other permanent obstruction must not exceed 10 degrees each, nor total more than 20 degrees, including any blind sector within the arc of visibility described in paragraph (a)(1) of this section.

(3) From each bridge wing, the field of vision extends over an arc from at least 45 degrees on the opposite bow, through dead ahead, to at least dead astern.

(4) From the main steering position, the field of vision extends over and arc from dead ahead to at least 60 degrees on either side of the vessel.

(5) From each bridge wing, the respective side of the vessel is visible forward and aft.

(b) Windows fitted on the navigation bridge must be arranged so that:

(1) Framing between windows is kept to a minimum and is not installed immediately in front of any work station.

(2) Front windows are inclined from the vertical plane, top out, at an angle of not less than 10 degrees and not more than 25 degrees.

(3) The height of the lower edge of the front windows is limited to prevent any obstruction of the foward view previously described in this section.

(4) The height of the upper edge of the front windows allows a foward view of the horizon at the conning position, for a person with a height of eye of 1.8 meters (71 inches), when the vessel is at a forward pitch angle of 20 degrees.

(c) Polarized or tinted windows must not be fitted.

[CGD 85–099, 55 FR 32248, Aug. 8, 1990]

Subpart 92.05—General Fire Protection

§ 92.05–1 Fire hazards to be minimized.

(a) The general construction of the vessel shall be such as to minimize fire hazards insofar as is reasonable and practicable.

§ 92.05–5 Woodwork insulated from heated surfaces.

(a) Internal combustion engine exhausts, boiler and galley uptakes, and similar sources of ignition shall be kept clear of and suitably insulated from any woodwork or other combustible matter.

§ 92.05–10 Lamp room construction.

(a) Lamp, paint, and oil lockers and similar compartments shall be constructed of steel or shall be wholly lined with metal.

§ 92.05–15 Segregation of spaces containing the emergency source of electric power.

(a) The provisions of this section shall apply to all vessels contracted for on or after October 1, 1958.

(b) When a compartment containing the emergency source of electric power, or vital components thereof, adjoins a space containing either the ship's service generators or machinery necessary for the operation of the ship's service generators, all common bulkheads and/or decks shall be protected by approved ''structural insulation'' or other approved material. This protection shall be such as to be capable of preventing an excessive temperature rise in the space containing the emergency source of electric power, or vital components thereof, for a period of at least one hour in the event of fire in the adjoining space. Bulkheads or decks meeting Class A–60 requirements, as defined by § 72.05–10 of Subchapter H (Passenger Vessels) of this chapter, will be considered as meeting the requirements of this paragraph.

Subpart 92.07—Structural Fire Protection

§ 92.07–1 Application.

(a) The provisions of this subpart, with the exception of § 92.07–90, shall apply to all vessels of 4,000 gross tons and over contracted for on or after January 1, 1962. Such vessels contracted for prior to January 1, 1962, shall meet the requirements of § 92.07–90(a).

(b) The provisions of this subpart, with the exception of § 92.07–90, shall apply to all industrial vessels of 300 gross tons and over but less than 4,000 gross tons, contracted for on or after July 1, 1968, which carry in excess of 12 industrial personnel. Such vessels contracted for prior to July 1, 1968, shall meet the requirements of § 92.07–90(b).

(c) SOLAS-certificated vessels complying with method IC, as described in SOLAS 74, regulation II–2/42, may be considered equivalent to the provisions of this subpart.

[CGFR 67–90, 33 FR 1015, Jan. 26, 1968, as amended by CGD 95–028, 62 FR 51206, Sept. 30, 1997]

§ 92.07–5 Definitions.

(a) *Standard fire test.* A ''standard fire test'' is one which develops in the test furnace a series of time temperature relationships as follows:

5 minutes—1,000° F.
10 minutes—1,300° F.
30 minutes—1,550° F.
60 minutes—1,700° F.

(b) *''A'' Class divisions.* Bulkheads or decks of the ''A'' Class shall be composed of steel or equivalent metal construction, suitably stiffened and made intact with the main structure of the vessel; such as shell, structural bulkheads, and decks. They shall be so constructed, that if subjected to the standard fire test, they would be capable of preventing the passage of flame and smoke for one hour.

(c) *''B'' Class bulkheads.* Bulkheads of the ''B'' Class shall be constructed with approved incombustible materials and made intact from deck to deck and to shell or other boundaries. They shall be so constructed that, if subjected to the standard fire test, they would be capable of preventing the passage of flame for one half hour.

(d) *''C'' Class divisions.* Bulkheads or decks of the ''C'' Class shall be constructed of approved incombustible materials, but need meet no requirements relative to the passage of flame.

(e) *Steel or other equivalent metal.* Where the term ''steel or other equivalent metal'' is used in this subpart, it is intended to require a material which, by itself or due to insulation provided, has structural and integrity qualities equivalent to steel at the end of the applicable fire exposure.

(f) *Approved material.* Where in this subpart approved materials are required, they refer to materials approved under the applicable subparts of Subchapter Q (Specifications) of this chapter, as follows:

Deck Coverings	164.006
Structural Insulations	164.007
Bulkhead Panels	164.008
Incombustible Materials	164.009
Interior Finishes	164.012

(g) *Stairtower.* A stairtower is a stairway which penetrates more than a single deck within the same enclosure.

[CGFR 65–50, 30 FR 16983, Dec. 30, 1965, as amended by CGFR 67–90, 33 FR 1015, Jan. 26, 1968; CGD 75–032, 41 FR 17910, Apr. 29, 1976]

§ 92.07–10 Construction.

(a) The hull, superstructure, structural bulkheads, decks, and deckhouses shall be constructed of steel. Alternately, the Commandant may permit the use of other suitable material in special cases, having in mind the risk of fire.

(b) Bulkheads of galleys, paint and lamp lockers, and emergency generator rooms shall be of ''A'' Class construction.

(c) The boundary bulkheads and decks separating the accommodations and control stations from cargo and machinery spaces, galleys, main pantries and storerooms, other than small service lockers, shall be of ''A'' Class construction.

(d) Within the accommodation and service areas the following conditions shall apply:

(1) Corridor bulkheads in accommodation spaces shall be of the ''A'' or ''B'' Class intact from deck to deck. Stateroom doors in such bulkheads may have a louver in the lower half.

(2) Stairtowers, elevator, dumbwaiter, and other trunks shall be of ''A'' Class construction.

(3) Bulkheads not already specified to be of ''A'' or ''B'' Class construction may be of ''A'', ''B'', or ''C'' Class construction.

(4) The integrity of any deck in way of a stairway opening, other than a stairtower, shall be maintained by means of ''A'' or ''B'' class bulkheads and doors at one level. The integrity of a stairtower shall be maintained by ''A'' Class doors at every level. The doors shall be of self-closing type. Holdback hooks, or other means of permanently holding the door open will not be permitted. However, magnetic holdbacks operated from the bridge or from other suitable remote control positions are acceptable.

(5) Interior stairs, including stringers and treads, shall be of steel.

(6) Except for washrooms and toilet spaces, deck coverings within accommodation spaces shall be of an approved type. However, overlays for leveling or finishing purposes which do not meet the requirements for an approved deck covering may be used in thicknesses not exceeding ⅜ of an inch.

(7) Ceilings, linings, and insulation, including pipe and duct laggings, shall be of approved incombustible materials.

(8) Any sheathing, furring or holding pieces incidental to the securing of any bulkhead, ceiling, lining, or insulation shall be of approved incombustible materials.

(9) Bulkheads, linings, and ceilings may have a combustible veneer within a room not to exceed 2/28 of an inch in thickness. However, combustible veneers, trim, decorations, etc., shall not be used in corridors or hidden spaces. This is not intended to preclude the use of an approved interior finish or a reasonable number of coat of paint.

(e) Wood hatch covers may be used between cargo spaces or between stores spaces. Hatch covers in other locations shall be of steel or equivalent metal construction. Tonnage openings shall be closed by means of steel plates.

(f) Nitrocellulose or other highly flammable or noxious fume-producing paints or lacquers shall not be used.

(g) The provisions of paragraph (d) (1) through (9) of this section apply to control spaces on vessels whose initial Application for Inspection is submitted to an Officer in Charge, Marine Inspection on or after June 15, 1987.

[CGFR 65–50, 30 FR 16983, Dec. 30, 1965, as amended by CGFR 67–90, 33 FR 1015, Jan. 26, 1968; CGD 84–073, 52 FR 18364, May 15, 1987; 52 FR 22751, June 15, 1987]

§ 92.07–90 Vessels contracted for prior to July 1, 1968.

(a) For all vessels of 4,000 gross tons and over contracted for prior to January 1, 1962, existing structure arrangements and materials previously approved will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original construction. Major alterations and conversions shall be in compliance with the provisions of this subpart to the satisfaction of the Officer in Charge, Marine Inspection.

(b) For industrial vessels of 300 gross tons and over but less than 4,000 gross tons, contracted for prior to July 1, 1968, which carry in excess of 12 industrial personnel, existing structure arrangements and materials previously approved will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original construction. Major alterations and conversions shall be in compliance with this subpart to the satisfaction of the Officer in Charge, Marine Inspection.

[CGFR 67–90, 33 FR 1016, Jan. 26, 1968]

Subpart 92.10—Means of Escape

§ 92.10–1 Application.

(a) The provisions of this subpart, with the exception of § 92.10–90, shall apply to all vessels contracted for on or after November 19, 1952. Vessels contracted for prior to November 19, 1952, shall meet the requirements of § 92.10–90.

§ 92.10–5 Two means required.

(a) There shall be at least two means of escape from all general areas accessible to the passengers, if carried, or where the crew may be quartered or normally employed. At least one of these two means of escape shall be independent of watertight doors.

§ 92.10–10 Location.

(a) The two means of escape shall be as remote as practicable so as to minimize the possibility of one incident blocking both escapes.

§ 92.10–15 Vertical ladders not accepted.

(a) Vertical ladders and deck scuttles shall not in general be considered satisfactory as one of the required means of escape. However, where it is demonstrated that the installation of a stairway would be impracticable, a vertical ladder may be used as the second means of escape.

§ 92.10–20 No means for locking doors.

(a) No means shall be provided for locking doors giving access to either of the two required means of escape, except that crash doors or locking devices, capable of being easily forced in an emergency, may be employed provided a permanent and conspicuous notice to this effect is attached to both sides of the door. This paragraph shall not apply to outside doors to deckhouses where such doors are locked by key only and such key is under the control of one of the vessel's officers.

§ 92.10–25 Stairway size.

(a) Stairways shall be of sufficient width having in mind the number of persons having access to such stairs for escape purposes.

(b) Vessels contracted for on or after January 1, 1959, shall meet the requirements of this paragraph. Special consideration for relief may be given in the case of small vessels if it is shown to be unreasonable or impracticable to meet the requirements.

(1) All interior stairways, other than those within the machinery spaces or cargo holds, shall have a minimum width of 28 inches. The angle of inclination with the horizontal of such stairways shall not exceed 50 degrees.

§ 92.10–30 Dead end corridors.

(a) Dead end corridors, or the equivalent, more than 40 feet in length shall not be permitted.

§ 92.10–35 Public spaces.

(a) In all cases, public spaces having a deck area of over 300 square feet shall have at least two exits. Where practicable, these exits shall give egress to different corridors, rooms, or spaces to minimize the possibility of one incident blocking both exits.

§ 92.10–40 Access to lifeboats.

(a) The stairways, corridors, and doors shall be so arranged as to permit a ready and direct access to the various lifeboat embarkation areas.

§ 92.10–45 Weather deck communications.

(a) Vertical communication shall be provided between the various weather decks by means of permanent inclined ladders.

§ 92.10–90 Vessels contracted for prior to November 19, 1952.

(a) Existing arrangements previously approved will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original design: *Provided*, That in no case will a greater departure from the standards of §§ 92.10–5 through 92.10–45 be permitted than presently exists. Nothing in this paragraph shall be construed as exempting any vessel from having 2 means of escape from all main compartments which are accessible to the passengers, if carried, or where the crew are normally quartered or employed.

Subpart 92.15—Ventilation

§ 92.15–1 Application.

The provisions of this subpart, with the exception of § 92.15–90, shall apply to all vessels contracted for on or after November 19, 1952. Vessels contracted for prior to November 19, 1952, shall meet the requirements of § 92.15–90.

§ 92.15–5 Vessels using fuel having a flashpoint of 110 degrees or lower.

(a) Where liquid fuel having a flashpoint of 110 degrees F. or lower is used for main or auxiliary machinery or for starting purposes, the spaces containing such machinery or fuel tanks shall have ventilation as required by this section.

(1) At least 2 ventilators fitted with cowls or their equivalent for the purpose of properly and effectively ventilating the bilges of every engine and fuel-tank compartment in order to remove any flammable or explosive gases.

(2) Vessels constructed so that the greater portions of the bilges under the engine and fuel tanks are open or exposed to the natural atmosphere at all times are not required to be fitted with ventilators.

§ 92.15–10 Ventilation for closed spaces.

(a) Except as noted in paragraph (c) of this section, all enclosed spaces within the vessel shall be properly vented or ventilated. Means shall be provided to close off all vents and ventilators.

(b) Means shall be provided for stopping all fans in ventilation systems serving machinery and cargo spaces and for closing all doorways, ventilators and annular spaces around funnels and other openings to such spaces, from outside these spaces, in case of fire.

(c) On unmanned cargo barges not fitted with a fixed bilge system, vents and ventilators may be omitted from void spaces.

(d) The ventilation of spaces which are ''specially suitable for vehicles'' shall be in accordance with the provisions of this paragraph. In addition, if vehicles are operated inside of enclosed spaces, the ventilation shall be in accordance with subpart 97.80 of this subchapter.

(1) Areas below the weather deck shall be provided with continuous pressure-positive ventilation at each level on which vehicles are transported.

(2) The quantity of ventilating air shall be not less than 1 cubic foot per minute per square foot of deck area.

(3) The ventilation system shall be such as to prevent air stratification as well as to prevent the accumulation of air pockets.

(4) An alarm system shall be provided which will indicate the loss of required

ventilation. The alarm location shall be in a normally manned space acceptable to the Commandant.

(e) For requirements regarding controls of electrically powered ventilation systems, see subchapter J (Electrical Engineering) of this chapter.

[CGFR 65–50, 30 FR 16983, Dec. 30, 1965, as amended by CGFR 66–33, 31 FR 15284, Dec. 5, 1966]

§ 92.15–15 Ventilation for crew quarters and, where provided, passenger spaces.

(a) All living spaces shall be adequately ventilated in a manner suitable to the purpose of the space.

(b) On vessels of 100 gross tons and over, except for such spaces as are so located that under all ordinary conditions of weather, windows, ports, skylights, etc., and doors to passageways can be kept open, all crew spaces shall be ventilated by a mechanical system, unless it can be shown that a natural system will provide adequate ventilation. However, vessels which trade regularly in the tropics shall, in general, be fitted with a mechanical ventilation system.

§ 92.15–90 Vessels contracted for prior to November 19, 1952.

(a) Existing arrangements previously approved will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original design provided that in no case will a greater departure from the standards of §§ 92.15–5 through 92.15–15 be permitted than presently exists.

Subpart 92.20—Accommodations for Officers and Crew

SOURCE: CGD 95–027, 61 FR 26005, May 23, 1996, unless otherwise noted.

§ 92.20–1 Application.

(a) The provisions of this subpart apply to all vessels of 100 gross tons and over contracted for on or after November 19, 1952. Vessels of 100 gross tons and over contracted for prior to November 19, 1952 must meet the requirements of § 92.20–90.

(b) Vessels of less than 100 gross tons must meet the applicable requirements of this subpart insofar as is reasonable and practicable.

§ 92.20–5 Intent.

It is the intent of this subpart that the accommodations provided for officers and crew on all vessels must be securely constructed, properly lighted, heated, drained, ventilated, equipped, located, arranged, and insulated from undue noise, heat, and odors.

§ 92.20–10 Location of crew spaces.

(a) Crew quarters must not be located farther forward in the vessel than a vertical plane located at 5 percent of the vessel's length abaft the forward side of the stem at the designed summer load water line. However, for vessels in other than ocean or coastwise service, this distance need not exceed 8.5 meters (28 feet). For the purposes of this paragraph, the vessel's length must be as defined in § 43.15-1 of subchapter E (Load Lines) of this chapter. Unless approved by the Commandant, no section of the deck head of the crew spaces may be below the deepest load line.

(b) There must be no direct communication, except through solid, close fitted doors, or hatches between crew spaces and chain lockers, or machinery spaces.

§ 92.20–15 Construction.

All crew spaces are to be constructed and arranged in a manner suitable to the purpose for which they are intended and so that they can be kept in a clean, workable, and sanitary condition.

§ 92.20–20 Sleeping accommodations.

(a) Where practicable, each licensed officer must be provided with a separate stateroom.

(b) Sleeping accommodations for the crew must be divided into rooms, no one of which shall berth more than 4 persons.

(c) Each room must be of such size that there is at least 2.78 square meters (30 square feet) of deck area and a volume of at least 5.8 cubic meters (210 cubic feet) for each person accommodated. The clear head room must be

not less than 190 centimeters (75 inches). In measuring sleeping accommodations, any furnishings contained therein for the use of the occupants are not to be deducted from the total volume or from the deck area.

(d) Each person shall have a separate berth and not more than one berth may be placed above another. The berth must be composed of materials not likely to corrode. The overall size of a berth must not be less than 68 centimeters (27 inches) wide by 190 centimeters (75 inches) long, except by special permission of the Commandant. Where 2 tiers of berths are fitted, the bottom of the lower berth must not be less than 30 centimeters (12 inches) above the deck. The berths must not be obstructed by pipes, ventilating ducts, or other installations.

(e) A locker must be provided for each person accommodated in a room.

§ 92.20–25 Washrooms and toilet rooms.

(a) There must be provided at least 1 toilet, 1 washbasin, and 1 shower or bathtub for each 8 members or portion thereof in the crew who do not occupy rooms to which private or semi-private facilities are attached.

(b) The toilet rooms and washrooms must be located convenient to the sleeping quarters of the crew to which they are allotted but must not open directly into such quarters except when they are provided as private or semi-private facilities.

(c) All washbasins, showers, and bathtubs shall be equipped with adequate plumbing, including hot and cold running water. All toilets must be installed with adequate plumbing for flushing.

(d) At least 1 washbasin must be fitted in each toilet room, except where private or semi-private facilities are provided and washbasins are installed in the sleeping rooms.

(e) Where more than 1 toilet is located in a space or compartment, each toilet must be separated by partitions.

§ 92.20–30 Messrooms.

(a) Messrooms must be located as near to the galley as is practicable except where the messroom is equipped with a steam table.

(b) Each messroom must seat the number of persons expected to eat in the messroom at one time.

§ 92.20–35 Hospital space.

(a) Each vessel which in the ordinary course of its trade makes voyages of more than 3 days duration between ports and which carries a crew of 12 or more, must be provided with a hospital space. This space must be situated with due regard to the comfort of the sick so that they may receive proper attention in all weathers.

(b) The hospital must be suitably separated from other spaces and must be used for the care of the sick and for no other purpose.

(c) The hospital must be fitted with berths in the ratio of 1 berth to every 12 members of the crew or portion thereof who are not berthed in single occupancy rooms, but the number of berths need not exceed 6.

(d) The hospital must have a toilet, washbasin, and bathtub or shower conveniently situated. Other necessary suitable equipment such as a clothes locker, a table, and a seat shall be provided.

(e) On vessels in which the crew is berthed in single occupancy rooms, a hospital space will not be required, provided that one room is designated and fitted for use as a treatment or isolation room. This room must meet the following standards:

(1) The room must be available for immediate medical use; and

(2) A washbasin with hot and cold running water must be installed either in or immediately adjacent to the space and other required sanitary facilities must be conveniently located.

§ 92.20–40 Other spaces.

Each vessel must have—

(a) Sufficient facilities where the crew may wash and dry their own clothes, including at least 1 sink supplied with hot and cold fresh water;

(b) Recreation spaces; and

(c) A space or spaces of adequate size on an open deck to which the crew has access when off duty.

[CGD 95–027, 61 FR 26005, May 23, 1996; 61 FR 32900, June 25, 1996]

§ 92.20–45 Lighting.

Each berth must have a light.

§ 92.20–50 Heating and cooling.

(a) All manned spaces must be adequately heated and cooled in a manner suitable to the purpose of the space.

(b) The heating and cooling system for accommodations must be capable of maintaining a temperature of 21° C (70° F) under normal operating conditions without curtailing ventilation.

(c) Radiators and other heating apparatus must be so placed and shielded, where necessary, to avoid risk of fire, danger, or discomfort to the occupants. Pipes leading to radiators or heating apparatus must be insulated where those pipes create a hazard to persons occupying the space.

§ 92.20–55 Insect screens.

Provisions must be made to protect the crew quarters against the admission of insects.

§ 92.20–90 Vessels contracted for prior to November 19, 1952.

(a) Vessels of less than 100 gross tons, contracted for prior to November 19, 1952, must meet the general intent of § 92.20–5 and in addition must meet the following requirements:

(1) Existing structure, arrangements, materials, and facilities, previously accepted or approved will be considered satisfactory so long as they are maintained in a suitable condition to the satisfaction of the Officer in Charge, Marine Inspection.

(2) Minor repairs and alterations may be made to the same standard as the original construction.

(b) Vessels of 100 gross tons and over, contracted for prior to March 4, 1915, must meet the following requirements:

(1) Existing structure, arrangements, materials, and facilities, previously approved will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

(2) Minor repairs and alterations may be made to the same standard as the original construction, provided that in no case will a greater departure from the standards of §§ 92.20–5 through 92.20–55 be permitted than presently exists.

(c) Vessels of 100 gross tons and over, contracted for on or after March 4, 1915, but prior to January 1, 1941, must meet the following requirements:

(1) Existing structure, arrangements, materials, and facilities, previously approved will be considered satisfactory so long as they are maintained in a suitable condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original construction.

(2) Each vessel, which in the ordinary course of its trade makes a voyage of more than 3 days duration between ports and which carries a crew of 12 or more persons, must be provided with a suitable hospital space for the exclusive use of the sick or injured.

(3) The crew spaces must be securely constructed, properly lighted, heated, drained, ventilated, equipped, located, arranged, and insulated from undue noise, heat, and odors.

(d) Vessels of 100 gross tons and over, contracted for on or after January 1, 1941, but prior to November 19, 1952, must meet the following requirements:

(1) Existing structure, arrangements, materials, and facilities, previously approved will be considered satisfactory so long as they are maintained in a suitable condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original construction.

(2) Washbasins, showers, and bathtubs if substituted for showers, must be equipped with adequate plumbing including hot and cold running water.

(3) Each crewmember must have a separate berth, and berths may not be placed more than 2 high.

(4) Each vessel, which in the ordinary course of its trade makes a voyage of more than 3 days duration between ports and which carries a crew of 12 or more persons, must be provided with a suitable hospital space for the exclusive use of the sick or injured. Berths shall be provided in the ratio of 1 berth for each 12 members of the crew or fraction thereof, but the number of berths need not exceed 6.

(5) The crew spaces must be securely constructed, properly lighted, heated, drained, ventilated, equipped, located,

arranged, and insulated from undue noise, heat, and odors.

Subpart 92.25—Rails and Guards

§ 92.25–1 Application.

(a) The provisions of this subpart, with the exception of § 92.25–90, shall apply to all vessels contracted for on or after July 1, 1969. Vessels contracted for prior to July 1, 1969, shall meet the requirements of § 92.25–90.

[CGFR 65–50, 30 FR 16983, Dec. 30, 1965, as amended by CGFR 69–72, 34 FR 17484, Oct. 29, 1969; CGD 80–120, 47 FR 5723, Feb. 8, 1982]

§ 92.25–5 Where rails required.

(a) All vessels shall have efficient guard rails or bulwarks on decks and bridges. The height of rails or bulwarks shall be at least 39½ inches from the deck except that where this height would interfere with the normal operation of the vessel, a lesser height may be approved by the Commandant. At exposed peripheries of the freeboard and superstructure decks, the rails shall be in at least three courses, including the top. The opening below the lowest course shall not be more than 9 inches. The courses shall not be more than 15 inches apart. In the case of ships with rounded gunwales the guard rail supports shall be placed on the flat of the deck. On other decks and bridges the rails shall be in at least two courses, including the top, approximately evenly spaced. If it can be shown to the satisfaction of the Officer in Charge, Marine Inspection, that the installation of rails of such height will be unreasonable and impracticable, having regard to the business of the vessel, rails of a lesser height or in some cases grab rails may be accepted and inboard rails may be eliminated if the deck is not generally accessible.

(b) Where it can be shown to the satisfaction of the Commandant that a vessel is engaged exclusively in voyages of a sheltered nature, the provisions of paragraph (a) of this section may be relaxed.

[CGFR 69–72, 34 FR 17484, Oct. 29, 1969, as amended by CGD 80–120, 47 FR 5723, Feb. 8, 1982]

§ 92.25–10 Storm rails.

(a) On vessels in ocean and coastwise service, suitable storm rails shall be installed in all passageways and at the deckhouse sides where persons on board might have normal access. Storm rails shall be installed on both sides of passageways which are 6 feet or more in width.

§ 92.25–15 Guards in dangerous places.

(a) Suitable hand covers, guards, or rails shall be installed in way of all exposed and dangerous places such as gears, machinery, etc.

§ 92.25–90 Vessels contracted for prior to July 1, 1969.

(a) Vessels contracted for prior to July 1, 1969, assigned a deeper load line under part 42 of subchapter E (Load Lines) of this chapter shall have efficient guard rails or bulwarks as required by § 92.25–5. Otherwise, existing structure, arrangements, materials, and facilities previously approved will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original construction. However, in no case will greater departure from the standards of §§ 92.25–5 through 92.25–15 be permitted than presently exists.

[CGFR 69–72, 34 FR 17484, Oct. 29, 1969, as amended by CGD 80–120, 47 FR 5723, Feb. 8, 1982]

PART 93—STABILITY

Subpart 93.01—Application

Sec.
93.01–1 General.

Subpart 93.01—Application

§ 93.01–1 General.

Each vessel must meet the applicable requirements in subchapter S of this chapter.

[CGD 79–023, 48 FR 51008, Nov. 4, 1983]

PART 95—FIRE PROTECTION EQUIPMENT

Subpart 95.01—Application

Sec.

95.01–1 General.
95.01–2 Incorporation by reference.
95.01–5 Equipment installed but not required.

Subpart 95.05—Fire Detecting and Extinguishing Equipment, Where Required

95.05–1 Fire detecting, manual alarm, and supervised patrol systems.
95.05–5 Fire main system.
95.05–10 Fixed fire extinguishing systems.
95.05–15 Hand portable fire extinguishers and semiportable fire extinguishing systems.

Subpart 95.10—Fire Main System, Details

95.10–1 Application.
95.10–5 Fire pumps.
95.10–10 Fire hydrants and hose.
95.10–15 Piping.
95.10–90 Installations contracted for prior to May 26, 1965.

Subpart 95.13—Steam Smothering Systems

95.13–1 Application.

Subpart 95.15—Carbon Dioxide Extinguishing Systems, Details

95.15–1 Application.
95.15–5 Quantity, pipe sizes, and discharge rates.
95.15–10 Controls.
95.15–15 Piping.
95.15–20 Carbon dioxide storage.
95.15–25 Discharge outlets.
95.15–30 Alarms.
95.15–35 Enclosure openings.
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95.15–90 Installations contracted for prior to November 19, 1952.

Subpart 95.17—Foam Extinguishing Systems, Details

95.17–1 Application.
95.17–5 Quantity of foam required.
95.17–10 Controls.
95.17–15 Piping.
95.17–20 Discharge outlets.
95.17–25 Additional protection required.
95.17–90 Installations contracted for prior to November 19, 1952.

Subpart 95.30—Automatic Sprinkler Systems, Details

95.30–1 Application.

Subpart 95.50—Hand Portable Fire Extinguishers and Semiportable Fire Extinguishing Systems, Arrangements and Details

95.50–1 Application.
95.50–5 Classification.
95.50–10 Location.
95.50–15 Spare charges.
95.50–20 Semiportable fire extinguishers.
95.50–90 Vessels contracted for prior to November 19, 1952.

Subpart 95.60—Fire Axes

95.60–1 Application.
95.60–5 Number required.
95.60–10 Location.

AUTHORITY: 46 U.S.C. 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGFR 65–50, 30 FR 17001, Dec. 30, 1965, unless otherwise noted.

Subpart 95.01—Application

§ 95.01–1 General.

(a) The provisions of this part shall apply to all vessels except as specifically noted in this part.

§ 95.01–2 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a). To enforce any edition other than that specified in paragraph (b) of this section, the Coast Guard must publish notice of change in the FEDERAL REGISTER and make the material available to the public. All approved material is on file at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC, and at the U.S. Coast Guard, Office of Design and Engineering Standards (G–MSE), 2100 Second Street SW., Washington, DC 20593–0001 and is available from the sources indicated in paragraph (b) of this section.

(b) The material approved for incorporation by reference in this part and the sections affected are:

American Society for Testing and Materials (ASTM)

100 Barr Harbor Drive, West Conshohocken, PA 19428–2959.

ASTM F 1121–87 (1993), Standard Specification for International Shore Connections for Marine Fire Applications—95.10–10

National Fire Protection Association (NFPA)

1 Batterymarch Park, Quincy, MA 02269–9101. NFPA 13–1996, Standard for the Installation of Sprinkler Systems—95.30–1

[CGD 88–032, 56 FR 35825, July 29, 1991, as amended by CGD 95–072, 60 FR 50464, Sept. 29, 1995; CGD 96–041, 61 FR 50729, Sept. 27, 1996; CGD 97–057, 62 FR 51045, Sept. 30, 1997; CGD 95–028, 62 FR 51206, Sept. 30, 1997; USCG 1999–5151, 64 FR 67181, Dec. 1, 1999]

§ 95.01–5 Equipment installed but not required.

(a) Where fire detecting or extinguishing systems or equipment are not required, but are installed, the system or equipment and its installation shall meet the requirements of this part.

Subpart 95.05—Fire Detecting and Extinguishing Equipment, Where Required

§ 95.05–1 Fire detecting, manual alarm, and supervised patrol systems.

(a) Fire detecting, manual alarm, and supervised patrol systems are not required except in special cases; but if installed, the systems shall meet the applicable requirements of part 76 of subchapter H (Passenger Vessels) of this chapter.

(b) In each compartment containing explosives, and in adjacent cargo compartments, there shall be provided a smoke detecting or other suitable type fire detecting system.

(c) Enclosed spaces which are ''specially suitable for vehicles'' shall be fitted with an approved fire or smoke detecting system.

[CGFR 66–33, 31 FR 15285, Dec. 6, 1966]

§ 95.05–5 Fire main system.

(a) Fire pumps, hydrants, hose, and nozzles shall be installed on the following vessels:

(1) On all self-propelled vessels.

(2) On all barges with sleeping accommodations for more than 12 persons.

(b) The arrangements and details of the fire main system shall be as set forth in subpart 95.10.

§ 95.05–10 Fixed fire extinguishing systems.

(a) Approved fire extinguishing systems may be used or required in locations delineated in this section on the following vessels. Previously approved installations may be retained as long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

(1) On all self-propelled vessels other than yachts and fishing vessels.

(2) On all barges with sleeping accommodations for more than 12 persons.

(b) A fixed carbon dioxide or other approved system must be installed in all cargo compartments and tanks for combustible cargo, except for vessels engaged exclusively in the carriage of coal or grain in bulk. For cargo compartments and tanks fitted with a fixed carbon dioxide or other approved system a deck foam system is not required, instead of the carbon dioxide system or other approved system, the following systems may be used or required in special cases:

(1) A fixed foam system may be used in cargo tanks.

(2) A water sprinkling system may be required, and the details of such system will be subject to special approval, in cases where a cargo is normally accessible and is considered to be a part of the working or living quarters.

(3) Spaces ''specially suitable for vehicles'' must be fitted with an approved carbon dioxide system. Alternately, the Commandant may permit the installation of an approved water sprinkler system or other suitable system.

(c) On vessels other than motorboats, a fixed carbon dioxide or other approved system must be installed in all lamp and paint lockers, oil rooms, and similar spaces.

(d) On vessels of 1,000 gross tons and over, contracted for on or after November 19, 1952, or where conversion from coal to oil is contracted for on or after November 19, 1952, a fixed carbon dioxide, foam, or water spray system shall be installed in all spaces containing oil fired boilers, either main or auxiliary, or their fuel oil units, valves, or manifolds in the line between the settling tanks and the boilers.

(e) Fire extinguishing systems shall be provided for internal combustion installations in accordance with the following:

(1) If a fixed fire-extinguishing system is installed to protect an internal

combustion propelling machinery installation, the system shall be of the carbon dioxide type.

(2) On vessels of 1,000 gross tons and over on an international voyage, the construction or conversion of which is contracted for on or after May 26, 1965, a fixed carbon dioxide system shall be installed in all spaces containing internal combustion or gas turbine main propulsion machinery, auxiliaries with an aggregate power of 1,000 b. hp. or greater, or their fuel oil units, including purifiers, valves, and manifolds.

(3) On vessels, the construction, conversion or automation of which is contracted for on or after July 1, 1968, the systems shall be in accordance with the following:

(i) A fixed carbon dioxide system shall be installed in any space containing machinery using fuel having a flashpoint of less than 110° F.

(ii) On vessels of 1,000 gross tons and over, a fixed carbon dioxide system shall be installed in all spaces containing internal combustion or gas turbine main propulsion machinery, auxiliaries with an aggregate power of 1,000 b. hp. or greater, or their fuel oil units, including purifiers, valves, and manifolds.

(f) On vessels contracted for on or after November 19, 1952, where an enclosed ventilating system is installed for electric propulsion motors or generators, a fixed carbon dioxide extinguishing system shall be installed in such system.

[CGFR 65–50, 30 FR 17001, Dec. 30, 1965, as amended by CGFR 66–33, 31 FR 15285, Dec. 6, 1966; CGFR 67–90, 33 FR 1016, Jan. 26, 1968; CGD 95–027, 61 FR 26006, May 23, 1996]

§ 95.05–15 Hand portable fire extinguishers and semiportable fire extinguishing systems.

(a) Approved hand portable fire extinguishers and semiportable fire extinguishing systems shall be installed on all vessels, other than unmanned barges and fishing vessels, as set forth in subpart 95.50.

Subpart 95.10—Fire Main System, Details

§ 95.10–1 Application.

(a) The provisions of this subpart, with the exception of § 95.10–90, shall apply to all fire main installations contracted for on or after May 26, 1965. Installations contracted for prior to May 26, 1965, shall meet the requirements of § 95.10–90.

§ 95.10–5 Fire pumps.

(a) Vessels shall be equipped with independently driven fire pumps in accordance with Table 95.10–5(a).

TABLE 95.10–5(a)

Gross tons		Minimum number of pumps	Hose and hydrant size, inches	Nozzle orifice size, inches	Length of hose feet
Over	Not over				
	100	[1] 1	[1] 1½	[1] ½	[1] 50
100	1,000	1	1½	⅝	50
1,000	1,500	2	1½	⅝	50
1,500	.....	2	[2] 2½	[2] ⅞	[2] 50

[1] On vessels of 65 feet in length or less, ¾-inch hose of good commercial grade together with a commercial garden hose nozzle may be used. The pump may be hand operated and the length of hose shall be sufficient to assure coverage of all parts of the vessel.

[2] 75 feet of 1½-inch hose and ⅝-inch nozzle may be used where specified by § 95.10–10(b) for interior locations and 50 feet of 1½-inch hose may be used in exterior locations on vessels in other than ocean or coastwise service.

(b) On vessels of 1,000 gross tons and over on an international voyage, each required fire pump, while delivering water thru the fire main system at a pressure corresponding to that required by paragraph (c) of this section, shall have a minimum capacity of at least two-thirds of that required for an independent bilge pump. However, in no case shall the capacity of each fire pump be less than that otherwise required by this section.

(c) Each pump shall be capable of delivering water simultaneously from the two highest outlets at a Pitot tube pressure of approximately 50 p.s.i. Where 1½-inch hose is permitted in lieu of 2½-inch hose by footnote 2 of Table 95.10–5(a), the pump capacity shall be determined on the same basis as if 2½-inch hose had been permitted. Where ¾-inch hose is permitted by Table

95.10–5(a), the Pitot tube pressure need be only 35 p.s.i.

(d) Fire pumps shall be fitted on the discharge side with relief valves set to relieve at 25 p.s.i. in excess of the pressure necessary to maintain the requirements of paragraph (c) of this section or 125 p.s.i., whichever is greater. Relief valves may be omitted if the pumps, operating under shut-off conditions, are not capable of developing a pressure exceeding this amount.

(e) Fire pumps shall be fitted with a pressure gage on the discharge side of the pumps.

(f) Fire pumps may be used for other purposes provided at least one of the required pumps is kept available for use on the fire system at all times. In no case shall a pump having connection to an oil line be used as a fire pump. Branch lines connected to the fire main for purposes other than fire and deck wash shall be so arranged that adequate water can be made continuously available for firefighting purposes.

(g) The total area of the pipes leading from a pump shall not be less than the discharge area of the pump.

(h) On vessels with oil fired boilers, either main or auxiliary, or with internal combustion propulsion machinery, where 2 fire pumps are required, they shall be located in separate spaces, and the arrangement of pumps, sea connections, and sources of power shall be such as to insure that a fire in any one space will not put all of the fire pumps out of operation. However, where it is shown to the satisfaction of the Commandant that it is unreasonable or impracticable to meet this requirement due to the size or arrangement of the vessel, or for other reasons, the installation of a total flooding carbon dioxide system may be accepted as an alternate method of extinguishing any fire which would affect the powering and operation of at least one of the required fire pumps.

[CGFR 65–50, 30 FR 17001, Dec. 30, 1965, as amended by CGFR 66–33, 31 FR 15285, Dec. 6, 1966; CGD 95–028, 62 FR 51206, Sept. 30, 1997]

§ 95.10–10 Fire hydrants and hose.

(a) The size of fire hydrants, hose, and nozzles and the length of hose required shall be as noted in Table 95.10–5(a).

(b) In lieu of the 2½-inch hose and hydrants specified in Table 95.10–5(a), on vessels over 1,500 gross tons, the hydrants in interior locations may have siamese connections for 1½-inch hose. In these cases the hose shall be 75 feet in length, and only one hose will be required at each fire station; however, if all such stations can be satisfactorily served with 50-foot lengths, 50-foot hose may be used.

(c) On vessels of 500 gross tons and over there must be at least one shore connection to the fire main available to each side of the vessel in an accessible location. Suitable cut-out valves and check valves must be provided. Suitable adapters also must be provided for furnishing the vessel's shore connections with couplings mating those on the shore fire lines. Vessels of 500 gross tons and over on an international voyage, must be provided with at least one international shore connection complying with ASTM F 1121 (incorporated by reference, see § 95.01–2). Facilities must be available enabling an international connection to be used on either side of the vessel.

(d) Fire hydrants shall be of sufficient number and so located that any part of the vessel, other than main machinery spaces, accessible to persons on board while the vessel is being navigated and all cargo holds may be reached with at least 2 streams of water from separate outlets, at least one of which shall be from a single length of hose. In main machinery spaces, all portions of such spaces shall be capable of being reached by at least 2 streams of water, each of which shall be from a single length of hose from separate outlets; however, this requirement need not apply to shaft alleys containing no assigned space for the stowage of combustibles. Fire hydrants shall be numbered as required by § 97.37–15 of this subchapter.

(e) All parts of the fire main located on exposed decks shall either be protected against freezing or be fitted with cut-out valves and drain valves so that the entire exposed parts of such piping may be shut off and drained in freezing weather. Except when closed to prevent freezing, such valves shall be sealed open.

(f) The outlet at the fire hydrant shall be limited to any position from the horizontal to the vertical pointing downward, so that the hose will lead horizontally or downward to minimize the possibility of kinking.

(g) Each fire hydrant must have at least one length of firehose, a spanner, and a hose rack or other device for stowing the hose.

(h) Fire hose shall be connected to the outlets at all times. However, on open decks where no protection is afforded to the hose in heavy weather, or where the hose may be liable to damage from the handling of cargo, the hose may be temporarily removed from the hydrant and stowed in an accessible nearby location.

(i) Each firehose on each hydrant must have a combination solid stream and water spray firehose nozzle approved under subpart 162.027 of this chapter. Firehose nozzles previously approved under subpart 162.027 of this chapter may be retained so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

(j) In each propulsion machinery space containing an oil fired boiler, internal combustion machinery, or oil fuel unit on a vessel on an international voyage or of 1000 gross tons or more, each firehose having a combination nozzle previously approved under subpart 162.027 of this chapter must have a low-velocity water spray applicator that is also previously approved under subpart 162.027 of this chapter. The length of the applicator must be less than 1.8 meters (6 feet).

(k) Fixed brackets, hooks, or other means for stowing an applicator must be next to each fire hydrant that has an applicator under paragraph (j) of this section.

(l) Firehose shall not be used for any other purpose than fire extinguishing, drills, and testing.

(m) Fire hydrants, nozzles, and other fittings shall have threads to accommodate the hose connections noted in paragraph (l) of this section.

(n) Firehose and couplings must be as follows:

(1) Fire station hydrant connections shall be brass, bronze, or other equivalent metal. Couplings shall either:

(i) Use National Standard fire hose coupling threads for the 1½ inch (38 millimeter) and 2½ inch (64 millimeter) hose sizes, i.e., 9 threads per inch for 1½ inch hose, and 7½ threads per inch for 2½ inch hose; or

(ii) Be a uniform design for each hose diameter throughout the vessel.

(2) Where 19 millimeters (¾ inch) hose is permitted by table 95.10–5(a), the hose and couplings shall be of good commercial grade.

(3) Each section of firehose must be lined commercial firehose that conforms to Underwriters' Laboratories, Inc. Standard 19 or Federal Specification ZZ–H–451E. Hose that bears the label of Underwriters' Laboratories, Inc. as lined firehose is accepted as conforming to this requirement.

[CGFR 65–50, 30 FR 17001, Dec. 30, 1965, as amended by CGD 74–60, 41 FR 43151, Sept. 30, 1976; CGD 76–086, 44 FR 2392, Jan. 11, 1979; CGD 88–032, 56 FR 35826, July 29, 1991; CGD 95–012, 60 FR 48051, Sept. 18, 1995; CGD 95–027, 61 FR 26007, May 23, 1996; CGD 95–028, 62 FR 51206, Sept. 30, 1997; USCG–2000–7790, 65 FR 58461, Sept. 29, 2000]

§ 95.10–15 Piping.

(a) All piping, valves, and fittings shall meet the applicable requirements of subchapter F (Marine Engineering) of this chapter.

(b) All distribution cut-off valves shall be marked as required by § 97.37–10 of this subchapter.

(c) For vessels on an international voyage, the diameter of the fire main shall be sufficient for the effective distribution of the maximum required discharge from two fire pumps operating simultaneously. This requirement is in addition to § 95.10–5(c). The discharge of this quantity of water through hoses and nozzles at a sufficient number of adjacent hydrants shall be at a minimum Pitot tube pressure of approximately 50 pounds per square inch.

§ 95.10–90 Installations contracted for prior to May 26, 1965.

Installations contracted for prior to May 26, 1965, shall meet the following requirements:

(a) Except as specifically modified by this paragraph, the requirements of §§ 95.10–5 through 95.10–15 shall be complied with insofar as the number and

general type of equipment is concerned. Existing equipment, except firehose nozzles and low-velocity water spray applicators, previously approved, but not meeting the applicable requirements of §§ 95.10–5 through 95.10–15 may be continued in service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs, alterations, and replacements may be permitted to the same standards as the original installations. However, all new installations or major replacements shall meet the applicable requirements in this subpart.

(b) All vessels contracted for prior to November 19, 1952, other than motorboats, shall be fitted with fire pumps, hoses, and nozzles in accordance with Table 95.10–90(a)(2).

TABLE 95.10–90(a)(2)

Gross tons		Minimum number of pumps	Minimum hose and hydrant size, inches	Nozzle orifice size, inches	Length of hose feet
Over	Not over				
	100	1	[1] 1½	[1] 5/16	[1] 50
100	1,000	1	[2] 1½	[2] ⅝	[2] 50
1,000	.....	2	[2] 1½	[2] ⅝	[2] 50

[1] On vessels of 65 feet in length or less, ¾-inch hose of good commercial grade together with a commercial garden hose nozzle may be used. The pump may be hand operated and the length of hose shall be sufficient to assure coverage of all parts of the vessel.

[2] May use 50 feet of 2½-inch hose with ⅞-inch nozzles for exterior stations. 75 feet of 1½-inch hose with ⅝-inch nozzles may be used for interior station in which case such interior stations shall have siamese connections.

(c) Vessels contracted for prior to July 1, 1935, need not meet the requirements of § 95.10–5(h), and vessels contracted for on or after July 1, 1935, but prior to November 19, 1952, may have a carbon dioxide ''bilge'' in lieu of ''total flooding'' system. However, in vessels of both categories where a conversion from coal to oil is contracted for on or after November 19, 1952, the provisions of § 95.10–5(h) shall apply.

(d) The general requirements of § 95.10–5(c) through (g), § 95.10–10(d) through (i), and § 95.10–15 shall be complied with insofar as is reasonable and practicable.

(e) Firehose nozzles and low-velocity spray applicators must meet the requirements of 95.10–10(i), 95.10–10(j), and 95.10–10(k).

[CGFR 65–50, 30 FR 17001, Dec. 30, 1965, as amended by CGD 76–086, 44 FR 2392, Jan. 11, 1979; CGD 95–027, 61 FR 26007, May 23, 1996]

Subpart 95.13—Steam Smothering Systems

§ 95.13–1 Application.

Steam smothering systems are not permitted on vessels contracted for on or after January 1, 1962. Previously approved installations may be retained as long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

[CGD 95–027, 61 FR 26007, May 23, 1996]

Subpart 95.15—Carbon Dioxide Extinguishing Systems, Details

§ 95.15–1 Application.

(a) Where a carbon dioxide extinguishing system is installed, the provisions of this subpart, with the exception of § 95.15–90, shall apply to all installations contracted for on or after November 19, 1952. Installations contracted for prior to November 19, 1952, shall meet the requirements of § 95.15–90.

(b) The requirements of this subpart are based on a ''high pressure system,'' i.e., one in which the carbon dioxide is stored in liquid form at atmospheric temperature. Details for ''low pressure systems,'' i. e., those in which the carbon dioxide is stored in liquid form at a continuously controlled low temperature, may be specifically approved by the Commandant where it is demonstrated that a comparable degree of safety and fire extinguishing ability is achieved.

§ 95.15–5 Quantity, pipe sizes, and discharge rates.

(a) *General.* The amount of carbon dioxide required for each space shall be as determined by paragraphs (b) through (d) of this section.

(b) *Total available supply.* A separate supply of carbon dioxide need not be provided for each space protected. The total available supply shall be at least sufficient for the space requiring the greatest amount.

(c) *Cargo spaces.* (1) The number of pounds of carbon dioxide required for each space shall be equal to the gross volume of the space in cubic feet divided by 30.

(2) Although separate piping shall be led to each cargo hold and 'tween deck, for the purpose of determining the amount of carbon dioxide required, a cargo compartment will be considered as the space between watertight or firescreen bulkheads and from the tank top or lowest deck to the deck head of the uppermost space on which cargo may be carried. If a trunk extends beyond such deck, the trunk volume shall be included. Tonnage openings shall be considered as sealed for this purpose.

(3) Branch lines to the various cargo holds and 'tween decks shall not be less than ¾-inch standard pipe size.

(4) No specific discharge rate need be applied to such systems.

(d) *Machinery spaces, paint lockers, tanks, and similar spaces.* (1) Except as provided in paragraph (d)(3) of this section, the number of pounds of carbon dioxide required for each space shall be equal to the gross volume of the space divided by the appropriate factor noted in Table 95.15–5(d)(1). If fuel can drain from the compartment being protected to an adjacent compartment, or if the compartments are not entirely separate, the requirements for both compartments shall be used to determine the amount of carbon dioxide to be provided. The carbon dioxide shall be arranged to discharge into both such compartments simultaneously.

TABLE 95.15–5(d)(1)

Gross volume of compartment, cubic feet		Factor
Over—	Not over—	
.....	.....	.....
500	.....	15
500	1,600	16
1,600	4,500	18
4,500	50,000	20
50,000	.....	22

(2) For the purpose of the requirements of this paragraph, the volume of the machinery space shall be taken as exclusive of the normal machinery casing unless the boiler, internal combustion machinery, or fuel oil installation extend into such space, in which case the volume shall be taken to the top of the casing or the next material reduction in casing area, whichever is lower. For installations contracted for on or after October 1, 1959, ''normal machinery casing'' and ''material reduction in casing area'' shall be defined as follows:

(i) By ''normal machinery casing'' shall be meant a casing the area of which is not more than 40 percent of the maximum area of the machinery space.

(ii) By ''material reduction in casing area'' shall be meant a reduction to at least 40 percent of the casing area.

(3) For vessels on an international voyage contracted for on or after May 26, 1965, the amount of carbon dioxide required for a space containing propulsion boilers or internal combustion propulsion machinery shall be as given by paragraphs (d) (1) and (2) of this section or by dividing the entire volume, including the casing, by a factor of 25, whichever is the larger.

(4) Branch lines to the various spaces shall be as noted in Table 95.15–5(d)(4).

TABLE 95.15–5(d)(4)

Maximum quantity of carbon dioxide required, pounds	Minimum pipe size, inches	Maximum quantity of carbon dioxide required, pounds	Minimum pipe size, inches
100	½	2,500	2½
225	¾	4,450	3
300	1	7,100	3½
600	1¼	10,450	4
1,000	1½	15,000	4½
2,450	2	.....	.....

(5) Distribution piping within the space shall be proportioned from the supply line to give proper distribution to the outlets without throttling.

(6) The number, type, and location of discharge outlets shall be such as to give a uniform distribution throughout the space.

(7) The total area of all discharge outlets shall not exceed 85 percent nor be less than 35 percent of the nominal cylinder outlet area or the area of the supply pipe, whichever is smaller. The nominal cylinder outlet area in square inches shall be determined by multiplying the factor 0.0022 by the number of pounds of carbon dioxide required, except that in no case shall this outlet area be less than 0.110 square inches.

(8) The discharge of at least 85 percent of the required amount of carbon dioxide shall be complete within 2 minutes.

(e) *Spaces specially suitable for vehicles.* (1) The number of pounds of carbon dioxide required shall be equal to the gross volume of the largest ''tight'' space divided by 22. In no case, however, shall the quantity be less than that required by paragraph (c)(2) of this section.

(2) The arrangement of valves and piping shall be such that the required quantity of carbon dioxide may be discharged into any ''tight'' space. The discharge of the required quantity of carbon dioxide shall be completed within 2 minutes.

(3) Except as noted in paragraphs (e)(1) and (2) of this section, the requirements of paragraph (d) of this section shall apply.

[CGFR 65–50, 30 FR 17001, Dec. 30, 1965, as amended by CGFR 66–33, 31 FR 15285, Dec. 6, 1966; CGD 95–028, 62 FR 51207, Sept. 30, 1997; USCG–1999–6216, 64 FR 53226, Oct. 1, 1999]

§ 95.15–10 Controls.

(a) Except as noted in § 95.15–20(b) all controls and valves for the operation of the system shall be outside the space protected, and shall not be located in any space that might be cut off or made inaccessible in the event of fire in any of the spaces protected.

(b) If the same cylinders are used to protect more than one hazard, a manifold with normally closed stop valves shall be used to direct the carbon dioxide into the proper space. If cylinders are used to protect only one hazard, a normally closed stop valve shall be installed between the cylinders and the hazard except for systems of the type indicated in § 95.15–5(d) which contain not more than 300 pounds of carbon dioxide.

(c) Distribution piping to the various cargo spaces shall be controlled from not more than two stations. One of the stations controlling the system for the main machinery space shall be located as convenient as practicable to one of the main escapes from the space. All control stations and the individual valves and controls shall be marked as required by §§ 97.37–10 and 97.37–13 of this subchapter.

(d) Systems of the type indicated in § 95.15–5(d) shall be actuated by one control operating the valve to the space and a separate control releasing at least the required amount of carbon dioxide. These two controls shall be located in a box or other enclosure clearly identified for the particular space. Those systems installed without a stop valve shall be operated by one control releasing at least the required amount of carbon dioxide.

(e) Where provisions are made for the simultaneous release of a given amount of carbon dioxide by operation of a remote control, provisions shall also be made for manual control at the cylinders. Where gas pressure from pilot cylinders is used as a means for releasing the remaining cylinders, not less than two pilot cylinders shall be used for systems consisting of more than two cylinders. Each of the pilot cylinders shall be capable of manual control at the cylinder, but the remaining cylinders need not be capable of individual manual control.

(f) Systems of the type indicated in § 95.15–5(d), other than systems for tanks, which are of more than 300 pounds of carbon dioxide, shall be fitted with an approved delayed discharge so arranged that the alarm will be sounded for at least 20 seconds before the carbon dioxide is released into the space. Such systems of not more than 300 pounds of carbon dioxide shall also have a similar delayed discharge, except for those systems for tanks and for spaces which have a suitable horizontal escape. This paragraph shall be applicable only to systems installed on or after July 1, 1957.

(g) All distribution valves and controls shall be of an approved type. All controls shall be suitably protected.

(h) Complete but simple instructions for the operation of the systems must be located in a conspicuous place at or near all pull boxes, stop valve controls and in the CO_2 cylinder storage room. On systems in which the CO_2 cylinders are not within the protected space, these instructions must also include a schematic diagram of the system and instructions detailing alternate methods of discharging the system should the manual release or stop valve controls fail to operate. Each control valve

to branch lines must be marked to indicate the related space served.

(i) If the space or enclosure containing the carbon dioxide supply or controls is to be locked, a key to the space or enclosure shall be in a break-glass-type box conspicuously located adjacent to the opening.

[CGFR 65–50, 30 FR 17001, Dec. 30, 1965, as amended by CGD 74–100B, 40 FR 6209, Feb. 10, 1975; USCG–1999–6216, 64 FR 53226, Oct. 1, 1999]

§ 95.15–15 Piping.

(a) The piping, valves, and fittings shall have a bursting pressure of not less than 6,000 pounds per square inch.

(b) All piping, in nominal sizes not over ¾ inch shall be at least Schedule 40 (standard weight) and in nominal sizes over ¾ inch, shall be at least Schedule 80 (extra heavy).

(c) All piping, valves, and fittings of ferrous materials shall be protected inside and outside against corrosion unless specifically approved otherwise by the Commandant.

(d) A pressure relief valve or equivalent set to relieve between 2,400 and 2,800 pounds per square inch shall be installed in the distributing manifold or such other location as to protect the piping in the event that all branch line shut-off valves are closed.

(e) All dead-end lines shall extend at least 2 inches beyond the last orifice and shall be closed with cap or plug.

(f) All piping, valves, and fittings shall be securely supported, and where necessary, protected against injury.

(g) Drains and dirt traps shall be fitted where necessary to prevent the accumulation of dirt or moisture. Drains and dirt traps shall be located in accessible locations where possible.

(h) Piping shall be used for no other purpose except that it may be incorporated with the fire-detecting system.

(i) Piping passing through living quarters shall not be fitted with drains or other openings within such spaces.

(j) Installation test requirements are:

(1) Upon completion of the piping installation, and before the cylinders are connected, a pressure test shall be applied as set forth in this paragraph. Only carbon dioxide or other inert gas shall be used for this test.

(2) The piping from the cylinders to the stop valves in the manifold shall be subjected to a pressure of 1,000 pounds per square inch. With no additional gas being introduced to the system, it shall be demonstrated that the leakage of the system is such as not to permit a pressure drop of more than 150 pounds per square inch per minute for a 2-minute period.

(3) The individual branch lines to the various spaces protected shall be subjected to a test similar to that described in the preceding paragraph with the exception that the pressure used shall be 600 pounds per square inch in lieu of 1,000 pounds per square inch. For the purpose of this test, the distribution piping shall be capped within the space protected at the first joint ahead of the nozzles.

(4) In lieu of the tests prescribed in paragraphs (j) (1) through (3) of this section, small independent systems protecting spaces such as emergency generator rooms, lamp lockers, etc., may be tested by blowing out the piping with air at a pressure of at least 100 pounds per square inch.

§ 95.15–20 Carbon dioxide storage.

(a) Except as provided in paragraph (b) of this section, the cylinders shall be located outside the spaces protected, and shall not be located in any space that might be cut off or made inaccessible in the event of a fire in any of the spaces protected.

(b) Systems of the type indicated in § 95.15–5(d), consisting of not more than 300 pounds of carbon dioxide, may have the cylinders located within the space protected. If the cylinder stowage is within the space protected, the system shall be arranged in an approved manner to be automatically operated by a heat actuator within the space in addition to the regular remote and local controls.

(c) The space containing the cylinders shall be properly ventilated and designed to preclude an anticipated ambient temperature in excess of 130 degrees F.

(d) Cylinders shall be securely fastened and supported, and where necessary, protected against injury.

(e) Cylinders shall be so mounted as to be readily accessible and capable of

easy removal for recharging and inspection. Provisions shall be available for weighing the cylinders.

(f) Where subject to moisture, cylinders shall be so installed as to provide a space of at least 2 inches between the flooring and the bottom of the cylinders.

(g) Cylinders shall be mounted in an upright position or inclined not more than 30 degrees from the vertical. However, cylinders which are fitted with flexible or bent siphon tubes may be inclined not more than 80 degrees from the vertical.

(h) Where check valves are not fitted on each independent cylinder discharge, plugs or caps shall be provided for closing outlets when cylinders are removed for inspection or refilling.

(i) All cylinders used for storing carbon dioxide must be fabricated, tested, and marked in accordance with §§ 147.60 and 147.65 of this chapter.

[CGFR 65–50, 30 FR 17001, Dec. 30, 1965, as amended by CGD 84–044, 53 FR 7749, Mar. 10, 1988; USCG–1999–6216, 64 FR 53226, Oct. 1, 1999]

§ 95.15–25 Discharge outlets.

(a) Discharge outlets shall be of an approved type.

§ 95.15–30 Alarms.

(a) Spaces which are protected by a carbon dioxide extinguishing system and are normally accessible to persons on board while the vessel is being navigated, other than paint and lamp lockers and similar small spaces, shall be fitted with an approved audible alarm in such spaces which will be automatically sounded when the carbon dioxide is admitted to the space. The alarm shall be conspicuously and centrally located and shall be marked as required by § 97.37–9 of this subchapter. For systems installed on or after July 1, 1957, alarms will be mandatory only for systems required to be fitted with a delayed discharge. Such alarms shall be so arranged as to sound during the 20 second delay period prior to the discharge of carbon dioxide into the space, and the alarm shall depend on no source of power other than the carbon dioxide.

§ 95.15–35 Enclosure openings.

(a) Where mechanical ventilation is provided for spaces other than cargo and similar spaces which are protected by a carbon dioxide extinguishing system, provisions shall be made so that the ventilation system is automatically shut down with the operation of the system to that space.

(b) Where natural ventilation is provided for spaces protected by a carbon dioxide extinguishing system, provisions shall be made for easily and effectively closing off the ventilation.

(c) Means shall be provided for closing all other openings to the space protected from outside such space. In this respect, relatively tight doors, shutters, or dampers shall be provided for openings in the lower portion of the space. The construction shall be such that openings in the upper portion of the space can be closed off either by permanently installed means or by the use of canvas or other material which is normally carried by the vessel.

§ 95.15–40 Pressure relief.

(a) Where necessary, relatively tight compartments such as refrigeration spaces, paint lockers, etc., shall be provided with suitable means for relieving excessive pressure accumulating within the compartment when the carbon dioxide is injected.

§ 95.15–90 Installations contracted for prior to November 19, 1952.

(a) Installations contracted for prior to November 19, 1952, shall meet the following requirements:

(1) Existing arrangements, materials, and facilities previously approved shall be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original installation.

(2) The details of the systems shall be in general agreement with §§ 95.15–5 through 95.15–40 insofar as is reasonable and practicable, with the exception of § 95.15–5(d)(1), (2) and (4) covering spaces other than cargo spaces,

which systems may be installed in accordance with paragraphs (a) (3) through (6) of this section.

(3) In boilerrooms, the bilges shall be protected by a system discharging principally below the floor plates. Perforated pipe may be used in lieu of discharge nozzles for such systems. The number of pounds of carbon dioxide shall be equal to the gross volume of the boilerroom taken to the top of the boilers divided by 36. In the event of an elevated boiler room which drains to the machinery space, the system shall be installed in the engineroom bilge and the gross volume shall be taken to the flat on which the boilers are installed.

(4) In machinery spaces where main propulsion internal combustion machinery is installed, the number of pounds of carbon dioxide required shall be equal to the gross volume of the space taken to the under side of the deck forming the hatch opening divided by 22.

(5) In miscellaneous spaces other than cargo or main machinery spaces the number of pounds of carbon dioxide required shall be equal to the gross volume of the space divided by 22.

(6) Branch lines to the various spaces other than cargo and similar spaces shall be as noted in Table 95.15–90(a)(6). This table is based on cylinders having discharge outlets and siphon tubes of ⅜ inch diameter.

TABLE 95.15–90(a)(6)

Number of cylinders		Nominal pipe size, inches
Over	Not over	
	2	½—standard.
2	4	¾—standard.
4	6	1—extra heavy.
6	12	1¼—extra heavy.
12	16	1½—extra heavy.
16	27	2—extra heavy.
27	39	2½—extra heavy.
39	60	3—extra heavy.
60	80	3½—extra heavy.
80	104	4—extra heavy.
104	165	5—extra heavy.

[CGFR 65–50, 30 FR 17001, Dec. 30, 1965, as amended by USCG–1999–6216, 64 FR 53226, Oct. 1, 1999]

Subpart 95.17—Foam Extinguishing Systems, Details

§ 95.17–1 Application.

(a) Where a foam extinguishing system is installed, the provisions of this subpart, with the exception of § 95.17–90, shall apply to all installations contracted for on or after November 19, 1952. Installations contracted for prior to November 19, 1952, shall meet the requirements of § 95.17–90.

§ 95.17–5 Quantity of foam required.

(a) *Area protected.* (1) For machinery and similar spaces, the system shall be so designed and arranged as to spread a blanket of foam over the entire tank top or bilge of the space protected. The arrangement of piping shall be such as to give a uniform distribution over the entire area protected.

(2) Where an installation is made to protect an oil fired boiler installation on a flat which is open to or can drain to the lower engineroom or other space, both the flat and the lower space shall be protected simultaneously. The flat shall be fitted with suitable coamings on all openings other than deck drains to properly restrain the oil and foam at that level. Other installations of a similar nature will be considered in a like manner.

(3) Where a system is installed to protect a tank, it shall be so designed and arranged as to spread a blanket of foam over the entire liquid surface of the tank within the range of usual trim. The arrangement of piping shall be such as to give a uniform distribution over the entire area protected.

(b) *Rate of application.* (1) For spaces other than tanks, the rate of discharge to foam outlets protecting the hazard shall be at least as set forth in this paragraph.

(i) For chemical foam systems with stored ''A'' and ''B'' solutions, a total of at least 1.6 gallons per minute of the two solutions shall be discharged for each 10 square feet of area protected.

(ii) For other types of foam systems, the water rate to the dry powder generators or air foam production equipment shall be at least 1.6 gallons per minute for each 10 square feet of area protected.

(2) For tanks, the rate of discharge to foam outlets protecting the hazard shall be as set forth in paragraph (b)(1) of this section, except that the value of 1 gallon per minute shall be substituted in both cases for the value of 1.6 gallons per minute.

(c) *Supply of foam producing material.* (1) There shall be provided a quantity of foam producing material sufficient to operate the equipment at the discharge rate specified in paragraph (b) of this section for a period of at least 3 minutes for spaces other than tanks, and for at least 5 minutes for tanks.

(d) *Separate supply of foam agent.* A separate supply of foam agent need not be provided for each space protected. The total available supply shall be at least sufficient for the space requiring the greatest amount.

(e) *Water supply for required pumps.* Where pumps are required, the water supply shall be from outside the space protected and shall in no way be dependent upon power from the space protected.

§ 95.17–10 Controls.

(a) The foam agent, its container, and all controls and valves for the operation of the system shall be of an approved type.

(b) The foam agent container and all controls and valves for the operation of the system shall be outside the space protected and shall not be located in such space as might be cut off or made inaccessible in the event of fire in any of the spaces protected. The control space shall be as convenient as practicable to one of the main escapes from the spaces protected, and shall be marked as required by § 97.37–13 of this subchapter. Where pumps are required, it shall not be necessary that they be started from the control space.

(c) Complete, but simple instructions for the operation of the system shall be located in a conspicuous place at or near the controls.

(d) The valves to the various spaces served shall be marked as required by § 97.37–10 of this subchapter.

§ 95.17–15 Piping.

(a) All piping, valves, and fittings shall meet the applicable requirements of Subchapter F (Marine Engineering) of this chapter.

(b) All piping, valves, and fittings of ferrous materials shall be protected inside and outside against corrosion unless specifically approved otherwise by the Commandant.

(c) All piping, valves, and fittings shall be securely supported, and where necessary, protected against injury.

(d) Drains and dirt traps shall be fitted where necessary to prevent the accumulation of dirt or moisture.

(e) Piping shall be used for no other purpose.

§ 95.17–20 Discharge outlets.

(a) Discharge outlets shall be of an approved type.

§ 95.17–25 Additional protection required.

(a) In order that any residual fires above the floor plates may be extinguished when a foam system is installed for the protection of spaces other than tanks, at least 2 fire hydrants, in addition to those required for the machinery space by Subpart 95.10, shall be installed outside of the machinery space entrance. Such hydrants shall be fitted with sufficient hose so that any part of the machinery space may be reached with at least 2 streams of water, and each hose shall be equipped with an approved combination nozzle, applicator, and self-cleaning strainer as described in § 95.10–10(i)(3).

§ 95.17–90 Installations contracted for prior to November 19, 1952.

(a) Installations contracted for prior to November 19, 1952, shall meet the following requirements:

(1) Existing arrangements, materials, and facilities previously approved shall be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original installation.

(2) The details of the systems shall be in general agreement with §§ 95.17–5 through 95.17–20, with the exception of § 95.17–5(a)(2), insofar as is reasonable

and practicable. A 6-inch blanket of foam in 5 minutes for tanks and 3 minutes for other spaces will be considered as meeting the requirements of §95.17–5.

Subpart 95.30—Automatic Sprinkler Systems, Details

§ 95.30–1 Application.

Automatic sprinkler systems shall comply with NFPA 13–1996.

[CGD 95–028, 62 FR 51207, Sept. 30, 1997]

Subpart 95.50—Hand Portable Fire Extinguishers and Semiportable Fire Extinguishing Systems, Arrangements and Details

§ 95.50–1 Application.

(a) The provisions of this subpart, with the exception of §95.50–90, shall apply to all vessels, other than unmanned barges and fishing vessels, contracted for on or after November 19, 1952. Such vessels contracted for prior to November 19, 1952, shall meet the requirements of §95.50–90.

§ 95.50–5 Classification.

(a) Hand portable fire extinguishers and semiportable fire extinguishing systems shall be classified by a combination letter and number symbol. The letter indicating the type of fire which the unit could be expected to extinguish, and the number indicating the relative size of the unit.

(b) The types of fire will be designated as follows:

(1) ''A'' for fires in ordinary combustible materials where the quenching and cooling effects of quantities of water, or solutions containing large percentages of water, are of first importance.

(2) ''B'' for fires in flammable liquids, greases, etc., where a blanketing effect is essential.

(3) ''C'' for fires in electrical equipment where the use of nonconducting extinguishing agent is of first importance.

(c) The number designations for size will start with ''I'' for the smallest to ''V'' for the largest. Sizes I and II are considered hand portable fire extinguishers and sizes III, IV, and V are considered semiportable fire extinguishing systems which shall be fitted with suitable hose and nozzle or otherpracticable means so that all portions of the space concerned may be covered. Examples of size graduations for some of the typical hand portable and semiportable fire extinguishing systems are set forth in Table 95.50–5(c).

TABLE 95.50–5(c)

Classification		Soda-acid and water, gallons	Foam, gallons	Carbon dioxide, pounds	Dry chemical, pounds
Type	Size				
A	II	2½	2½	.....	.....
B	I	.....	1¼	4	2
B	II	.....	2½	15	10
B	III	.....	12	35	20
B	IV	.....	20	50	30
B	V	.....	40	100	50
C	I	.....	.....	4	2
C	II	.....	.....	15	10

(d) All hand portable fire extinguishers and semiportable fire extinguishing systems shall have permanently attached thereto a metallic name plate giving the name of the item, the rated capacity in gallons, quarts, or pounds, the name and address of the person or firm for whom approved, and the identifying mark of the actual manufacturer.

(e) Vaporizing-liquid type fire extinguishers containing carbon tetrachloride or chlorobromomethane or other toxic vaporizing liquids shall be removed from all vessels.

§ 95.50–10 Location.

(a) Approved hand portable fire extinguishers and semiportable fire extinguishing systems shall be installed in accordance with Table 95.50–10(a). The location of the equipment shall be to the satisfaction of the Officer in Charge, Marine Inspection. Nothing in this paragraph shall be construed as limiting the Officer in Charge, Marine Inspection, from requiring such additional equipment as he deems necessary for the proper protection of the vessel.

TABLE 95.50–10(a)—HAND PORTABLE FIRE EXTINGUISHER AND SEMIPORTABLE FIRE-EXTINGUISHING SYSTEMS

Space	Classification (see § 95.50–5)	Quantity and location
Safety areas[1]		
Wheelhouse or fire control room	.....	None required.
Stairway and elevator enclosures	.....	Do.
Communicating corridors	A–II	1 in each main corridor not more than 150 feet apart. (May be located in stairways.)
Lifeboat embarkation and lowering stations	.....	None required.
Radio room.		
C–I[2]	2 in vicinity of exit.[2].	
Accommodations[1]		
Staterooms, toilet spaces, public spaces, offices, lockers, isolated storerooms, and pantries, open decks, etc.	.....	None required.
Service spaces[1]		
Galleys	B–II or C–II	1 for each 2,500 square feet or fraction thereof suitable for hazards involved.
Paint and lamp rooms	B–II	1 outside space in vicinity of exit.
Accessible baggage, mail, and specie rooms, and storerooms	A–II	1 for each 2,500 square feet or fraction thereof located in vicinity of exits, either inside or outside the spaces.
Carpenter shop and similar spaces	A–II	1 outside the space in vicinity of exit.
Machinery spaces		
Coal-fired boilers: Bunker and boiler space	.....	None required.
Oil-fired boilers: Spaces containing oil-fired boilers, either main or auxiliary, or their fuel-oil units.	B–II; B–V	2 required[3]; 1 required.[4]
Internal combustion or gas turbine propelling machinery spaces	B–II	1 for each 1,000 brake horsepower, but not less than 2 nor more than 6.[5]
	B–III	1 required.[6][7]
Electric propulsive motors or generators of open type	C–II	1 for each propulsion motor or generator unit.
Enclosed ventilating systems for motors and generators of electric propelling machinery.	.....	None required.
Auxiliary spaces:		
Internal combustion or gas turbine	B–II	1 outside the space in vicinity of exit.[7]
Electric emergency motors or generators	C–II	1 outside the space in vicinity of exit.[8]
Steam	.....	None required.
Trunks to machinery spaces	.....	Do.
Fuel tanks	.....	Do.
Cargo spaces		
Inaccessible during voyage, including trunks and cargo tanks	.....	Do.
Accessible during voyage	.....	Do.

[1] For motorboats, the total number of hand portable fire extinguishers required for safety areas, accommodation spaces, and service spaces shall be 1 B–II for motorboats of less than 50 gross tons and 2 B–II for motor boats of 50 gross tons and over. Two B–I hand portable fire extinguishers may be substituted for 1 B–II.
[2] For vessels on an international voyage, substitute 1 C–II in vicinity of exit.
[3] Vessels of less than 1,000 gross tons require 1.
[4] Vessels of less than 1,000 gross tons may substitute 1 B–IV.
[5] Only 1 required for motorboats.
[6] If oil burning donkey boiler fitted in space, the B–V previously required for the protection of the boiler may be substituted. Not required where a fixed carbon dioxide system is installed.
[7] Not required on vessels of less than 300 gross tons if fuel has a flashpoint higher than 110° F.
[8] Not required on vessels of less than 300 gross tons.

(b) Semiportable fire extinguishing systems shall be located in the open so as to be readily seen.

(c) If hand portable fire extinguishers are not located in the open or behind glass so that they may be readily seen, they may be placed in enclosures together with the fire hose, provided such enclosures are marked as required by § 97.37–15 of this subchapter.

(d) Hand portable fire extinguishers and their stations shall be numbered in accordance with § 97.37–23 of this subchapter.

(e) Hand portable or semiportable extinguishers, which are required on their nameplates to be protected from freezing, shall not be located where freezing temperatures may be expected.

§ 95.50–15 Spare charges.

(a) For all vessels other than motorboats spare charges shall be carried for

at least 50 percent of each size and each variety, i.e. foam, soda-acid, carbon dioxide, etc., of hand portable fire extinguisher required by §95.50–10(a). However, if the unit is of such variety that it cannot be readily recharged by the vessel's personnel, one spare unit of the same classification shall be carried in lieu of spare charges for all such units of the same size and variety.

(b) Spare charges shall be so packaged as to minimize the hazards to personnel while recharging the units. Acid shall be contained in a Crown stopper type of bottle.

§95.50–20 Semiportable fire extinguishers.

(a) The frame or support of each size III, IV, and V fire extinguisher required by Table 95.50–10(a) must be welded or otherwise permanently attached to a bulkhead or deck.

(b) If an approved size III, IV, or V fire extinguisher has wheels and is not required by Table 95.50–10(a), it must be securely stowed when not in use to prevent it from rolling out of control under heavy sea conditions.

[CGD 77–039, 44 FR 34133, June 14, 1979]

§95.50–90 Vessels contracted for prior to November 19, 1952.

(a) Vessels contracted for prior to November 19, 1952, shall meet the following requirements:

(1) The provisions of §§95.50–5 through 95.50–15 shall be met with the exception that existing installations in safety areas and service spaces may be maintained if in the opinion of the Officer in Charge, Marine Inspection, they are in general agreement with the degree of safety prescribed by Table 95.50–10(a). In such cases, minor modifications may be made to the same standard as the original installation: *Provided*, That in no case will a greater departure from the standards of Table 95.50–10(a) be permitted than presently exists.

Subpart 95.60—Fire Axes

§95.60–1 Application.

(a) The provisions of this subpart shall apply to all vessels other than motorboats.

§95.60–5 Number required.

(a) All vessels except barges shall carry at least the minimum number of fire axes as set forth in Table 95.60–5(a). Nothing in this paragraph shall be construed as limiting the Officer in Charge, Marine Inspection, from requiring such additional fire axes as he deems necessary for the proper protection of the vessel.

TABLE 95.60–5(a)

Gross tons		Number of axes
Over	Not over	
	50	1
50	200	2
200	500	4
500	1,000	6
1,000	.....	8

(b) Manned barges shall carry at least two fire axes.

§95.60–10 Location.

(a) Fire axes shall be distributed throughout the spaces available to persons on board so as to be most readily available in the event of emergency.

(b) If fire axes are not located in the open, or behind glass, so that they may be readily seen, they may be placed in enclosures together with the fire hose, provided such enclosures are marked as required by §97.37–15 of this subchapter.

PART 96—VESSEL CONTROL AND MISCELLANEOUS SYSTEMS AND EQUIPMENT

Subpart 96.01—Application

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96.05–1 Installation and details.

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Subpart 96.35—Fireman's Outfit

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96.35–5 General.
96.35–10 Fireman's outfit.
96.35–15 Stowage.
96.35–20 Spare charges.
96.35–90 Vessels contracted for before November 23, 1992.

Subpart 96.40—Pilot Boarding Equipment

96.40–1 Pilot boarding equipment.

AUTHORITY: 46 U.S.C. 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGFR 65–50, 30 FR 17008, Dec. 30, 1965, unless otherwise noted.

Subpart 96.01—Application

§ 96.01–1 General.

(a) The provisions of this part shall apply to all vessels except as specifically noted in this part.

§ 96.01–3 Incorporation by reference.

(a) Certain materials are 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 the one listed in paragraph (b) of this section, notice of the change must be published in the FEDERAL REGISTER and the material made available to the public. All approved material is on file at the Office of the Federal Register, Washington, DC 20408, and at the U.S. Coast Guard, Office of Design and Engineering Standards (G–MSE), 2100 Second Street SW., Washington, DC 20593–0001, and is available from the address indicated in paragraph (b).

(b) The material approved for incorporation by reference in this part, and the sections affected is:

American Society for Testing and Materials (ASTM)

100 Barr Harbor Drive, West Conshohocken, PA 19428–2959.

ASTM F 1014–92, Standard Specification for Flashlights on Vessels—96.35–5

NOTE: All other documents referenced in this part are still in effect.

[CGD 82–042, 53 FR 17705, May 18, 1988, as amended by CGD 95–072, 60 FR 50464, Sept. 29, 1995; CGD 96–041, 61 FR 50729, Sept. 27, 1996; CGD 97–057, 62 FR 51046, Sept. 30, 1997; USCG 1999–5151, 64 FR 67181, Dec. 1, 1999]

Subpart 96.03—Marine Engineering Systems

§ 96.03–1 Installation and details.

(a) The installation of all systems of a marine engineering nature, together with the details of design, construction, and installation, shall be in accordance with the requirements of subchapter F (Marine Engineering) of this chapter. Systems of this type include the following:

Steering Systems.
Bilge and Ballast Systems.
Tank Vent and Sounding Systems.
Overboard Discharges and Shell Connections.
Pipe and Pressure Systems.
Liquefied Petroleum Gas For Cooking and Heating.

Subpart 96.05—Electrical Engineering and Interior Communications Systems

§ 96.05–1 Installation and details.

(a) The installation of all systems of an electrical engineering or interior communication nature, together with the details of design, construction, and installation, shall be in accordance with the requirements of subchapter J (Electrical Engineering) of this chapter. Systems of this type include the following:

Ship's service generating systems.
Ship's service power distribution systems.
Ship's lighting systems.
Electric propulsion and propulsion control systems.
Emergency lighting and power systems.
Electric lifeboat winch systems.
Electric steering gear and steering control systems.
Fire detecting and alarm systems.
Sound powered telephone and voice tube systems.
Engine order telegraph systems.
Rudder angle indicator systems.
Refrigerated spaces alarm systems.
Navigation lights systems.
Daylight signaling lights.
Miscellaneous machinery alarms and controls.
General alarm systems.

(b) Electrical equipment installed in spaces ''specially suitable for vehicles'' shall be in accordance with subchapter J (Electrical Engineering) of this chapter.

[CGFR 66–33, 31 FR 15285, Dec. 6, 1966, as amended by CGFR 68–32, 33 FR 5719, Apr. 12, 1968, CGD 74–125A, 47 FR 15232, Apr. 8, 1982]

Subpart 96.06—Lifesaving Appliances and Arrangements

§ 96.06–1 Installation.

The installation of all lifesaving appliances and arrangements must be in accordance with subchapter W (Lifesaving Appliances and Arrangements) of this chapter.

[CGD 84–069, 61 FR 25289, May 20, 1996]

Subpart 96.07—Anchors, Chains, and Hawsers

§ 96.07–1 Application.

(a) The provisions of this subpart, with the exception of § 96.07–90, shall apply to all vessels contracted for on or after November 19, 1952. Vessels contracted for prior to November 19, 1952, shall meet the requirements of § 96.07–90.

§ 96.07–5 Ocean, coastwise, or Great Lakes service.

(a) Vessels in ocean, coastwise, or Great Lakes service, except unmanned barges, shall be fitted with anchors. chains, and hawsers in general agreement with the Standards established by the American Bureau of Shipping, see Subpart 90.35 of this subchapter.

(b) In addition to the provisions of paragraph (a) of this section, the following requirements and alternatives also apply:

(1) The American Bureau of Shipping rules relating to anchor equipment are mandatory, not a guide.

(2) Vessels under 200 feet (61 meters) in length and with an American Bureau of Shipping equipment number of less than 150 may be equipped with either—

(i) One anchor of the tabular weight and one-half the tabulated length of anchor chain listed in the applicable standard, or

(ii) Two anchors of one-half the tabular weight with the total length of anchor chain listed in the applicable standard provided both anchors are in a position that allows for ready use at all times and the windlass is capable of heaving in either anchor.

(c) Tugs, under 200 feet (61 meters) in length, shall have at least one anchor of one-half the tabular weight listed in the applicable standards.

(d) Standards of other recognized classification societies may be used, in lieu of those established by the American Bureau of Shipping, upon approval by the Commandant.

[CGFR 68–32, 33 FR 5720, Apr. 12, 1968, as amended by CGD 87–013, 53 FR 20624, June 6, 1988]

§ 96.07–10 Lakes, bays, and sounds, or river service.

(a) Vessels in lakes, bays, and sounds, or river service shall be fitted with such ground tackle and hawsers as deemed necessary by the Officer in Charge, Marine Inspection, depending upon the size of the vessel and the waters on which it operates.

§ 96.07–90 Vessels contracted for prior to November 19, 1952.

(a) Vessels contracted for prior to November 19, 1952, shall meet the following requirements:

(1) Installations previously accepted or approved shall be considered satisfactory for the same service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. If the service of the vessel is changed, the suitability of the equipment will be established by the Officer in Charge, Marine Inspection.

Subpart 96.17—Magnetic Compass and Gyrocompass

§ 96.17–1 When required.

(a) All mechanically propelled vessels in ocean or coastwise service must be fitted with a magnetic compass.

(b) All mechanically propelled vessels of 1,600 gross tons and over in ocean or coastwise service must be fitted with a gyrocompass in addition to the magnetic compass.

(c) Each vessel must have an illuminated repeater for the gyrocompass required under paragraph (b) that is at the main steering stand unless the gyrocompass is illuminated and is at the main steering stand.

[CGD 75–074, 42 FR 5963, Jan. 31, 1977]

Subpart 96.25—Radar

§ 96.25–1 When required.

All mechanically propelled vessels of 1,600 gross tons and over in ocean or coastwise service must be fitted with a marine radar system for surface navigation. Facilities for plotting radar readings must be provided on the bridge.

[CGD 75–074, 42 FR 5964, Jan. 31, 1977]

Subpart 96.27—Sounding Equipment

§ 96.27–1 When required.

All mechanically propelled vessels of 500 gross tons and over in ocean or coastwise service and all mechanically propelled vessels of 500 gross tons and over in Great Lakes service and certificated for service on the River St. Lawrence eastward of the lower exit of the St. Lambert Lock at Montreal, Canada, must be fitted with an efficient electronic sounding apparatus.

[CGD 95–027, 61 FR 26007, May 23, 1996]

Subpart 96.30—Protection From Refrigerants

SOURCE: CGD 86–036, 57 FR 48325, Oct. 23, 1992, unless otherwise noted.

§ 96.30–1 Application.

(a) This subpart, except § 96.30–90, applies to each vessel that is contracted for on or after November 23, 1992, and is equipped with any refrigeration unit using—

(1) Ammonia to refrigerate any space with a volume of more than 20 cubic feet; or

(2) Fluorocarbons to refrigerate any space with a volume of more than 1000 cubic feet.

(b) Each vessel that is contracted for before November 23, 1992, must satisfy § 96.30–90 if it is equipped with any refrigeration unit using—

(1) Ammonia to refrigerate any space with a volume of more than 20 cubic feet; or

(2) Fluorocarbons to refrigerate any space with a volume of more than 1000 cubic feet.

§ 96.30–5 General.

(a) Each self-contained breathing apparatus must be of the pressure-demand, open-circuit type, approved by the Mine Safety and Health Administration (MSHA) and by the National Institute for Occupational Safety and Health (NIOSH), and have at a minimum a 30-minute air supply, a full facepiece, and a spare charge.

(b) All equipment shall be maintained in an operative condition, and it

shall be the responsibility of the master and chief engineer to ascertain that a sufficient number of the crew are familiar with the operation of the equipment.

[CGD 86–036, 57 FR 48325, Oct. 23, 1992; 57 FR 56406, Nov. 27, 1992]

§ 96.30–15 Self-contained breathing apparatus.

(a) Each vessel must have a self-contained breathing apparatus for use as protection against gas leaking from a refrigeration unit.

(b) The self-contained breathing apparatus required by paragraph (a) of this section may be one of those required by § 96.35–10.

§ 96.30–90 Vessels contracted for before November 23, 1992.

Vessels contracted for before November 23, 1992, must meet the following requirements:

(a) Each vessels must satisfy §§ 96.30–5 through 96.30–15 concerning the number of items and method of stowage of equipment.

(b) Items of equipment previously approved, but not meeting the applicable specifications set forth in § 96.30–5, may continue in service as long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection; but each item in an installation or a replacement must meet all applicable specifications.

(c) After November 23, 1994, each respirator must either satisfy § 96.30–5(a) or be a self-contained compressed-air breathing apparatus previously approved by MSHA and NIOSH under part 160, subpart 160.011, of this chapter.

Subpart 96.35—Fireman's Outfit

§ 96.35–1 Application.

This subpart, except § 96.35–90, applies to each vessel that is on an international voyage and is contracted for on or after November 23, 1992. Each vessel that is on an international voyage and is contracted for before November 23, 1992, must satisfy § 96.35–90.

[CGD 86–036, 57 FR 48325, Oct. 23, 1992]

§ 96.35–5 General.

(a) All flame safety lamps shall be of an approved type, constructed in accordance with subpart 160.016 of subchapter Q (Specifications) of this chapter.

(b) Each self-contained breathing apparatus must be of the pressure-demand, open-circuit type, approved by the Mine Safety and Health Administration (MSHA) and by the National Institute for Occupational Safety and Health (NIOSH), and have at a minimum a 30-minute air supply and full facepiece.

(c) Flashlights shall be Type II or Type III, constructed and marked in accordance with ASTM F 1014 (incorporated by reference, see § 96.01–3).

(d) All lifelines shall be of steel or bronze wire rope. Steel wire rope shall be either inherently corrosion-resistant, or made so by galvanizing or tinning. Each end shall be fitted with a hook with keeper having throat opening which can be readily slipped over a ⅝-inch bolt. The total length of the lifeline shall be dependent upon the size and arrangement of the vessel, and more than one line may be hooked together to achieve the necessary length. No individual length of lifeline may be less than 50 feet in length. The assembled lifeline shall have a minimum breaking strength of 1,500 pounds.

(e) All equipment shall be maintained in an operative condition, and it shall be the responsibility of the master and chief engineer to ascertain that a sufficient number of the crew are familiar with the operation of the equipment.

(f) Boots and gloves shall be of rubber or other electrically nonconducting material.

(g) The helmet shall provide effective protection against impact.

(h) Protective clothing shall be of material that will protect the skin from the heat of fire and burns from scalding steam. The outer surface shall be water resistant.

[CGFR 65–50, 30 FR 17008, Dec. 30, 1965, as amended by CGFR 69–72, 34 FR 17485, Oct. 29, 1969; CGD 82–042, 53 FR 17705, May 18, 1988; CGD 86–036, 57 FR 48325, Oct. 23, 1992; USCG 1999–5151, 64 FR 67181, Dec. 1, 1999]

§ 96.35–10 Fireman's outfit.

(a) Each fireman's outfit must consist of one self-contained breathing apparatus, one lifeline with a belt or a suitable harness, one flashlight, one flame safety lamp, one rigid helmet, boots and gloves, protective clothing, and one fire ax. In lieu of the flame safety lamp, vessels may carry an oxygen depletion meter which is listed by a Coast Guard recognized independent laboratory as intrinsically safe.

(b) Every vessel shall carry at least two firemen's outfits.

[CGFR 69–72, 34 FR 17485, Oct. 29, 1969, as amended by CGD 86–036, 57 FR 48325, Oct. 23, 1992; CGD 95–028, 62 FR 51207, Sept. 30, 1997]

§ 96.35–15 Stowage.

The fireman's outfits must be stored in widely separated, accessible locations.

[CGD 75–074, 42 FR 5964, Jan. 31, 1977]

§ 96.35–20 Spare charges.

(a) A complete recharge shall be carried for each self-contained breathing apparatus, and a complete set of spare batteries shall be carried for each flashlight. The spares shall be stowed in the same location as the equipment it is to reactivate.

§ 96.35–90 Vessels contracted for before November 23, 1992.

Vessels contracted for before November 23, 1992, must meet the following requirements:

(a) Each vessel must satisfy §§ 96.35–5 through 96.35–20 concerning the number of items and method of stowage of equipment.

(b) Items of equipment previously approved, but not meeting the applicable specifications set forth in § 96.35–5, may continue in service as long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection; but each item in an installation or a replacement must meet all applicable specifications.

(c) After November 23, 1994, each respirator must either satisfy § 96.35–5(b) or be a self-contained compressed-air breathing apparatus previously approved by MSHA and NIOSH under part 160, subpart 160.011, of this chapter.

[CGD 86–036, 57 FR 48326, Oct. 23, 1992]

Subpart 96.40—Pilot Boarding Equipment

§ 96.40–1 Pilot boarding equipment.

(a) This section applies to each vessel that normally embarks or disembarks a pilot from a pilot boat or other vessel.

(b) Each vessel must have suitable pilot boarding equipment available for use on each side of the vessel. If a vessel has only one set of equipment, the equipment must be capable of being easily transferred to and rigged for use on either side of the vessel.

(c) Pilot boarding equipment must be capable of resting firmly against the vessel's side and be secured so that it is clear from overboard discharges.

(d) Each vessel must have lighting positioned to provide adequate illumination for the pilot boarding equipment and each point of access.

(e) Each vessel must have a point of access that has—

(1) A gateway in the rails or bulwark with adequate handholds; or

(2) Two handhold stanchions and a bulwark ladder that is securely attached to the bulwark rail and deck.

(f) The pilot boarding equipment required by paragraph (b) of this section must include at least one pilot ladder approved under subpart 163.003 of this chapter. Each pilot ladder must be of a single length and capable of extending from the point of access to the water's edge during each condition of loading and trim, with an adverse list of 15°.

(g) Whenever the distance from the water's edge to the point of access is more than 30 feet, access from a pilot ladder to the vessel must be by way of an accommodation ladder or equally safe and convenient means.

(h) Pilot hoists, if used, must be approved under subpart 163.002 of this chapter.

[CGD 79–032, 49 FR 25455, June 21, 1984]

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AUTHORITY: 33 U.S.C. 1321(j); 46 U.S.C. 2103, 3306, 6101; 49 U.S.C. 5103, 5106; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p. 351; 49 CFR 1.46.

SOURCE: CGFR 65–50, 30 FR 17011, Dec. 30, 1965, unless otherwise noted.

Subpart 97.01—Application

§ 97.01–1 General.

(a) The provisions of this part shall apply to all vessels except as specifically noted in this part.

§ 97.01–2 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 paragraph (b) of this section, the Coast Guard must publish notice of change in the FEDERAL REGISTER; and the material must be available to the public. All approved material is available for inspection at the Office of the Federal Register, 800 North Capitol Street NW., Suite 700, Washington, DC 20002, and at the U.S. Coast Guard, Lifesaving and Fire Safety Division (G–MSE–4), 2100 Second Street SW., Washington, DC 20593–0001, and is available from the sources indicated in paragraph (b) of this section.

(b) The material approved for incorporation by reference in this part and the sections affected are as follows:

American Society for Testing and Materials (ASTM)

100 Barr Harbor Drive, West Conshohocken, PA 19428–2959

ASTM D 93–97, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester—97.15–55

ASTM Adjunct F 1626, Symbols for Use in Accordance with Regulation II–2/20 of the 1974 SOLAS Convention as amended PCN: 12–616260–01 (1996)—97.36–1

International Maritime Organization (IMO)

Publications Section, 4 Albert Embankment, London, SE1 7SR United Kingdom

Resolution A.654(16), Graphical Symbols for Fire Control Plans—97.36–1

[CGD 95–028, 62 FR 51207, Sept. 30, 1997, as amended by USCG 1998–4442, 63 FR 52191, Sept. 30, 1998; USCG 1999–5151, 64 FR 67181, Dec. 1, 1999]

Subpart 97.05—Notice to Mariners and Aids to Navigation

§ 97.05–1 Duty of officers.

(a) Licensed deck officers are required to acquaint themselves with the latest information published by the Coast Guard and the U.S. Navy regarding aids to navigation. Neglect to do so is evidence of neglect of duty. It is desirable that vessels other than motorboats shall have available in the pilothouse for convenient reference at all times a file of the applicable Notice to Mariners.

(b) Weekly Notices to Mariners (Great Lakes Edition), published by the Commander, 9th Coast Guard District, contain announcements and information on changes in aids to navigation and other marine information affecting the safety of navigation on the Great Lakes. These notices may be obtained free of charge, by making application to Commander, 9th Coast Guard District.

(c) Weekly Notices to Mariners (world-wide coverage) are prepared jointly by the U.S. Naval Oceanographic Office, the U.S. Coast and Geodetic Survey and the U.S. Coast Guard. They include changes in aids to navigation in assembled form for the 1st, 5th, 7th, Greater Antilles Section 8th, 11th, 13th, 14th, and 17th Coast Guard Districts. Foreign marine information is also included in these notices. These notices are available without charge from the U.S. Naval Oceanographic Office, Washington, DC 20390, Branch Oceanographic Offices, U.S. Collector of Customs of the major seaports in the United States and are also on file in the U.S. Consulates where they may be inspected.

[CGFR 66–33, 31 FR 15286, Dec. 6, 1966, as amended by CGFR 68–32, 33 FR 5720, Apr. 12, 1968; CGFR 69–116, 35 FR 6861, Apr. 30, 1970; CGD 95–072, 60 FR 50464, Sept. 29, 1995]

§ 97.05–5 Charts and nautical publications.

As appropriate for the intended voyage, all vessels except barges, vessels operating exclusively on rivers, and motorboats other than those certificated for ocean or coastwise route, must carry adequate and up-to-date—

(a) Charts;
(b) Sailing directions;
(c) Coast pilots;
(d) Light lists;
(e) Notices to mariners;
(f) Tide tables;
(g) Current tables; and
(h) All other nautical publications necessary.[1]

[CGD 75–074, 42 FR 5964, Jan. 31, 1977]

Subpart 97.07—Notice and Reporting of Casualty and Voyage Records

§ 97.07–1 Notice and reporting of casualty and voyage records.

The requirements for providing notice and reporting of marine casualties and for retaining voyage records are contained in subpart 4.05 of this chapter.

[CGD 84–099, 52 FR 47536, Dec. 14, 1987, as amended by USCG 1998–4442, 63 FR 52191, Sept. 30, 1998]

Subpart 97.10—Persons Allowed in Pilothouse and on Navigation Bridge

§ 97.10–1 Application.

(a) The provisions of this subpart shall apply to all vessels carrying passengers.

§ 97.10–5 Persons excluded.

Masters and pilots shall exclude from the pilothouse and navigation bridge while underway, all persons not connected with the navigation of the vessel. However, licensed officers of vessels, persons regularly engaged in training, regulating, evaluating, or learning the profession of pilot, officials of the United States Coast Guard, United States Navy, United States Coast and Geodetic Survey, United States Army Corps of Engineers, Maritime Administration, and National Transportation Safety Board may be allowed in the pilothouse or upon the navigation bridge upon the responsibility of the master or pilot.

[CGD 91–023, 59 FR 16779, Apr. 8, 1994]

[1] For United States vessels in or on the navigable waters of the United States, see 33 CFR 164.33.

Subpart 97.11—Stability Letter

§ 97.11–1 Posting.

If a stability letter is issued under § 170.120 of this chapter, it must be posted under glass or other suitable transparent material in the pilothouse of the vessel.

[CGD 79–023, 48 FR 51008, Nov. 4, 1983]

Subpart 97.12—Cargo Stowage

§ 97.12–1 Bulk ores and similar cargoes.

(a) The owners or operators of general cargo vessels which carry bulk cargoes such as ore, ore concentrates, and similar cargoes shall furnish to the masters of such vessels guidance information pertaining to the safe stowage of such cargoes.

§ 97.12–5 Manual.

The manual on the ''Stowage of Bulk Cargoes Such as Ore, Ore Concentrates, and Similar Cargoes when carried in General Cargo Vessels,'' 1966,[1] printed and distributed by the National Cargo Bureau, Inc., 30 Vesey Street, New York, NY 10007-2914, is endorsed and recognized by the Coast Guard for use in compliance with the requirements of § 97.12–1(a).

[CGFR 65–50, 30 FR 17011, Dec. 30, 1965, as amended by CGFR 66–33, 31 FR 15286, Dec. 6, 1966; CGD 96–041, 61 FR 50729, Sept. 27, 1996]

Subpart 97.13—Station Bills

§ 97.13–1 Muster lists, emergency signals, and manning.

The requirements for muster lists, emergency signals, and manning must be in accordance with subchapter W (Lifesaving Appliances and Arrangements) of this chapter.

[CGD 84–069, 61 FR 25289, May 20, 1996]

[1] Copies of this manual are on file at Coast Guard Headquarters and with the various Coast Guard District Commanders for reference purposes.

Subpart 97.15—Tests, Drills, and Inspections

§ 97.15–1 Application.

(a) Except as specifically noted, the provisions of this subpart shall apply to all vessels other than motorboats, and to all motorboats on an international voyage. Motorboats not on an international voyage shall meet the general intent of this subpart insofar as is reasonable and practicable with the exception that the logging of information is not required.

§ 97.15–3 Steering gear, whistle, and means of communication.

(a) On all vessels making a voyage of more than 48 hours' duration, the entire steering gear, the whistle, and the means of communication between the bridge or pilothouse and the engineroom shall be examined and tested by an officer of the vessel within a period of not more than 12 hours prior to departure. On all other vessels similar examinations and tests shall be made at least once in every week.

(b) The date of the test and the condition of the equipment shall be noted in the official logbook.

§ 97.15–5 Drafts and load line markings.

(a) The master of every vessel on an ocean, coastwise, or Great Lakes voyage shall enter the drafts of the vessel, forward and aft, in the official logbook when leaving port.

(b) On vessels subject to the requirements of subchapter E (Load Lines) of this chapter at the time of departure from port on an ocean, coastwise, or Great Lakes voyage, the master shall insert in the official logbook a statement of the position of the load line mark, port and starboard, in relation to the surface of the water in which the vessel is then floating.

(1) When an allowance for draft is made for density of the water in which the vessel is floating, this density is to be noted in the official logbook.

§ 97.15–7 Verification of vessel compliance with applicable stability requirements.

(a) Except as provided in paragraph (d) of this section, after loading and

prior to departure and at all other times necessary to assure the safety of the vessel, the master or person in charge shall determine that the vessel complies with all applicable stability requirements in the vessel's trim and stability book, stability letter, Certificate of Inspection, and Load Line Certificate, as the case may be. The vessel may not depart until it is in compliance with these requirements.

(b) When determining compliance with applicable stability requirements the vessel's draft, trim, and stability must be determined as necessary.

(c) If a log book is required by §97.35, then the master or person in charge must enter an attestation statement verifying that the vessel complies with the applicable stability requirements at the times specified in paragraph (a) and any stability calculations made in support of the determination must be retained on board the vessel for the duration of the voyage.

(d) Stability verification is not required for tank barges whose Certificate of Inspection carries draft restrictions for purposes other than stability.

[CGD 89–037, 57 FR 41822, Sept. 11, 1992]

§97.15–10 Sanitation.

(a) It shall be the duty of the master and chief engineer to see that the vessel, and, in particular, the quarters are in a clean and sanitary condition. The chief engineer shall be responsible only for the sanitary condition of the engineering department.

§97.15–15 Examination of boilers and machinery.

It shall be the duty of the chief engineer when assuming charge of the boilers and machinery of a vessel to examine them thoroughly. If any parts thereof are in bad condition, the fact shall immediately be reported to the master, owner or agent, and the Officer in Charge, Marine Inspection.

[CGD 95–028, 62 FR 51207, Sept. 30, 1997]

§97.15–17 Loading doors.

(a) The master of a vessel fitted with loading doors shall assure that all loading doors are closed watertight and secured during the entire voyage except that—

(1) If a door cannot be opened or closed while the vessel is at a dock, it may be open while the vessel approaches and draws away from the dock, but only as far as necessary to enable the door to be immediately operated;

(2) If needed to operate the vessel, or embark and disembark passengers when the vessel is at anchor in protected waters, loading doors may be open provided that the master determines that the safety of the vessel is not impaired.

(b) For the purposes of this section, ''loading doors'' include all weathertight ramps, bow visors, and openings used to load personnel, equipment, cargo, and stores, in the collision bulkhead, the side shell, and the boundaries of enclosed superstructures that are continuous with the shell of the vessel.

(c) The master shall enter into the log book the time and door location of every closing of the loading doors.

(d) The master shall enter into the log book any opening of the doors in accordance with paragraph (a)(2) of this section setting forth the time of the opening of the doors and the circumstances warranting this action.

[CGD 89–037, 57 FR 41823, Sept. 11, 1992]

§97.15–20 Hatches and other openings.

(a)(1) With the exception stated in paragraph (a)(2) of this section, it shall be the responsibility of the master to assure himself that all exposed cargo hatches and other openings in the hull of his vessel are closed, made properly watertight by the use of tarpaulins, gaskets or similar devices, and in all respects properly secured for sea before leaving protected waters.

(2) A vessel engaged in a voyage exclusively on Great Lakes waters and having 6 feet or more of freeboard, measured vertically from the water's edge at the lowest point of sheer to the top of deck at the ship's side, may, at the master's discretion, omit tarpaulins on the ship's hatches from 16 May through 15 September (both dates inclusive). This exemption does not relieve the master of any responsibility for the securing and protection of his hatches during the interval of exemption and, in case of indications of bad

weather or other threatening conditions, he shall not leave protected waters until the exposed cargo hatches and other openings in the hull of his vessel are properly covered, secured and protected.

(b) The openings to which this section applies are as follows:

(1) Exposed cargo hatches.

(2) Gangway, cargo and coaling ports fitted below the freeboard deck.

(3) Port lights that are not accessible during navigation including the dead lights for such port lights.

(c) Vessels which, by their design, do not require cargo hatch closing devices and to which §45.01–20 of subchapter E (Load Lines) of this chapter applies need not comply with the requirements of this section as to exposed cargo hatches.

(d) The master at his discretion may permit hatches or other openings to remain uncovered or open, or to be uncovered or opened for reasonable purposes such as ship's maintenance while the vessel is being navigated: *Provided,* That in his opinion existing conditions warrant such action.

(e) In the event the master employs the discretionary provisions of this section after leaving port he shall cause appropriate entries to be made in the official log or equivalent thereof setting forth the time of uncovering, opening, closing or covering of the hatches or other openings to which this section applies and the circumstances warranting the action taken.

(f) The discretionary provisions of this section shall not relieve the master of his responsibility for the safety of his vessel, her crew or cargo.

§ 97.15–30 Emergency lighting and power systems.

(a) Where fitted, it shall be the duty of the master to see that the emergency lighting and power systems are operated and inspected at least once in each week that the vessel is navigated to be assured that the system is in proper operating condition.

(b) Internal combustion engine driven emergency generators shall be operated under load for at least 2 hours, at least once in each month that the vessel is navigated.

(c) Storage batteries for emergency lighting and power systems shall be tested at least once each 6-month period that the vessel is navigated to demonstrate the ability of the storage battery to supply the emergency loads for the period of time specified in Table 112.05–5(a) of this chapter.

(d) The date of the tests and the condition and performance of the apparatus shall be noted in the official log book.

[CGFR 65–50, 30 FR 17014, Dec. 30, 1965, as amended by CGFR 70–143, 35 FR 19906, Dec. 30, 1970; 36 FR 5606, Mar. 25, 1971]

§ 97.15–35 Emergency training, musters, and drills.

Onboard training, musters, and drills must be in accordance with subchapter W (Lifesaving Appliances and Arrangements) of this chapter.

[CGD 84–069, 61 FR 25289, May 20, 1996]

§ 97.15–55 Requirements for fuel oil.

(a) It shall be the duty of the chief engineer to cause an entry in the log to be made of each supply of fuel oil received on board, stating the quantity received, the name of the vendor, the name of the oil producer, and the flashpoint (Pensky-Martens Closed Cup Method, ASTM D 93 (incorporated by reference, see §97.01–2)) for which it is certified by the producer.

(b) It shall be the further duty of the chief engineer to cause to be drawn and sealed and suitably labeled at the time the supply is received on board, a half-pint sample of each lot of fuel oil. These samples shall be preserved until the particular supply of oil is exhausted.

[CGFR 65–50, 30 FR 17011, Dec. 30, 1965, as amended by CGFR 68–82, 33 FR 18901, Dec. 18, 1968; USCG–2000–7790, 65 FR 58461, Sept. 29, 2000]

§ 97.15–60 Firefighting equipment, general.

(a) It shall be the duty of the owner, master, or person in charge to see that the vessel's firefighting equipment is at all times ready for use and that all such equipment required by the regulations in this subchapter is provided, maintained, and replaced as indicated.

(b) It shall be the duty of the owner, master, or person in charge to require and have performed at least once in every twelve months the tests and inspections of all hand portable fire extinguishers, semiportable fire extinguishing systems, and fixed fire extinguishing systems on board, as described in Tables 91.25–20(a)(1) and 91.25–20(a)(2) in §91.25–20 of this subchapter. The owner, master, or person in charge shall keep records of such tests and inspections showing the dates when performed, the number and/or other identification of each unit tested and inspected, and the name(s) of the person(s) and/or company conducting the tests and inspections. Such records shall be made available to the inspector upon request and shall be kept for the period of validity of the vessel's current certificate of inspection. Where practicable these records should be kept in or with the vessel's log book. The conduct of these tests and inspections does not relieve the owner, master, or person in charge of his responsibility to maintain this firefighting equipment in proper condition at all times.

§97.15–75 Test of inflatable hopper gate seals on Great Lakes bulk dry cargo vessels.

(a) It is the duty of the Master to ensure that the inflatable hopper gate seals installed on vessels required to meet the damage stability requirements of subpart H of part 172 of this chapter are tested after each carriage of cargo.

(b) Where inflatable hopper gate seals are installed, the test must consist of inflating the seals and assuring they hold the design pressure for at least 15 minutes without a drop in pressure.

(c) The date of the test and the condition of the equipment must be noted in the vessel's official logbook.

[CGD 80–159, 51 FR 33059, Sept. 18, 1986]

Subpart 97.16—Auto Pilot

§97.16–1 Use of auto pilot.

Except as provided in 33 CFR 164.15, when the automatic pilot is used in—

(a) Areas of high traffic density;

(b) Conditions of restricted visibility; and

(c) All other hazardous navigational situations, the master shall ensure that—

(1) It is possible to immediately establish manual control of the ship's steering;

(2) A competent person is ready at all times to take over steering control;

(3) The changeover from automatic to manual steering and vice versa is made by, or under, the supervision of the officer of the watch.

[CGD 75–074, 42 FR 5964, Jan. 31, 1977]

Subpart 97.19—Maneuvering Characteristics

§97.19–1 Data required.

For each ocean and coastwise vessel of 1,600 gross tons or over, the following apply:

(a) The following maneuvering information must be prominently displayed in the pilothouse on a fact sheet:

(1) For full and half speed, a turning circle diagram to port and starboard that shows the time and the distance of advance and transfer required to alter the course 90 degrees with maximum rudder angle and constant power settings.

(2) The time and distance to stop the vessel from full and half speed while maintaining approximately the initial heading with minimum application of rudder.

(3) For each vessel with a fixed propeller, a table of shaft revolutions per minute for a representative range of speeds.

(4) For each vessel with a controllable pitch propeller a table of control settings or a representative range of speeds.

(5) For each vessel that is fitted with an auxiliary device to assist in maneuvering, such as a bow thruster, a table of vessel speeds at which the auxiliary device is effective in maneuvering the vessel.

(b) The maneuvering information must be provided in the normal load and normal light condition with normal trim for a particular condition of loading assuming the following—

(1) Calm weather—wind 10 knots or less, calm sea;

(2) No current;

(3) Deep water conditions—water depth twice the vessel's draft or greater; and

(4) Clean hull.

(c) At the bottom of the fact sheet, the following statement must appear:

WARNING

The response of the (name of the vessel) may be different from those listed above if any of the following conditions, upon which the maneuvering information is based, are varied:

(1) Calm weather—wind 10 knots or less, calm sea;

(2) No current;

(3) Water depth twice the vessel's draft or greater;

(4) Clean hull; and

(5) Intermediate drafts or unusual trim.

(d) The information on the fact sheet must be:

(1) Verified six months after the vessel is placed in service; or

(2) Modified six months after the vessel is placed into service and verified within three months thereafter.

(e) The information that appears on the fact sheet may be obtained from:

(1) Trial trip observations;

(2) Model tests;

(3) Analytical calculations;

(4) Simulations;

(5) Information established from another vessel of similar hull form, power, rudder and propeller; or

(6) Any combination of the above.

The accuracy of the information in the fact sheet required is that attainable by ordinary shipboard navigation equipment.

(f) The requirements for information for fact sheets for specialized craft such as semi-submersibles, hydrofoils, hovercraft and other vessels of unusual design will be specified on a case by case basis.

[CGD 73–78, 40 FR 2689, Jan. 15, 1975]

Subpart 97.20—Whistling

§ 97.20–1 Unnecessary whistling prohibited.

(a) The unnecessary sounding of the vessel's whistle is prohibited within any harbor limits of the United States.

Subpart 97.25—Searchlights

§ 97.25–1 Improper use prohibited.

(a) No person shall flash or cause to be flashed the rays of a searchlight or other blinding light onto the bridge or into the pilothouse of any vessel under way.

Subpart 97.27—Lookouts

§ 97.27–5 Master's and officer's responsibility.

(a) Nothing in this part shall exonerate any master or officer in command from the consequences of any neglect to keep a proper lookout or to maintain a proper fire watch or from any neglect of any precaution which may be required by the ordinary practice of seamen or by the special circumstances of the case. When circumstances require it, additional watches shall be maintained to guard against fire or other danger and to give an alarm in case of accident or disaster.

Subpart 97.30—Reports of Accidents, Repairs, and Unsafe Equipment

§ 97.30–1 Repairs to boilers and pressure vessels.

(a) Before making any repairs to boilers or unfired pressure vessels, the chief engineer shall submit a report covering the nature of the repairs to the Officer in Charge, Marine Inspection, at or nearest to the port where the repairs are to be made.

§ 97.30–5 Accidents to machinery.

(a) In the event of an accident to a boiler, unfired pressure vessel, or machinery tending to render the further use of the item unsafe until repairs are made, or if by ordinary wear such items become unsafe, a report shall be made, by the chief engineer immediately to the Officer in Charge, Marine Inspection, or if at sea immediately upon arrival at port.

§ 97.30–10 Notice required before repair.

(a) No repairs or alterations, except in an emergency, shall be made to any

lifesaving or fire detecting or extinguishing equipment without advance notice to the Officer in Charge, Marine Inspection. When emergency repairs or alterations have been made, notice shall be given to the Officer in Charge, Marine Inspection, as soon as practicable.

Subpart 97.33—Communication Between Deckhouses

§ 97.33–1 When required.

On all vessels navigating in other than protected waters, where the distance between deckhouses is more than 46 meters (150 feet) a fixed means facilitating communication between both ends of the vessel, such as a raised fore and aft bridge or side tunnels, must be provided. Previously approved arrangements may be retained so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

[CGD 95–027, 61 FR 26007, May 23, 1996]

Subpart 97.34—Work Vests

§ 97.34–1 Application.

(a) Provisions of this subpart shall apply to all vessels inspected and certificated in accordance with this subchapter.

§ 97.34–5 Approved types of work vests.

(a) Each buoyant work vest carried under the permissive authority of this section must be approved under—

(1) Subpart 160.053 of this chapter; or

(2) Subpart 160.077 of this chapter as a commercial hybrid PFD.

[CGD 78–174A, 51 FR 4350, Feb. 4, 1986]

§ 97.34–10 Use.

(a) Approved buoyant work vests are considered to be items of safety apparel and may be carried aboard vessels to be worn by crew members when working near or over the water under favorable working conditions. They shall be used under the supervision and control of designated ship's officers. When carried, such vests shall not be accepted in lieu of any portion of the required number of approved life preservers and shall not be substituted for the approved life preservers required to be worn during drills and emergencies.

§ 97.34–15 Shipboard stowage.

(a) The approved buoyant work vests shall be stowed separately from the regular stowage of approved life preservers.

(b) The locations for the stowage of work vests shall be such as not to be easily confused with that for approved life preservers.

§ 97.34–20 Shipboard inspections.

(a) Each work vest shall be subject to examination by a marine inspector to determine its serviceability. If found to be satisfactory, it may be continued in service, but shall not be stamped by a marine inspector with a Coast Guard stamp. If a work vest is found not to be in a serviceable condition, then such work vest shall be removed from the vessel. If a work vest is beyond repair, it shall be destroyed or mutilated in the presence of a marine inspector so as to prevent its continued use as a work vest.

§ 97.34–25 Additional requirements for hybrid work vests.

(a) In addition to the other requirements in this subpart, commercial hybrid PFD's must be—

(1) Used, stowed, and maintained in accordance with the procedures set out in the manual required for these devices by § 160.077–29 of this chapter and any limitation(s) marked on them; and

(2) Of the same or similar design and have the same method of operation as each other hybrid PFD carried on board.

[CGD 78–174A, 51 FR 4350, Feb. 4, 1986]

Subpart 97.35—Logbook Entries

§ 97.35–1 Application.

(a) Except as specifically noted, the provisions of this subpart shall apply to all vessels other than motorboats and barges. Motorboats on an international or intercoastal voyage may be required to carry a logbook in accordance with § 97.35–10.

§ 97.35–3 Logbooks and records.

(a) The master or person in charge of a vessel that is required by 46 U.S.C. 11301 to have an official logbook shall maintain the logbook on form CG–706. When the voyage is completed, the master or person in charge shall file the logbook with the Officer in Charge, Marine Inspection.

(b) The master or person in charge of a vessel that is not required by 46 U.S.C. 11301 to have an official logbook, shall maintain, on board, an unofficial logbook or record in any form desired for the purposes of making entries therein as required by law or regulations in this subchapter. Such logs or records are not filed with the Officer in Charge, Marine Inspection, but must be kept available for review by a marine inspector for a period of 1 year after the date to which the records refer. Separate records of tests and inspections of fire fighting equipment must be maintained with the vessel's logs for the period of validity of the vessel's certificate of inspection.

[CGD 95–027, 61 FR 26007, May 23, 1996]

§ 97.35–5 Actions required to be logged.

The actions and observations noted in this section shall be entered in the official log book. This section contains no requirements which are not made in other portions of this subchapter, the items being merely grouped together for convenience.

(a) Onboard training, musters, and drills: held in accordance with subchapter W (Lifesaving appliances and Arrangements) of this chapter.

(b) Steering Gear, Whistle, and Means of Communication. Prior to departure. See § 97.15–3.

(c) Drafts and Load Line Markings. Prior to leaving port, ocean, coastwise, and Great Lakes services only. See § 97.15–5.

(d) Verification of vessel compliance with applicable stability requirements. After loading and prior to departure and at all other times necessary to assure the safety of the vessel. See § 97.15–7.

(e) Loading doors. Where applicable, every closing and any opening when not docked. See § 97.15–17.

(f) Hatches and other openings. All openings and closings, or leaving port without closing. Except vessels on protected waters. See § 97.15–20.

(g) Emergency Lighting and Power Systems. Weekly and semi-annually. See § 97.15–30.

(h) Fuel oil data: Upon receipt of fuel oil on board. See § 97.15–55.

(i) Cargo gear inspections: At least once a month. See § 91.37–70 of this subchapter.

(j) Inflatable hopper gate seals. Where installed to comply with subpart G of part 172 of this chapter after each carriage of cargo. See § 97.15–75.

[CGFR 65–50, 30 FR 17011, Dec. 30, 1965, as amended by CGD 80–159, 51 FR 33059, Sept. 18, 1986; CGD 89–037, 57 FR 41823, Sept. 11, 1992; CGD 84–069, 61 FR 25289, May 20, 1996]

Subpart 97.36—Display of Plans

§ 97.36–1 When required.

Barges with sleeping accommodations for more than six persons and all self-propelled vessels shall have permanently exhibited for the guidance of the officer in charge of the vessel the following plans:

(a) General arrangement plans showing for each deck the fire control stations, the various sections enclosed by fire-resisting bulkheads, together with particulars of the fire alarms, detecting systems, the sprinkler installation (if any), the fire extinguishing appliances, means of access to different compartments, decks, etc., and the ventilating systems including particulars of the master fan controls, the positions of dampers, the location of the remote means of stopping fans, and identification numbers of the ventilating fans serving each section. If cargo compartments are ''specially suitable for vehicles,'' they shall be so indicated on the plan. Alternatively, at the discretion of the Commandant, the aforementioned details may be set out in any other medium, such as a booklet or on computer software, provided that the aforementioned details are available to each officer and a copy is retained on board at all times and is accessible during emergencies. For vessels constructed on or after September 30, 1997 or for existing vessels which have their plans redrawn, the symbols

used to identify the aforementioned details shall be in accordance with IMO Assembly resolution A.654(16). These identical symbols can also be found in ASTM Adjunct F 1626 (incorporated by reference, see § 97.01–2).

(b) Plans showing clearly for each deck and hold the boundaries of the watertight compartments, the openings therein with the means of closure and position of any controls thereof, and the arrangements for the correction of any list due to flooding.

(c) The aforementioned information shall be kept up-to-date, any alteration being recorded in the applicable medium as soon as practicable.

[CGD 95–028, 62 FR 51207, Sept. 30, 1997, as amended by USCG–2000–7790, 65 FR 58461, Sept. 29, 2000]

Subpart 97.37—Markings for Fire and Emergency Equipment, Etc.

§ 97.37–1 Application.

(a) The provisions of this subpart, with the exception of § 97.37–90, shall apply to all vessels contracted for on or after November 19, 1952. Vessels contracted for prior to November 19, 1952, shall meet the requirements of § 97.37–90.

§ 97.37–3 General.

(a) It is the intent of this subpart to provide such markings as are necessary for the guidance of the person on board in case of an emergency. In any specific case, and particularly on small vessels, where it can be shown to the satisfaction of the Officer in Charge, Marine Inspection, that the prescribed markings are unnecessary for the guidance of the persons on board in case of emergency, such markings may be modified or omitted.

(b) In addition to English, all stateroom notices, directional signs, etc., shall be printed in languages appropriate to the service of the vessel or other action be taken to achieve the same purpose.

(c) Where in this subpart red letters are specified, letters of a contrasting color on a red background will be accepted.

§ 97.37–5 General alarm bell contact maker.

Each general alarm contact maker must be marked in accordance with requirements in subchapter J (Electrical Engineering Regulations) of this chapter.

[CGD 74–125A, 47 FR 15232, Apr. 8, 1982]

§ 97.37–7 General alarm bells.

(a) All general alarm bells shall be identified by red lettering at least ½ inch high:

''GENERAL ALARM—WHEN BELL RINGS GO TO YOUR STATION.''

(b) [Reserved]

§ 97.37–9 Carbon dioxide alarm.

(a) All carbon dioxide alarms shall be conspicuously identified:

''WHEN ALARM SOUNDS—VACATE AT ONCE. CARBON DIOXIDE BEING RELEASED.''

(b) [Reserved]

§ 97.37–10 Fire extinguishing system branch lines.

(a) The branch line valves of all fire extinguishing systems shall be plainly and permanently marked indicating the spaces served.

(b) [Reserved]

§ 97.37–13 Fire extinguishing system controls.

(a) The control cabinets or spaces containing valves or manifolds for the various fire extinguishing systems shall be distinctly marked in conspicuous red letters at least 2 inches high:

''STEAM FIRE APPARATUS,'' ''CARBON DIOXIDE FIRE APPARATUS,'' ''FOAM FIRE APPARATUS,'' or ''WATER SPRAY FIRE APPARATUS'' as the case may be.

(b) [Reserved]

§ 97.37–15 Fire hose stations.

(a) Each fire hydrant shall be identified in red letters and figures at least two inches high ''FIRE STATION NO. 1,'' ''2,'' ''3,'' etc. Where the hose is not stowed in the open or behind glass so as to be readily seen, this identification shall be so placed as to be readily seen from a distance.

(b) [Reserved]

§ 97.37–20 Self-contained breathing apparatus.

(a) Lockers or spaces containing self-contained breathing apparatus shall be marked ''SELF-CONTAINED BREATHING APPARATUS.''

(b) [Reserved]

§ 97.37–23 Hand portable fire extinguishers.

(a) Each hand portable fire extinguisher shall be marked with a number and the location where stowed shall be marked with a corresponding number at least ½ inch high. Where only one type and size of hand portable fire extinguisher is carried, the numbering may be omitted.

(b) [Reserved]

§ 97.37–25 Emergency lights.

(a) All emergency lights shall be marked with a letter ''E'' at least ½ inch high.

(b) [Reserved]

§ 97.37–33 Instructions for changing steering gear.

(a) Instructions in at least ½ inch letters and figures shall be posted in the steering engine room, relating in order, the different steps to be taken in changing to the emergency steering gear. Each clutch, gear, wheel, lever, valve, or switch which is used during the changeover shall be numbered or lettered on a metal plate or painted so that the markings can be recognized at a reasonable distance. The instructions shall indicate each clutch or pin to be ''in'' or ''out'' and each valve or switch which is to be ''opened'' or ''closed'' in shifting to any means of steering for which the vessel is equipped. Instructions shall be included to line up all steering wheels and rudder amidship before changing gears.

(b) [Reserved]

§ 97.37–35 Rudder orders.

(a) At all steering stations, there shall be installed a suitable notice on the wheel or device or in such other position as to be directly in the helmsman's line of vision, to indicate the direction in which the wheel or device must be turned for ''right rudder'' and for ''left rudder.''

(b) [Reserved]

§ 97.37–42 Markings for lifesaving appliances, instructions to passengers, and stowage locations.

Lifesaving appliances, instructions to passengers, and stowage locations must be marked in accordance with subchapter W (Lifesaving Appliances and Arrangements) of this chapter.

[CGD 84–069, 61 FR 25289, May 20, 1996]

§ 97.37–47 Portable magazine chests.

(a) Portable magazine chests shall be marked in letters at least 3 inches high:

''PORTABLE MAGAZINE CHEST — FLAMMABLE — KEEP LIGHTS AND FIRE AWAY.''

(b) [Reserved]

§ 97.37–50 Ventilation alarm failure.

(a) The alarm required by §92.15–10(d)(4) of this subchapter, which indicates the loss of required ventilation in spaces specially suitable for vehicles, shall be marked with a conspicuous sign in at least ¼-inch letters ''VENTILATION FAILURE IN VEHICULAR SPACE.''

(b) [Reserved]

[CGFR 66–33, 31 FR 15286, Dec. 6, 1966]

§ 97.37–60 Watertight doors.

Quick-acting Class I watertight doors fitted in accordance with the requirements in §170.255(d) of this chapter must be marked ''KEEP THIS DOOR CLOSED''.

[CGD 80–129, 51 FR 33059, Sept. 18, 1986]

§ 97.37–90 Vessels contracted for prior to November 19, 1952.

(a) Vessels contracted for prior to November 19, 1952, shall meet the requirements of this paragraph.

(1) The requirements of §§97.37–5 through 97.37–50 shall be met with the exception that existing signs and markings containing the same general intent, but not necessarily identical wording or exact letter type, size, or color, may be retained so long as they

are in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

(2) [Reserved]

(b) [Reserved]

[CGFR 65–50, 30 FR 17011, Dec. 30, 1965, as amended by CGFR 66–33, 31 FR 15286, Dec. 6, 1966]

Subpart 97.40—Markings on Vessels

§ 97.40–1 Application.

(a) The provisions of this subpart shall apply to all vessels except as specifically noted.

§ 97.40–5 Hull markings.

Vessels shall be marked as required by parts 67 and 69 of this chapter.

[CGD 72–104R, 37 FR 14233, July 18, 1972]

§ 97.40–10 Draft marks and draft indicating systems.

(a) All vessels must have draft marks plainly and legibly visible upon the stem and upon the sternpost or rudderpost or at any place at the stern of the vessel as may be necessary for easy observation. The bottom of each mark must indicate the draft.

(b) The draft must be taken from the bottom of the keel to the surface of the water at the location of the marks.

(c) In cases where the keel does not extend forward or aft to the location of the draft marks, due to raked stem or cut away skeg, the datum line from which the draft shall be taken shall be obtained by projecting the line of the bottom of keel forward or aft, as the case may be, to the location of the draft marks.

(d) In cases where a vessel may have a skeg or other appendage extending locally below the line of the keel, the draft at the end of the vessel adjacent to such appendage shall be measured to a line tangent to the lowest part of such appendage and parallel to the line of the bottom of the keel.

(e) Draft marks must be separated so that the projections of the marks onto a vertical plane are of uniform height equal to the vertical spacing between consecutive marks.

(f) Draft marks must be painted in contrasting color to the hull.

(g) In cases where draft marks are obscured due to operational constraints or by protrusions, the vessel must be fitted with a reliable draft indicating system from which the bow and stern drafts can be determined.

[CGFR 65–50, 30 FR 17011, Dec. 1965, as amended by CGD 89–037, 57 FR 41823, Sept. 11, 1992]

§ 97.40–15 Load line marks.

(a) Vessels assigned a load line shall have the deck line and the load line marks permanently scribed or embossed as required by subchapter E (Load Lines) of this chapter.

Subpart 97.45—Carrying of Excess Steam

§ 97.45–1 Master and chief engineer responsible.

It shall be the duty of the master and the chief engineer of any vessel to require that a steam pressure is not carried in excess of that allowed by the certificate of inspection, and to require that the safety valves, once set by the inspector, are in no way tampered with or made inoperable.

[CGD 95–028, 62 FR 51207, Sept. 30, 1997]

Subpart 97.47—Routing Instructions

§ 97.47–1 All persons must comply.

All licensed masters, officers, and certificated seamen on U.S. vessels must strictly comply with routing instructions issued by competent naval authority.

[CGD 95–027, 61 FR 26008, May 23, 1996]

Subpart 97.50—Compliance With Provisions of Certificate of Inspection

§ 97.50–1 Master or person in charge responsible.

(a) It shall be the duty of the master or other person in charge of the vessel to see that all of the provisions of the certificate of inspection are strictly adhered to. Nothing in this subpart shall be construed as limiting the master or other person in charge of the vessel, at his own responsibility, from

diverting from the route prescribed in the certificate of inspection or taking such other steps as he deems necessary and prudent to assist vessels in distress or for other similar emergencies.

(b) [Reserved]

Subpart 97.53—Exhibition of License

§ 97.53–1 Licensed officers.

All licensed officers on a vessel shall have their licenses conspicuously displayed.

[CGD 95–028, 62 FR 51207, Sept. 30, 1997]

Subpart 97.55—De-Energizing of Cargo Hold Lighting Circuits When Grain or Other Combustible Bulk Cargo Is Carried

§ 97.55–1 Master's responsibility.

(a) Before loading bulk grain, or similar combustible bulk cargo, the master shall have the lighting circuits to cargo compartments in which the bulk cargo is to be loaded de-energized at the distribution panel or panel board. He shall thereafter have periodic inspections made of the panel or panel board as frequently as necessary to ascertain that the affected circuits remain de-energized while this bulk cargo remains within the vessel.

§ 97.55–5 Warning notice posted.

(a) As a precaution against any subsequent unintentional re-energizing of the circuits specified above, an appropriate notice shall be posted at the location where the control is effected warning against re-energizing these circuits. Such notice shall remain posted while this bulk cargo remains within the vessel.

Subpart 97.80—Operation of Vehicles in Enclosed Locations

§ 97.80–1 Special operating conditions.

(a) The operation of self-propelled vehicles in enclosed locations shall be permitted only when the other conditions in this section have been met.

(b) Spaces exposed to carbon monoxide or other hazardous vapors from exhausts of power-operated industrial trucks shall have adequate ventilation. The senior deck officer shall see that tests of the carbon monoxide content of the atmosphere are made as frequently as conditions require to insure that dangerous concentrations do not develop. Such tests shall be made in the area in which persons are working, by persons acquainted with the test equipment and procedure. The carbon monoxide concentration in the holds and intermediate decks where persons are working shall be maintained at not more than 50 parts per million (0.005%) as a time-weighted average, and persons shall be removed from the area if the concentration exceeds 75 parts per million (0.0075%). When necessary, portable blowers of adequate size and location shall be utilized.

[CGFR 66–33, 31 FR 15286, Dec. 6, 1966, as amended by CGFR 69–72, 34 FR 17485, Oct. 29, 1969; CGD 95–027, 61 FR 26008, May 23, 1996]

Subpart 97.90—Pilot Boarding Operations

§ 97.90–1 Pilot boarding operation.

(a) The master shall ensure that pilot boarding equipment is maintained as follows:

(1) The equipment must be kept clean and in good working order.

(2) Each damaged step or spreader step on a pilot ladder must be replaced in kind with an approved replacement step or spreader step, prior to further use of the ladder. The replacement step or spreader step must be secured by the method used in the original construction of the ladder, and in accordance with manufacturer instructions.

(b) The master shall ensure compliance with the following during pilot boarding operations:

(1) Only approved pilot boarding equipment may be used.

(2) The pilot boarding equipment must rest firmly against the hull of the vessel and be clear of overboard discharges.

(3) Two man ropes, a safety line and an approved lifebuoy with an approved water light must be at the point of access and be immediately available for use during boarding operations.

(4) Rigging of the equipment and embarkation/debarkation of a pilot must

be supervised in person by a deck officer.

(5) Both the equipment over the side and the point of access must be adequately lit during night operations.

(6) If a pilot hoist is used, a pilot ladder must be kept on deck adjacent to the hoist and available for immediate use.

[CGD 79–032, 49 FR 25455, June 21, 1984]

Subpart 97.95—Person in Charge of Transfer of Liquid Cargo in Bulk

SOURCE: CGD 79–116, 60 FR 17157, Apr. 4, 1995

§ 97.95–1 General.

A qualified person in charge of a transfer of liquid cargo in bulk shall be designated in accordance with subpart C of 33 CFR part 155.

[CGD 79–116, 60 FR 17157, Apr. 4, 1995]

PART 98—SPECIAL CONSTRUCTION, ARRANGEMENT, AND OTHER PROVISIONS FOR CERTAIN DANGEROUS CARGOES IN BULK

Subpart 98.01—General

Sec.
98.01–1 Applicability.
98.01–3 Incorporation by reference.

Subpart 98.25—Anhydrous Ammonia in Bulk

98.25–1 Applicability.
98.25–5 How anhydrous ammonia may be carried.
98.25–10 Design and construction of cargo tanks.
98.25–15 Markings.
98.25–20 Installation of cargo tanks.
98.25–30 Lagging.
98.25–35 Refrigerated systems.
98.25–40 Valves, fittings, and accessories.
98.25–45 Liquid level gaging device.
98.25–50 Filling and discharge pipes.
98.25–55 Cargo piping.
98.25–60 Safety relief valves.
98.25–65 Filling density.
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98.25–85 Electrical bonding.
98.25–90 Special operating requirements.
98.25–95 Tests and inspections.
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Subpart 98.30—Portable Tanks

98.30–1 Applicability.
98.30–2 Definitions.
98.30–3 Vessels carrying MPTs.
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98.30–5 Materials authorized for transfer to and from a portable tank.
98.30–6 Lifting a portable tank.
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98.30–8 Gaskets and lining.
98.30–9 Stowage of portable tanks.
98.30–10 Pipe connections, and filling and discharge openings.
98.30–11 Cargo pumps.
98.30–13 Ground connection.
98.30–14 Requirements for ships carrying NLSs in portable tanks.
98.30–15 Leakage containment.
98.30–17 Qualifications of person in charge.
98.30–19 Supervision by person in charge.
98.30–21 Inspection prior to transfer.
98.30–23 Requirements for transfer; general.
98.30–25 Requirements for transfer; cargo handling system.
98.30–27 Connections.
98.30–29 Piping incompatible products.
98.30–31 Conditions for pumping.
98.30–33 Warning signals.
98.30–35 Warning sign at gangway.
98.30–37 Firefighting requirements.
98.30–39 Alternate fire extinguishing system.

Subpart 98.31—Control of Pollution From NLS Cargoes on Oceangoing Offshore Supply Vessels

98.31–5 Applicability.
98.31–10 Certificate of inspection and NLS certificate endorsements.
98.31–15 Operating requirements.

Subpart 98.33—Portable Tanks for Certain Grade E Combustible Liquids and Other Regulated Materials

98.33–1 Applicability.
98.33–3 Cargoes authorized.
98.33–5 Portable tanks authorized.
98.33–7 Pipe and hose connections.
98.33–9 Stowage.
98.33–11 Smoking.
98.33–13 Cargo-handling systems.
98.33–15 Transfers.

AUTHORITY: 33 U.S.C. 1903; 46 U.S.C. 3306, 3307, 3703; 49 U.S.C. App. 1804; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGFR 65–50, 30 FR 17022, Dec. 30, 1965, unless otherwise noted.

Subpart 98.01—General

§ 98.01–1 Applicability.

(a) The provisions of this part shall apply to all self-propelled cargo vessels which carry in bulk any of the dangerous cargoes specifically noted in this part.

(b) [Reserved]

(c) The regulations for barges carrying any of the bulk chemical cargoes listed in subparts 98.01 through 98.25 are found in subchapter O of this chapter.

(d) [Reserved]

(e) Manned barges carrying any of the cargoes listed in Table 151.05 of this chapter will be considered individually by the Commandant and may be required to meet the applicable requirements of subchapter O of this chapter, as well as the requirements of this subchapter.

[CGFR 65–50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 70–10, 35 FR 3711, Feb. 25, 1970; CGD 84–043, 55 FR 37411, Sept. 11, 1990; 59 FR 17011, Apr. 11, 1994]

§ 98.01–3 Incorporation by reference.

(a) Certain standards and specifications are 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 the ones listed in paragraph (b) of this section, notice of change must be published in the FEDERAL REGISTER and the material made available to the public. All approved material is at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC, and is available from the sources indicated in paragraph (b) of this section.

(b) The standards and specifications approved for incorporation by reference in this part and the sections affected, are:

American Society for Nondestructive Testing (ASNT)

4153 Arlingate Road, Caller # 28518, Columbus, OH, 43228–0518

ASNT ''Recommended Practice No. SNT–TC–1A (1988), Personnel Qualification and Certification in Nondestructive Testing'' .....98.25–97(c)(2)

American Society of Mechanical Engineers (ASME) International

Three Park Avenue, New York, N.Y. 10016—5990

ASME Boiler and Pressure Vessel Code, section V, Nondestructive Examination (1986).....98.25–97(a)(1)

[CGD 85–061, 54 FR 50965, Dec. 11, 1989 as amended by USCG–1999–6216, 64 FR 53226, Oct. 1, 1999]

Subpart 98.25—Anhydrous Ammonia in Bulk

§ 98.25–1 Applicability.

(a) The regulations in this subpart apply to each self-propelled vessel that has anhydrous ammonia on board as a cargo, cargo residue, or vapor and that is not regulated under part 154 of this chapter.

(b) Any self-propelled vessel to which this subpart applies shall be inspected and certificated under this subchapter and subchapter D of this chapter.

[CGD 74–289, 44 FR 26008, May 3, 1979]

§ 98.25–5 How anhydrous ammonia may be carried.

(a) Anhydrous ammonia shall be carried in unfired pressure vessel type tanks independent of the structure as detailed in this part, except as otherwise provided in paragraph (b) of this section.

(b) When anhydrous ammonia is to be transported at its boiling temperature at or near atmospheric pressure, the Commandant may permit the use of alternate methods of storage if it is shown to his satisfaction that a degree of safety is obtained consistent with the minimum requirements of this subpart.

§ 98.25–10 Design and construction of cargo tanks.

(a) The cargo tanks shall meet the requirements for Class I, I-L, II, or II-L welded pressure vessels and shall be fabricated, inspected, and tested in accordance with the applicable requirements of part 54 of subchapter F (Marine Engineering) of this chapter.

(b) Unlagged cargo tanks subject to atmospheric temperatures shall be designed for a pressure of not less than 250 pounds per square inch gage.

(c) Where unrefrigerated cargo tanks are lagged as required by §§ 98.25–30 and 98.25–60, the tanks shall be designed for a pressure of not less than 215 pounds per square inch gage.

(d) Refrigerated cargo tanks, in which the temperature of the liquid ammonia is maintained below the normal atmospheric temperatures, shall be designed for a pressure of not less than the vapor pressure corresponding to the temperature of the liquid at which the system is to be maintained, plus 25 pounds per square inch gage.

(e) Each tank shall be provided with not less than a 15″ x 18″ diameter manhole, fitted with a cover located above the maximum liquid level and as close as possible to the top of the tank. Where access trunks are fitted to tanks, the diameter of the trunks shall be not less than 30 inches.

[CGFR 65–50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 68–82, 33 FR 18902, Dec. 18, 1968]

§ 98.25–15 Markings.

(a) Cargo tanks shall be marked in accordance with the requirements of § 54.10–20 of subchapter F (Marine Engineering) of this chapter.

(b) In addition to the markings required to be stamped on the tank, the legend, ''Anhydrous Ammonia'' shall be conspicuously and legibly marked upon the dome or upper portion of the tank in letters at least 4 inches high.

(c) All tank inlet and outlet connections, except safety relief valves, liquid level gaging devices and pressure gages shall be labeled to designate whether they terminate in the vapor or liquid space. Labels of noncorrosive material may be attached to valves.

(d) All tank markings shall be permanently and legibly stamped in a readily visible position. If the tanks are lagged, the markings attached to the tank proper shall be duplicated on a corrosion resistant plate secured to the outside jacket of the lagging.

[CGFR 65–50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 68–82, 33 FR 18902, Dec. 18, 1968]

§ 98.25–20 Installation of cargo tanks.

(a) Independent tanks shall be arranged in the vessel so as to provide a minimum clearance of not less than 24 inches from the vessel's side and not less than 15 inches from the vessel's bottom. Where more than one tank is installed in a vessel, the distance between such tanks shall be not less than 15 inches, unless otherwise approved by the Commandant. Alternate provisions may be made for moving such tanks to provide for adequate inspection and maintenance of the vessel's structure and the tanks.

(b) The design shall show the manner in which the tanks are to be installed, supported, and secured in the vessel and shall be approved prior to installation. Tanks shall be supported in steel saddles and securely anchored in place. If the tanks are required to be stress-relieved no appendages shall be welded to the tanks after they have been stress-relieved unless authorized by the Commandant.

(c) Tanks may be located in dry cargo holds or in liquid cargo tanks or may be installed ''on deck'' or ''under deck'' with the tank protruding above deck. On installations where a portion of the tank extends above the weather deck, provision shall be made to maintain the weathertightness of the deck, except that vessels operating on protected inland waters may have tanks located in the holds of hopper type barges without the watertightness of the deck being maintained. All tanks shall be installed with the manhole opening and fittings located above the weather deck.

(d) The anhydrous ammonia tanks may be installed in the bulk liquid cargo tanks provided the liquid surrounding the enclosed anhydrous ammonia tanks complies with the following chemical and physical properties:

(1) Boiling point above 125° F. at atmospheric pressure.

(2) Inert to ammonia at 100° F. at atmospheric pressure.

(3) Noncorrosive in the liquid and vapor phase to the ammonia tanks and piping.

[CGFR 65–50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 70–10, 35 FR 3711, Feb. 25, 1970]

§ 98.25–30 Lagging.

(a) Lagged tanks shall be covered with an incombustible insulation material of a thickness to provide a thermal conductance of not more than 0.075 B.t.u. per square foot per degree F. differential in temperature per hour. The insulating material shall be of an approved type complying with the requirements of subpart 164.009 of subchapter Q (Specifications) of this chapter, and shall be given a vapor proof coating with fire retardant material acceptable to the Commandant. Tanks exposed to the weather shall have the insulation and vapor proof coating covered with a removable sheet metal jacket of not less than 0.083 inch thickness and flashed around all openings so as to be weather tight. Materials other than sheet metal may be used to cover the insulation and vapor proof coating when specifically authorized by the Commandant.

(b) Where unlagged tanks are installed in insulated holds or insulated 'tween deck spaces, such tanks shall be considered lagged provided the thermal conductance of the insulation is not less than that required by paragraph (a) of this section.

§ 98.25–35 Refrigerated systems.

(a) Where refrigerated systems are installed to maintain the temperature of the liquid below atmospheric, at least two complete refrigeration plants automatically regulated by pressure variations within the tanks shall be provided, each to be complete with the necessary auxiliaries for proper operation. The capacity of each refrigeration compressor shall be sufficient to maintain the vapor pressure in the tanks during the peak atmospheric temperature conditions below the pressure for which the tanks are designed.

(b) An alternate arrangement may consist of three compressors, any two of which shall be capable of maintaining the vapor pressure in the tanks during peak atmospheric temperature conditions below the pressure for which the tanks are designed, the third compressor acting as a stand-by unit.

(c) Refrigerated tanks shall be insulated in conformance with the requirements of § 98.25–30.

§ 98.25–40 Valves, fittings, and accessories.

(a) All valves, flanges, fittings and accessory equipment shall be of a type suitable for use with anhydrous ammonia and shall be made of steel, or malleable or nodular iron meeting the requirements of § 56.60–1 of subchapter F (Marine Engineering) of this chapter. Valves shall be fitted with noncorrosive material suitable for ammonia service. Valves, flanges, and pipe fittings shall be of the square or round tongue and groove type or raised-face, United States of America Standard 300-pound standard minimum, fitted with suitable soft gasket material. Welded fittings shall be used wherever possible and the number of pipe joints shall be held to a minimum. Screwed joints are not permitted for pipe diameters exceeding 2 inches. Nonferrous materials, such as copper, copper alloys and aluminum alloys, shall not be used in the construction of valves, fittings or accessory equipment. Brazed joints are prohibited.

(b) Each tank shall be provided with the necessary fill and discharge liquid and vapor shut-off valves, safety relief valves, liquid level gaging devices, thermometer well and pressure gage, and shall be provided with suitable access for convenient operation. Connections to tanks installed below the weather deck shall be made to a trunk or dome extending above the weather deck. Connections to the tanks shall be protected against mechanical damage and tampering. Other openings in the tanks, except as specifically permitted by this part, are prohibited.

(c) All connections to the tanks, except safety devices and liquid level gaging devices, shall have manually operated shut-off valves located as close to the tank as possible.

(d) Excess flow valves where required by this section shall close automatically at the rated flow of vapor or liquid as specified by the manufacturer. The piping, including valves, fittings and appurtenances, protected by an excess flow valve, shall have a greater capacity than the rated flow of the excess flow valve.

(e) Liquid level gaging devices which are so constructed that outward flow of tank contents shall not exceed that

passed by a No. 54 drill size opening, need not be equipped with excess flow valves.

(f) Pressure gage connections need not be equipped with excess flow valves if the openings are not larger than No. 54 drill size.

(g) Excess flow valves may be designed with a bypass, not to exceed a No. 60 drill size opening, to allow equalization of pressure.

(h) Prior to disconnecting shore lines, the pressure in the liquid and vapor lines shall be relieved through suitable valves installed at the loading header.

(i) Relief valves shall be fitted in liquid lines which may be subject to excessive pressure caused by liquid full condition, and the escape from the relief valves shall be piped to the venting system.

(j) The pressure gage shall be located at the highest practical point. The thermometer well shall terminate in the liquid space and be attached to the shell by welding with the end of the fitting being provided with a gas-tight screwed plug or bolted cover.

[CGFR 65–50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 68–82, 33 FR 18902, Dec. 18, 1968; CGFR 70–10, 35 FR 3712, Feb. 25, 1970]

§ 98.25–45 Liquid level gaging device.

(a) Each tank shall be fitted with a liquid level gaging device of suitable design to indicate the maximum level to which the tank may be filled with liquid at temperatures between 20° F. and 130° F.

(b) Liquid level gaging devices shall be of the following types: magnetic, rotary tube, slip tube, fixed tube, automatic float, or other types acceptable to the Commandant.

(c) Gaging devices that require bleeding of the product to the atmosphere, such as rotary tube, fixed tube, and slip tube, shall be so designed that the bleed valve maximum opening is not larger than a No. 54 drill size, unless provided with an excess flow valve.

(d) Gaging devices shall have a design pressure of at least 250 pounds per square inch.

(e) Gage glasses of the columnar type are prohibited.

§ 98.25–50 Filling and discharge pipes.

(a) Filling connections shall be provided with one of the following:

(1) Combination back pressure check valve and excess flow valve;

(2) One double or two single back pressure check valves; or

(3) A positive shut-off valve in conjunction with either an internal back pressure check valve or an internal excess flow valve.

(b) All other liquid and vapor connections to tanks, except filling connections, safety relief valves, and liquid level gaging devices and pressure gages described in § 98.25–40(e) and (f) shall be equipped with automatic excess flow valves; or in lieu thereof, may be fitted with quick closing internal stop valves, which, except during filling and discharge operations, shall remain closed. The control mechanism for such valves shall be provided with a secondary remote control of a type acceptable to the Commandant.

(c) The excess flow, internal stop or back pressure check valves shall be located on the inside of the tank or outside where the piping enters the tank. In the latter case, installation shall be made in such a manner that any undue strain will not cause breakage between the tank and the excess flow or internal stop valve.

(d) Where the filling and discharge are made through a common nozzle at the tank, and the connection is fitted with a quick-closing internal stop valve as permitted in paragraph (b) of this section, the back pressure check valve or excess flow valve is not required, provided, however, a positive shut-off valve is installed in conjunction with the internal stop valve.

[CGFR 65–50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 70–10, 35 FR 3712, Feb. 25, 1970]

§ 98.25–55 Cargo piping.

(a) Piping shall be of seamless steel meeting the requirements of § 56.60–1 of subchapter F (Marine Engineering) of this chapter. The piping shall be of not less than Schedule 40 thickness. In case of piping on the discharge side of the liquid pumps or vapor compressors, the design shall be for a pressure of not less than the pump or compressor relief

valve setting; or if the piping is not fitted with relief valves, the design pressure shall not be less than the total discharge head of the pump or compressor.

(b) Where necessary, provision shall be made for expansion and contraction of piping by means of seamless steel pipe expansion bends. Special consideration will be given for packless type expansion joints. Slip type expansion joints are prohibited. Piping shall be provided with adequate support to take the weight of the piping off the valves and fittings.

[CGFR 65–50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 68–82, 33 FR 18902, Dec. 18, 1968]

§ 98.25–60 Safety relief valves.

(a) Each tank shall be fitted with two or more approved safety relief valves, designed, constructed, and flow-tested for capacity in conformance with subpart 162.018 of subchapter Q (Specifications) of this chapter.

(b) Each safety relief valve shall start to discharge at a pressure not in excess of the design pressure of the tank.

(c) Safety relief valves shall be attached to the tank near the highest point of the vapor space. Shutoff valves shall not be installed between the tanks and the safety relief valves, except manifolds for mounting multiple safety relief valves may be fitted with acceptable interlocking three-way valves so arranged at all times as to permit at any position of the three-way valve, an unrestricted flow of vapors through at least one port. When two safety relief valves are mounted in parallel on both the upper outlets of the three-way valve, the arrangement shall be such as to permit at least one safety relief valve to be operative at all times.

(d) Each safety valve shall be tested in the presence of a marine inspector at the site of installation before or after mounting prior to being placed in service. The tests shall prove that the safety relief valve will start to discharge at a pressure not in excess of the maximum allowable pressure of the tank.

[CGFR 68–82, 33 FR 18902, Dec. 18, 1968]

§ 98.25–65 Filling density.

(a) The filling density, or the percent ratio of the liquefied gas that may be loaded in the tank to the weight of the water the tank will hold at 60° F., shall not exceed 56 percent for unlagged tanks and 58 percent for lagged or refrigerated tanks.

§ 98.25–70 Venting.

(a) Except as provided in paragraph (b) of this section, each safety valve installed on a cargo tank shall be connected to a branch vent of a venting system which shall be constructed so that the discharge of gas will be directed vertically upward to a point at least 10 feet above the weather deck or the top of any tank or house located above the weather deck.

(b) The capacity of branch vents or vent headers shall depend upon the number of cargo tanks connected to such branch or header as provided in Table 98.25–70(b).

TABLE 98.25–70(b)—CAPACITY OF BRANCH VENTS OR VENT HEADERS

Number of cargo tanks	Percent of total valve discharge
1 or 2	100
3	90
4	80
5	70
6 or more	60

(c) In addition to the requirement specified in paragraph (b) of this section, the size of the branch vents or vent headers shall be such that the back pressure in relief valve discharge lines shall not be more than 10 percent of the safety relief valve setting.

(d) Return bends and restrictive pipe fittings are prohibited. Vents and headers shall be so installed as to prevent stresses on safety relief valve mountings.

(e) When vent discharge risers are installed, they shall be so located as to provide protection against physical damage and be fitted with loose raincaps.

(f) No shut-off valve shall be fitted in the venting system between the safety

relief valve and the vent outlets. Suitable provision shall be made for draining the venting system if liquid can collect therein.

[CGFR 65–50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 70–10, 35 FR 3712, Feb. 25, 1970; 35 FR 6431, Apr. 22, 1970]

§ 98.25–75 Ventilation.

(a) All enclosed spaces containing cargo tanks fitted with bottom outlet connections shall be provided with mechanical ventilation of sufficient capacity to assure a change of air every 3 minutes. Where cargo tanks are fitted with top outlet connections, the enclosed spaces containing such tanks shall be fitted with efficient natural or mechanical ventilation.

(b) Enclosed compartments in which machinery such as cargo pumps or vapor compressors are located shall be adequately ventilated.

§ 98.25–80 Cargo hose.

(a) Cargo hose fabricated of seamless steel pipe with swivel joints, wire braided armored rubber or other hose material acceptable to the Commandant, shall be fitted to the liquid or vapor lines during filling and discharging of the cargo tanks.

(b) Hose subject to tank pressure shall be designed for a bursting pressure of not less than five times the maximum safety relief valve setting of the tank.

(c) Hose subject to discharge pressure of pumps or vapor compressors shall be designed for a bursting pressure of not less than five times the pressure of setting of the pump or compressor relief valve.

(d) Before being placed in service, each new cargo hose, with all necessary fittings attached, shall be hydrostatically tested by the manufacturer to a pressure of not less than twice the maximum pressure to which it may be subjected in service. The hose shall be marked with the maximum pressure guaranteed by the manufacturer.

§ 98.25–85 Electrical bonding.

(a) Each cargo tank shall be electrically grounded to the hull. The cargo vessel shall be electrically connected to the shore piping prior to connecting the cargo hose. This electrical connection shall be maintained until after the cargo hose has been disconnected and any spillage has been removed.

[CGFR 65–50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 70–10, 35 FR 3712, Feb. 25, 1970]

§ 98.25–90 Special operating requirements.

(a) Repairs involving welding or burning shall not be undertaken on the cargo tanks or piping while anhydrous ammonia in either the liquid or vapor state is present in the system.

(b) During the time anhydrous ammonia is laden in the tanks the vessel shall be under constant surveillance.

(c) Authorization from the Commandant (G–MSO) shall be obtained to transport lading other than anhydrous ammonia in the cargo tanks.

(d) Sufficient hose stations shall be installed with adequate water supply so that if leakage of anhydrous ammonia occurs the vapors may be removed by use of a stream of water.

(e)(1) At least two units of approved self-contained breathing apparatus, one stowed forward of the cargo tanks and one stowed aft of the cargo tanks, shall be carried on board the vessel at all times.

(2) All approved self-contained breathing apparatus, masks and respiratory protective devices shall be of types suitable for starting and operating at the temperatures encountered, and shall be maintained in good operating condition.

(3) Personnel involved in the filling or discharge operations shall be adequately trained in the use of the equipment.

(4) For all self-propelled cargo vessels, during filling or discharge operations every person on the vessel shall carry on his person or have close at hand at all times a canister mask approved for ammonia; or each person shall carry on his person a respiratory protective device which will protect the wearer against ammonia vapors and provide respiratory protection for emergency escape from a contaminated area which would result from cargo leakage. This respiratory protective equipment shall be of such size and

weight that the person wearing it will not be restricted in movement or in the wearing of lifesaving device.

(f) While fast to a dock, a vessel during transfer of bulk cargo shall display a red flag by day or a red light by night, which signal shall be so placed that it will be visible on all sides. When at anchor, a vessel during transfer of bulk cargo shall display a red flag by day, which signal shall be so placed that it will be visible on all sides.

[CGFR 70–10, 35 FR 3712, Feb. 25, 1970, as amended by CGD 82–063b, 48 FR 4781, Feb. 3, 1983; CGD 95–072, 60 FR 50464, Sept. 29, 1995; CGD 96–041, 61 FR 50730, Sept. 27, 1996]

§ 98.25–95 Tests and inspections.

(a) Each tank shall be subjected to the tests and inspections described in this section in the presence of a marine inspector, except as otherwise provided in this part.

(1) An internal inspection of the tank is conducted within—

(i) Ten years after the last internal inspection if the tank is a pressure-vessel type cargo tank on an unmanned barge described under § 151.01–25(c) of this chapter and carrying cargo at temperatures of −67 °F (−55 °C) or warmer; or

(ii) Eight years after the last internal inspection if the tank is of a type other than that described in paragraph (a)(1)(i) of this section.

(2) An external examination of unlagged tanks and the visible parts of lagged tanks is made at each inspection for certification and periodic inspection. The owner shall ensure that the amount of insulation deemed necessary by the marine inspector is removed from insulated tanks during each internal inspection to allow spot external examination of the tanks and insulation, or the thickness of the tanks may be gauged by a nondestructive means accepted by the marine inspector without the removal of insulation.

(3) If required by the Officer in Charge, Marine Inspection the owner shall conduct nondestructive testing of each tank in accordance with § 98.25–97.

(4) If the tank is a pressure vessel type cargo tank with an internal inspection interval of 10 years, and is 30 years old or older, determined from the date it was built, the owner shall conduct nondestructive testing of each tank in accordance with § 98.25–97, during each internal inspection.

(b) A hydrostatic test of 1½ times the maximum allowable pressure as determined by the safety relief valve setting shall be made at any time that the inspector considers such hydrostatic test necessary to determine the condition of the tank. If the jacket and lagging are not removed during the hydrostatic tests prescribed in this paragraph, the tank shall hold the hydrostatic test pressure for at least 20 minutes without a pressure drop.

(c) The safety relief valves shall be popped in the presence of a marine inspector by either liquid, gas or vapor pressure at least once every four years to determine the accuracy of adjustment and, if necessary, shall be reset.

[CGFR 65–50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 67–86, 32 FR 17622, Dec. 9, 1967; CGD 85–061, 54 FR 50965, Dec. 11, 1989; USCG 1999–4976, 65 FR 6503, Feb. 9, 2000]

§ 98.25–97 Nondestructive testing.

(a) Before nondestructive testing may be conducted to meet § 98.25–95(a)(3) and (4), the owner shall submit a proposal to the Officer in Charge, Marine Inspection for approval that includes—

(1) The test methods and procedures to be used, all of which must meet section V of the ASME Boiler and Pressure Vessel Code (1986);

(2) Each location on the tank to be tested; and

(3) The test method and procedure to be conducted at each location on the tank.

(b) If the Officer in Charge, Marine Inspection rejects the proposal, the Officer in Charge, Marine Inspection informs the owner of the reasons why the proposal is rejected.

(c) If the Officer in Charge, Marine Inspection accepts the proposal, then the owner shall ensure that—

(1) The proposal is followed; and

(2) Nondestructive testing is performed by personnel meeting ASNT ''Recommended Practice No. SNT–TC–1A (1988), Personnel Qualifications and Certification in Nondestructive Testing.''

(d) Within 30 days after completing the nondestructive test, the owner shall submit a written report of the results to the Officer in Charge, Marine Inspection.

[CGD 85–061, 54 FR 50965, Dec. 11, 1989]

Subpart 98.30—Portable Tanks

SOURCE: CGD 73–172, 39 FR 22954, June 25, 1974, unless otherwise noted.

§ 98.30–1 Applicability.

(a) This subpart contains regulations concerning transfer of combustible liquids, certain flammable liquids, and other hazardous materials to or from portable tanks on vessels.

(b) This subpart applies to the following portable tanks:

(1) A marine portable tank (MPT);

(2) An IM 101 or IM 102 portable tank; and

(3) A portable tank authorized for liquid hazardous materials, other than liquefied gases, by the Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration (AAHMS), under an exemption issued in accordance with subpart B of 49 CFR part 107.

[CGD 84–043, 55 FR 37411, Sept. 11, 1990, as amended by CGD 97–057, 62 FR 51046, Sept. 30, 1997]

§ 98.30–2 Definitions.

(a) *IM 101 portable tank* and *IM 102 portable tank* mean a portable tank constructed in accordance with 49 CFR 178.270 through 178.272 and approved under 49 CFR 173.32a.

(b) *MPT* means a marine portable tank that was inspected and stamped by the Coast Guard on or before September 30, 1992, and that meets the applicable requirements in this part and part 64 of this chapter.

[CGD 84–043, 55 FR 37411, Sept. 11, 1990]

§ 98.30–3 Vessels carrying MPTs.

Each MPT on a vessel to which this part applies must bear, on a metal or other corrosion-resistant tag—

(a) An inspection date for pressure relief devices and vacuum relief devices in accordance with paragraph (b) of §64.79 of this chapter that is not more than 12 months earlier than the month in which the vessel is operated;

(b) An inspection date in accordance with paragraph (b) of §64.81 of this chapter that is not more than 30 months earlier than the month during which the vessel is operated; and

(c) A hydrostatic test date in accordance with paragraph (b) of §64.83 of this chapter that is not more than 60 months earlier than the month during which the vessel is operated.

[CGD 84–043, 55 FR 37411, Sept. 11, 1990]

§ 98.30–4 Vessels carrying portable tanks other than MPTs.

(a) Each portable tank, other than an MPT, on board a vessel to which this part applies must be one of the following:

(1) An IM 101 or IM 102 tank authorized for its contents in accordance with Columns 7 and 8C of the Hazardous Materials Table of 49 CFR 172.101.

(2) A portable tank authorized by the AAHMS under an exemption issued in accordance with subpart B of 49 CFR part 107, and

(i) According to the terms of the exemption, equivalent to an IM 101 or IM 102 portable tank; and

(ii) Authorized for its contents under the terms of the exemption or by written acknowledgment from the AAHMS.

(b) Each IM 101 or IM 102 portable tank must be tested and inspected in accordance with 49 CFR 173.32b, and used only as specified in 49 CFR 173.32c.

(c) Each portable tank authorized under an exemption from the AAHMS must be inspected and tested, maintained, and used in accordance with the terms of that exemption.

[CGD 84–043, 55 FR 37411, Sept. 11, 1990; 56 FR 13598, Apr. 3, 1991, as amended by CGD 95–072, 60 FR 50464, Sept. 29, 1995; CGD 96–041, 61 FR 50730, Sept. 27, 1996; CGD 97–057, 62 FR 51046, Sept. 30, 1997]

§ 98.30–5 Materials authorized for transfer to and from a portable tank.

(a) The following hazardous materials may be transferred to and from a portable tank under this subpart:

(1) Any Grade D or Grade E combustible liquid listed in §30.25–1 of this chapter that does not meet the definition of any hazard class in 49 CFR part

173 other than that of ''flammable liquid'', ''combustible liquid'', or ''ORM–E'';

(2) Any corrosive liquid that—

(i) Is compatible with the materials of the tank;

(ii) Meets the definition of no other hazard class in 49 CFR part 173; and

(iii) Is authorized for transport in an IM 101 or IM 102 portable tank under subpart F of 49 CFR part 173;

(3) Any hazardous material listed in Table 98.30–5(a);

(4) Any environmentally hazardous substance, liquid, N.O.S., Class 9, listed in table 1 of appendix A of 49 CFR 172.101, and any aqueous solution of an environmentally hazardous substance, solid, N.O.S., Class 9, listed in that table, that meets the definition of ''hazardous substance'' in 49 CFR 171.8; and

(5) Other cargoes subject to regulation under 49 CFR parts 171 through 176 when authorized in writing by the Commandant. Requests for such authorization must be submitted as prescribed in §153.900(d)(1) of this chapter.

TABLE 98.30–5(a) CERTAIN HAZARDOUS MATERIALS AUTHORIZED FOR TRANSFER TO AND FROM PORTABLE TANKS

Acetone
Alcohols; flash point of 80 °F (27 °C) or less by open-cup test
Benzene
Gasoline
Mixtures of Hydrochloric acid and hydrofluoric acid containing not more than 36 percent hydrochloric acid or 2 percent hydrofluoric acid [1]
Methyl Ethyl Ketone
Toluene (Toluol)

NOTE:
[1] Each MPT must be lined with rubber or with material equally acid-resistant and equally strong and durable.

(b) Grade D and Grade E combustible liquids with a flash point of 100°F (38°C) or higher by closed cup test that are not listed by name in the Table of 49 CFR 172.101 may be transferred to and from an MPT or an IM 102 portable tank conforming to the entry for note ''T1'' of 49 CFR 172.102(c)(7)(i).

(c) Sulfuric acid having a concentration of not over 51 percent may be transferred to or from an MPT only if the MPT is lined with rubber or with material equally acid-resistant and equally strong and durable.

(d) Sulfuric acid having a concentration of 65.25 percent or greater may be transferred to or from any portable tank; *provided* that the corrosion rate on steel, measured at 100 °F (38 °C), of sulfuric acid having a concentration of greater than 65.25 percent is not greater than the corrosion rate of such an acid having a concentration of 65.25 percent.

(e) Environmentally hazardous substances (see paragraph (a)(4) of this section) may be transferred only to or from an IM 101 or IM 102 portable tank or an MPT.

(f) A hazardous material that may be transferred to and from an IM 102 portable tank may also be transferred to and from an IM 101 portable tank.

(g) No hazardous material not referred to in this section may be transferred to or from a portable tank on board a vessel.

[CGD 84–043, 55 FR 37411, Sept. 11, 1990; 55 FR 40755, Oct. 4, 1990, as amended by CGD 97–057, 62 FR 51046, Sept. 30, 1997]

§ 98.30–6 Lifting a portable tank.

No person may lift a portable tank with another portable tank.

[CGD 73–172, 39 FR 22954, June 25, 1974. Redesignated by CGD 84–043, 55 FR 37411, Sept. 11, 1990]

§ 98.30–7 Smoking.

No person may smoke within 50 feet of a portable tank on the deck on which the tank is stowed.

§ 98.30–8 Gaskets and lining.

No person may transfer a hazardous material to or from a portable tank on board a vessel unless each gasket and the lining of the portable tank are made of a material that is—

(a) Chemically compatible with the product for which the portable tank is approved; and

(b) Resistant to deterioration by the product for which the portable tank is approved.

[CGD 84–043, 55 FR 37412, Sept. 11, 1990]

§ 98.30–9 Stowage of portable tanks.

(a) No person may operate a vessel to which this subpart applies unless each portable tank is stowed on an open deck.

(b) No person may stow a portable tank—

(1) In the vicinity of another tank that contains a chemically incompatible product; and

(2) Unless all electrical equipment is explosion-proof or intrinsically safe, as defined in §§ 111.105–9 and 111.105–11 of this chapter, in the area of the tank and its associated equipment that is—

(i) Within 10 feet in any horizontal direction; and

(ii) Within 8 feet above the deck.

[CGD 73–172, 39 FR 22954, June 25, 1974, as amended by CGD 84–043, 55 FR 37412, Sept. 11, 1990; 55 FR 47477, Nov. 14, 1990]

§ 98.30–10 Pipe connections, and filling and discharge openings.

No person may transfer a hazardous material to or from a portable tank on board a vessel, unless each filling and discharge opening in the tank bottom is equipped with the following:

(a) For an IM 101 or IM 102 portable tank, the closures specified in 49 CFR 173.32c(g)(2); and

(b) For an MPT, the valves and closures specified in §§ 64.33 through 64.41 of this chapter.

[CGD 84–043, 55 FR 37412, Sept. 11, 1990]

§ 98.30–11 Cargo pumps.

No person may operate a cargo pump to transfer a product to or from a portable tank unless the pump is installed—

(a) Above deck; or

(b) Below deck, in conformance with subpart 32.60 of this chapter.

§ 98.30–13 Ground connection.

No person may transfer an inflammable or combustible product to or from a vessel unless—

(a) The portable tank and its pumping equipment is electrically grounded to the hull of the vessel; and

(b) The vessel is electrically grounded to an offshore platform, shore piping, or another vessel by a—

(1) Cargo hose constructed with an integral grounding wire if the end connections are used for electrical continuity; or

(2) Separate grounding that is maintained until the cargo hose is disconnected and drained.

§ 98.30–14 Requirements for ships carrying NLSs in portable tanks.

(a) The person in charge of a ship, except a ship under subpart 98.31 of this chapter, that carries an NLS in a portable tank shall ensure that—

(1) The ship's Certificate of Inspection is endorsed with the name of the NLS;

(2) Any letters issued by the Commandant (G–MSO) prescribing additional conditions for endorsement are attached; and

(3) Each operating requirement specified in writing by Commandant (G–MSO) as a condition for endorsement is met.

(b) To have a ship's Certificate of Inspection endorsed to allow the carriage of NLSs in portable tanks, the—

(1) Owner of the ship must make a request to the Commandant (G–MSO) following the procedures for requesting alternatives in § 153.10(a) of this chapter; and

(2) The ship must meet any design and equipment requirements specified in writing as a condition for the endorsement by the Commandant (G–MSO).

[CGD 81–101, 53 FR 28974, Aug. 1, 1988. Redesignated at CGD 84–043, 55 FR 37411, Sept. 11, 1990, and amended by CGD 84–043, 55 FR 37412, Sept. 11, 1990; CGD 95–072, 60 FR 50464, Sept. 29, 1995; CGD 96–041, 61 FR 50730, Sept. 27, 1996]

§ 98.30–15 Leakage containment.

(a) No person may transfer a product to or from a vessel unless there is a container or enclosed deck area that meets the requirements of this section under or around each transfer connection area.

(b) Each container or enclosed deck area must hold, in all conditions of vessel list or trim to be encountered during the transferring operation, 5 gallons or more and must have a means of draining or removing any leakage without mixing incompatible products or discharging into the water.

§ 98.30–17 Qualifications of person in charge.

(a) The operator or agent of each vessel shall designate the person in charge of a transfer of liquid cargo in bulk to or from a portable tank.

(b) Each person designated as person in charge of a transfer of liquid cargo in bulk to or from a portable tank shall—

(1) On a tank barge, hold a ''Tankerman-PIC'', restricted ''Tankerman-PIC'', ''Tankerman-PIC (Barge)'', or restricted ''Tankerman-PIC (Barge)'' merchant mariner's document authorizing transfer of the classification of cargo involved;

(2) On a self-propelled tank vessel, or on a tankship, carrying oil or hazardous material in bulk, hold a valid license or certificate authorizing service as a master, mate, pilot, engineer, or operator aboard that vessel, and a Tankerman-PIC or a restricted Tankerman (PIC) endorsement on his or her MMD.

[CGD 79–116, 60 FR 17157, Apr. 4, 1995, as amended at 62 FR 25135, May 8, 1997]

§ 98.30–19 Supervision by person in charge.

(a) No person may connect, top off, disconnect, or engage in any other critical product transfer operation unless the person in charge designated in § 98.30–17, personally supervises the operation.

(b) No person may start the flow of a product to or from a portable tank unless instructed to do so by the person in charge.

(c) No person may transfer a product to or from a portable tank unless the person in charge is in the immediate vicinity of the transfer operation and immediately available to the person transferring the product.

§ 98.30–21 Inspection prior to transfer.

No person may transfer to or from a portable tank a product with a flashpoint of less than 300° F unless the person in charge of the transfer determines that—

(a) Each warning signal and sign required in §§ 98.30–33 and 98.30–35 is displayed;

(b) No repair work in the vicinity of any portable tank is done without permission of the person in charge of the transfer operation; and

(c) Riveting, welding, burning, or a similar operation is not done in the vicinity of a portable tank unless an inspection by the person in charge of the transfer ensures that the operation can be done safely.

§ 98.30–23 Requirements for transfer; general.

No person may transfer a product to or from a portable tank unless—

(a) The vessel's moorings are strong enough to hold in all expected conditions of surge, current, and weather and are long enough to allow adjustment for changes in draft, drift, and tide during the transfer operation;

(b) Transfer hoses or loading arms are long enough to allow the vessel to move the limits of its mooring without placing strain on the hose, loading arm, or transfer piping system;

(c) Each transfer hose is supported in a manner that prevents strain on its coupling;

(d) Each part of the transfer system necessary to allow the flow of the product is lined up for the transfer;

(e) Each transfer hose has no loose covers, kinks, bulges, soft spots, and no gouges, cuts, or slashes that penetrate the hose reinforcement;

(f) Each coupling meets the requirements of § 98.30–27;

(g) Each scupper or drain in a discharge containment system is closed;

(h) The person in charge of the transfer operations on the transferring vessel or facility and the person in charge of the transfer operations on the receiving vessel or facility have held a conference, to ensure that each person in charge understands—

(1) The identity of the product to be transferred;

(2) The sequence of transfer operations;

(3) The transfer rate;

(4) The name or title and location of each person participating in the transfer operation;

(5) Particulars of the transferring and receiving systems;

(6) Critical stages of the transfer operations;

(7) Federal, state, and local rules that apply to the transfer of dangerous articles and combustible liquids;

(8) Emergency procedures;

(9) Discharge containment procedures;

(10) Discharge reporting procedures;

(11) Watch or shift arrangement; and

(12) Transfer shutdown procedures;

(i) The person in charge of the transfer operations on the transferring vessel or facility and the person in charge of transfer operations on the receiving vessel or facility agree to begin the transfer operations; and

(j) Each person in charge required in this subpart is present.

§ 98.30–25 Requirements for transfer; cargo handling system.

No person may transfer a product to or from a portable tank unless the cargo handling system meets the requirements in subpart F of part 64 of this chapter.

§ 98.30–27 Connections.

(a) Each person who makes a connection for a transfer operation shall—

(1) Use suitable material in joints and couplings to make a tight seal;

(2) Use a bolt in at least every other hole and in no case less than four bolts in each temporary connection utilizing an American National Standards Institute (ANSI) standard flange coupling;

(3) Use a bolt in each hole of couplings other than ANSI standard flange couplings;

(4) Use a bolt in each hole of each permanently connected flange coupling;

(5) Use bolts of the same size in each bolted coupling; and

(6) Tighten each bolt and nut uniformly to distribute the load.

(b) No person who makes a connection for a transfer operation may use any bolt that shows signs of strain or is elongated or deteriorated.

(c) No person may use a connection for transfer operations unless it is—

(1) A bolted or full threaded connection; or

(2) A quick-connect coupling accepted by the Coast Guard.

§ 98.30–29 Piping incompatible products.

No person may pipe a portable tank with another tank that contains a chemically incompatible product.

§ 98.30–31 Conditions for pumping.

No person may start pumping a product to or from a portable tank or if started, continue to pump if—

(a) There is an electrical storm;

(b) A fire occurs—

(1) On the deck;

(2) On the vessel;

(3) In the vicinity; or

(c) The cargo hose ruptures or leaks.

§ 98.30–33 Warning signals.

(a) If the vessel is moored, no person may transfer to or from a portable tank a product with a flashpoint of less than 300° F unless the person in charge displays a—

(1) Red flag by day; and

(2) Red electric lantern by night.

(b) If the vessel is at anchor, no person may transfer to or from a portable tank a product with a flashpoint of less than 300° F unless the person in charge displays a red flag.

(c) The signal required in paragraphs (a) and (b) of this section must be visible on all sides of the vessel.

§ 98.30–35 Warning sign at gangway.

If a vessel is moored, no person may transfer to or from a portable tank a product with a flashpoint of less than 300° F unless the person in charge displays at each gangway or access that is open for use a warning placard containing the following in letters 2 inches in height or larger:

WARNING

No open lights

No smoking

§ 98.30–37 Firefighting requirements.

No person may lift a portable tank on or off a vessel, or transfer a product with a flashpoint of less than 300° F to or from a portable tank unless—

(a) Water pressure is maintained on the firemain;

(b) Firehoses, fitted with a Coast Guard approved combination nozzle, are attached to each fire hydrant in the vicinity of the portable tanks;

(c) Except as provided in §98.30–39, fire extinguishers of a dry chemical type are—

(1) Located to protect the deck area 10 feet in any horizontal direction from each portable tank and its associated cargo handling system;

(2) Coast Guard approved; and

(3) Capable of covering the deck area without being moved;

(d) In a deck area of 500 square feet or less, there are 2 or more dry chemical fire extinguishers of 300 pounds or more total capacity of extinguishing agent; and

(e) In a deck area of more than 500 square feet, there are 3 or more dry chemical fire extinguishers of 450 pounds or more total capacity of extinguishing agent.

§ 98.30–39 Alternate fire extinguishing system.

An alternative to the fire extinguishing system required in § 98.30–37(c) may be approved in accordance with procedures contained in subpart 90.15 of this chapter.

Subpart 98.31—Control of Pollution From NLS Cargoes on Oceangoing Offshore Supply Vessels

SOURCE: CGD 82–004 and CGD 86–074, 62 FR 49321, Sept. 19, 1997, unless otherwise noted.

§ 98.31–5 Applicability.

This subpart applies to each offshore supply vessel contracted for, or the keel of which was laid, before March 15, 1996, that is oceangoing as defined in 33 CFR 151.05(j) and that carries noxious liquid substances (NLSs) as defined in § 153.2 of this chapter in bulk, including carriage in portable tanks.

§ 98.31–10 Certificate of inspection and NLS certificate endorsements.

(a) The Coast Guard issues the endorsed Certificate of Inspection or NLS Certificate required by § 98.31–15 for every vessel under this subpart to carry NLSs if the vessel—

(1) Has the Cargo Record Book prescribed in § 153.490(a)(1) of this chapter; and

(2) Unless it discharges no NLS residues as defined in § 153.2 of this chapter to the sea, meets the requirements in §§ 153.470 through 153.491 of this chapter.

(b) Each vessel under this subpart that does not meet the requirements in §§ 153.470 through 153.491 of this chapter must have a statement on its Certificate of Inspection or NLS Certificate stating that the vessel is prohibited from discharging NLS residues to the sea.

§ 98.31–15 Operating requirements.

No person may operate a vessel that carries a bulk liquid cargo of NLS unless the vessel—

(a) Has on board a Certificate of Inspection and, if it is a vessel making a foreign voyage, an NLS Certificate endorsed under § 98.31–10 with the name of the NLS cargo;

(b) Discharges no NLS residues to the sea unless the vessel meets—

(1) The equipment requirements in § 98.31–10(a)(2); and

(2) The operating requirements prescribed for oceangoing ships carrying NLSs in §§ 153.901, 153.903, 153.909, and 153.1100 through 153.1132 of this chapter.

Subpart 98.33—Portable Tanks for Certain Grade E Combustible Liquids and Other Regulated Materials

SOURCE: CGD 84–043, 55 FR 37412, Sept. 11, 1990, unless otherwise noted.

§ 98.33–1 Applicability.

(a) This subpart contains regulations concerning transfer of certain low-hazard materials to and from portable tanks on vessels

(b) This subpart applies to the following portable tanks:

(1) A DOT-specification 57 portable tank (see 49 CFR 173.24, 173.32, 178.251, and 178.253);

NOTE TO PARAGRAPH (b)(1): Copies of Specifications 178.251 and 178.253 may be obtained from the Commandant (G-MSO–3).

(2) A portable tank authorized under 49 CFR 176.340(b); and

(3) A portable tank approved by the Commandant under subpart 50.20 of this chapter.

[CGD 84–043, 55 FR 37412, Sept. 11, 1990; 56 FR 13598, Apr. 3, 1991, as amended by CGD 97–057, 62 FR 51046, Sept. 30, 1997]

§ 98.33–3 Cargoes authorized.

The following cargoes are authorized for transfer to and from portable tanks authorized by § 98.33–5:

(a) Grade E combustible liquids that have a closed-cup flashpoint of 300 °F or higher and that meet the definition

of no DOT hazard class in 49 CFR part 173;

(b) Any environmentally hazardous substance, liquid N.O.S., Class 9, listed in table 1 of appendix A of 49 CFR 172.101, and any aqueous solution of an environmentally hazardous substance, solid, N.O.S., Class 9, listed in that table, that meets the definition of ''Hazardous substance'' in 49 CFR 171.8.

(c) Other cargoes subject to regulation under 49 CFR parts 171 through 176 when authorized in writing by the Commandant. Requests for such authorization must be submitted as prescribed in §153.900(d)(1) of this chapter.

[CGD 84–043, 55 FR 37412, Sept. 11, 1990, as amended by CGD 97–057, 62 FR 51046, Sept. 30, 1997]

§98.33–5 Portable tanks authorized.

The cargoes authorized under §98.33–3 may be transferred to and from portable tanks to which this subpart applies if the portable tanks have:

(a) A minimum design pressure of 9 psig.

(b) Pressure-relief devices that may be frangible pressure-relief devices (rupture disks), and that do not open at less than 3 psig.

[CGD 84–043, 55 FR 37412, Sept. 11, 1990; 55 FR 47477, Nov. 14, 1990]

§98.33–7 Pipe and hose connections.

If a portable tank authorized under §98.33–5 of this part has a pipe or hose connection in its bottom, the connection must have a manually operated valve and a bolted flange, threaded cap, or similar device, to protect against leakage of the tank's contents.

§98.33–9 Stowage.

Each portable tank authorized under §98.33–5 of this part must be secured to the vessel by devices of sufficient strength and number to prevent the tank from moving in any direction during transport.

§98.33–11 Smoking.

No person may smoke when—

(a) Within 50 feet of a portable tank containing a combustible liquid; and

(b) On the deck where the tank is stowed.

§98.33–13 Cargo-handling systems.

A cargo authorized under §98.33–3 of this part may not be transferred to or from a portable tank authorized under §98.33–5 of this part unless the cargo-handling system meets the requirements of subpart F of part 64 of this chapter.

§98.33–15 Transfers.

A cargo authorized under §98.33–3 of this part may not be transferred to or from a portable tank authorized under §98.33–5 of this part unless the following requirements are met:

(a) *Cargo pumps* comply with §98.30–11 of this part;

(b) *Ground connection* complies with §98.30–13 of this part;

(c) *Leakage containment* complies with §98.30–15 of this part;

(d) *Qualification of person in charge* complies with §98.30–17 of this part;

(e) *Supervision of person in charge* complies with §98.30–19 of this part;

(f) *Transfers, general,* comply with §98.30–23 of this part;

(g) *Connections* comply with §98.30–27 of this part;

(h) Pumping of incompatible products complies with §98.30–29 of this part;

(i) Conditions for pumping comply with §98.30–31 of this part; and

(j) *Carriage of NLSs* complies with §98.30–14 of this part.

[CGD 84–043, 55 FR 37412, Sept. 11, 1990; 55 FR 47477, Nov. 14, 1990]

PART 105—COMMERCIAL FISHING VESSELS DISPENSING PETROLEUM PRODUCTS

Subpart 105.01—Administration

Sec.

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Subpart 105.90—Existing Commercial Fishing Vessels Dispensing Petroleum Products

105.90–1 Existing commercial fishing vessels dispensing petroleum products.

AUTHORITY: 33 U.S.C. 1321(j); 46 U.S.C. 3306, 3703, 4502; 49 U.S.C. App. 1804; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp., p. 793; 49 CFR 1.46.

SOURCE: CGFR 69–53, 34 FR 11265, July 4, 1969, unless otherwise noted.

Subpart 105.01—Administration

§ 105.01–1 Purpose.

The purpose of the regulations in this part is to provide adequate safety in the transporting and handling of inflammable or combustible cargo in bulk on board certain commercial fishing vessels and tenders.

[CGD 95–028, 62 FR 51208, Sept. 30, 1997]

§ 105.01–3 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 paragraph (b) of this section, the Coast Guard must publish notice of change in the FEDERAL REGISTER; and the material must be available to the public. All approved material is available for inspection at the Office of the Federal Register, 800 North Capitol Street NW., suite 700, Washington, DC, and at the U.S. Coast Guard Office of Design and Engineering Standards (G–MSE), 2100 Second Street SW., Washington, DC 20593–0001, and is available from the sources indicated in paragraph (b) of this section.

(b) The material approved for incorporation by reference in this part, and the sections affected are as follows:

American Society for Testing and Materials (ASTM)

100 Barr Harbor Drive, West Conshohocken, PA 19428–2959.

ASTM D 323–94, Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)—105.10–15

[USCG 1999–5151, 64 FR 67182, Dec. 1, 1999]

§ 105.01–5 Intent of Pub. L. 90–397 (approved July 11, 1968, 82 Stat. 341) and Pub. L. 93–430 (approved October 1, 1974, 88 Stat. 1180).

(a) Pub. L. 90–397 allowed cannery tenders, fishing tenders, and fishing vessels of not more than 500 gross tons used in the salmon or crab fisheries of the States of Oregon, Washington, and Alaska when engaged exclusively in the fishing industry, to have on board inflammable or combustible cargo in bulk to the extent and upon conditions as might be required by regulations promulgated by the Secretary of the department in which the Coast Guard is operating.

(b) Pub. L. 93–430 allowed vessels of not more than 5000 gross tons used in the processing and assembling of fishery products in the fisheries of the States of Oregon, Washington, and Alaska to have on board inflammable or combustible cargo in bulk to the extent and upon conditions as might be required by regulations promulgated by the Secretary of the department in which the Coast Guard is operating.

[CGD 75–105, 41 FR 17910, Apr. 29, 1976]

§ 105.01–10 Effective date of regulations.

(a) Amendments, revisions, or additions to the regulations in this part will become effective 90 days after the date of publication in the FEDERAL REGISTER, unless the Commandant directs otherwise.

(b) The regulations in this subchapter are not retroactive in effect unless specifically made so at the time the regulations are issued. Changes in specification requirements of articles of equipment or materials used in construction shall not apply to such items which have been passed as satisfactory until replacement shall become necessary, unless a specific finding is made that such equipment or material used is unsafe or hazardous and has to be removed from vessels.

[CGFR 69–53, 34 FR 11265, July 4, 1969, as amended by CGD 75–105, 41 FR 17910, Apr. 29, 1976]

Subpart 105.05—Application

§ 105.05–1 Commercial fishing vessels dispensing petroleum products.

(a) The provisions of this part, with the exception of Subpart 105.90, shall apply to all commercial fishing vessels of not more than 500 gross tons used in the salmon or crab fisheries of Oregon, Washington, and Alaska, the construction of which is contracted for on or after December 1, 1969, and all vessels of not more than 5000 gross tons used in the processing and assembling of fishery products in the fisheries of the States of Oregon, Washington, and Alaska, the construction of which is contracted for on or after May 31, 1976 which have or propose to have permanently or temporarily installed tanks or containers for dispensing petroleum products, Grades B and lower flammable or combustible liquids, in bulk in limited quantities.

(b) The provisions of Subpart 105.90 shall apply to all commercial fishing vessels of not more than 500 gross tons used in the salmon or crab fisheries of Oregon, Washington, and Alaska, the construction of which was contracted for prior to December 1, 1969, and all vessels of not more than 5000 gross tons used in the processing and assembling of fishery products in the fisheries of the States of Oregon, Washington, and Alaska, the construction of which is contracted for prior to May 31, 1976 which have or propose to have permanently or temporarily installed tanks or containers for dispensing petroleum products, Grades B and lower flammable or combustible liquids, in bulk in limited quantities.

[CGFR 69–53, 34 FR 11265, July 4, 1969, as amended by CGD 75–105, 41 FR 17910, Apr. 29, 1976]

§ 105.05–2 Prohibitions regarding petroleum products.

(a) Commercial fishing vessels shall not transport Grade A flammable liquids in bulk. (See § 105.10–15(a) for definition of Grade A flammable liquid.)

(b) On commercial fishing vessels, temporarily installed dispensing tanks or containers shall not be installed or

carried below deck or in closed compartments on or above the deck.

§ 105.05–3 New vessels and existing vessels for the purpose of application of regulations in this part.

(a) *New vessels.* In the application of the regulations in this part, the term ''new vessels'' means any commercial fishing vessel of not more than 500 gross tons used in the salmon or crab fisheries of Oregon, Washington, or Alaska, the construction of which is contracted for on or after December 1, 1969, and vessels of not more than 5000 gross tons used in the processing and assembling of fishery products in the fisheries of the States of Oregon, Washington, and Alaska, the construction of which is contracted for on or after May 31, 1976.

(b) *Existing vessels.* In the application of the regulations in this part, the term ''existing vessels'' means any commercial fishing vessel of not more than 500 gross tons used in the salmon or crab fisheries of Oregon, Washington, or Alaska, the construction of which is contracted for prior to December 1, 1969, and vessels of not more than 5000 gross tons used in the processing and assembling of fishery products in the fisheries of the States of Oregon, Washington, and Alaska, the construction of which is contracted for prior to May 31, 1976.

[CGD 75–105, 41 FR 17910, Apr. 29, 1976]

§ 105.05–5 Types of vessels.

(a) The only types of commercial fishing vessels to which the provisions of this part apply are self-propelled manned vessels with one of the following:

(1) Permanently installed dispensing tanks or containers on open decks.

(2) Permanently installed dispensing tanks or containers located below deck or in closed compartments.

(3) Temporary dispensing tanks or containers installed on open decks.

[CGD 75–105, 41 FR 17910, Apr. 29, 1976]

§ 105.05–10 Intent of regulations.

(a) The intent of the regulations in this part is to prescribe special requirements for commercial fishing vessels which are otherwise exempt from requirements of vessel inspection, but by reason of occasionally engaging in the service of carrying on board and dispensing liquid inflammable and combustible cargo in bulk are subject to certain requirements of 46 U.S.C. section 3702.

(b) The application of the regulations governing petroleum products in bulk is limited to that portion of the vessel involved in the storage, carriage, and handling of such products. This shall include, but shall not be limited to:

(1) Permanently or temporarily installed tanks or containers;

(2) Compartments, areas or places where such tanks or containers are placed;

(3) Fuel filling systems;

(4) Fuel venting systems;

(5) Fuel piping and pumping systems.

(c) The regulations in this part also state the manning, crew requirements, and officers for those vessels when required by other specific provisions of law.

(1) Vessels carrying flammable or combustible liquids in bulk are required by 46 U.S.C. 3702, to have aboard certificated tankermen.

(2) Vessels of 200 gross tons and upward and operating on the high seas are subject to the Officers' Competency Certificate Convention, 1936, and 46 U.S.C. 8304, regarding licensed masters, mates, chief engineers, and assistant engineers.

[CGFR 69–53, 34 FR July 4, 1969, as amended by USCG–1999–6216, 64 FR 53226, Oct. 1, 1999]

Subpart 105.10—Definition of Terms Used in This Part

§ 105.10–5 Approved.

(a) The term *approved* means approved by the Commandant, U.S. Coast Guard, unless otherwise stated.

§ 105.10–10 Combustible liquid.

(a) The term *combustible liquid* means any liquid having a flashpoint above 80° F. (as determined from an open cup tester, as used for test of burning oils). In the regulations of this part, combustible liquids are referred to by grades, as follows:

(1) *Grade D.* Any combustible liquid having a flashpoint below 150° F. and above 80° F.

(2) *Grade E.* Any combustible liquid having a flashpoint of 150° F. or above.

[CGFR 69–53, 34 FR 11265, July 4, 1969, as amended by CGD 73–96, 42 FR 49025, Sept. 26, 1977]

§ 105.10–15 Flammable liquid.

(a) The term *flammable liquid* means any liquid which gives off flammable vapors (as determined by flashpoint from an open cup tester, as used for test of burning oils) at or below a temperature of 80° F. Flammable liquids are referred to by grades as follows:

(1) *Grade A.* Any flammable liquid having a Reid [1] vapor pressure of 14 pounds or more.

(2) *Grade B.* Any flammable liquid having a Reid [1] vapor pressure under 14 pounds and over 8½ pounds.

(3) *Grade C.* Any flammable liquid having a Reid [1] vapor pressure of 8½ pounds or less and a flashpoint of 80° F. or below.

[CGFR 69–53, 34 FR 11265, July 4, 1969, as amended by CGD 73–96, 42 FR 49025, Sept. 26, 1977; USCG–2000–7790, 65 FR 58461, Sept. 29, 2000]

§ 105.10–20 Pressure vacuum relief valve.

(a) The term *pressure vacuum relief valve* means any device or assembly of a mechanical, liquid, weight, or other type used for the automatic regulation of pressure or vacuum in enclosed places.

§ 105.10–25 Commercial fishing vessel.

(a) The term *commercial fishing vessel* includes fishing vessels, cannery tenders, fishing tender vessels, and vessels processing or assembling fishery products.

[CGD 75–105, 41 FR 17910, Apr. 29, 1976]

[1] American Society of Testing Materials Standard D 323 (incorporated by reference, see § 105.01–3) (most recent revision), Method of Test for Vapor Pressure of Petroleum Products (Reid Method).

Subpart 105.15—Inspection Required

§ 105.15–1 General.

(a) Before a commercial fishing vessel may be used to transport combustible or flammable liquids in bulk in limited quantities for the purpose of dispensing those liquids, the vessel shall be inspected by the Coast Guard to determine that the vessel is in substantial compliance with the requirements in this part.

(b) A vessel with permanently installed cargo tanks shall be inspected biennially, or more frequently if necessary, by the Coast Guard to determine that the vessel is maintained in substantial compliance with the requirements in this part.

(c) A vessel with temporarily installed cargo tanks or containers shall be inspected annually, or more frequently if necessary, by the Coast Guard.

(d) Vessels while laid up or dismantled or out of commission are exempt from any or all inspections required by law or regulations in this part.

§ 105.15–5 Authority of marine inspectors.

(a) Marine inspectors may at any time lawfully inspect any vessel subject to the requirements in this part.

§ 105.15–10 Application for inspection.

(a) Prior to the commencement of the construction of a new vessel, or a conversion of a vessel to a commercial fishing vessel, intended for transporting combustible or flammable liquids in bulk in limited quantities for the purpose of dispensing those liquids, the owners, master, or agent shall submit an application for inspection and a letter of compliance to an Officer in Charge, Marine Inspection, at any Marine Inspection Office, U.S. Coast Guard.

(b) Application for inspection and renewal of letter of compliance of a vessel shall be made in writing by the master, owner, or agent to an Officer in Charge, Marine Inspection, at any Marine Inspection Office, U.S. Coast Guard.

(c) The application for inspection and letter of compliance shall be on Form

CG-3752 or in letter form and set forth the following information:

(1) Vessel's name;

(2) Nature of employment and route or areas in which to be operated;

(3) Date and place where the vessel may be inspected;

(4) Date and place where the vessel was last inspected (if inspected); and,

(5) That application for inspection has not been made to any other Officer in Charge, Marine Inspection.

§ 105.15–15 Letter of compliance.

(a) When a vessel has been inspected and found to be in substantial compliance with the requirements of this part, a ''letter of compliance'' shall be issued to the vessel by the Officer in Charge, Marine Inspection.

(b) The letter of compliance shall permit the presence on board of liquid flammable or combustible cargoes in bulk, and describe the conditions governing the transportation and dispensing of such cargoes.

(c) The letter of compliance shall state the maximum amount of liquid flammable or combustible cargo in bulk to be carried on board.

(d) The letter of compliance shall be limited to a period of validity which shall not exceed 2 years. For cause, the letter of compliance may be suspended or revoked as authorized by law or regulations in this chapter.

§ 105.15–20 Exhibition of letter of compliance.

(a) On every vessel subject to this part, the original letter of compliance shall be framed under glass or other suitable transparent material and posted in a conspicuous place protected from the weather.

Subpart 105.20—Specific Requirements—Cargo Tanks

§ 105.20–1 Plans and/or sketches.

(a) The owners, master, or agent of a commercial fishing vessel shall submit with his application for the initial inspection a brief description and the plans and/or sketches of the cargo tanks and piping systems for filling and dispensing cargo; dimensions and identifications of material shall be included.

(b) If cargo tanks will be located in enclosed compartments or below decks, the plans and/or sketches shall also show the proposed ventilation system.

(c) Plans and/or sketches are not required if the cargo tanks and piping systems have previously been accepted by the Coast Guard.

§ 105.20–3 Cargo tanks.

(a) *Construction and Materials.* (1) The cargo tanks must be constructed of iron, steel, copper, nickel alloy, copper alloy; or aluminum. The tanks shall be designed to withstand the maximum head to which they may be subjected, except that in no case shall the thickness of the shell or head be less than that specified in this subparagraph. Tanks of over 150 gallons capacity shall have a minimum thickness as indicated in Table 105.20–3(a)(1):

TABLE 105.20–3(a)(1)

Material	A.S.T.M. specification (latest edition)	Thickness in inches and gage number [2] [3]
Nickel copper	B127, hot rolled sheet or plate.	0.107 (USSG 12).
Copper nickel [1]	B122, Alloy No. 5.	0.128 (AWG 8).
Copper [1]	B152, Type ETP	0.182 (AWG 5).
Copper silicon [1]	B97, Alloys A, B, and C.	0.144 (AWG 7).
Steel or iron		0.179 (MSG 7).
Aluminum [4]	B209, Alloy	[5] 5086 0.250 (USSG 3).

[1] Tanks fabricated with these materials shall not be utilized for the carriage of diesel oil.

[2] The gage numbers used in this table may be found in many standard engineering reference books. The letters ''USSG'' stand for ''U.S. Standard Gage'' which was established by the act of Mar. 3, 1892 (15 U.S.C. 206) for sheet and plate iron and steel. The letters ''AWG'' stand for ''American Wire Gage'' (or Brown and Sharpe Gage) for nonferrous sheet thicknesses. The letters ''MSG'' stand for ''Manufacturers' Standard Gage'' for sheet steel thicknesses.

[3] Tanks over 400 gallons shall be designed with a factor of safety of four on the ultimate strength of the tank material used with a design head of not less than 4 feet of liquid above the top of the tank.

[4] Anodic to most common metals. Avoid dissimila-metal contact with tank body unless galvanically compatible.

[5] And other alloys acceptable to the Commandant.

(2) All tank joints, connections, and fittings shall be welded or brazed. Tanks with flanged-up top edges will not be acceptable.

(3) All tanks exceeding 30 inches in any horizontal dimension shall be fitted with vertical baffle plates of the same material as the tank. Limber holes at the bottom and air holes at the top of all baffles shall be provided.

Tanks constructed of material of greater thickness than minimum requirements and that are reinforced with stiffeners may be accepted without baffles.

(4) An opening fitted with a threaded pipe plug may be used on the bottom of the tank for cleaning purposes.

(b) *Supports.* (1) Tanks shall be adequately supported and braced to prevent movement. The supports and braces shall be insulated from contact with the tank surface with a nonabrasive and nonabsorbent material.

(c) *Fittings.* (1) Filling lines shall be at least 1½ inches standard pipe size and extend to within 1½-pipe diameters of the bottom of the tank.

(2) Suction lines from diesel oil tanks may be taken from the bottom provided a shutoff valve is installed at the tank. Tanks for Grades B and C liquids shall have top suctions only.

(3) Vent lines shall be at least equal in size to the filling lines.

(4) When a cargo tank contains Grades B or C liquids, the vent lines shall be terminated with an approved pressure vacuum relief valve not less than 3 feet above the weather deck. When a cargo tank contains Grades D or E liquids the vent line may be terminated with a gooseneck fitted with flame screen at a reasonable height above the weather deck.

(d) *Hydrostatic tests.* All tanks vented to the atmosphere shall be hydrostatically tested to a pressure of 5 pounds per square inch or 1½ times the maximum head to which they may be subjected in service. A standpipe of 11½ feet in length attached to the tanks may be filled with water to accomplish the 5 pounds per square inch test.

[CGFR 69–53, 34 FR 11265, July 4, 1969, as amended by CGD 72–206R, 38 FR 17229, June 29, 1973; CGD 76–061, 41 FR 23401, June 10, 1976]

§ 105.20–5 Piping systems.

(a) Piping shall be copper, nickel copper, or copper nickel having a minimum wall thickness of 0.035″; except that seamless steel pipe or tubing which provides equivalent safety may be used for diesel cargo systems.

(b) Valves shall be of a suitable nonferrous metallic Union Bonnet type with ground seats except that steel or nodular iron may be used in cargo systems utilizing steel pipe or tubing.

(c) Aluminium or aluminum alloy valves and fittings are prohibited for use in cargo lines.

§ 105.20–10 Pumps.

(a) Pumps for cargo dispensing shall be of a type satisfactory for the purpose.

(b) A relief valve shall be provided on the discharge side of pump if the pressure under shutoff conditions exceeds 60 pounds. When a relief valve is installed, it shall discharge back to the suction of the pump.

(c) Where electric motors are installed with dispensing pumps they shall be explosion proof and shall be labeled as explosion proof by Underwriter's Laboratories, Inc., or other recognized laboratory, as suitable for Class I, Group D atmospheres.

§ 105.20–15 Grounding.

(a) All tanks and associated lines shall be electrically grounded to the vessel's common ground.

(b) A grounded type hose and nozzle shall be used for dispensing fuels.

Subpart 105.25—Additional Requirements—When Cargo Tanks Are Installed Below Decks

§ 105.25–1 General requirements.

(a) Cargo tank and piping systems shall be as described in Subpart 105.20.

§ 105.25–5 Compartments or areas containing cargo tanks or pumping systems.

(a) Compartments or areas containing tanks or pumping systems shall be closed off from the remainder of the vessel by gastight bulkheads. Such gastight bulkheads may be pierced for a drive shaft and pump engine control rods if such openings are fitted with stuffing boxes or other acceptable gland arrangements.

§ 105.25–7 Ventilation systems for cargo tank or pumping system compartment.

(a) Each compartment shall be provided with a mechanical exhaust system capable of ventilating such compartment with a complete change of air once in every 3 minutes. The intake duct or ducts shall be of sufficient size to permit the required air change. The exhaust duct or ducts shall be located so as to remove vapors from the lower portion of the space or bilges.

(b) The ventilation outlets shall terminate more than 10 feet from any opening to the interior of the vessel which normally contains sources of vapor ignition. The ventilation fan shall be explosion proof and unable to act as a source of ignition.

§ 105.25–10 Cargo pumping installation.

(a) Cargo pumps shall not be installed in the cargo tank compartment unless the drive system is outside the compartment.

(b) Suction pipelines from cargo tanks shall be run directly to the pump, but not through working or crew spaces of vessel.

§ 105.25–15 Spacings around tanks.

(a) Tanks shall be located so as to provide at least 15″ space around tank, including top and bottom to permit external examination.

§ 105.25–20 Shutoff valves required.

(a) Shutoff valves shall be provided in the suction lines as close to the tanks as possible. The valves shall be installed so as to shut off against the flow.

(b) Remote control of this shutoff valve shall be provided where deemed necessary by the marine inspector.

Subpart 105.30—Electrical Requirements

§ 105.30–1 Electrical fittings and fixtures.

(a) In compartments or areas containing tanks or pumps handling other than Grade E petroleum products, no electrical fittings, fixtures, nor electrical equipment shall be installed or used unless approved for a Class I, Group D hazardous location and so labeled by Underwriter's Laboratories, Inc., or other recognized laboratories. (See subpart 110.10 of subchapter J (Electrical Engineering) of this chapter for listings of standards.)

(b) All electrical equipment, fixtures and fittings within 10 feet of a vent outlet or a dispensing outlet shall be explosion proof and shall be labeled as explosion proof by Underwriter's Laboratories, Inc., or other recognized laboratory, as suitable for Class I, Group D atmospheres.

§ 105.30–5 Grounding of electrical equipment.

(a) All electrical equipment shall be grounded to the vessel's common ground.

Subpart 105.35—Fire Extinguishing Equipment

§ 105.35–1 General.

(a) In addition to the requirements in § 28.160 of subchapter C of this chapter, at least two B–II dry chemical or foam portable fire extinguishers bearing the marine type label of the Underwriter's Laboratories, Inc., shall be located at or near each dispensing area.

(b) This equipment shall be inspected prior to issuing a letter of compliance.

[CGFR 69–53, 34 FR 11265, July 4, 1969, as amended by CGD 95–028, 62 FR 51208, Sept. 30, 1997

§ 105.35–5 Fire pumps.

(a) All vessels shall be provided with a hand operated portable fire pump having a capacity of at least 5 gallons per minute. This fire pump shall be equipped with suction and discharge hose suitable for use in firefighting. This pump may also serve as a bilge pump.

(b) A power-driven fire pump shall be installed on each vessel of more than 65 feet in length overall.

(1) The power fire pump shall be self-priming and of such size as to discharge an effective stream from a hose connected to the highest outlet.

(2) The minimum capacity of the power fire pump shall be 50 gallons per minute at a pressure of not less than 60

pounds per square inch at the pump outlet. The pump outlet shall be fitted with a pressure gage.

(3) The power fire pump may be driven off a propulsion engine or other source of power and shall be connected to the fire main. This pump may also be connected to the bilge system so that it can serve as either a fire pump or a bilge pump.

§ 105.35–10 Fire main system.

(a) All vessels required to be provided with a power-driven fire pump shall also be provided with a fire main system including fire main, hydrants, hose, and nozzles.

(b) Fire hydrants, when required, shall be of sufficient number and so located that any part of the vessel may be reached with an effective stream of water from a single length of hose.

(c) All piping, valves, and fittings shall be in accordance with good marine practice and suitable for the purpose intended.

§ 105.35–15 Fire hose.

(a) One length of fire hose shall be provided for each fire hydrant required.

(b) Fire hose may be commercial fire hose or equivalent of not over 1½-inch diameter or garden hose of not less than ⅝-inch nominal inside diameter. Hose shall be in one piece not less than 25 feet and not more than 50 feet in length.

(c) If 1½ inch diameter fire hose is used after January 1, 1980, each length of hose must:

(1) Be lined commercial fire hose that conforms to Underwriters' Laboratories, Inc. Standard 19 or Federal Specification ZZ-H-451E. A hose that bears the label of Underwriters' Laboratories, Inc. as lined fire hose is accepted as conforming to this requirement; and

(2) Have a combination nozzle approved by the Commandant in accordance with § 162.027–6 of this chapter.

(d) If garden hose is used, it shall be of a good commercial grade constructed of an inner rubber tube, plies of braided cotton reinforcement and an outer rubber cover or of equivalent material, and shall be fitted with a commercial garden hose nozzle of good grade bronze or equivalent metal.

(e) All fittings on fire hose shall be of brass, copper, or other suitable corrosion resistant metal.

(f) A length of fire hose shall be attached to each fire hydrant at all times.

[CGFR 69–53, 34 FR 11265, July 4, 1969, as amended by CGD 74–60, 41 FR 43151, Sept. 30, 1976]

Subpart 105.45—Special Operating Requirements

§ 105.45–1 Loading or dispensing petroleum products.

(a) A commercial fishing vessel must have aboard a letter of compliance valid under subpart 105.15 of this part and must be in compliance with the requirements in the letter while dispensing petroleum products. This letter of compliance issued to a vessel will state—

(1) The number of crewmembers required to hold documents endorsed as tankermen under part 13 of this chapter; and

(2) For each vessel of 200 gross tons or over, the complement of officers under Title 46 U.S.C. 8304.

(b) Each person in charge of a transfer of liquid cargo in bulk to or from a cargo tank shall hold—

(1) A valid merchant mariner's document endorsed as ''Tankerman-PIC'' or restricted ''Tankerman-PIC'' authorizing transfer of the classification of cargo involved; or

(2) A valid license authorizing service as master, mate, pilot, or engineer.

[CGD 79–116, 60 FR 17157, Apr. 4, 1995]

§ 105.45–5 Galley fires.

(a) Galley fires are normally permitted during cargo transfer operations. However, prior to transferring Grade B or C cargoes, the tankerman shall make an inspection to determine whether in his judgment galley fires may be maintained with reasonable safety during the transfer operations.

§ 105.45–10 Smoking.

(a) Smoking is prohibited during and in the vicinity of the transfer operations. At other times the senior officer on duty shall designate when and where the crew may smoke.

§ 105.45–15 Warning signals and signs.

(a) During transfer of cargo while fast to a dock, a red signal (flag by day and electric lantern at night) shall be so placed that it will be visible on all sides. At all other times of transfer a red flag only shall be displayed.

§ 105.45–20 Warning sign at gangway.

(a) Warning placards shall be kept at hand for display while a vessel is fast to a dock during transfer of cargo, to warn persons approaching the gangway. The placard shall state in letters not less than 2 inches high substantially as follows:

WARNING

No open lights.
No smoking.
No visitors.

Subpart 105.90—Existing Commercial Fishing Vessels Dispensing Petroleum Products

§ 105.90–1 Existing commercial fishing vessels dispensing petroleum products.

(a) The prohibition in § 105.05–2 shall apply to all commercial fishing vessels.

(b) Existing vessels must meet the following requirements:

(1) Permanently or temporarily installed tanks or containers used for dispensing in limited quantities petroleum products in bulk, Grades B or lower flammable or combustible liquids, shall meet the applicable requirements in Subparts 105.20 (Tanks and piping systems), 105.25 (Cargo tanks below decks), 105.30 (Electrical). However, these tanks or containers and their associated piping systems in use prior to December 1, 1969, if in satisfactory condition in the opinion of the Officer in Charge, Marine Inspection, may be continued in use as long as they are maintained in such satisfactory condition.

(2) Minor repairs or alterations may be made in permanently or temporarily installed tanks or containers for petroleum products in bulk, which shall be to the satisfaction of the Officer in Charge, Marine Inspection. Major repairs or replacement of such tanks or containers shall be in accordance with requirements governing new installations as set forth in this part.

(3) All commercial fishing vessels must comply with the applicable requirements in subparts 105.15 (Inspection Required), 105.35 (Fire Extinguishing Equipment), and 105.45 (Special Operating Requirements).

[CGFR 69–53, 34 FR 11265, July 4, 1969, as amended by CGD 75–105, 41 FR 17910, Apr. 29, 1976; CGD 79–116, 62 FR 25136, May 8, 1997]

SUBCHAPTER I–A—MOBILE OFFSHORE DRILLING UNITS

PART 107—INSPECTION AND CERTIFICATION

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AUTHORITY: 43 U.S.C. 1333; 46 U.S.C. 3306, 3307; 46 U.S.C. 3316; 49 CFR 1.45, 1.46; §107.05 also issued under the authority of 44 U.S.C. 3507.

SOURCE: CGD 73–251, 43 FR 56802, Dec. 4, 1978, unless otherwise noted.

Subpart A—General

§107.01 Purpose of subchapter.

This subchapter prescribes rules for the design, construction, equipment, inspection and operation of mobile offshore drilling units operating under the U.S. flag.

§107.01–3 Right of appeal.

Any person directly affected by a decision or action taken under this subchapter, by or on behalf of the Coast Guard, may appeal therefrom in accordance with subpart 1.03 of this chapter.

[CGD 88–033, 54 FR 50380, Dec. 6, 1989]

§107.05 OMB control numbers assigned pursuant to the Paperwork Reduction Act.

(a) *Purpose.* This section collects and displays the control numbers assigned to information collection and recordkeeping requirements in this subchapter by the Office of Management and Budget (OMB) pursuant to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*). The Coast Guard intends that this section comply with the requirements of 44 U.S.C. 3507(f) which requires that agencies display a current control number assigned by the Director of the OMB for each approved agency information collection requirement.

(b) *Display.*

46 CFR part or section where identified or described	Current OMB control No.
§107.305	2115–0505

46 CFR part or section where identified or described	Current OMB control No.
§ 107.309	2115–0505
§ 109.227	2115–0589

[49 FR 38121, Sept. 27, 1984, as amended by CGD 89–037, 57 FR 41823, Sept. 11, 1992]

§ 107.111 Definitions.

As used in this subchapter:

Accommodation means a cabin or other covered or enclosed place intended to carry persons.

Anniversary date means the day and the month of each year, which corresponds to the date of expiration of the Certificate of Inspection.

Approval series means the first six digits of a number assigned by the Coast Guard to approved equipment. Where approval is based on a subpart of subchapter Q of this chapter, the approval series corresponds to the number of the subpart. A listing of approved equipment, including all of the approval series, is published periodically by the Coast Guard in Equipment Lists (COMDTINST M16714.3 series), available from the Superintendent of Documents.

Approved means approved by the Commandant.

Column stabilized unit means a unit with the main deck connected to the underwater hull of footings by columns or caissons.

Commandant means the Commandant of the Coast Guard or his authorized representative.

District Commander means an officer of the Coast Guard who commands a Coast Guard District described in 33 CFR Part 3 or his authorized representative.

Drillship means a surface type unit with a single shipshape displacement hull.

Embarkation ladder means the ladder provided at survival craft embarkation stations to permit safe access to survival craft after launching.

Embarkation station means the place where a survival craft is boarded.

Float-free launching means the method of launching a survival craft or lifesaving appliance whereby the craft or appliance is automatically released from a sinking unit and is ready for use.

Free-fall launching means the method of launching a survival craft whereby the craft, with its full complement of persons and equipment on board, is released and allowed to fall into the sea without any restraining apparatus.

Headquarters means Office of the Commandant, U.S. Coast Guard, Washington, D.C. 20593–0001.

Immersion suit means protective suit that reduces loss of body heat of a person wearing it in cold water.

Industrial systems and components means any machinery or equipment except diving systems on board a mobile offshore drilling unit for use in the industrial function of the unit.

Inflatable appliance means an appliance that depends upon nonrigid, gas-filled chambers for buoyancy and that is normally kept uninflated until ready for use.

Inflated appliance means an appliance that depends upon nonrigid, gas-filled chambers for buoyancy and that is kept inflated and ready for use at all times.

International service means operation of a mobile offshore drilling unit on an international voyage or in waters under the jurisdiction of foreign nations or the United Nations.

Launching appliance or *launching arrangement* means the method or devices for transferring a survival craft or rescue boat from its stowed position to the water. For a launching arrangement using a davit, the term includes the davit, winch, and falls.

Lifejacket means a flotation device approved as a life preserver or lifejacket.

Marine evacuation system means an appliance designed to rapidly transfer large numbers of persons from an embarkation station by means of a passage to a floating platform for subsequent embarkation into associated survival craft, or directly into associated survival craft.

Marine inspector means any person designated by an Officer in Charge, Marine Inspection, as a marine inspector.

Master or *Person in charge* means a person designated under § 109.107.

Mobile offshore drilling unit or *unit* means a vessel, except a public vessel

of the United States, capable of engaging in drilling operations for the exploration or exploitation of subsea resources that is—

(1) Seagoing and 300 or more gross tons and self-propelled by motor;

(2) Seagoing and 100 or more gross tons and non-self-propelled; or

(3) More than 65 feet in length and propelled by steam.

Muster station means the place where the crew and industrial personnel assemble before boarding a survival craft.

Non-self-propelled unit means a unit which is not self-propelled.

Novel lifesaving appliance or arrangement means one that has new features not fully covered by the provisions of this subchapter but providing an equal or higher standard of safety.

Officer in Charge, Marine Inspection means an officer of the Coast Guard who commands a Marine Inspection Zone described in 33 CFR Part 3 or his authorized representative.

Pilot boarding equipment means a pilot ladder, accommodation ladder, pilot hoist, or combination of them as required by this subchapter.

Point of access means the place on deck of a vessel where a person steps onto or off of pilot boarding equipment.

Rescue boat means a boat designed to rescue persons in distress and to marshal survival craft.

Retrieval means the safe recovery of survivors.

Seagoing condition means the operating condition of the unit with the personnel, equipment, fluids, and ballast necessary for safe operation on the waters where the unit operates. For bottom-bearing mobile offshore drilling units (MODU), the term also applies in the bottom-bearing mode, but the lightest seagoing condition is considered to be the highest anticipated operating condition.

Self-elevating unit means a unit with moveable legs capable of raising its hull above the surface of the sea.

Self-propelled unit means a unit that has propulsion machinery that provides for independent underway navigation.

Surface type unit means a unit with a ship shape or barge type displacement hull of single or multiple hull construction intended for operation in the floating condition.

Survival craft means a craft capable of sustaining the lives of persons in distress after abandoning the unit on which they were carried. The term includes lifeboats and liferafts, but does not include rescue boats.

Watertight means designed and constructed to withstand a static head of water without any leakage, except that *watertight equipment* means enclosed equipment so constructed that a stream of water from a hose (not less than 1 inch in diameter) under head of about 35 feet from a distance of about 10 feet, and for a period of 5 minutes, can be played on the apparatus without leakage.

Weathertight means that water will not penetrate into the unit in any sea condition, except that *weathertight equipment* means equipment so constructed or protected that exposure to a beating rain will not result in the entrance of water.

Widely-separated locations as the term applies to the location of lifeboats on self-elevating units, means locations on different sides or ends of the unit separated by sufficient distance or structure to protect the lifeboats in one location from a fire or explosion occurring at or near the lifeboats in another location on the unit. Locations across from each other at the apex of a unit with a triangular deck are not widely-separated locations unless there is a substantial solid structure between them.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 79–032, 49 FR 25455, June 21, 1984; CGD 88–070, 53 FR 34534, Sept. 7, 1988; CGD 84–069, 61 FR 25289, May 20, 1996; 63 FR 52814, Oct. 1, 1998; USCG 1999–4976, 65 FR 6503, Feb. 9, 2000]

§ 107.113 Industrial personnel.

Industrial personnel are all persons, exclusive of the required crew as set forth in the Certificate of Inspection, carried on board a mobile offshore drilling unit for the sole purpose of carrying out the industrial business or functions of the unit.

§ 107.115 Incorporation by reference.

(a) The standards referred to in this subchapter are incorporated by reference. The incorporation by reference was approved by the Director of the Federal Register under the provisions of 1 CFR Part 51 on November 7, 1978.

(b) The standards are on file in the FEDERAL REGISTER library and are available from the appropriate organizations whose addresses are listed below:

(1) American Bureau of Shipping, ABS Plaza, 16855 Northchase Drive, Houston, TX 77060.

(2) American National Standards Institute Standards (ANSIS), American Society of Mechanical Engineers (ASME) International, Three Park Avenue, New York, NY 10016—5990.

(3) American Petroleum Institute, 1220 L Street NW., Washington, D.C. 20005—4070.

(4) International Cargo Gear Bureau,Inc., 90 West Street—Suite 1612, New York, New York 10004.

(5) National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269-9101.

(6) Underwriters Laboratories, 12 Laboratory Drive, Research Triangle Park, NC 27709–3995.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 88–070, 53 FR 34534, Sept. 7, 1988; CGD 88–070, 53 FR 37570, Sept. 27, 1988; CGD 88–070, 53 FR 44011, Nov. 1, 1988; CGD 96–041, 61 FR 50730, Sept. 27, 1996; CGD 97–057, 62 FR 51046, Sept. 30, 1997; USCG–1999–6216, 64 FR 53226, Oct. 1, 1999; USCG–2000–7790, 65 FR 58461, Sept. 29, 2000]

§ 107.117 Coast Guard addresses.

When approval of the Commandant is required under this subchapter, the following addresses are to be used:

(a) For approval by Commandant (G–MOC)—

Commandant (G–MOC), U.S. Coast Guard, Washington, D.C. 20593–0001.

(b) For approval by Commandant (G–MSE)—

Commandant (G–MSE), U.S. Coast Guard, Washington, D.C. 20593–0001.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 82–063b, 48 FR 4781, Feb. 3, 1983; CGD 88–070, 53 FR 34534, Sept. 7, 1988; CGD 95–072, 60 FR 50464, Sept. 29, 1995; CGD 96–041, 61 FR 50730, Sept. 27, 1996]

Subpart B—Inspection and Certification

§ 107.201 Purpose.

This subpart prescribes rules for the—

(a) Original inspection and issuance of an original Certificate of Inspection required by 46 U.S.C. 3301, 3307 and 3309;

(b) Inspection for certification and renewal of a Certificate of Inspection required by 46 U.S.C. 3301, 3307, 3309;

(c) Annual and periodic inspections required by 46 U.S.C. 3308;

(d) Inspection after an accident required by 46 U.S.C. 3308; and

(e) Inspection of repairs or alterations, or both, required by 46 U.S.C. 3308 and 3313;

(f) Amendments to Certificates of Inspection;

(g) Issuance of Temporary Certificate of Inspection; and

(h) Issuance of Permit to Proceed to Another Port for Repairs.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 83–067, 49 FR 39161, Oct. 4, 1984; USCG 1999–4976, 65 FR 6503, Feb. 9, 2000]

§ 107.205 Alternate compliance.

(a) In place of compliance with other applicable provisions of this subchapter, the owner or operator of a vessel subject to plan review and inspection under this subchapter for initial issuance or renewal of a Certificate of Inspection may comply with the Alternate Compliance Program provisions of part 8 of this chapter.

(b) For the purposes of this section, a list of authorized classification societies, including information for ordering copies of approved classification society rules and supplements, is available from Commandant (G-MSE), 2100 Second St., SW., Washington, DC 20593–0001; telephone (202)267–6925; or fax (202)267–4816. Approved classification society rules and supplements are incorporated by reference into 46 CFR 8.110(b).

[CGD 95–010, 62 FR 67536, Dec. 24, 1997, as amended by USCG–1999–5004, 64 FR 30439, June 8, 1999]

§ 107.211 Original Certificate of Inspection.

(a) The owner or builder of a unit applies for an inspection for an original Certificate of Inspection by submitting before construction is started:

(1) A completed Application for Inspection of U.S. Vessel, Form CG–3752, to the Officer in Charge, Marine Inspection, of the marine inspection zone in which the unit is to be constructed; and

(2) Plans and information indicating the proposed arrangement and construction of the unit to the Coast Guard in accordance with Subpart C of this part.

(b) An original Certificate of Inspection is issued if the Coast Guard finds, during the inspections conducted while the unit is being constructed, that a unit contracted for on or after January 3, 1979 meets § 107.231.

(c) An original Certificate of Inspection is issued if the Coast Guard finds that an uncertificated unit contracted for before January 3, 1979 meets the applicable requirements of this Subchapter as specified in the Navigation and Vessel Inspection Circular, *''Inspection and Certification of Existing Mobile Offshore Drilling Units''* (Appendix A). Existing structure, arrangements, materials, equipment, and facilities will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Repairs and minor alterations may be made to the same standards as originally used. Major alterations and conversions shall be in compliance with the provisions of each subpart of this part to the satisfaction of the Officer in Charge, Marine Inspection.

(d) A Certificate of Inspection is valid for 5 years.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by USCG 1999–4976, 65 FR 6503, Feb. 9, 2000]

§ 107.215 Renewal of Certificate of Inspection.

(a) The master, owner, or agent of a certificated unit may apply for an inspection for the renewal of a Certificate of Inspection by submitting a completed Application for Inspection of U.S. Vessel, Form CG–3752, to the Officer in Charge, Marine Inspection, in or nearest to the port where the inspection will be made.

(b) The master, owner, or agent of a certificated unit operating in international service may apply for renewal of a Certificate of Inspection by submitting a completed Application for Inspection of U.S. Vessel Form CG–3752, to the appropriate Officer in Charge, Marine Inspection, at least 30 days before the expiration date that appears on the unit's unexpired Certificate of Inspection.

(c) A Certificate of Inspection is renewed if the Coast Guard finds, during the inspection for certification, that—

(1) A unit contracted for on or after January 3, 1979 meets the requirements of this Subchapter; or

(2) A unit contracted for before January 3 1979, and issued a Certificate of Inspection under Subchapter I of this chapter, continues to meet the requirements of that subchapter and meets the applicable requirements of this subchapter as specified in Navigation and Vessel Inspection Circular, *''Inspection and Certification of Existing Mobile Offshore Drilling Units''* (Appendix A).

(d) A Certificate of Inspection is valid for 5 years.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by USCG 1999–4976, 65 FR 6503, Feb. 9, 2000]

§ 107.219 Permit to proceed to another port for repairs.

(a) If a unit fails to meet the requirements in § 107.231, and the Coast Guard withholds reissuance of a Certificate of Inspection, or suspends an unexpired Certificate of Inspection, as described in § 107.279, a Permit to Proceed to Another Port for Repairs (Form CG–948) is issued by the Coast Guard if—

(1) The owner, master, person in charge, or agent makes a written request for a permit to the Officer in Charge, Marine Inspection, that includes—

(i) The reason the permit is requested;

(ii) The port in which the repairs are to be made; and

(iii) The period of time for the voyage;

(2) The Officer in Charge, Marine Inspection finds that the unit is seaworthy for the voyage.

(b) A Permit to Proceed to Another Port for Repairs states the conditions under which it was issued and is in force for the period of the voyage to the port in which the repairs are to be made.

§ 107.223 Temporary Certificate of Inspection: Period in effect.

A Temporary Certificate of Inspection, issued under 46 U.S.C. 3309 is effective until a Certificate of Inspection is issued to the unit.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 83–067, 49 FR 39161, Oct. 4, 1984]

§ 107.227 Certificate of Inspection Amendment.

The Coast Guard issues a Certificate of Inspection Amendment, Form CG–858, to a certificated unit if a requirement for equipment and data listed on the unexpired Certificate of Inspection is changed.

§ 107.231 Inspection for certification.

A unit is issued a Certificate of Inspection under § 107.211 or § 107.215(c) if the inspector finds the following:

(a) The unit and its equipment comply with—

(1) Part 108 of this subchapter;

(2) Subchapter J of this chapter, Electrical Engineering;[1]

(3) Subchapter F of this chapter, Marine Engineering;[2]

(4) Subchapter E of this chapter, Load Lines;[3]

(5) Part 64 or Part 98 of this chapter, or both, if the unit carries marine portable tanks or portable tanks;

(6) The vessel design and equipment requirements of the oil pollution regulations (33 CFR Part 155, Subpart B);

(7) The Rules of the Road requirements for the waters in which the unit navigates, contained in—

(i) 33 U.S.C. Chapters 3, 4, 5, or 21; and

(ii) 33 CFR Parts 80, 85, or 86.

(8) Subchapter S of this chapter.

LIFESAVING EQUIPMENT

(b) The survival craft and rescue boat launching appliances are in proper condition and operating properly at loads ranging from light load to full load.

(c) The lifeboats and rescue boats, including engines and release mechanisms are in proper condition and operating properly.

(d) The flotation equipment such as lifebuoys, lifejackets, immersion suits, work vests, lifefloats, buoyant apparatus, and associated equipment are in proper condition.

(e) Each inflatable liferaft and inflatable lifejacket has been serviced as required under this chapter;

(f) Each hydrostatic release unit, other than a disposable hydrostatic release unit, has been serviced as required under this chapter.

(g) The crew has the ability to effectively carry out abandonment and fire fighting procedures.

FIRE FIGHTING EQUIPMENT

(h) Each hand portable fire extinguisher and each semiportable fire extinguisher is inspected, and serviced if required, in accordance with § 107.235(a).

(i) Each fixed fire-extinguishing system is inspected, and serviced if required, in accordance with § 107.235(b).

(j) Each fire main system meets the testing requirements in § 107.251.

(k) Each fire hose meets the testing requirements in § 107.257.

CRANES

(l) The rated load test for cranes in § 107.260 is met.

(m) Each crane is inspected and tested in accordance with § 107.258.

MISCELLANEOUS

(n) Each watertight door is operative.

(o) Each valve with a remote control is operative.

(p) Each means of escape on the unit is safe for the intended service.

[1] Requirements for industrial systems and components are in Subpart 111.94 of this chapter.

[2] Requirements for industrial systems and components are in Subpart 58.60 of this chapter.

[3] Requirements for load lines are not applicable to bottom supported units when they are being supported by, or being lowered to or raised from the seabed.

(q) There is not an accumulation of oil which might create a fire hazard on tank tops, decks, in drip pans, machinery spaces, and pumproom bilges.

(r) Each accommodation space is sanitary.

(s) The unit meet the drydocking requirement in §107.261 or the special examination in §107.265.

(t) The unit meets the equipment and data information requirements on its certificate of inspection.

(u) Each record in Subpart D of Part 109 is maintained as prescribed.

(v) Tests and inspections of the lifesaving equipment shall be carried out during the initial inspection for certification, and whenever any new item of lifesaving equipment is installed on the unit. The tests and inspections shall determine that the installation of each item of lifesaving equipment is consistent with each condition of its approval, as listed on its Coast Guard Certificate of Approval. The tests and inspections shall also demonstrate, as applicable,—

(1) The proper condition and operation of the survival craft and rescue boat launching appliances at loads ranging from light load to 10 percent overload;

(2) The proper condition and operation of lifeboats and rescue boats, including engines and release mechanisms;

(3) The proper condition of flotation equipment such as lifebuoys, lifejackets, immersion suits, work vests, and associated equipment;

(4) The proper condition of distress signaling equipment, including EPIRB's, SART's, and pyrotechnic signaling devices;

(5) The proper condition of line-throwing appliances;

(6) The proper condition and operation of embarkation and debarkation appliances, including embarkation-debarkation ladders, and alternate means of escape;

(7) The ability of the crew to effectively carry out abandonment and fire-fighting procedures; and

(8) The ability to meet the egress and survival craft launching requirements of this part.

INSTALLATION TESTS

(w) [Reserved]

(x) Piping for each carbon dioxide extinguishing system meets the installation test in §108.449 of this chapter.

(y) Each sliding watertight door meets the installation tests in §163.001–6(b) of this chapter.

OTHER TESTS AND INSPECTIONS

(z) The unit and its equipment meet any other test or inspection deemed necessary by the inspector to determine if they are suitable for the service in which they are to be employed.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 79–023, 48 FR 51008, Nov. 4, 1983; CGD 82–075a, 49 FR 4485, Feb. 7, 1984; CGD 84–069, 61 FR 25290, May 20, 1996; 63 FR 52814, Oct. 1, 1998]

§107.235 Servicing of hand portable fire extinguishers, semi-portable fire extinguishers and fixed fire-extinguishing systems.

(a) Each hand portable fire extinguisher and each semi-portable fire extinguisher on board the unit must be serviced as set out in Table 107.235 and examined for excessive corrosion and general condition.

TABLE 107.235

Type extinguisher	Test and servicing required
Soda Acid	Discharge, clean hose and inside of extinguisher thoroughly. Recharge.
Foam	Discharge, clean hose and inside of extinguisher thoroughly. Recharge.
Pump Tank (water or antifreeze)	Discharge, clean hose and inside of extinguisher thoroughly. Recharge with clean water or antifreeze.
Cartridge operated (water, antifreeze or loaded stream).	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Remove liquid, clean hose and inside of extinguisher thoroughly. Recharge with clean water, solution, or antifreeze. Insert charged cartridge.
Carbon Dioxide	Weigh cylinders. Recharge if weight loss exceeds 10 percent. Inspect hose and nozzle to be sure they are clear.

TABLE 107.235—Continued

Type extinguisher	Test and servicing required
Dry chemical (cartridge-operated type)	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Inspect hose and nozzle to see if they are clear. Insert charged cartridge. Be sure dry chemical is free-flowing (not caked) and chamber contains full charge.
Dry chemical (stored pressure type)	See that pressure gage is in operating range. If not, or if seal is broken, weigh or otherwise determine that full charge of dry chemical is in extinguisher. Recharge if pressure is low or if dry chemical is needed.

(b) Each fixed fire-extinguishing system must be examined for excessive corrosion and general condition and be serviced by—

(1) Recharging the cylinders of each carbon dioxide system, if the weight loss is more than 10% of the weight of the charge;

(2) Testing each foam system, except premix systems by—

(i) Discharging foam for approximately 15 seconds from a nozzle designated by the marine inspector;

(ii) Discharging water from all other lines and nozzles; and

(iii) Taking a sample of the foam liquid and submitting it to the manufacturer or his authorized representative for determination of its specific gravity, PH, percentage of water dilution, and solid content, and certification as a suitable firefighting foam;

(3) Removing the pressure cartridge of each premix aqueous film forming foam system and replacing the cartridge if the seal is punctured, sampling the premix solution in accordance with the manufacturer's instructions, and replacing cylinders that are discharged.

NOTE: All carbon dioxide cylinders and discharge hoses of semi-portable carbon dioxide and halon extinguishers must be tested and marked in accordance with §§ 147.60 and 147.65 of this chapter.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 84–044, 53 FR 7749, Mar. 10, 1988]

§ 107.251 Testing of the fire main.

Each fire main system must be opened and the pressure checked at—

(a) The most remote outlet; and

(b) The highest outlet.

§ 107.257 Testing of fire hose.

Each fire hose must be subjected to a test pressure equivalent to the maximum pressure to which it may be subjected during operation. However, each fire hose must be subjected to a pressure of at least 100 p.s.i.

§ 107.258 Crane certification.

(a) The Coast Guard may accept current certificates issued by approved organizations as evidence of condition and suitability of cranes. The following organizations are approved by the Coast Guard as crane certifying authorities:

(1) American Bureau of Shipping, ABS Plaza, 16855 Northchase Drive, Houston, TX 77060.

(2) International Cargo Gear Bureau, Inc., 90 West Street, Suite 1612, New York, NY 10006.

(b) Crane certification must be based upon—

(1) A review of plans submitted under § 107.309; and

(2) The continuing program of tests and inspections in § 107.259.

(c) Each load test and inspection by the certifying authority must be recorded in the unit's Crane Record Book required in § 109.437.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 96–041, 61 FR 50730, Sept. 27, 1996; USCG–2000–7790, 65 FR 58461, Sept. 29, 2000]

§ 107.259 Crane inspection and testing.

(a) Each crane must be inspected and tested in accordance with Section 3 of the American Petroleum Institute (A.P.I.) *Recommended Practice for Operation and Maintenance of Offshore Cranes*, API RP 2D, First Edition (October 1972) with supplement 1, except that the rated load test must be performed in accordance with § 107.260.

(b) The tests are witnessed and the inspections are conducted by—

(1) A Coast Guard marine inspector; or

(2) The American Bureau of Shipping (A.B.S.), or the International Cargo Gear Bureau, Inc. (I.C.G.B.) for cranes under certification by these organizations.

(c) If the tests and inspections are conducted by the A.B.S. or the I.C.G.B., the surveyor shall certify that the tests and inspections were conducted in accordance with the A.P.I. specification; or modified by §107.260.

§107.260 Rated load test for cranes.

(a) To meet the requirements in §107.231(l), each crane must meet the following rated load test at both the maximum and minimum boom angles usually employed in material transfers over the side of the unit:

Rated load of assembled gear	Proof load
Less than or equal to 20 tons ...	25 pct in excess.
Greater than 20 tons but less than or equal to 50 tons.	5 tons in excess.
Greater than 50 tons	10 pct in excess.

(b) The weight of the hook, hook blocks, slings, rib, and other rigging, except the hoist rope, must be considered part of the load for the rated load test.

(c) The rated load test must be performed—

(1) When the crane is installed;

(2) Each 60 months; and

(3) After repairs or alterations to any structural component of the crane.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by USCG–1999–6216, 64 FR 53226, Oct. 1, 1999; USCG 1999–4976, 65 FR 6504, Feb. 9, 2000]

§107.261 Drydock or special examination.

(a) Except as provided in paragraphs (b), (c), and (d), each unit must be drydocked in the presence of a Coast Guard inspector at least once during each 24 month period after it is issued a Certificate of Inspection.

(b) If a unit is column-stabilized, it may be specially examined in lieu of drydocking in accordance with §107.265 in the presence of a Coast Guard inspector.

(c) If a unit is self-elevating, it may be specially examined in lieu of drydocking in accordance with §107.267 in the presence of a Coast Guard inspector.

(d) If a unit is a surface type, it may be specially examined in lieu of drydocking in accordance with §107.265 in the presence of a Coast Guard inspector if the examination is specifically approved by the Commandant.

(e) The master, person in charge, owner, or agent of a certificated unit must notify the appropriate Officer in Charge, Marine Inspection before the unit is drydocked, or specially examined.

(f) The master, person in charge, owner, or agent of a certificated unit operating in international service must notify the appropriate Officer in Charge, Marine Inspection at least 60 days before the unit is drydocked or specially examined under §107.265 or §107.267.

§107.265 Special examination in lieu of drydocking for column stabilized units or surface type units when specifically approved by the Commandant.

(a) A column stabilized unit, or surface type unit when approved by the Commandant, must be specially examined in accordance with a plan—

(1) Submitted in accordance with paragraph (b) of this section; and

(2) Accepted by the Commandant (G–MOC).

(b) To meet the requirements in paragraph (a) of this section, the owner or operator of the unit must submit a plan to the Coast Guard that provides the methods used to determine the condition of the hull and that contains the following information:

(1) The planned location where the unit is to be examined.

(2) The draft at which the unit is to be examined.

(3) The names of the diver or diving company selected for the examination.

(4) The method of visual presentation for the examination.

(5) The method used to clean the underwater portion of the hull.

(6) The method and location of gauging the underwater portion of the hull.

(7) The number of underwater hull fittings and number of compartments to be opened.

(8) The underwater high stress areas and the welds in those areas to be examined.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 95–072, 60 FR 50464, Sept. 29, 1995; CGD 96–041, 61 FR 50730, Sept. 27, 1996]

§ 107.267 Special examination in lieu of drydocking for self-elevating units.

(a) A self-elevating unit must be specially examined in accordance with a plan—

(1) Submitted in accordance with paragraph (b) of this section; and

(2) Approved by the Commandant (G–MOC).

(b) To meet the requirements in paragraph (a) of this section, the owner or operator of the unit must submit a plan to the Commandant (G–MOC) that provides for—

(1) Examination of the unit's hull while it is in the elevated position; and

(2) Examination of the supporting mat, spud cans, or footings while the unit is afloat.

(c) The plan required in paragraph (b) of this section must contain the following information:

(1) The planned location where the unit is to be examined.

(2) The methods to be used to conduct the hull examination.

(3) The method of visual presentation for examination of the underwater components.

(4) The methods of determining the condition of the underwater components.

(5) The underwater high stress areas and the welds in those areas that are to be examined.

(6) The names of the diver or diving company selected for the examination.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 95–072, 60 FR 50464, Sept. 29, 1995; CGD 96–041, 61 FR 50730, Sept. 27, 1996]

§ 107.269 Annual inspection.

(a) Your mobile offshore drilling unit (MODU) must undergo an annual inspection within the 3 months before or after each anniversary date, except as specified in § 107.270.

(b) You must contact the cognizant OCMI to schedule an inspection at a time and place which he or she approves. No written application is required.

(c) The scope of the annual inspection is the same as the inspection for certification as specified in § 107.231, except § 107.231(x) and (y), but in less detail unless the cognizant OCMI finds deficiencies or determines that a major change has occurred since the last inspection. If deficiencies are found or a major change to the MODU has occurred, the OCMI will conduct an inspection more detailed in scope to ensure that the MODU is in satisfactory condition and fit for the service for which it is intended. If your MODU passes the annual inspection, the OCMI will endorse your current Certificate of Inspection.

(d) If the annual inspection reveals deficiencies in your MODU's maintenance, you must make any or all repairs or improvements within the time period specified by the OCMI.

(e) Nothing in this subpart limits the marine inspector from conducting such tests or inspections he or she deems necessary to be assured of the vessel's seaworthiness.

[USCG 1999–4976, 65 FR 6504, Feb. 9, 2000]

§ 107.270 Periodic inspection.

(a) Your vessel must undergo a periodic inspection within 3 months before or after the second or third anniversary of the date of your vessel's Certificate of Inspection. This periodic inspection will take the place of an annual inspection.

(b) You must contact the cognizant OCMI to schedule an inspection at a time and place which he or she approves. No written application is required.

(c) The scope of the periodic inspection is the same as that for the inspection for certification, as specified in § 107.231 except § 107.231(x) and (y). The OCMI will insure that the MODU is in satisfactory condition and fit for the service for which it is intended. If your MODU passes the periodic inspection, the marine inspector will endorse your current Certificate of Inspection.

(d) If the periodic inspection reveals deficiencies in your MODU's maintenance, you must make any or all repairs or improvements within the time period specified by the OCMI.

(e) Nothing in this subpart limits the marine inspector from conducting such tests or inspections he or she deems necessary to be assured of the vessel's seaworthiness.

[USCG 1999–4976, 65 FR 6504, Feb. 9, 2000]

§ 107.271 Inspection: Alterations.

After plans are approved for alterations affecting the safety of the unit the Coast Guard conducts inspections of the affected—

(a) Hull;

(b) Machinery; or

(c) Equipment.

§ 107.275 Other inspections.

When the Coast Guard receives the report required in § 109.411 or § 109.425, the Coast Guard conducts the following inspections of a unit to determine if the unit meets the requirements under which it was issued its original Certificate of Inspection:

(a) An inspection after an accident.

(b) An inspection after a defect is found that affects—

(1) The seaworthiness of the unit; or

(2) The safety or efficiency of a lifesaving device, or firefighting device.

(c) An inspection of repairs made because of an accident or a defect.

§ 107.279 Certificate of Inspection: Failure to meet requirements.

If a unit fails to meet the requirements in § 107.231, the Coast Guard may—

(a) Withhold issuance of an original Certificate of Inspection after an original inspection for certification, until the unit meets the requirements in § 107.231;

(b) Withhold renewal of the Certificate of Inspection until the MODU meets the requirements of § 107.231, except § 107.231(x) and (y).

(c) Suspend a valid Certificate of Inspection after an annual or periodic inspection until the MODU meets the requirements of § 107.231, except § 107.231(x) and (y).

(d) Revoke a valid Certificate of Inspection after an annual or periodic inspection if the unit operates without complying with Coast Guard orders to correct unlawful conditions.

(e) Revoke or suspend an unexpired Certificate of Inspection;

(f) Withhold issuance of a safety equipment certificate;

(g) Withhold renewal of safety equipment certificate;

(h) Suspend an unexpired safety equipment certificate;

(i) Revoke an unexpired safety equipment certificate; and

(j) Withhold, suspend, or revoke an exemption certificate.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by USCG–1999–6216, 64 FR 53226, Oct. 1, 1999; USCG 1999–4976, 65 FR 6504, Feb. 9, 2000]

§ 107.283 Certificate of Inspection: Conditions of validity.

To maintain a valid Certificate of Inspection, you must complete your annual and periodic inspections within the periods specified in §§ 107.269 and 107.270 and your Certificate of Inspection must be endorsed.

[USCG 1999–4976, 65 FR 6504, Feb. 9, 2000]

Subpart C—Plan Approval

§ 107.301 Purpose.

This subpart prescribes procedures for submitting plans and specifications for plan approval and describes the information that must be submitted.

§ 107.305 Plans and information.

Each applicant for approval of plans must submit three copies of each of the following described plans, specifications, and structural calculations concerning the construction, arrangement, required equipment, and safety features of the unit:

GENERAL

(a) Specifications.

(b) General arrangement plan of decks, holds, inner bottoms, etc. including inboard and outboard profile.

HULL STRUCTURE [1]

(c) *Inner bottom plating and framing.

[1] The asterisk (*) indicates items that are approved by the American Bureau of Shipping for vessels classed by it. Items approved by the American Bureau of Shipping are generally accepted as satisfactory unless the

(d) *Midship section.
(e) *Shell plating and framing.
(f) *Stern, stern frame, and rudder.
(g) *Structural deck plans for strength decks.
(h) *Pillars and girders.
(i) *Watertight and oiltight bulkheads.
(j) *Foundations for main machinery and boilers.
(k) *Arrangement of ports, doors, and airports in shell plating.
(l) *Hatch coamings and covers in weather and watertight decks.
(m) *Details of hinged subdivision watertight doors and operating gear.
(n) *Scuppers and drains penetrating shell plating.
(o) Arrangement of cranes.
(p) For self-elevating units, column stabilized units, and units with special hull configuration, structural calculations and plans showing special structural features.

STABILITY

(q) The plans and information required by Subchapter S of this chapter.
(r) For vessels of 100 meters (328 feet) or more in length contracted for on or after September 7, 1990, a plan must be included which shows how visibility from the navigation bridge will meet the standards contained in §108.801 of this subchapter.
(s)–(u) [Reserved]

FIRE CONTROL

(v) General arrangement plans showing, for each deck, the control stations, fire sections enclosed by fire resisting bulkheads, alarm and extinguishing systems, fire extinguishers, means of access to compartments and other decks, and the ventilation system, including location of ventilation shutdowns, positions of dampers, and the numbers identifying each system.
(w) Ventilation diagram, including dampers and other fire control features.
(x) Details of fire alarm systems.
(y) Details of fixed fire extinguishing systems.

law or Coast Guard regulations contain requirements that are not covered by the American Bureau of Shipping.

MARINE ENGINEERING

(z) Plans required for marine engineering equipment and systems by Subchapter F of this chapter.

ELECTRICAL ENGINEERING

(aa) Plans required for electrical engineering equipment and systems by Subchapter J of this chapter.

LIFE SAVING EQUIPMENT

(bb) The location and arrangement of each lifesaving system including each embarkation deck, showing each overboard discharge and clearances from projections and obstructions in the way of launching lifeboats, rescue boats, and liferafts throughout the range of list and trim angles required under part 108, subpart E of this chapter.
(cc) The design weight of each lifeboat, rescue boat, and davit-launched liferaft when fully equipped and loaded.
(dd) Working loads of davits and winches.
(ee) Types and sizes of falls.
(ff) Manufacturer's name and identification of each item of equipment.

PERSONNEL ACCOMMODATIONS

(gg) Arrangement plans showing each accommodation space, ventilation, and means of escape.

CONSTRUCTION PORTFOLIO[2]

(hh) A construction portfolio must be prepared for each unit and must be approved by the Coast Guard. The portfolio must document the location and extent of application of different grades and strengths of materials and include a description of the materials and welding procedures employed and any other relevant construction information. The portfolio must contain the following:
(1) Structural plans showing areas incorporating different grades and strengths of materials. A simplified plan may be included in the portfolio if it adequately defines the different areas of application.

[2] This portfolio may be included in the operating manual required in §109.121.

(2) A list of different grades or strengths of material that conform to American Bureau of Shipping (ABS) or American Society of Testing and Materials (ASTM) specifications. For materials that do not conform to ABS or ASTM specifications, complete specifications, including chemical and physical properties, special testing and any heat treatment.

(3) Each approved weld procedure for the fabrication of each structure using different grades or strengths of material and each approved weld test procedure.

(4) Information, restrictions or prohibitions regarding repairs or modifications.

OPERATING MANUAL

(ii) The operating manual required in §109.121. If an approved manual is changed, only the pages affected by the change need be submitted if the manual is bound in such a way as to allow old pages to be removed easily and new ones inserted and if the manual has a record of page changes.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 79–023, 48 FR 51008, Nov. 4, 1983; CGD 83–071, 52 FR 6978, Mar. 6, 1987; CGD 85–099, 55 FR 32248, Aug. 8, 1990; CGD 88–032, 56 FR 35826, July 29, 1991; CGD 84–069, 61 FR 25290, May 20, 1996; 63 FR 52814, Oct. 1, 1998]

§107.309 Crane plans and information.

(a) Three copies of each of the following must be submitted:

(1) Stress and arrangement diagrams, bill of materials, and supporting calculations for all structural components listed in API Spec. 2C, Second Edition, February 1972 (with supplement 2).

(2) Drawings of foundations and substructures with supporting calculations for support and stability of each crane under its rated load.

(3) Plans showing the installation of the safety features required in §108.601.

(4) Drawings of the means provided to stop motion and set brakes during a power failure.

NOTE: These plans must be submitted to the Coast Guard, if the crane is not certified. If the crane is to be certified, four copies must be sent to the American Bureau of Shipping or the International Cargo Gear Bureau.

(b) In addition to the plans and information required in paragraph (a), the following plans and information must be submitted to the Coast Guard only:

(1) One line diagrams of the electrical power circuits of the electric power crane overload protection required in Subpart 111.50 of this chapter.

(2) Diagrams of the hydraulic or pneumatic power and control systems, as required by Subpart 58.30–40 or 58.30–50 of this chapter, as applicable.

§107.317 Addresses for submittal of plans, specifications, and calculations.

The copies of each plan, specification, and calculation required under §107.305 and §107.309 must be submitted to one of the following as applicable:

(a) The Officer in Charge, Marine Inspection, in the zone in which the unit is to be built or altered.

(b) Commanding Officer, U.S. Coast Guard Marine Safety Center, 400 Seventh St., SW., Washington, DC 20590–0001.

(c) The American Bureau of Shipping, (ABS) ABS Plaza, 16855 Northchase Drive, Houston, TX 77060.

NOTE: For classed vessels, the American Bureau of Shipping will, upon request by the submitter, arrange to forward the plans indicated with an asterisk in §107.305 to the Coast Guard indicating ABS's action thereon.

(d) International Cargo Gear Bureau, Inc., 90 West Street, Suite 1612, New York, NY 10006.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 85–048b, 51 FR 15498, Apr. 24, 1986; CGD 89–025, 54 FR 19571, May 8, 1989; CGD 96–041, 61 FR 50730, Sept. 27, 1996; USCG–2000–7790, 65 FR 58461, Sept. 29, 2000]

Subpart D—Certificates Under International Convention for Safety of Life at Sea, 1974

§107.401 Purpose and definition.

(a) The International Convention for Safety of Life at Sea, 1974, requires one or more of the certificates described in this subpart to be carried on self-propelled vessels of 500 gross tons or over engaged in international voyages. This subpart prescribes rules for the issuance of these certificates to mobile offshore drilling units.

(b) ''International voyage'' has the same meaning as stated in Regulation

2(d) of part A, chapter I in the International Convention for Safety of Life at Sea, 1974. (SOLAS 74), which is: ''a voyage from a country to which the present Convention applies to a port outside such country, or conversely. The Coast Guard has interpreted this definition to include the following:

(1) A voyage from a country to which SOLAS 1974 applies, to a port outside that country or the reverse;

(2) A voyage from any territory, including the Commonwealth of Puerto Rico, all possesssions of the United States, and all lands held by the United States under a protectorate or mandate, whose international relations are the responsibility of a contracting SOLAS 74 government, or which is administered by the United Nations, to a port outside that territory or the reverse;

The Coast Guard has interpreted this definition to not include a ''Great Lakes voyage'' which means a voyage solely on the Great Lakes of North America and the St. Lawrence River west of a straight line drawn from Capedes Rosiers to West Point, Anticosti Island and, on the north side of Anticosti Island, the 63rd Meridian.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 90–008, 55 FR 30662, July 26, 1990]

§ 107.405 Safety Equipment Certificate.

(a) A self-propelled unit of at least 500 gross tons that engages in international voyages is issued a safety equipment certificate if the inspector issues it a certificate of inspection under § 107.211 or § 107.215 and it meets chapter 3 of the International Convention for Safety of Life at Sea, 1974.

(b) A Safety Equipment Certificate expires 60 months after the date of issue.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 90–008, 55 FR 30662, July 26, 1990; USCG 1999–4976, 65 FR 6504, Feb. 9, 2000]

§ 107.409 Safety Construction Certificate.

(a) Application for a Safety Construction Certificate is made by indicating in the space provided on the Application for Inspection Form CG–3752 whether the American Bureau of Shipping or the Coast Guard is to issue the certificate.

(b) The American Bureau of Shipping or the Coast Guard may issue a self-propelled unit of at least 500 gross tons that engages on international voyages a Safety Construction Certificate if the unit meets the requirements in Regulation 12 (a)(ii), Chapter I of the International Convention for Safety of Life at Sea, 1974.

(c) A Safety Construction Certificate expires 60 months after the date of issue.

(d) If a unit fails to meet the requirements in Regulation 12(a)(ii), the Coast Guard may—

(1) Suspend an unexpired Safety Construction Certificate; and

(2) Revoke an unexpired Safety Construction Certificate.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 90–008, 55 FR 30662, July 26, 1990]

§ 107.413 Exemption certificate.

(a) An owner or operator of a unit may request an exemption from the requirements of the International Convention for Safety of Life at Sea, 1974 (SOLAS 74) by writing to the appropriate OCMI.

(b) The Commandant (G–MOC) may exempt a self-propelled unit of at least 500 gross tons on an international voyage from any of the requirements in the International Convention for Safety of Life at Sea, 1974 (SOLAS 74) if the unit meets the conditions of Regulation 4 of Part A, Chapter I, of SOLAS 74 which states the following:

a. A ship which is not normally engaged on international voyages but which, in exceptional circumstances, is required to undertake a single international voyage may be exempted by the Administration from any of the requirements of the present Regulations provided that it complies with safety requirements which are adequate in the opinion of the Administration for the voyage which is to be undertaken by the ship.

b. The Administration may exempt any ship which embodies features of a novel kind from any of the provisions of Chapters II–1, II–2, III and IV of these Regulations the application of which might seriously impede research into the development of such features and their incorporation in ships engaged on international voyages. Any such

ship shall, however, comply with safety requirements which, in the opinion of that Administration, are adequate for the service for which it is intended and are such as to ensure the overall safety of the ship and which are acceptable to the Governments of the States to be visited by the ship. The Administration which allows any such exemption shall communicate to the Organization particulars of same and the reasons therefor which the Organization shall circulate to the Contracting Governments for their information.

(c) The Commandant (G–MOC) may exempt a self-propelled unit of at least 500 gross tons on an international voyage from the requirements of Chapter III (Lifesaving Appliances, &C.) of SOLAS 74 if the unit meets the conditions of Regulation 2 of chapter III which states in part:

The Administration may, if it considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific requirements of this chapter unreasonable or unnecessary, exempt from those requirements individual ships or classes of ships which, in the course of their voyage, do not proceed more than 20 miles from the nearest land.

(d) The Commandant (G–MOC) may exempt a unit from the requirements of Chapters II–1 (Construction—Subdivision and stability, machinery and electrical installations) or II–2 (Construction—Fire protection, fire detection and fire extinction) of SOLAS 74 if the unit meets the conditions of Regulation 1–4 of Part A Chapter II–1 or Regulation 1–4.1 of Part A Chapter II–2, respectively, of SOLAS 74 which state the following: The Administration of a State may, if it considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific requirements of this chapter unreasonable or unnecessary, exempt from those requirements individual ships or classes of ships entitled to fly the flag of the State which, in the course of their voyage, do not proceed more than 20 miles from the nearest land.

(e) An Exemption Certificate is in force for the period of validity of the certificate to which it refers.

[CGD 73–251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 90–008, 55 FR 30662, July 26, 1990; CGD 95–072, 60 FR 50464, Sept. 29, 1995; CGD 96–041, 61 FR 50730, Sept. 27, 1996]

§ 107.415 Safety Management Certificate.

(a) All self-propelled mobile offshore drilling units of 500 gross tons or over to which 33 CFR part 96 applies, on an international voyage must have a valid Safety Management Certificate and a copy of their company's valid Document of Compliance certificate on board.

(b) A Safety Management Certificate is issued for a period of not more than 60 months.

[CGD 95–073, 62 FR 67515, Dec. 24, 1997]

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AUTHORITY: 43 U.S.C. 1333; 46 U.S.C. 3102, 3306; 49 CFR 1.46.

SOURCE: CGD 73–251, 43 FR 56808, Dec. 4, 1978, unless otherwise noted.

Subpart A—General

§ 108.101 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 paragraph (b) of this section, the Coast Guard must publish notice of change in the FEDERAL REGISTER and make the material available to the public. All approved material is on file at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC, and at the U.S. Coast Guard, Office of

Design and Engineering Standards (G–MSE), 2100 Second Street SW., Washington, DC 20593–0001 and is available from the sources indicated in paragraph (b) of this section.

(b) The material approved for incorporation by reference in this part and the sections affected are:

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

100 Barr Harbor Drive, West Conshohocken, PA 19428–2959.

ASTM D 93–97, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester.	108.500
ASTM F 1014–92, Standard Specification for Flashlights on Vessels	108.497
ASTM F 1121–87 (1993), Standard Specification for International Shore Connections for Marine Fire Applications.	108.427

INTERNATIONAL MARITIME ORGANIZATION (IMO)

Publications Section, 4 Albert Embankment, London, SE1 7SR, United Kingdom

Resolution A.520(13), Code of Practice for the Evaluation, Testing and Acceptance of Prototype Novel Life-saving Appliances and Arrangements, 17 November 1983.	108.105.
Resolution A.649(16), Code for the Construction and Equipment of Mobile Offshore Drilling Units (MODU Code), 19 October 1989 with amendments of June 1991.	108.503.
Resolution A.658(16), Use and Fitting of Retro-reflective Materials on Life-saving Appliances, 20 November 1989.	108.645; 108.649.
Resolution A.760(18), Symbols Related to Life-saving Appliances and Arrangements, 17 November 1993.	108.646; 108.647; 108.649; 108.655.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

1 Batterymarch Park, Quincy, MA 02269–9101.

NFPA 13–1996, Standard for the Installation of Sprinkler Systems	108.430

[88–032, 56 FR 35826, July 29, 1991, as amended by CGD 95–072, 60 FR 50464, Sept. 29, 1995; CGD 84–069, 61 FR 25290, May 20, 1996; CGD 96–041, 61 FR 50730, Sept. 27, 1996; CGD 97–057, 62 FR 51046, Sept. 30, 1997; CGD 95–028, 62 FR 51208, Sept. 30, 1997; USCG 1999–5151, 64 FR 67182, Dec. 1, 1999]

§ 108.103 Equipment not required on a unit.

Each item of lifesaving and fire-fighting equipment carried on board the unit in addition to equipment of the type required under this subchapter, must—

(a) Be approved; or

(b) Be acceptable to the cognizant OCMI, for use on the unit.

[CGD 84–069, 61 FR 25291, May 20, 1996]

§ 108.105 Substitutes for required fittings, material, apparatus, equipment, arrangements, calculations, and tests.

(a) Where this subchapter requires a particular fitting, material, apparatus, equipment, arrangement, calculation or test, the Commandant (G–MSE) may accept any substitution that is at least as effective as that specified. If necessary, the Commandant (G–MSE) may require engineering evaluations and tests to demonstrate the equivalence of the substitution.

(b) In any case where it is shown to the satisfaction of the Commandant that the use of any particular equipment, apparatus, arrangement, or test is unreasonable or impracticable, the Commandant may permit the use of alternate equipment, apparatus, arrangement, or test to such an extent and upon such condition as will insure, to his satisfaction, a degree of safety consistent with the minimum standards set forth in this subchapter.

(c) The Commandant (G–MSE) may accept a novel lifesaving appliance or arrangement, if it provides a level of safety equivalent to the requirements of this part and the appliance or arrangement—

(1) Is evaluated and tested in accordance with IMO Resolution A.520(13), Code of Practice for the Evaluation, Testing and Acceptance of Prototype

Novel Life-saving Appliances and Arrangements; or

(2) Has successfully undergone evaluation and tests that are substantially equivalent to those recommendations.

(d) During a unit's construction and when any modification to the lifesaving arrangement is done after construction, the owner must obtain acceptance of lifesaving arrangements from the Commandant (G–MSC).

(e) The OCMI may accept substitute lifesaving appliances other than those required by this part, except for—

(1) Survival craft and rescue boats; and

(2) Survival craft and rescue boat launching and embarkation appliances.

(f) Acceptance of lifesaving appliances and arrangements will remain in effect unless—

(1) The OCMI deems their condition to be unsatisfactory or unfit for the service intended; or

(2) The OCMI deems the crew's ability to use and assist others in the use of the lifesaving appliances or arrangements to be inadequate.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 95–072, 60 FR 50465, Sept. 29, 1995; CGD 84–069, 61 FR 25291, May 20, 1996]

§ 108.109 Classification society standards.

(a) Any person who desires to use the rules of a classification society, other than the American Bureau of Shipping, to meet requirements in this Subchapter must request recognition of that society from the Commanding Officer, Marine Safety Center. The relevant rules must be submitted with the request.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 95–072, 60 FR 50465, Sept. 29, 1995]

Subpart B—Construction and Arrangement

HULL STRUCTURE

§ 108.113 Structural standards.

Except as provided in §108.109, each unit must meet the structural standards of the American Bureau of Shipping's *Rules for Building and Classing Offshore Mobile Drilling Units, 1978.*

§ 108.114 Appliances for watertight and weathertight integrity.

(a) Appliances to ensure watertight integrity include watertight doors, hatches, scuttles, bolted manhole covers, or other watertight closures for openings in watertight decks and bulkheads.

(b) Appliances to ensure weathertight integrity include weathertight doors and hatches, closures for air pipes, ventilators, ventilation intakes and outlets, and closures for other openings in deckhouses and superstructures.

(c) Each internal opening fixed with appliances to ensure watertight integrity which are used intermittently during operation of the unit while afloat must meet the following:

(1) Each door, hatch, and scuttle must—

(i) Be remotely controlled from a normally manned control station, and be operable locally from both sides of the bulkhead; or

(ii) If there is no means of remote control there must be an alarm system which signals whether the appliance is open or closed both locally at each appliance and in a normally manned control station.

(2) Each closing appliance must remain watertight under the design water pressure of the watertight boundary of which it is a part.

(d) Each external opening fitted with an appliance to ensure weathertight integrity must be located so that it would not be submerged below the final equilibrium waterline if the unit is subjected simultaneously to—

(1) Damage causing flooding described in §174.075 through §174.085 of this chapter; and

(2) A wind heeling moment calculated in accordance with §174.055 of this chapter using a wind velocity of 50 knots (25.8 meters per second).

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 79–023, 48 FR 51008, Nov. 4, 1983]

FIRE PROTECTION: GENERAL

§ 108.123 Isolation of combustible material.

Each internal combustion engine exhaust, boiler and galley uptake, and similar heat source must be separated

or insulated from combustible materials.

§ 108.127 Storage lockers for combustibles.

Each oil and paint locker must be made of steel or an equivalent material or be completely lined with steel or an equivalent material as described in § 108.131(c) of this subpart.

STRUCTURAL FIRE PROTECTION

§ 108.131 Definitions.

(a) *Standard Fire Test* means the test in which specimens of the relevant bulkheads or decks, having a surface of approximately 4.65 square meters (50 square feet) and a height of 2.44 meters (8 feet) resembling as closely as possible the intended construction and including, where appropriate, at least one joint, are exposed in a test furnace to a series of temperature relationships approximately as follows:

(1) At the end of 5 minutes—538°C. (1,000°F.)

(2) At the end of 10 minutes—704°C. (1,300°F.)

(3) At the end of 30 minutes—843°C. (1,550°F.)

(4) At the end of 60 minutes—927°C. (1,700°F.).

(b) Bulkheads and decks are defined and classed as follows:

(1) *A class bulkhead or deck* means a bulkhead or deck that—

(i) Is made of steel or other equivalent material; and

(ii) Prevents the passage of flame and smoke for 60 minutes if subjected to the standard fire test.

(2) *A 60 bulkhead or deck* means an A class bulkhead or deck that—

(i) Is insulated with approved insulation, bulkhead panels, or deck covering;

(ii) If subjected to the standard fire test for 60 minutes, has an average temperature rise on the unexposed side of the insulated bulkhead or deck of less than 139°C. (250°F.) above the temperature before the standard fire test and has a temperature rise at any point on the unexposed surface, including any joint, of less than 180°C. (325°F.) above the temperature before the standard fire test.

(3) *B class bulkhead or deck* means a bulkhead or deck that—

(i) Is made of approved noncombustible material;

(ii) Prevents flame from passing through it for 30 minutes if subjected to the standard fire test.

(4) *C class bulkhead or deck* means a bulkhead or deck made of approved noncombustible material.

(c) *Equivalent material* means a material that by itself or with insulation has smoke and fire retardant properties equal to that of the steel required for ''A'' or ''B'' class bulkheads or decks and has structural qualities equivalent to steel at the end of the applicable fire exposure.

(d) *Approved material* means a material approved under one of the following subparts of Subchapter Q of this chapter:

(1) Deck coverings, Subpart 164.006.

(2) Structural insulation, Subpart 164.007.

(3) Bulkhead panel, Subpart 164.008.

(4) Noncombustible materials, Subpart 164.009;

(5) Interior finishes, Subpart 164.012.

(e) *Stairtower* means a stairway that penetrates more than one deck within the same enclosure, or two or more stairways that—

(1) Are arranged vertically one above the other; or

(2) Penetrate both the deck and the overhead within the same enclosure.

(f) *Accommodation space* includes, sleeping, mess, hospital, recreational, toilet, washing and shower spaces, and corridors.

§ 108.133 Hull superstructure, structural bulkheads, decks, and deckhouses.

Each hull superstructure, structural bulkhead, deck, and deckhouse must be made of steel or an equivalent material.

§ 108.135 Boundary bulkheads, decks of galleys, and combustible material lockers.

Each boundary bulkhead and deck of each galley, each combination galley and messroom, and each combustible material storage locker must be an A class bulkhead and A class deck respectively.

§ 108.137 Bulkhead and deck separations of accommodation spaces.

Each boundary bulkhead and deck that separates an accommodation space or control station from the following must be an A class bulkhead and A class deck respectively—

(a) Machinery space;

(b) Galley or combination galley and messroom;

(c) Main pantry;

(d) Classified space;

(e) Store room.

§ 108.139 Boundary bulkheads and decks of a space containing emergency power.

Each boundary bulkhead and deck of a space containing an emergency electric power source or components of an emergency electric power source must be an A class bulkhead and A class deck respectively. When separate but adjoining spaces are provided for such equipment, boundary bulkhead type construction is not required for the separating partitions common to each space.

§ 108.141 Boundary bulkheads and decks between the emergency power source and service generators.

Each boundary bulkhead and deck of a space containing an emergency electric power source or components of an emergency electric power source that adjoins a space containing a ship's service generator, the components of a ship's service generator, or a classified space must be an A–60 bulkhead and A–60 deck.

§ 108.143 Accommodation space.

(a) Each corridor bulkhead in an accommodation space must be an A class or B class bulkhead except if an A class bulkhead is specifically required by this part.

(b) No door in a corridor bulkhead in an accommodation space may have a louver, except that a stateroom, lounge, or recreation room door may have louvers in its lower half.

(c) Each stairtower, elevator, and dumbwaiter, and other trunk must be enclosed by A class bulkheads.

(d) Each bulkhead not described under paragraph (a) of this section must be either A class, B class, or C class bulkheads.

(e) At least one opening to each stairway must be enclosed by either A class or B class bulkheads and doors.

(f) Each stairtower must have doors at all levels and each must be an A class door.

(g) Each door required by paragraphs (e) and (f) of this section—

(1) Must be self-closing;

(2) May not have any means to permanently hold the door open, except for magnetic holdbacks that are operated from the bridge or other remote location.

(h) Interior stairs, including stringers and treads, must be made of steel or an equivalent material.

(i) Except in washrooms and toilet spaces, each deck covering in an accommodation space must be made of an approved material, except an overlay on a deck for leveling or finishing that is not more than 9.375 millimeters (3/8 inch) thick.

(j) Except as provided in paragraph (1), each ceiling, lining, insulation, and pipe and duct lagging in an accommodation space must be made of an approved material that is noncombustible.

(k) Each sheathing, furring, or holding piece used to secure a bulkhead, ceiling, lining, or insulation in an accommodation space must be made of an approved material that is non-combustible.

(l) No bulkhead, lining, or ceiling in an accommodation space may have a combustible veneer greater than 2 millimeters (1/12 inch) in thickness.

(m) Each corridor or hidden space in an accommodation space may be covered by an approved interior finish or a reasonable number of coats of paint. However, no corridor or hidden space may have combustible veneer, trim, or decoration except material approved under Subpart 164.012 of this chapter.

§ 108.145 Hatches and tonnage openings.

Each hatch, except a hatch between storage spaces and each tonnage opening closure, must be made of steel or an equivalent material of the same class as the bulkhead or deck where the opening occurs.

§ 108.147 Certain paints prohibited.

No nitrocellulose or other highly flammable or noxious fume-producing paint or lacquer may be used on a unit.

MEANS OF ESCAPE

§ 108.151 Two means required.

(a) Each of the following must have at least 2 means of escape:

(1) Each accommodation space with a deck area of at least 27 sq. meters (300 sq. ft.).

(2) Each space, other than an accommodation space, that is continuously manned or used on a regular working basis except for routine security checks.

(3) Weather deck areas where personnel may be normally employed.

(b) When two means of escape are required from a space below the main deck, one the means of escape must provide for a rapid escape through openings that are not required to be watertight by damage stability considerations.

(c) When two means of escape are required from a space above the main deck, one of the means of escape must provide for a rapid escape to a weather deck.

§ 108.153 Location of means of escape.

The required two means of escape must be through exits that minimize the possibility of having both exits blocked if a fire or other casualty occurs in the area.

§ 108.155 Restrictions on means of escape utilized.

A required means of escape may not be a vertical ladder or deck scuttle, except that one of the means of escape may be a vertical ladder or deck scuttle if a stairway would be impracticable.

§ 108.157 Locked doors.

No door to the required means of escape may be designed to lock except—

(a) A crash door or a door that has a locking device that can be easily forced, if on both sides of the door a permanent and easily seen instruction is placed; or

(b) An outside door to a deckhouse if the door can be locked by key only and if the master or person in charge has control of the key to the door's lock.

§ 108.159 Stairways and exterior inclined ladders.

Each stairway, except a stairway in a machinery or storage space, and each exterior inclined ladder must be at least 70 centimeters (28 inches) wide with an angle of inclination from the horizontal of not more than 50 degrees, except that special consideration may be given to the installation if a 70 centimeters (28 inch) width is impracticable.

§ 108.160 Vertical ladders.

(a) Each vertical ladder must have rungs that are—

(1) At least 41 centimeters (16 inches) in length;

(2) Not more than 30 centimeters (12 inches) apart, uniform for the length of the ladder; and

(3) At least 18 centimeters (7 inches) from the nearest permanent object in back of the ladder.

(b) Except when unavoidable obstructions are encountered, there must be at least 11.5 centimeters (4½ inches) clearance above each rung.

(c) Except as provided in § 108.525(e), each exterior vertical ladder more than 6 meters (20 ft.) in length must be fitted with a cage or ladder safety device meeting ANSI Standard 14.3 (1974) for fixed ladders.

(d) No vertical fixed ladders may be made of wood.

§ 108.161 Dead end corridors.

No dead end corridor may be more than 13 meters (43 feet) long.

§ 108.165 Access to lifeboats and liferafts.

Each unit must be designed to provide direct access to the lifeboat and liferaft embarkation areas.

§ 108.167 Weather deck ladders.

Each unit must have at least one permanent, inclined ladder between each weather deck.

CLASSIFIED LOCATIONS

§ 108.170 Definitions.

(a) Classified locations are those in which flammable hydrocarbon gas or vapors, resulting from the drilling operations, may be present in quantities sufficient to produce an explosive or ignitable mixture. Location of these areas affect the design of the units' machinery, electrical, and ventilation systems. (See Notes 1 and 2).

(b) For the purpose of this subpart ''semi-enclosed location'' means a location where natural conditions of ventilation are notably different from those on open decks due to the presence of structures such as roofs, windbreaks, or bulkheads.

NOTES: 1. Further requirements with respect to hazardous locations are contained in part 111, subpart 111.105, of this chapter.

2. For specific requirements for machinery and electrical installations on mobile offshore drilling units see Subchapters ''F'' and ''J'' of this chapter.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 94–108, 61 FR 28270, June 4, 1996]

§ 108.171 Class I, Division 1 locations.

The following are Class I, Division 1 locations:

(a) An enclosed space that contains any part of the mud circulating system that has an opening into the space and is between the well and final degassing discharge.

(b) An enclosed or semi-enclosed location that is below the drill floor, and contains a possible source of gas release.

(c) An enclosed space that is on the drill floor, and is not separated by a solid, gas-light floor from the spaces specified in paragraph (b) of this section.

(d) A space that would normally be considered a Division 2 location under § 108.173 but where combustible or flammable gases might accumulate.

(e) A location in the weather, or a semi-enclosed location, except as provided in paragraph (b) of this section that is within 1.5 m (5 ft.) of the boundary of any—

(1) Equipment or opening specified in paragraph (a) of this section;

(2) Ventilation outlet, access, or other opening to a Class I, Division 1 space; or

(3) Gas vent outlet.

(f) Except as provided in § 108.175, an enclosed space that has an opening into a Class I, Division 1 location.

§ 108.173 Class I, Division 2 locations.

The following are Class I, Division 2 locations:

(a) An enclosed space that has any open portion of the mud circulating system from the final degassing discharge to the mud suction connection at the mud pit.

(b) A location in the weather that is—

(1) Within the boundaries of the drilling derrick up to a height of 3 m (10 ft.) above the drill floor;

(2) Below the drill floor and within a radius of 3 m (10 ft.) of a possible source of gas release; or

(3) Within 1.5 m (5 ft.) of the boundaries of any ventilation outlet, access, or other opening to a Class I, Division 2 space.

(c) A location that is—

(1) Within 1.5 m (5 ft.) of a semi-enclosed Class I, Division 1 location indicated in § 108.171(b); or

(2) Within 1.5 m (5 ft.) of a Class I, Division 1 space indicated in § 108.171(e).

(d) A semi-enclosed area that is below and contiguous with the drill floor to the boundaries of the derrick or to the extent of any enclosure which is liable to trap gasses.

(e) A semi-enclosed derrick to the extent of its enclosure above the drill floor or to a height of 3 m (10 ft.) above the drill floor, whichever is greater.

(f) Except as provided in § 108.175 an enclosed space that has an opening into a Class I, Division 2 location.

§ 108.175 Contiguous locations.

An enclosed space that has direct access to a Division 1 or Division 2 location is the same division as that location, except—

(a) An enclosed space that has direct access to a Division 1 location is not a hazardous location if—

(1) The access has self-closing gastight doors that form an air lock;

(2) The ventilation causes greater pressure in the space than in the Division 1 location; and

(3) Loss of ventilation overpressure activates an alarm at a manned station;

(b) An enclosed space that has direct access to a Division 1 location can be considered as a Division 2 location if—

(1) The access has a self-closing, gastight door that opens into the space and that has no hold-back device;

(2) Ventilation causes the air to flow with the door open from the space into the Division 1 location; and

(3) Loss of ventilation activates an alarm at a manned control station; and

(c) An enclosed space that has direct access to a Division 2 location is not a hazardous location if—

(1) The access has a self-closing, gastight door that opens into the space and that has no hold-back device;

(2) Ventilation causes the air to flow with the door open from the space into the Division 2 location; and

(3) Loss of ventilation activates an alarm at a manned control station.

§ 108.177 Electrical equipment in classified locations.

Electrical equipment and devices installed in spaces made non-hazardous by the methods indicated in § 108.175 must only be essential equipment.

VENTILATION

§ 108.181 Ventilation for enclosed spaces.

(a) Each enclosed space must be vented or ventilated.

(b) There must be a means to close each vent or ventilating system.

(c) Each fan in a ventilating system must have remote controls installed in accordance with part 111, subpart 111.103, of this chapter.

(d) There must be a means to close each doorway, ventilator, and annular space around each funnel or other opening to machinery, stowage, or working spaces. The means must be located outside the space.

(e) Each intake in a ventilating system must be located so as to prevent, as far as practicable, the intake of noxious fumes.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 94–108, 61 FR 28270, June 4, 1996]

§ 108.185 Ventilation for enclosed classified locations.

(a) The ventilation system for each enclosed classified location must be designed to maintain a pressure differential between the enclosed classified location and each non-classified location adjacent to the enclosed classified location, so as to prevent the discharge of ignitable gases into the non-classified adjacent locations.

(b) Each air intake must be outside of enclosed classified locations.

(c) Each unit must have alarms that are powered independently of the ventilation motor power and control circuitry and sound at a continuously manned station when—

(1) Gas is present in an enclosed classified location; or

(2) The ventilation system for the space is not working.

(d) Each ventilation system for enclosed classified locations must provide a complete change of air every five minutes.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 94–108, 61 FR 28270, June 4, 1996]

§ 108.187 Ventilation for brush type electric motors in classified spaces.

Ventilation for brush type electric motors in classified locations must meet N.F.P.A. 496–1974 ''Standard for Purged and Pressurized Enclosures for Electrical Equipment in Hazardous Locations'', except audible and visual alarms may be used if shutting down the motors may cause unsafe conditions.

ACCOMMODATION SPACES

§ 108.193 Restrictions.

(a) There must be no direct communication between the accommodation spaces and any chainlocker, stowage, or machinery space, except through solid, close-fitted doors or hatches.

(b) No access, vent, or sounding tube from a fuel or oil tank may open into any accommodation space, except that

accesses and sounding tubes may open into corridors.

§ 108.195 Location of accommodation spaces.

(a) On surface type units, accommodation spaces must not be located forward of a vertical plane located at 5 percent of the unit's length aft of the stem, at the designed summer load line.

(b) On all units, the deckhead of each accommodation space must be above the deepest load line.

§ 108.197 Construction of accommodation spaces.

(a) Each sleeping, mess, recreational, or hospital space that is adjacent to or immediately above a stowage or machinery space, paint locker, drying room, washroom, toilet space, or other odor source must be made odorproof.

(b) Each accommodation space that is adjacent to or immediately above a galley, machinery space, machinery casing, boiler room, or other noise or heat source, must be protected from the heat and noise.

(c) Where the shell or an unsheathed weather deck forms a boundary of an accommodation space, the shell of deck must have a covering that prevents the formation of moisture.

(d) The deckheads of each accommodation space must be a light color.

(e) Each accommodation space in which water may accumulate must have a drain scupper located in the lowest part of the space, considering the average trim of the unit.

(f) Each public toilet space must be constructed and located so that its odors do not readily enter any sleeping, mess, recreational, or hospital space.

§ 108.199 Arrangement of sleeping spaces.

To the extent practicable, each occupation group must be berthed together in sleeping spaces arranged to minimize disturbance created by personnel leaving for or arriving from a working period.

§ 108.201 Size of sleeping spaces.

(a) No sleeping space may berth more than four persons, except that a sleeping space for personnel not regularly employed on a unit may berth up to six persons if the space meets § 108.199 and berthing of six persons in that space is authorized by the Commandant (G–MSO).

(b) Without deducting any equipment used by the occupants, each sleeping space must have for each occupant—

(1) 2.8 square meters (approximately 30 square feet) of deck area; and

(2) 6 cubic meters (approximately 210 cubic feet) of volume.

(c) Each sleeping space must have at least 191 centimeters (approximately 6 feet 3 inches) of headroom over clear deck areas.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 82–063b, 48 FR 4781, Feb. 3, 1983; CGD 95–072, 60 FR 50465, Sept. 29, 1995; CGD 96–041, 61 FR 50730, Sept. 27, 1996]

§ 108.203 Berths and lockers.

(a) Each sleeping space must have a separate berth for each occupant.

(b) No more than one berth may be placed over another.

(c) Each berth must have a framework of hard, smooth material that is not likely to corrode or harbor vermin.

(d) Each berth must be arranged to provide ample room for easy occupancy.

(e) Each berth must be at least 76 centimeters (approximately 30 inches) wide by 193 centimeters (approximately 76 inches) long.

(f) Adjacent berths must be separated by a partition that extends at least 46 centimeters (approximately 18 inches) above the sleeping surface.

(g) The bottom of a lower berth must be at least 30 centimeters (approximately 12 inches) above the deck.

(h) The bottom of an upper berth must be at least 76 centimeters (approximately 2 feet 6 inches) from the bottom of the berth below it and from the deck or any pipe, ventilating duct, or other overhead installation.

(i) Each berth must have a berth light.

(j) Each occupant of a sleeping space must have a readily accessible locker of hard, smooth material.

(k) Each locker must be at least .194 square meters (approximately 300 square inches) in cross section and 1.53 meters (approximately 60 inches) high.

§ 108.205 Wash spaces; toilet spaces; and shower spaces.

(a) For the purposes of this section—

(1) ''Private facility'' means a toilet, washing, or shower space that is accessible only from one single or double occupancy sleeping space;

(2) ''Semi-private facility'' means a toilet, washing or shower space that is accessible from either of two one-to-four person occupancy sleeping spaces; and

(3) ''Public facility'' means a toilet, washing, or shower space that is not private or semi-private.

(b) Each private facility must have one toilet, one shower, and one washbasin, all of which may be in a single space.

(c) Each semi-private facility must have at least one toilet and one shower, which may be in a single space.

(d) Each room adjoining a semi-private facility must have a washbasin if a washbasin is not installed in a semi-private facility.

(e) Each unit must have enough public facilities to provide at least one toilet, one shower, and one washbasin for each eight persons who occupy sleeping spaces that do not have private or semi-private facilities.

(f) Urinals may be installed in toilet rooms, but no toilet required in this section may be replaced by a urinal.

(g) Each public toilet space and washing space must be convenient to the sleeping space that it serves.

(h) No public facility may open into any sleeping space.

(i) Each washbasin, shower, and bathtub must have hot and cold running water.

(j) Adjacent toilets must be separated by a partition that is open at the top and bottom for ventilation and cleaning.

(k) Public toilet facilities and shower facilities must be separated.

(l) Each public facility that is a toilet space must have at least one washbasin unless the only access to the toilet space is through a washing space.

(m) Each toilet must have an open front seat.

(n) Each washing space and toilet space must be so constructed and arranged that it can be kept in a clean and sanitary condition and the plumbing and mechanical appliances kept in good working order.

(o) Washbasins may be located in sleeping spaces.

§ 108.207 Messrooms.

(a) Each messroom that is not adjacent to the galley that serves it must be equipped with a steamtable.

(b) Each messroom must seat the number of persons expected to eat in the messroom at one time.

§ 108.209 Hospital spaces.

(a) Each unit carrying twelve or more persons on a voyage of more than three days must have a hospital space.

(b) Each hospital space must be suitably separated from other spaces.

(c) No hospital space may be used for any other purpose, when used for care of the sick.

(d) An entrance to each hospital space must be wide enough and arranged to readily admit a person on a stretcher.

(e) Each berth in a hospital space must be made of metal.

(f) Each upper berth must be hinged and arranged so that it can be secured clear of the lower berth.

(g) Each hospital space must have at least one berth that is accessible from both sides.

(h) Each hospital space must have one berth for every 12 persons or portion thereof on board, who are not berthed in single occupancy rooms, but the number of berths need not exceed six.

(i) Each hospital space must have a toilet, washbasin, and bathtub or shower accessible from the hospital space.

(j) Each hospital space must have clothes lockers, a table, and seats.

§ 108.210 Hospital space not required.

(a) The hospital space required under § 108.209 is not required on a unit if one single or double occupancy sleeping space, designated and equipped as a treatment or isolation room or both is available for immediate medical use, and has—

(1) An entrance that is wide enough and arranged to readily admit a person on a stretcher;

(2) A single berth or examination table that is accessible from both sides; and

(3) A washbasin in or immediately adjacent to it.

§ 108.211 Miscellaneous accommodation spaces.

(a) Each unit must have enough facilities for personnel to wash their own clothes, including at least one tub or sink that has hot and cold running water.

(b) Each unit must have enough equipment or space for the personnel to dry their own clothes.

(c) Each unit must have an accommodation space that can be used for recreation.

§ 108.213 Heating requirements.

(a) Each accommodation space must be heated by a heating system that can maintain at least 20°C. (68°F.).

(b) Radiators and other heating apparatuses must be constructed, located or shielded so as to avoid risk of—

(1) Fire;

(2) Danger; and

(3) Discomfort

to the occupants of each accommodation space.

(c) Each exposed pipe in an accommodation space, leading to a radiator or other heating apparatus must be insulated.

§ 108.215 Insect screens.

(a) Accommodation spaces must be protected against the admission of insects.

(b) Insect screens must be installed when natural ventilation is provided.

RAILS

§ 108.217 Guardrails and bulwarks.

(a) Each unit must have guardrails or bulwarks along the edge of the bridge, of each deck, and of each deck opening.

(b) Each guardrail and bulwark must extend at least one meter (39.37 inches) above the deck except where this height may interfere with the normal operation of the unit, a lesser height may be approved.

(c) Removable guardrails may be installed where operating conditions warrant their use.

§ 108.219 Guardrails.

(a) Except for exposed peripheries of a freeboard or superstructure deck, each guardrail must have at least two evenly spaced courses.

(b) At exposed peripheries of a freeboard or superstructure deck, each guardrail must have at least three courses not more than 38 centimeters (15 in.) apart with the lowest course not more than 23 centimeters (9 in.) above the deck.

(c) For a rounded gunwale, the guardrail must be at the edge of the flat of the deck.

§ 108.221 Storm rails.

Each unit must have a storm rail in the following locations:

(a) On each deckhouse side that is normally accessible.

(b) On each side of each passageway that is wider than 1.83 meters (6 feet).

(c) On at least one side of each passageway that is less than 1.83 meters (6 feet) wide.

§ 108.223 Guards on exposed equipment.

Each unit must have hand covers, guards, or rails installed on all belts, gears, shafts, pulleys, sprockets, spindles, flywheels or other reciprocating, rotating or moving parts of machinery or equipment normally exposed to contact by personnel.

HELICOPTER FACILITIES

§ 108.231 Application.

Sections 108.231 through 108.241 apply to each unit with a helicopter landing facility.

§ 108.233 Location and size.

(a) Each helicopter deck must be—

(1) At least the size of the rotor diameter of the largest single main rotor helicopter that will be used on the facility; or

(2) If tandem main rotor helicopters use the facility, at least of a size to provide a longitudinal axis of 9/10 the overall length of the helicopter, and a

width of ¾ of the overall length of the helicopter.

NOTE: For the purpose of paragraph (a)(2) the overall length is measured across both main rotors in the fore and aft line.

(b) Each helicopter deck must be located so as to provide clear approach/departure paths to enable the largest helicopter using the facility to operate in all weather conditions which allow helicopter operations.

§ 108.235 Construction.

(a) Each helicopter deck must be designed to accommodate the loadings (static and dynamic) imposed by operation and stowage of helicopters intended to use the facility as well as environmental loadings (wind, wave, water, snow, etc.) anticipated for the unit.

(b) The adequacy of each helicopter deck for the loadings required in paragraph (a) of this section must be shown by design calculations. Where the placement of a load affects the suitability of a structural member, the load must be evaluated in the most unfavorable position for each member.

(c) The analysis required in paragraph (b) of this section must be based on the dead load of the structure, existing stresses in the deck when it is an integral part of a unit's structure, and each of the following loading conditions:

(1) *Uniform distributed loading.* A loading of $2 kg/m^2$ ($42 lb/ft^2$) applied to the helicopter deck area.

(2) *Helicopter landing impact loading.* The limit load established by the limit drop test in 14 CFR 29.725, or a load of not less than 75 percent of the helicopter maximum weight taken on a square area of 0.3×0.3 m (1 ft.×1 ft.) under each main landing gear unit applied anywhere on the helicopter deck area.

(3) *Stowed helicopter loading.* The helicopter maximum weight plus inertial forces from the helicopter due to anticipated unit motions, and applicable environmental loadings including wind loads.

(d) The landing area of each helicopter facility must—

(1) Have a non-skid surface;

(2) Have drainage facilities that prevent the collection of liquids and prevent liquids from spreading to or falling on other parts of the unit;

(3) Have recessed tie-down points; and

(4) Be free of projections, except that landing lights or other projections may be installed around the periphery of the landing deck provided they do not interfere with landing and take-off operations.

(e) The unprotected perimeter of each helicopter facility must have a safety net at least 1.5 meters (4.92 ft.) wide. The outer edge of the net must not extend more than 15 centimeters (6 in.) above the surface of the deck.

(f) Each helicopter facility must have both a main and an emergency access/egress route located as far apart from each other as practicable.

§ 108.237 Fuel storage facilities.

(a) Helicopter fuel storage tanks must be installed as far as practicable from—

(1) The landing area; and

(2) Each source of vapor ignition.

(b) Independent tanks must meet Subpart 58.50 of this Chapter.

(c) Marine portable fuel stowage tanks must meet Part 64 of this chapter.

(d) Each marine portable fuel stowage tank must have a means to contain fuel spills or leaks.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by USCG–1999–6216, 64 FR 53226, Oct. 1, 1999]

§ 108.239 Fuel transfer equipment.

(a) Each nozzle must be a ''deadman'' type.

(b) Each hose must have a storage reel.

(c) Each hose must have a static grounding device.

(d) Each electric fuel transfer pump must have a control with a fuel transfer pump operation indicator light at the pump.

(e) There must be a fuel pump shut off at each of the access routes required by § 108.235(f).

(f) Each fuel transfer pump and each hose reel must have a means to contain fuel spills or leaks.

(g) Each hose must meet chapter 3 ''Aircraft Fueling Hose'' of National Fire Protection Association Standard

for Aircraft Fuel Servicing (N.F.P.A. No. 407–1975).

§ 108.241 Visual aids.

(a) Each helicopter deck must—

(1) Have a wind direction indicator located in an unobstructed area readily visible to helicopter pilots approaching the deck;

(2) Be fitted around the perimeter with yellow and blue lights in alternate order, not more than 3 meters (10 ft.) apart; and

(3) Be marked with—

(i) The unit's identification;

(ii) A continuous line 40 centimeters (16 in.) wide on the perimeter; and

(iii) Aiming circles as may be appropriate considering deck configuration, helicopter type, and operational requirements.

(b) All markings must be in a contrasting color to the surface of the deck.

Subpart C—Stability

§ 108.301 Stability.

Each unit must meet the requirements in Subchapter S of this chapter that apply to Mobile Offshore Drilling Units.

[CGD 79–023, 48 FR 51008, Nov. 4, 1983]

Subpart D—Fire Extinguishing Systems

§ 108.401 Fire main system.

Each unit must have a fire main system.

§ 108.403 Fire extinguishing systems: General.

(a) Each of the following on a unit must have an approved fixed gaseous type extinguishing system:

(1) Each paint locker, oil room, and similar space.

(2) Each enclosed space containing internal combustion or gas turbine main propulsion machinery.

(3) Each enclosed space containing internal combustion machinery with an aggregate power of at least 1000 B.H.P.

(4) Each enclosed space containing a fuel oil unit, including purifiers, valves, or manifolds for main propulsion machinery or internal combustion machinery with an aggregate power of at least 1000 B.H.P.

(5) Each enclosed ventilation system for electric motors or generators used for vital services including bilge pumps, fire pumps, or propulsion.

(b) Each space containing an oil fired boiler, the fuel oil unit or valves for the boiler, or manifolds in the line between the fuel settling tanks and the boiler on a unit must have a fixed gas type, foam, or other approved fire extinguishing system.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 95–027, 61 FR 26008, May 23, 1996]

§ 108.403a Fire extinguishing systems: Non-vital services.

Each enclosed ventilating system for electric motors or generators not used for vital services must have an access into the system for firefighting or be protected by a fixed fire protection system.

§ 108.404 Selection of fire detection system.

(a) If a fire detector is in a space, it must provide effective detection of fires most likely to occur in the space.

(b) The fire detection system must be designed to minimize false alarms.

§ 108.405 Fire detection system.

(a) Each fire detection system and each smoke detection system on a unit must—

(1) Be approved by the Commandant; and

(2) Have a visual alarm and an audible alarm in the pilothouse or at a normally manned control station for the system.

(b) Each fire detection system must be divided into zones to limit the area covered by any particular alarm signal.

(c) Each visual alarm must—

(1) Have a chart or diagram next to the alarm that shows the location of the zones in the system and that contains the instructions for operating, and testing the system;

(2) When activated show the zone in the system where fire has been detected; and

(3) Be in a noticeable location in the pilothouse or control station.

§ 108.407 Detectors for electric fire detection system.

(a) Each detector in an electric fire detection system must be located where—

(1) No portion of the overhead of a space protected is more than 3 meters (10 feet) from a detector;

(2) Beams and girders extending below the ceiling of the space protected and any other obstructions do not detract from the effectiveness of the detector; and

(3) Damage to the detector is unlikely to occur if it is not protected.

(b) Each detector must be set to activate at not less than 57° C (135° F) and at not more than 73° C (165° F), except that if a space normally has a high ambient temperature each detector may be set to activate at not less than 80° C (175° F) and not more than 107° C (225° F).

§ 108.409 Location and spacing of tubing in pneumatic fire detection system.

(a) All tubing in a pneumatic fire detection system must be on the overhead or within 300 millimeters (12 inches) of the overhead on a bulkhead in a location where—

(1) No portion of the overhead is more than 3.6 meters (12 feet) from the nearest point of tubing;

(2) Beams or girders extending below the ceiling or other obstructions do not detract from the effectiveness of the tubing; and

(3) Damage to the tubing, is unlikely to occur if it is not protected.

(b) If tubing in a tubing circuit is installed in an enclosed space, at least 5% of the tubing in the circuit must be exposed in the space, except that at least 7.6 meters (25 feet) of tubing must always be exposed in the space.

(c) A pneumatic fire detection system must be set to activate after approximately a 22°C. (40°F.) per minute increase in temperature at the center of the circuit in the system.

§ 108.411 Smoke detection system.

Each smoke accumulator in a smoke detection system must be located on the overhead of the compartment protected by the system in a location—

(a) Where no portion of the overhead of the compartment is more than 12 meters (40 feet) from an accumulator;

(b) That is no closer to the opening of a ventilator than 3 times the diameter or equivalent size of the opening.

(c) Where damage to the accumulator is unlikely to occur if it is not protected.

§ 108.413 Fusible element fire detection system.

(a) A fusible element fire detection system may be installed.

(b) The arrangements for the system must be acceptable to the Commandant.

FIRE MAIN SYSTEM

§ 108.415 Fire pump: General.

A fire main system must have at least two independently driven fire pumps that can each deliver water at a continuous pitot tube pressure of at least 3.5 kilograms per square centimeter (approximately 50 pounds per square inch) at least two fire hose nozzles that are connected to the highest two fire hydrants on the unit. Alternative designs that meet the pressure requirement of this paragraph will be considered for column stabilized and self elevating units.

§ 108.417 Fire pump components and associated equipment.

(a) Each fire pump in a fire main system must have a relief valve on its discharge side that is set to relieve at 1.75 kilograms per square centimeter (approximately 25 pounds per square inch) in excess of the pump discharge pressure necessary to meet the pressure required in § 108.415 for the pump or 8.6 kilograms per square centimeters (approximately 125 pounds per square inch), whichever is greater. A relief valve may be omitted if the pump operating under shut off condition is not capable of developing the pressure described in § 108.415 plus 1.75 kilograms per square centimeter (25 pounds per square inch).

(b) Each fire pump in a fire main system must have a pressure gauge on its discharge side.

(c) Fire pumps may be used for other purposes. One of the required pumps

must be kept available for use on the fire system at all times. If a fire pump is used in a system other than the fire main system, except for branch lines connected to the fire main for deck washing, each pipe connecting the other system must be connected to the pump discharge through a shut off valve at a manifold near the pump. If the fire pump exceeds the pressure in §108.417(a), the pipe leading from the discharge manifold to other portions of the fire main system must have a reducing station and a pressure gauge in addition to the pressure gauge required by paragraph (b) of this section.

(d) If a fire pump has a reducing station, the relief valve required by paragraph (a) of this section for the pump and the additional pressure gauge required in paragraph (c) of this section must not be located on the discharge side of the reducing station.

(e) An oil line must not be connected to a fire pump.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 95–028, 62 FR 51208, Sept. 30, 1997]

§108.419 Fire main capacity.

The diameter of the fire main must be sufficient for the effective distribution of the maximum required discharge from two fire pumps operating simultaneously.

§108.421 Location of fire pumps and associated equipment.

Each fire pump required by §108.415, and the source of power, controls, sea connections for the fire pump, and booster pumps, if installed, must be installed in locations where, if a fire occurs in an enclosed space, all of the fire pumps on the unit are not made inoperative, except that if compliance with this requirement is impracticable, a gas type extinguishing system may be installed to protect at least one of the fire pumps, its source of power, and controls.

§108.423 Fire hydrants and associated equipment.

(a) A fire main system must have enough fire hydrants so that each accessible space may be sprayed with at least two spray patterns of water.

(b) In a main machinery space, except a shaft alley with no assigned space for stowage of combustibles, each spray pattern of water must be from one length of fire hose and each must be from a separate outlet. In all other spaces at least one spray pattern of water must be from one length of fire hose.

(c) No outlet on a fire hydrant may point above the horizontal.

(d) Each fire hydrant must have at least one spanner and at least one fire hose rack or reel.

§108.425 Fire hoses and associated equipment.

(a) Each length of fire hose in a fire main system must be—

(1) Of 1½ or 2½ inch nominal hose size diameter;

(2) Of 50 foot nominal hose size length; and

(3) Lined commercial fire hose that meets Standard 19 of the Underwriters' Laboratories, Inc., (1971 edition) or Federal Specification ZZ–H–451f.

(b) Fire station hydrant connections shall be brass, bronze, or other equivalent metal. Couplings shall either:

(1) Use National Standard fire hose coupling threads for the 1½ inch (38 millimeter) and 2½ inch (64 millimeter) hose sizes, i.e., 9 threads per inch for 1½ inch hose, and 7½ threads per inch for 2½ inch hose; or

(2) Be a uniform design for each hose diameter throughout the vessel.

(c) Each nozzle for a firehose in a fire main system must be a combination solid stream and water spray firehose nozzle that is approve under subpart 162.027. Combination solid stream and water spray nozzles previously approved under subpart 162.027 of this chapter may be retained so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

(d) A combination solid stream and water spray firehose nozzle previously approved under subpart 162.027 of this chapter, must have a low-velocity water spray applicator also previously approved under subpart 162.027 of this chapter when installed in—

(1) Machinery spaces containing oil fired boilers, internal combustion machinery or oil fuel units; and

(2) Helicopter decks.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 95–027, 61 FR 26008, May 23, 1996; CGD 95–028, 62 FR 51208, Sept. 30, 1997]

§ 108.427 International shore connection.

A fire main system on a unit in international service must have—

(a) At least one international shore connection that meets ASTM F 1121 (incorporated by reference, see § 105.01–3).

(b) A cutoff valve and check valve for each connection; and

(c) Facilities available enabling the connection to be used on either side of the unit.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 88–032, 56 FR 35826, July 29, 1991; USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

§ 108.429 Fire main system protection.

(a) Each pipe and fire hydrant in a fire main system must be installed to the extent practicable in locations that are not exposed to damage by materials that are moved on or onto the deck.

(b) Each part of the fire main system located on an exposed deck must either be protected against freezing or be fitted with cutout valves and drain valves to shut off and drain the entire exposed system in freezing weather.

AUTOMATIC SPRINKLING SYSTEMS

§ 108.430 General.

Automatic Sprinkler Systems shall comply with NFPA 13–1996.

[CGD 95–028, 62 FR 51208, Sept. 30, 1997]

FIXED CARBON DIOXIDE FIRE EXTINGUISHING SYSTEMS

§ 108.431 Carbon dioxide systems: General.

(a) Sections 108.431 through 108.457 apply to high pressure carbon dioxide fire extinguishing systems.

(b) Low pressure systems, that is, those in which the carbon dioxide is stored in liquid form at low temperature, must be approved by the Commandant.

(c) Each carbon dioxide system cylinder must be fabricated, tested, and marked in accordance with §§ 147.60 and 147.65 of this chapter.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 84–044, 53 FR 7749, Mar. 10, 1988]

§ 108.433 Quantity of CO_2: General.

Each CO_2 system must have enough gas to meet the quantity requirements of § 108.439 for the space requiring the greatest amount of CO_2.

§ 108.437 Pipe sizes and discharge rates for enclosed ventilation systems for rotating electrical equipment.

(a) The minimum pipe size for the initial charge must meet table 108.441 and the discharge of the required amount of CO_2 must be completed within 2 minutes.

(b) The minimum pipe size for the delayed discharge must be at least 1.25 centimeters (½ inch) standard pipe.

(c) The pipe used for the initial discharge must not be used for the delayed discharge, except systems having a volume of less than 57 cubic meters (2,000 cubic feet).

§ 108.439 Quantity of CO_2 for protection of spaces.

(a) The number of pounds of CO_2 required to protect a space must be equal to the gross volume of the space divided by the appropriate factor from Table 108.439.

(b) If a machinery space includes a casing, the gross volume of the space may be calculated using the reductions allowed in 46 CFR 95.10–5(e).

(c) If fuel can drain from a space to an adjacent space or if two spaces are not entirely separate, the requirements for both spaces must be used to determine the amount of CO_2 to be provided and the CO_2 system must be arranged to discharge into both spaces simultaneously.

TABLE 108.439—*CO_2 Supply Factors*

[Gross volume of space in cubic feet]

Over	Not over	Factor
0	500	15
500	1,600	16
1,600	4,500	18
4,500	50,000	20
50,000	.....	22

§ 108.441 Piping and discharge rates for CO_2 systems.

(a) The size of branch lines to spaces protected by a CO_2 system must meet Table 108.441.

(b) Distribution piping within a space must be proportioned from the supply line to give proper distribution to the outlets without throttling.

(c) The number, type, and location of discharge outlets must distribute the CO_2 uniformly throughout the space.

TABLE 108.441—*CO_2 System Pipe Size*

CO_2 supply in system, kilograms (pounds)	Minimum pipe size (inches), millimeters (inches)
45 (100)	12.7 (½).
104 (225)	19.05 (¾).
136 (300)	25.4 (1).
272 (600)	31.75 (1¼).
450 (1,000)	38.10 (1½).
1,110 (2,450)	50.80 (2).
1,130 (2,500)	63.5 (2½).
2,023 (4,450)	76.2 (3).
3,229 (7,100)	88.9 (3½).
4,750 (10,000)	101.6 (4).
6,818 (15,000)	114.3 (4½).

(d) The total area of all discharge outlets must be more than 35 percent and less than 85 percent of the nominal cylinder outlet area or the area of the supply pipe, whichever is smaller. The nominal cylinder outlet area in square centimeters is determined by multiplying the factor 0.0313 by the number of kilograms of CO_2 required. (The nominal cylinder outlet area in square inches is determined by multiplying the factor 0.0022 by the number of pounds of CO_2 required). The nominal cylinder outlet area must not be less than 71 square millimeters (0.110 square inches).

(e) A CO_2 system must discharge at least 85 percent of the required amount within 2 minutes.

§ 108.443 Controls and valves.

(a) At least one control for operating a CO_2 system must be outside the space or spaces that the system protects and in a location that would be accessible if a fire occurred in any space that the system protects. Control valves must not be located in a protected space unless the CO_2 cylinders are also in the protected space.

(b) A CO_2 system that protects more than one space must have a manifold with a stop valve, the normal position of which is closed, that directs the flow of CO_2 to each protected space.

(c) A CO_2 system that protects only one space must have a stop valve installed between the cylinders and the discharge outlets in the system, except on a system that has a CO_2 supply of 136 kilograms (300 pounds) or less.

(d) At least one of the control stations in a CO_2 system that protects a machinery space must be as near as practicable to one of the main escapes from that space.

(e) All distribution valves and controls must be of an approved type.

(f) Each CO_2 system that has a stop valve must have a remote control that operates only the stop valve and must have a separate remote control for releasing the required amount of CO_2 into the space protected by the system.

(g) Each CO_2 system that does not have a stop valve must be operated by a remote control that releases the required amount of CO_2 into the space protected by the system.

(h) Remote controls to each space must be in an enclosure.

(i) Each system must have a manual control at its cylinders for releasing CO_2 from the cylinders, except that if the system has pilot cylinders, a manual control is not required for other than pilot cylinders.

(j) If gas pressure is used to release CO_2 from a system having more than 2 cylinders, the system must have at least 2 pilot cylinders to release the CO_2 from the remaining cylinders.

(k) If the entrance to a space containing the CO_2 supply or controls of a CO_2 system has a lock, the space must have a key to the lock in a break-glass type box that is next to and visible from the entrance.

§ 108.445 Alarm and means of escape.

(a) Each CO_2 system that has a supply of more than 136 kilograms (300 pounds) of CO_2, except a system that protects a tank, must have an alarm that sounds for at least 20 seconds before the CO_2 is released into the space.

(b) Each audible alarm for a CO_2 system must have the CO_2 supply for the system as its source of power and must be in a visible location in the spaces protected.

§ 108.447 Piping.

(a) Each pipe, valve, and fitting in a CO_2 system must have a bursting pressure of at least 420 kilograms per square centimeter (6,000 pounds per square inch).

(b) All piping for a CO_2 system of nominal size of 19.05 millimeters (¾ inch) inside diameter or less must be at least Schedule 40 (standard weight) and all piping of nominal size over 19.05 millimeters (¾ inch) inside diameter must be at least Schedule 80 (extra heavy).

(c) Each pipe, valve, and fitting made of ferrous materials in a CO_2 system must be protected inside and outside from corrosion.

(d) Each CO_2 system must have a pressure relief valve set to relieve between 168 and 196 kilograms per square centimeter (2,400 and 2,800 pounds per square inch) in the distribution manifold or other location that protects the piping when all branch line shut off valves are closed.

(e) The end of each branch line in a CO_2 system must extend at least 50 millimeters (2 inches) beyond the last discharge outlet and be closed with a cap or plug.

(f) Piping, valves, and fittings in a CO_2 system must be securely supported and protected from damage.

(g) Each CO_2 system must have drains and dirt traps located where dirt or moisture can accumulate in the system.

(h) Discharge piping in a CO_2 system may not be used for any other purpose except as part of a fire detection system.

(i) Piping in a CO_2 system that passes through accommodation spaces must not have drains or other openings within these spaces.

§ 108.449 Piping tests.

(a) Each test prescribed in (b), (c), and (d) of this section must be performed upon completion of the piping installation.

(b) When tested with CO_2 or other inert gas under a pressure of 70 kilograms per square centimeter (1000 pounds per square inch), with no additional gas introduced into the system, the leakage in the piping from the cylinders to the stop valves in the manifold must not allow a pressure drop of more than 10.5 kilograms per square centimeter (150 pounds per square inch) per minute for a 2 minute period.

(c) When tested with CO_2 or other inert gas under a pressure of 42 kilograms per square centimeter (600 pounds per square inch), with no additional gas introduced into the system, the leakage in each branch line must not allow a pressure drop of more than 10.5 kilograms per square centimeter (150 pounds per square inch) per minute for a 2-minute period. The distribution piping must be capped within the protected space.

(d) Small independent systems protecting emergency generator rooms, lamp lockers and similar small spaces need not meet the tests prescribed in paragraphs (a) and (b) of this section if they are tested by blowing out the piping with air at a pressure of at least 7 kilograms per square centimeter (100 pounds per square inch).

§ 108.451 CO_2 storage.

(a) Except as provided in paragraph (b) of this section, each cylinder of a CO_2 system must be outside each space protected by the system and in a location that would be accessible if a fire occurred in any space protected by the system.

(b) A CO_2 system that has a CO_2 supply of 136 kilograms (300 pounds) or less may have one or more cylinders in the space protected by the system if the space has a heat detection system to activate the system automatically in addition to the remote and manual controls required by this subpart.

(c) Each space that contains cylinders of a CO_2 system must be ventilated and designed to prevent an ambient temperature of more than 54° C. (130° F.)

(d) Each cylinder in a CO_2 system must be securely fastened, supported, protected from damage, in an accessible location, and capable of removal from that location.

(e) Each unit must have a means for weighing cylinders of a CO_2 system.

(f) A cylinder in a CO_2 system may not be mounted in a position that is inclined more than 30° from a vertical position, except that a cylinder having flexible or bent siphon tubes may be

mounted in a position that is inclined up to 80° from the vertical. The bottom of each cylinder when mounted must be at least 5 centimeters (2 inches) from the deck.

(g) If a cylinder does not have a check valve on its independent cylinder discharge, it must have a plug or cap to close the outlet when the cylinder is moved.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 84–044, 53 FR 7749, Mar. 10, 1988]

§ 108.453 Discharge outlets.

Each discharge outlet must be of an approved type.

§ 108.455 Enclosure openings.

(a) Mechanical ventilation for spaces protected by a CO_2 system must be designed to shut down automatically when the system is activated.

(b) Each space that is protected by a CO_2 system and that has natural ventilation must have a means for closing that ventilation.

(c) Each space protected by a CO_2 system must have the following means for closing the openings to the space from outside the space:

(1) Doors, shutters, or dampers for closing each opening in the lower portion of the space.

(2) Doors, shutters, dampers or temporary means such as canvas or other material normally on board a unit may be used for closing each opening in the upper portion of the space.

§ 108.457 Pressure release.

Each air tight or vapor tight space, such as a paint locker, that is protected by a CO_2 system must have a means for releasing pressure that accumulates within the space if CO_2 is discharged into the space.

HALOGENATED GAS EXTINGUISHING SYSTEMS

§ 108.458 General.

Halogenated gas extinguishing systems may be installed if approved by the Commandant.

FOAM EXTINGUISHING SYSTEMS

§ 108.459 Number and location of outlets.

(a) A foam extinguishing system in a space must have enough outlets to spread a layer of foam of uniform thickness over the deck or bilge areas of the space.

(b) A foam extinguishing system in a space that has a boiler on a flat that is open to or can drain into a lower portion of the space must have enough outlets to spread a layer of foam of uniform thickness over the—

(1) Flat; and

(2) Deck or bilge areas of the space.

(c) A foam extinguishing system for a tank must have enough outlets to spread a layer of foam of uniform thickness over the surface of the liquid in the tank.

§ 108.461 Coamings.

Each machinery flat in a space that has a foam extinguishing system must have coamings that are high enough to retain spilled oil and foam on the flat on all openings except deck drains.

§ 108.463 Foam rate: Protein.

(a) If the outlets of a protein foam extinguishing system are in a space, the foam rate at each outlet must be at least 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered by the systems.

(b) If the outlets of a protein foam extinguishing system are in a tank, the foam rate at each outlet must be at least 4.07 liters per minute for each square meter (.1 gallon per minute for each square foot) of liquid surface in the tank.

§ 108.467 Water supply.

The water supply of a foam extinguishing system must not be the water supply of the fire main system on the unit unless when both systems are operated simultaneously—

(a) The water supply rate to the foam production equipment meets the requirements of this section; and

(b) Water supply rate to the fire hydrants required by §108.415 of this subpart allows compliance with the pressure requirement in that section.

§ 108.469 Quantity of foam producing materials.

(a) Except as provided in paragraph (b) of this section, each foam extinguishing system with outlets—

(1) In a tank must have enough foam producing material to discharge foam for at least 5 minutes at each outlet; and

(2) In a space must have enough foam producing material to discharge foam for at least 3 minutes at each outlet.

(b) If a foam system has outlets in more than one tank or space, the system need have only enough foam producing material to cover the largest space that the system covers or, if the liquid surface of a tank covered by the system is larger, the tank with the largest liquid surface.

§ 108.471 Water pump.

Each water pump in a foam extinguishing system must be outside each machinery space in which the system has outlets and must not receive power from any of those spaces.

§ 108.473 Foam system components.

(a) Each foam agent, each tank for a foam agent, each discharge outlet, each control, and each valve for the operation of a foam extinguishing system must be approved by the Commandant.

(b) Each foam agent tank and each control and valve for the operation of a foam extinguishing system with outlets in a space must be outside the space and must not be in a space that may become inaccessible if a fire occurs in the space.

(c) Each control for a foam extinguishing system with outlets in a space must be near a main escape from the space.

§ 108.474 Aqueous film forming foam systems.

Aqueous film forming foam systems may be installed if approved by the Commandant.

§ 108.475 Piping.

(a) Each pipe, valve, and fitting in a foam extinguishing system must meet the applicable requirements in Subchapter F of this chapter.

(b) Each pipe, valve, and fitting made of ferrous material must be protected inside and outside from corrosion.

(c) Each pipe, valve, and fitting must have support and protection from damage.

(d) Each foam extinguishing system must have enough—

(1) Dirt traps to prevent the accumulation of dirt in its pipes; and

(2) Drains to remove liquid from the system.

(e) Piping in a foam extinguishing system must be used only for discharging foam.

§ 108.477 Fire hydrants.

(a) If a fixed foam extinguishing system has outlets in a main machinery space, at least 2 fire hydrants, in addition to the fire hydrants required by § 108.423 of this subpart, must be installed outside the entrances to the space with each at a separate entrance.

(b) Each hydrant must have enough hose to spray any part of the space.

(c) Each hydrant must have a combination nozzle and applicator.

FIRE PROTECTION FOR HELICOPTER FACILITIES

§ 108.486 Helicopter decks.

At least two of the accesses to the helicopter landing deck must each have a fire hydrant on the unit's fire main system located next to them.

§ 108.487 Helicopter deck fueling operations.

(a) Each helicopter landing deck on which fueling operations are conducted must have a fire protection system that discharges protein foam or aqueous film forming foam.

(b) a system that only discharges foam must—

(1) Have enough foam agent to discharge foam continuously for at least 5 minutes at maximum discharge rate;

(2) Have at least the amount of foam agent needed to cover an area equivalent to the swept rotor area of the largest helicopter for which the deck is designed with foam at—

(i) If protein foam is used, 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered for five minutes;

(ii) If aqueous film forming foam is used, 4.07 liters per minute for each square meter (.1 gallons per minute for each square foot) of area covered for five minutes; and

(3) Be capable of discharging from each hose at 7 kilograms per square centimeter (100 pounds per square inch) pressure—

(i) A single foam stream at a rate of at least 340 liters (90 gallons) per minute; and

(ii) A foam spray at a rate of at least 190 liters (50 gallons) per minute.

(c) Each system must have operating controls at each of its hose locations, be protected from icing and freezing, and be capable of operation within 10 seconds after activation of its controls.

(d) Each system must have at least one hose at each of the two access routes required by §108.235(f) of this part. Each hose must be reel mounted and long enough to cover any point on the helicopter deck. Each hose that discharges foam must have a nozzle that has foam stream, foam spray, and off positions.

§108.489 Helicopter fueling facilities.

(a) Each helicopter fueling facility must have a fire protection system that discharges one of the following agents in the amounts prescribed for the agents over the area of the fuel containment systems around marine portable tanks, fuel transfer pumps and fuel hose reels:

(1) Protein foam at the rate of 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered for five minutes.

(2) Aqueous film forming foam at the rate of 4.07 liters per minute for each square meter (.1 gallon per minute for each square foot) of area covered for five minutes.

(3) 22.5 kilograms (50 pounds) of dry chemical (B–V semi-portable) for each fueling facility of up to 27.87 square meters (300 square feet).

(b) If the fire protection system required by §108.487 of this subpart is arranged so that it covers both a helicopter fueling facility and a landing deck, the system must have the quantity of agents required by this section in addition to the quantity required by §108.487.

HAND PORTABLE AND SEMIPORTABLE FIRE EXTINGUISHING SYSTEMS

§108.491 General.

Each hand portable and semiportable fire extinguisher on a unit must be approved under Subpart 162.028 or 162.039 of this chapter.

§108.493 Location.

(a) Each unit must have the hand portable and semiportable fire extinguishers prescribed in Table 108.495(a) of this subpart and installed in the locations prescribed in the table.

(b) Each portable and semi-portable fire extinguisher must be visible and readily accessible.

(c) The location, size, and number of each portable and semiportable fire extinguisher on a unit must be acceptable to the appropriate OCMI. The OCMI may require extinguishers in addition to those prescribed in Table 108.495(a) if he considers them necessary for fire protection on the unit.

(d) Each hand portable and semiportable fire extinguisher that has a nameplate which states that it is to be protected from freezing, must be located where freezing temperatures do not occur.

§108.495 Spare charges.

(a) Each unit must have enough spare charges for 50 percent of the hand portable fire extinguishers required under Table 108.495(a) of this subpart that are rechargeable by personnel on the unit.

(b) If a unit has extinguishers that cannot be recharged by personnel on unit, it must also have at least one spare extinguisher for each classification and variety of those extinguishers.

TABLE 108.495(a)—*Hand Portable Fire Extinguishers and Semiportable Fire-Extinguishing Systems*

Space	Classification (see table 108.495(b))	Quantity and location
SAFETY AREAS		
Wheelhouse and control room	C–I	2 in vicinity of exit.
Stairway and elevator enclosure		None required.
Corridors	A–II	1 in each corridor not more than 150 ft (45 m) apart. (May be located in stairways.)
Lifeboat embarkation and lowering stations		None required.
Radio room	C–I	2 in vicinity of exit.
ACCOMMODATIONS		
Staterooms, toilet spaces, public spaces, offices, lockers, small storerooms, and pantries, open decks, and similar spaces.		None required.
SERVICE SPACES		
Galleys	B–II or C–II	1 for each 2,500 ft^2 (232 m^2) or fraction thereof suitable for hazards involved.
Paint and lamp rooms	B–II	1 outside each room in vicinity of exit.
Storerooms	A–II	1 for each 2,500 ft^2 (232 m^2) or fraction thereof located in vicinity of exits, either inside or outside the spaces.
Work shop and similar spaces	C–II	1 outside each space in vicinity of an exit.
MACHINERY SPACES		
Oil-fired boilers: Spaces containing oil-fired boilers, either main or auxiliary, or their fuel oil units.	B–II	2 required in each space.
	B–V	1 required in each space.
Internal combustion or gas turbine propelling machinery spaces.	B–II	1 for each 1,000 brake horsepower but not less than 2 nor more than 6 in each space.
	B–III	1 required in each space. See note 1.
Motors or generators of electric propelling machinery that do not have an enclosed ventilating system.	C–II	1 for each motor or generator.
Motors and generators of electric propelling machinery that have enclosed ventilating systems.		None required.
AUXILIARY SPACES		
Internal combustion engines or gas turbine	B–II	Outside the space containing engines or turbines in vicinity of exit.
Electric emergency motors or generators	C–II	1 outside the space containing motors or generators in vicinity of exit.
Steam driven auxiliary machinery		None required.
Trunks to machinery spaces		Do.
Fuel tanks		Do.
MISCELLANEOUS AREAS		
Helicopter landing decks	B–V	1 at each access route.
Helicopter fueling facilities	B–IV	1 at each fuel transfer facility. See note 2.
Drill floor	C–II	2 required.
Cranes with internal combustion engines	B–II	1 required.

Notes: 1. Not required where a fixed gas extinguishing system is installed.
2. Not required where a fixed foam system is installed in accordance with § 108.489 of this subpart.

TABLE 108.495(b)

	Classification: Type and size	Water liters (gallons)	Foam liters (gallons)	Carbon dioxide kilograms (pounds)	Dry chemical kilograms (pounds)	Halon 1211 kilograms (pounds)
A	II	9.5 (2½)	9.5 (2½)		2.25 (5)[3]	
B	I		4.7 (1¼)	1.8 (4)	0.9 (2)	1.1 (2½)
B	II		9.5 (2½)	6.7 (15)	4.5 (10)	4.5 (10)[5]
B	III		45.5 (12)	15.8 (35)	9.0 (20)	
B	IV		7.6 (20)	22.5 (50)	13.5 (30)	
B	V		152 (40)	45 (100)[4]	22.5 (50)[4]	
C	I			1.8 (4)	0.9 (2)	
C	II			6.7 (15)	4.5 (10)	
C	III			15.8 (35)	9.0 (20)	

TABLE 108.495(b)—Continued

	Classification: Type and size	Water liters (gallons)	Foam liters (gallons)	Carbon dioxide kilograms (pounds)	Dry chemical kilograms (pounds)	Halon 1211 kilograms (pounds)
C	IV	.....	.....	22.5 (50)	13.5 (30)	

NOTE: 1. Fire extinguishers are designed by type as follows: (a) ''A'' for fires in combustible materials such as wood. (b) ''B'' for fires in flammable liquids and greases. (c) ''C'' for fires in electrical equipment.
2. Fire extinguishers are designated by size where size ''I'' is the smallest and size ''V'' is the largest. Sizes ''I'' and ''II'' are hand-portable extinguishers and sizes ''III'', ''IV'', and ''V'' are semiportable extinguishers.
3. Must be specifically approved as a type A, B, or C extinguisher.
4. For outside use, double the quantity of agent that must be carried.
5. For outside use only.

§ 108.496 Semiportable fire extinguishers.

(a) The frame or support of each size III, IV, and V fire extinguisher required by Table 108.495(a), except a wheeled size V extinguisher provided for a helicopter landing deck, must be welded or otherwise permanently attached to a bulkhead or deck.

(b) If the following semiportable fire extinguishers have wheels, they must be securely stowed when not in use to prevent them from rolling out of control under heavy sea conditions:

(1) Each size V extinguisher required for a helicopter landing deck.

(2) Each size III, IV, and V extinguisher that is not required by Table 108.495(a).

[CGD 77–039, 44 FR 34133, June 14, 1979]

MISCELLANEOUS FIREFIGHTING EQUIPMENT

§ 108.497 Fireman's outfits.

Each unit must have at least 2 fireman's outfits. Each fireman's outfit on a unit must consist of—

(a) A pressure-demand, open-circuit, self-contained breathing apparatus, approved by the Mine Safety and Health Administration (MSHA) and by the National Institute for Occupational Safety and Health (NIOSH) and having at a minimum a 30-minute air supply, a full facepiece, and a spare charge; but a self-contained compressed-air breathing apparatus previously approved by MSHA and NIOSH under part 160, subpart 160.011, of this chapter may continue in use as required equipment if it was part of the vessel's equipment on November 23, 1992, and as long as it is maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection;

(b) A Type II or Type III flashlight constructed and marked in accordance with ASTM F 1014 (incorporated by reference, see § 108.101).

(c) An oxygen and explosive meter with the Underwriter's Laboratories, Inc. label or the Factory Mutual label;

(d) A lifeline that—

(1) Is attached to a belt or a suitable harness;

(2) Is made of bronze wire rope, inherently corrosion resistant steel wire rope, or galvanized or tinned steel wire rope;

(3) Is made up of enough 15.2 meters (50 foot) or greater lengths of wire rope to permit use of the outfit in any location on the unit;

(4) Has each end fitted with a hook with a 16 millimeters (⅝ inch) throat opening for the keeper; and

(5) Has a minimum breaking strength of 680 kilograms (1,500 pounds).

(e) Boots and gloves that are made of rubber or other electrically non-conductive material;

(f) A helmet that meets the requirements in ANSI standard Z–89.1–1969; and

(g) Clothing that protects the skin from scalding steam and the heat of fire and that has a water resistant outer surface.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 82–042, 53 FR 17705, May 18, 1988; CGD 86–036, 57 FR 48326, Oct. 23, 1992; USCG 1999–5151, 64 FR 67182, Dec. 1, 1999]

§ 108.499 Fire axes.

Each unit must have at least two fire axes.

Subpart E—Lifesaving Equipment

SOURCE: CGD 84–069, 61 FR 25291, May 20, 1996, unless otherwise noted.

§ 108.500 General.

(a) Each unit, other than a drillship, must meet the requirements in this subpart.

(b) Each drillship must meet the lifesaving system requirements in subchapter W of this chapter for a tank vessel certificated to carry cargoes that have a flash point less than 60° C as determined under ASTM D 93 (incorporated by reference, see § 108.101).

(c) The OCMI may require a unit to carry specialized or additional lifesaving equipment other than as required by this part, if the OCMI determines the conditions of the unit's service present uniquely hazardous circumstances which are not adequately addressed by existing requirements.

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998; USCG 1999–5151, 64 FR 67182, Dec. 1, 1999]

§ 108.503 Relationship to international standards.

For the purposes of this part, any unit carrying a valid IMO MODU Safety Certificate, including a listing of lifesaving equipment as required by the 1989 IMO MODU Code, is considered to have met the requirements of this subpart if, in addition to the requirements of the 1989 IMO MODU Code, it meets the following requirements:

(a) Each new lifeboat and launching appliance may be of aluminum construction only if its stowage location is protected with a water spray system in accordance with § 108.550(d) of this chapter.

(b) Each lifejacket, immersion suit, and emergency position indicating radiobeacon (EPIRB) must be marked with the unit's name in accordance with §§ 108.649 and 108.650.

(c) Inflatable lifejackets, if carried, must be of the same or similar design as required by § 108.580(b).

(d) Containers for lifejackets, immersions suits, and anti-exposure suits must be marked as specified in § 108.649(g).

(e) Each liferaft must be arranged to permit it to drop into the water from the deck on which it is stowed as required in § 108.530(c)(3).

(f) Survival craft must be arranged to allow safe disembarkation onto the unit after a drill in accordance with § 108.540(f).

(g) The requirements for guarding of falls in §§ 108.553 (d) and (f) must be met.

(h) The winch drum requirements described in § 108.553(e) must be met for all survival craft winches, not just multiple drum winches.

(i) The maximum lowering speed requirements from §§ 108.553 (h) and (i) must be met.

(j) An auxiliary line must be kept with each line-throwing appliance in accordance with § 108.597(c)(2).

(k) Immersion suits are required on all units, except those operating between the 32 degrees north and 32 degrees south latitude in accordance with § 108.580(c).

(l) All abandonment drills conducted on units carrying immersion suits must include immersion suits.

§ 108.510 Application.

(a) For the purposes of this subpart—

(1) *Similar stage of construction* means the stage at which—

(i) Construction identifiable with a specific unit begins; and

(ii) Assembly of that unit comprising at least 50 metric tons (55.1 U.S. tons) or 1 percent of the estimated mass of all structural material, whichever is less, has been achieved.

(2) *Unit constructed* means a unit, the keel of which is laid or which is at a similar stage of construction.

(b) Subject to § 108.515, each unit constructed before October 1, 1996, must meet the requirements of this subpart, except for the number, type, and arrangement of lifeboats (including survival capsules), lifeboat davits, winches, inflatable liferafts, liferaft launching equipment, and rescue boats.

(c)(1) If a District Commander determines that the overall safety of the persons on board a unit will not be significantly reduced, the District Commander may grant an exemption from compliance with a provision of this part to a specific unit for a specified geographic area within the boundaries of the Coast Guard District. This exemption may be limited to certain periods of the year.

(2) Requests for exemption under this paragraph must be in writing to the

OCMI for transmission to the District Commander in the area in which the unit is in service or will be in service.

(3) If the exemption is granted by the District Commander, the OCMI will endorse the unit's Certificate of Inspection with a statement describing the exemption.

§ 108.515 Requirements for units built before October 1, 1996.

(a) Units which were constructed prior to October 1, 1996, must—

(1) By October 1, 1997, have either—

(i) Lifeboats and liferafts that meet § 108.525; or

(ii) Totally enclosed fire-protected lifeboats of sufficient capacity to accommodate 100 percent of the persons permitted on board, plus additional totally enclosed lifeboats or davit-launched liferafts of sufficient capacity to accommodate 100 percent of the persons permitted on board the unit. The following exceptions apply:

(A) An open lifeboat may be used instead of davit-launched liferafts as long as it is in good working order. An open lifeboat requiring extensive repairs must be replaced with either a totally enclosed fire-protected lifeboat, or davit-launched liferafts.

(B) A submersible unit constructed before January 3, 1979, may continue to use the lifesaving arrangements described on the units Certificate of Inspection in effect on October 1, 1996.

(2) By October 1, 1997, fit retro-reflective material on all floating appliances, lifejackets, and immersion suits.

(3) Except for the requirements in paragraphs (a)(1) and (a)(2) of this section, units may retain the arrangement of lifesaving appliances previously required and approved for the unit, as long as the arrangement or appliance is maintained in good condition to the satisfaction of the OCMI.

(b) When any lifesaving appliance or arrangement on a unit subject to this part is replaced, or when the unit undergoes repairs, alterations or modifications of a major character involving replacement of, or any addition to, the existing lifesaving appliances or arrangements, each new lifesaving appliance and arrangement must meet the requirements of this part, unless the OCMI determines that the unit cannot accommodate the new appliance or arrangement, except that—

(1) A survival craft is not required to meet the requirements of this part if it is replaced without replacing its davit and winch; and

(2) A davit and its winch are not required to meet the requirements of this part if one or both are replaced without replacing the survival craft.

§ 108.520 Type of survival craft.

(a) Each lifeboat must be a fire-protected lifeboat approved under approval series 160.135. A lifeboat of aluminum construction in the hull or canopy must be protected in its stowage position by a water spray system meeting the requirements of part 34, subpart 34.25 of this chapter.

(b) Each inflatable liferaft must be approved under approval series 160.151. Each rigid liferaft must be approved under approval series 160.118. Each liferaft must have a capacity of six persons or more.

§ 108.525 Survival craft number and arrangement.

(a) Each unit must carry the following:

(1) Lifeboats installed in at least two widely separated locations on different sides or ends of the unit. The arrangement of the lifeboats must provide sufficient capacity to accommodate the total number of persons permitted on board if—

(i) All the lifeboats in any one location are lost or rendered unusable; or

(ii) All the lifeboats on any one side or end of the unit are lost or rendered unusable.

(2) Liferafts arranged for float-free launching and having an aggregate capacity that will accommodate the total number of persons permitted on board.

(b) In the case of a self-elevating unit where, due to its size or configuration, lifeboats can not be located in the widely separated locations required under paragraph (a)(1) of this section, the OCMI may accept the following number and arrangement of survival craft:

(1) Lifeboats with an aggregate capacity to accommodate the total number of persons permitted on board.

(2) Liferafts served by launching appliances or marine evacuation systems of an aggregate capacity to accommodate the total number of persons permitted on board. These liferafts may be the float-free liferafts under paragraph (a)(2) of this section, or liferafts in addition to the float-free liferafts.

§ 108.530 Stowage of survival craft.

(a) *General.* Each survival craft required to be served by a launching appliance or marine evacuation system must be stowed as follows:

(1) Each survival craft must be stowed as close to the accommodation and service spaces as possible.

(2) Each survival craft must be stowed in a way that neither the survival craft nor its stowage arrangements will interfere with the embarkation and operation of any other survival craft or rescue boat at any other launching station.

(3) Each survival craft must be stowed as near the water surface as is safe and practicable.

(4) Each survival craft must be stowed where the survival craft, in the embarkation position, is above the waterline with the unit—

(i) In the fully loaded condition; and

(ii) Listed up to 20 degrees either way, or to the angle where the unit's weatherdeck edge becomes submerged, whichever is less.

(5) Each survival craft must be sufficiently ready for use so that two crew members can complete preparations for embarkation and launching in less than 5 minutes.

(6) Each survival craft must be fully equipped as required under this subpart.

(7) Each survival craft must be in a secure and sheltered position and protected from damage by fire and explosion, as far as practicable.

(8) Each survival craft must not require lifting from its stowed position in order to launch, except that a davit-launched liferaft may be lifted by a manually powered winch from its stowed position to its embarkation position.

(b) *Additional lifeboat-specific stowage requirements.* In addition to meeting the requirements of paragraph (a) of this section, each lifeboat must be stowed as follows:

(1) The unit must be arranged so each lifeboat, in its stowed position, is protected from damage by heavy seas.

(2) Each lifeboat must be stowed attached to its launching appliance.

(3) Each lifeboat must be provided a means for recharging the lifeboat batteries from the unit's power supply at a supply voltage not exceeding 50 volts.

(c) *Additional liferaft-specific stowage requirements.* In addition to meeting the requirements of paragraph (a) of this section, each liferaft must be stowed as follows:

(1) Each liferaft must be stowed to permit manual release from its securing arrangements.

(2) Each liferaft must be stowed at a height above the waterline in the lightest seagoing condition, not greater than the maximum stowage height indicated on the liferaft. Each liferaft without an indicated maximum stowage height must be stowed not more than 18 meters (59 feet) above the waterline in the unit's lightest seagoing condition.

(3) Each liferaft must be arranged to permit it to drop into the water from the deck on which it is stowed. A liferaft stowage arrangement meets this requirement if it—

(i) Is outboard of the rail or bulwark;

(ii) Is on stanchions or on a platform adjacent to the rail or bulwark; or

(iii) Has a gate or other suitable opening to allow the liferaft to be pushed directly overboard.

(4) Each davit-launched liferaft must be stowed within reach of its lifting hook, unless some means of transfer is provided that is not rendered inoperable—

(i) Within the list limits specified in paragraph (a)(4)(ii) of this section;

(ii) By unit motion; or

(iii) By power failure.

(5) Each rigid container for an inflatable liferaft to be launched by a launching appliance must be secured in a way that the container or parts of it are prevented from falling into the water during and after inflation and launching of the contained liferaft.

(6) Each liferaft must have a painter system providing a connection between the unit and the liferaft.

(7) Each liferaft or group of liferafts must be arranged for float-free launching. The arrangement must ensure that the liferaft or liferafts when released and inflated, are not dragged under by the sinking unit. A hydrostatic release unit used in a float-free arrangement must be approved under approval series 160.162.

§ 108.540 Survival craft muster and embarkation arrangements.

(a) Each muster station must have sufficient space to accommodate all persons assigned to muster at that station. One or more muster stations must be close to each embarkation station.

(b) Each muster station and embarkation station must be readily accessible from accommodation and work areas.

(c) Each lifeboat must be arranged to be boarded and launched directly from the stowed position.

(d) Each lifeboat must be arranged to be boarded by its full complement of persons within 3 minutes from the time the instruction to board is given.

(e) Each davit-launched and free-fall survival craft muster station and embarkation station for a survival craft which is boarded before it is launched must be arranged to enable stretcher cases to be placed in the survival craft.

(f) Means must be provided for bringing each davit-launched survival craft against the side of the unit and holding it alongside to allow persons to be—

(1) Safely embarked in the case of a survival craft intended to be boarded over the edge of the deck; and

(2) Safely disembarked after a drill in the case of a survival craft not intended to be moved to the stowed position with a full complement of persons on board.

(g) Each davit-launched liferaft launching arrangement must have a means to hold the liferaft in the embarkation position that—

(1) Will hold the liferaft securely in high winds;

(2) Can be rapidly engaged in the proper position for boarding; and

(3) Can be rapidly released for launching by one person from within the loaded liferaft.

(h) Each launching station or each two adjacent launching stations must have an embarkation ladder as follows:

(1) Each embarkation ladder must be approved under approval series 160.117 or be a rope ladder approved under approval series 160.017, and must be installed in a way that—

(i) Each embarkation ladder must extend in a single length, from the deck to the waterline in the lightest seagoing condition with the unit listed not less than up to 15 degrees either way; or

(ii) Each embarkation ladder may be replaced by a device approved to provide safe and rapid access to survival craft in the water, if the OCMI permits the device, provided that there is at least one embarkation ladder on each side of the unit.

(2) An embarkation ladder is not required if—

(i) The distance from the embarkation deck to the unit's lightest operating waterline is less than 3 meters (10 feet); and

(ii) The unit is not in international service.

(3) If the embarkation ladders cannot be supported against a vertical flat surface, the unit must instead be provided with at least two widely-separated fixed metal ladders or stairways extending from the deck to the surface of the water and meet the following:

(i) Each inclined fixed ladder must meet the requirements under § 108.159.

(ii) Each vertical fixed ladder must meet the requirements under § 108.160 for fixed ladders, except that the vertical bars in cages must be open at least 500 millimeters (20 inches) on one side throughout the length of the ladder, and cages are not required in the area subject to wave action or on ladders inside the legs of a self-elevating unit.

(iii) If a fixed ladder cannot be installed, the OCMI may accept an alternate means of embarkation with sufficient capacity for all persons permitted on board to safely descend to the waterline.

(4) Alternate means of embarkation under paragraphs (h)(1)(ii) and (h)(3) of this section, such as portable slides, safety booms, moveable ladders, elevators, and controlled descent devices,

must be acceptable to the OCMI. An alternate means of embarkation must have sufficient capacity to permit persons to safely descend to the waterline at a rate comparable to the device which the alternate means of embarkation replaces.

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

§ 108.545 Marine evacuation system launching arrangements.

(a) *Arrangements.* Each marine evacuation system must have the following arrangements:

(1) Each marine evacuation system must be capable of being deployed by one person.

(2) Each marine evacuation system must enable the total number of persons for which it is designed, to be transferred from the unit into the inflated liferafts within a period of 10 minutes from the time the signal to abandon the unit is given.

(3) Each marine evacuation system must be arranged so that liferafts may be securely attached to the platform and released from the platform by a person either in the liferaft or on the platform.

(4) Each marine evacuation system must be capable of being deployed from the unit under unfavorable conditions of list of up to 20 degrees.

(5) If the marine evacuation system has an inclined slide, the angle of the slide from horizontal must be within a range of 30 to 35 degrees when the unit is upright and in the lightest seagoing condition.

(6) Each marine evacuation system platform must be capable of being restrained by a bowsing line or other positioning system that is designed to deploy automatically, and if necessary, be capable of being adjusted to the position required for evacuation.

(b) *Stowage.* Each marine evacuation system must be stowed as follows:

(1) There must not be any openings between the marine evacuation system's embarkation station and the unit's side at the unit's waterline in the lightest seagoing condition.

(2) The marine evacuation system must be protected from any projections of the unit's structure or equipment.

(3) The marine evacuation system's passage and platform, when deployed, its stowage container, and its operational arrangement must not interfere with the operation of any other lifesaving appliance at any other launching station.

(4) Where appropriate, the marine evacuation system's stowage area must be protected from damage by heavy seas.

(c) *Stowage of associated liferafts.* Inflatable liferafts used in conjunction with the marine evacuation system must be stowed as follows:

(1) Each inflatable liferaft used in conjunction with the marine evacuation system must be close to the system container, but capable of dropping clear of the deployed chute and boarding platform.

(2) Each inflatable liferaft used in conjunction with the marine evacuation system must be capable of individual release from its stowage rack.

(3) Each inflatable liferaft used in conjunction with the marine evacuation system must be stowed in accordance with § 108.530.

(4) Each inflatable liferaft used in conjunction with the marine evacuation system must be provided with pre-connected or easily connected retrieving lines to the platform.

§ 108.550 Survival craft launching and recovery arrangements: General.

(a) Each launching appliance for a lifeboat must be a davit approved under approval series 160.132, with a winch approved under approval series 160.115. Each launching appliance for a davit-launched liferaft must be approved under approval series 160.163, with an automatic disengaging apparatus approved under approval series 160.170.

(b) All lifeboats required for abandonment by the total number of persons permitted on board must be capable of being launched with their full complement of persons and equipment within 10 minutes from the time the signal to abandon the unit is given.

(c) Each survival craft must be arranged to clear each leg, column, footing, brace, mat, and each similar structure below the hull of a self-elevating

unit and clear the upper hull, the columns, and the pontoons of a column stabilized unit, with the unit in an intact condition.

(1) The survival craft must be arranged to be launched down the straight side of the unit or be mounted on a structure intended to provide clearance from lower structures of the unit.

(2) The OCMI may allow a reduction in the total number of survival craft meeting this requirement when the unit is in the transit mode and the number of personnel on board is reduced. In such cases, sufficient survival craft must be available for use by the total number of personnel remaining on board.

(d) Each lifeboat of aluminum construction in the hull or canopy, and each aluminum launching appliance must be protected in its stowage position by a water spray system meeting the requirements of part 34, subpart 34.25 of this chapter.

(e) With the exception of the secondary means of launching for free-fall lifeboats, each launching appliance together with all its lowering and recovery gear must be arranged in a way that the fully equipped survival craft it serves can be safely lowered when loaded with its full complement of persons, and also without persons, against—

(1) A list of up to 20 degrees on the high side; and

(2) A list of up to 20 degrees or the degree of list where the survival craft becomes waterborne, whichever, is the greater, on the low side.

(f) When the unit is under any unfavorable condition such as maximum airgap, lightest transit or operational condition, or any damaged condition under part 174, subpart C of this chapter,—

(1) Notwithstanding the requirements under §108.550(e), survival craft launching appliances and marine evacuation systems must be capable of operation;

(2) Falls, where used, must be long enough for survival craft to reach the water; and

(3) Lifeboats with an aggregate capacity that will accommodate the total number of persons permitted on board must be capable of being launched safely, and clear of any obstruction. The location and orientation of each lifeboat must be such that the lifeboat is either headed away from the unit upon launching, or can be turned to a heading away from the unit immediately upon launching.

(g) A launching appliance must not depend on any means other than gravity or stored mechanical power independent of the unit's power supplies to launch the survival craft it serves, in the fully loaded and equipped conditions, and also in the light condition.

(h) Each launching appliance's structural attachment to the vessel must be designed, based on the ultimate strength of the construction material, to be at least 4.5 times the load imparted on the attachment by the launching appliance and its fully loaded survival craft under the most adverse combination of list and trim under paragraph (b) of this section.

(i) Each launching appliance must be arranged so that—

(1) All parts requiring regular maintenance by the crew are readily accessible and easily maintained;

(2) The launching appliance remains effective under conditions of icing;

(3) The same type of release mechanism is used for each similar survival craft carried on board the unit; and

(4) The preparation and handling of survival craft at any one launching station does not interfere with the prompt preparation and handling of any other survival craft at any other station.

(j) Each launching mechanism must be arranged so it may be actuated by one person from a position on the unit's deck, and also from a position within the survival craft. Each launching and recovery arrangement must allow the operator on the deck to observe the survival craft at all times during launching.

(k) Means must be provided outside the machinery space to prevent any discharge of water onto survival craft during abandonment.

§ 108.553 Survival craft launching and recovery arrangements using falls and a winch.

Survival craft launching and recovery arrangements, in addition to meeting the requirements in § 108.550, must meet the following requirements:

(a) Each fall wire must be of rotation-resistant and corrosion-resistant steel wire rope.

(b) The breaking strength of each fall wire and each attachment used on the fall must be at least six times the load imparted on the fall by the fully-loaded survival craft.

(c) Each fall must be long enough for the survival craft to reach the water with the unit in its lightest seagoing condition, under unfavorable conditions of trim and with the unit listed not less than 20 degrees either way.

(d) Each unguarded fall must not pass near any operating position of the winch, such as hand cranks, payout wheels, and brake levers.

(e) Each winch drum must be arranged so the fall wire winds onto the drum in a level wrap, and a multiple drum winch must be arranged so that the falls wind off at the same rate when lowering, and onto the drums at the same rate when hoisting.

(f) Each fall, where exposed to damage or fouling, must have guards or equivalent protection. Each fall that leads along a deck must be covered with a guard that is not more than 300 millimeters (1 foot) above the deck.

(g) The lowering speed for a fully loaded survival craft must be not less than that obtained from the following formula:

(1) $S=0.4+(0.02\ H)$, where S is the speed of lowering in meters per second, and H is the height in meters from the davit head to the waterline at the lightest seagoing condition, with H not greater than 30, regardless of the lowering height.

(2) $S=79+(1.2\ H)$, where S is the speed of lowering in feet per minute, and H is the height in feet, with H not greater than 99.

(h) The lowering speed for a survival craft loaded with all of its equipment must be not less than 70 percent of the speed required under paragraph (g) of this section.

(i) The lowering speed for a fully loaded survival craft must be not more than 1.3 meters per second (256 feet per minute).

(j) If a survival craft is recovered by electric power, the electrical installation, including the electric power-operated boat winch, must meet the requirements in subchapter J of this chapter. If a survival craft is recovered by any means of power, including a portable power source, safety devices must be provided which automatically cut off the power before the davit arms or falls reach the stops in order to avoid overstressing the falls or davits, unless the motor is designed to prevent such overstressing.

(k) Each launching appliance must be fitted with brakes that meet the following requirements:

(1) The brakes must be capable of stopping the descent of the survival craft or rescue boat and holding it securely when loaded with it full complement of persons and equipment.

(2) The brake pads must, where necessary, be protected from water and oil.

(3) Manual brakes must be arranged so that the brake is always applied unless the operator, or a mechanism activated by the operator, holds the brake control in the off position.

§ 108.555 Lifeboat launching and recovery arrangements.

Lifeboat launching and recovery arrangements, in addition to meeting the requirements in §§ 108.550 and 108.553, must meet the following requirements:

(a) Each lifeboat must be capable of being launched with the unit making headway of 5 knots in calm water, or with the unit anchored or bearing on the bottom in a current of up to 5 knots. A painter may be used to meet this requirement.

(b) Each lifeboat must be provided with a launching appliance. The launching appliance must be capable of launching and recovering the lifeboat with its crew.

(c) Each launching appliance arrangement must allow the operator on the unit to observe the lifeboat at all times during recovery.

(d) Each launching appliance arrangement must be designed to ensure

persons can safely disembark from the survival craft prior its stowage.

[CGD 84–069, 61 FR 25291, May 20, 1996; 61 FR 40281, Aug. 1, 1996]

§ 108.557 Free-fall lifeboat launching and recovery arrangements.

(a) The launching appliance for a free-fall lifeboat must be designed and installed so that the launching appliance and the lifeboat it serves operate as a system to protect the occupants from harmful acceleration forces and to effectively clear the unit.

(b) The launching appliance must be designed and arranged so that in its ready to launch position, the distance from the lowest point on the lifeboat it serves to the water surface with the unit in its lightest seagoing condition does not exceed the lifeboat's certificated free-fall height.

(c) The launching appliance must be arranged so as to preclude accidental release of the lifeboat in its unattended stowed position. If the means provided to secure the lifeboat cannot be released from inside the lifeboat, the means to secure the lifeboat must be arranged as to preclude boarding the lifeboat without first releasing it.

(d) Each free-fall launching arrangement must be provided with a secondary means to launch the lifeboat by falls. Such means must comply with the requirements of §§ 108.550, 108.553, and 108.555. Notwithstanding § 108.550(e), the launching appliance must be capable of launching the lifeboat against unfavorable conditions of list of 5 degrees in any direction and it need not comply with the speed requirements of §§ 108.553 (g), (h), and (i).

If the secondary launching appliance is not dependent on gravity, stored mechanical power or other manual means, the launching arrangement must be connected both to the unit's main and emergency power supplies.

§ 108.560 Rescue boats.

Each unit must carry at least one rescue boat. Each rescue boat must be approved under approval series 160.156. A lifeboat is accepted as a rescue boat if it also meets the requirements for a rescue boat.

§ 108.565 Stowage of rescue boats.

(a) Rescue boats must be stowed as follows:

(1) Each rescue boat must be ready for launching in not more than 5 minutes.

(2) Each rescue boat must be in a position suitable for launching and recovery.

(3) Each rescue boat must be stowed in a way that neither the rescue boat nor its stowage arrangements will interfere with the operation of any survival craft at any other launching station.

(4) Each rescue boat that is also a lifeboat, must be in compliance with § 108.530.

(b) Each rescue boat must be provided a means for recharging the rescue boat batteries from the unit's power supply at a supply voltage not exceeding 50 volts.

(c) Each inflated rescue boat must be kept fully inflated at all times.

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

§ 108.570 Rescue boat embarkation, launching and recovery arrangements.

(a) Each rescue boat must be capable of being launched with the unit making headway of 5 knots in calm water, or with the unit anchored or bearing on the bottom in a current of up to 5 knots. A painter may be used to meet this requirement.

(b) Each rescue boat embarkation and launching arrangement must permit the rescue boat to be boarded and launched in the shortest possible time.

(c) If the rescue boat is one of the unit's survival craft, the rescue boat must also be as follows:

(1) The rescue boat must meet the embarkation arrangement and launching station requirements of § 108.540.

(2) The rescue boat must meet the launching arrangement requirements of §§ 108.550 and 108.557, and if the launching arrangement uses falls and a winch, § 108.553.

(3) If the launching arrangement uses a single fall, the rescue boat must have an automatic disengaging apparatus approved under approval series 160.170, instead of a lifeboat release mechanism.

(d) Rapid recovery of the rescue boat must be possible when loaded with its full complement of persons and equipment. If the rescue boat is also a lifeboat, rapid recovery must be possible when loaded with its lifeboat equipment and an approved rescue boat complement of at least six persons.

(e) Each rescue boat launching appliance must be fitted with a powered winch motor.

(f) Each rescue boat launching appliance must be capable of hoisting the rescue boat when loaded with its full rescue boat complement of persons and equipment at a rate of not less than 0.3 meters per second (59 feet per minute).

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

§ 108.575 Survival craft and rescue boat equipment.

(a) All lifeboat and rescue boat equipment must be as follows:

(1) The equipment must be secured within the boat by lashings, storage in lockers, or compartments, storage in brackets or similar mounting arrangements or other suitable means.

(2) The equipment must be secured in such a manner as not to interfere with any abandonment procedures or reduce seating capacity.

(3) The equipment must be as small and of as little mass as possible.

(4) The equipment must be packed in a suitable and compact form.

(5) The equipment should be stowed so the items do not—

(i) Reduce the seating capacity;

(ii) Adversely affect the seaworthiness of the survival craft or rescue boat; or

(iii) Overload the launching appliance.

(b) Each lifeboat, rigid liferaft, and rescue boat, unless otherwise stated in this paragraph, must carry the equipment specified for it in table § 108.575(b) of this section. A lifeboat that is also a rescue boat must carry the equipment in the table column marked for a lifeboat. Each item in the table has the same description as in § 199.175 of this chapter.

TABLE 108.575(b)—SURVIVAL CRAFT EQUIPMENT

Item No.	Item	International service			Other than international service		
		Lifeboat	Rigid liferaft	Rescue boat	Lifeboat	Rigid liferaft	Rescue boat
1	Bailer[1]	1	1	1	1	1	1
2	Bilge pump[2]	1			1		
3	Boathook	2		1	2		1
4	Bucket[3]	2		1	2		1
5	Can opener	3	3				
6	Compass	1		1	1		1
7	Dipper	1			1		
8	Drinking cup	1	1				
9	Fire extinguisher	1		1	1		1
10	First-aid kit	1	1	1	1	1	1
11	Fishing kit	1	1				
12	Flashlight	1	1	1	1	1	1
13	Hatchet	2			2		
14	Heaving line	2	1	2	2	1	2
15	Instruction card		1			1	
16	Jackknife	1			1		
17	Knife[1 4]		1	1		1	1
18	Ladder	1		1	1		1
19	Mirror, signaling	1	1		1	1	
20	Oars (units)[5 6]	1		1			
	Paddles		2			2	
21	Painter	2	1	1	2	1	1
22	Provisions (units per person)	1	1				
23	Pump[7]			1			
24	Radar reflector	1	1	1			
25	Rainwater collection device	1					
26	Repair kit[7]			1			1
27	Sea anchor	1	2	1	1	2	1
28	Searchlight	1		1	1		1
29	Seasickness kit (kits/person)	1	1		1	1	
30	Signal, smoke	2	2		2	1	
31	Signal, hand flare	6	6		6	6	
32	Signal, parachute flare	4	4		4	4	

TABLE 108.575(b)—SURVIVAL CRAFT EQUIPMENT—Continued

Item No.	Item	International service			Other than international service		
		Lifeboat	Rigid liferaft	Rescue boat	Lifeboat	Rigid liferaft	Rescue boat
33	Skates and fenders[8]	1			1		
34	Sponge[7]		2	2		2	2
35	Survival instructions	1	1		1	1	
36	Table of lifesaving signals	1	1		1	1	
37	Thermal protective aid (percent of persons)[9]	10%	10%	10%	10%	10%	10%
38	Tool kit	1			1		
39	Towline[10]	1		1	1		1
40	Water (liters per person)	3	1.5		3	1	
41	Whistle	1	1	1	1	1	1

Notes:
[1] Each liferaft approved for 13 persons or more must carry two of these items.
[2] Bilge pumps are not required for boats of self-bailing design.
[3] Not required for inflated or rigid/inflated rescue boats.
[4] A hatchet counts toward this requirement in rigid rescue boats.
[5] Oars not required on a free-fall lifeboat; a unit of oars means the number of oars specified by the manufacturer.
[6] Rescue boats may substitute buoyant oars for paddles, as specified by the manufacturer.
[7] Not required for a rigid rescue boat.
[8] Required if specified by the boat manufacturer.
[9] Sufficient thermal protective aids are required for at least 10% of the persons the survival craft is equipped to carry, but not less than two.
[10] Required only if the lifeboat is also the rescue boat.

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

§ 108.580 Personal lifesaving appliances.

(a) *Lifebuoys.* Each unit must carry at least eight lifebuoys approved under approval series 160.150 as follows:

(1) *Stowage.* Lifebuoys must be stowed as follows:

(i) Each lifebuoy must be capable of being rapidly cast loose.

(ii) Each lifebuoy must not be permanently secured to the unit in anyway.

(iii) Lifebuoys must be so distributed as to be readily available on each side of the unit and, as far as practicable, on each open deck extending to the side of the unit. The lifebuoys with attached self-igniting lights must be evenly distributed on all sides of the unit.

(iv) At least two lifebuoys, each with attached self-activating smoke signals, must be stowed where they can be quickly released from the navigating bridge or main control station, or a location readily available to personnel on board. These lifebuoys should, when released, fall directly into the water without striking any part of the unit.

(2) *Attachments and fittings.* Lifebuoys must have the following attachments and fittings:

(i) At least one lifebuoy on each side of the unit fitted with a buoyant lifeline that is—

(A) At least as long as twice the height where it is stowed above the waterline in the lightest seagoing condition, or 30 meters (100 feet), whichever is the greater;

(B) Non-kinking;

(C) Not less than 8 millimeters (5/16 inch) in diameter;

(D) Of a breaking strength which is not less than 5 kiloNewtons (1,124 pounds-force); and

(E) Is, if synthetic, a dark color or certified by the manufacturer to be resistant to deterioration from ultraviolet light.

(ii) At least one-half the total number of lifebuoys on the unit must each be fitted with a self-igniting light approved under approval series 161.010. A self-igniting light must not be attached to the lifebuoys required by this section to be fitted with lifelines.

(iii) At least two lifebuoys on the unit each must be fitted with a self-activating smoke signal approved under approval series 160.157. Lifebuoys fitted with smoke signals must also be fitted with lights.

(b) *Lifejackets.* Each unit must carry lifejackets approved under approval series 160.155, 160.176, or 160.177. If the unit carries inflatable lifejackets, they must be of the same or similar design and have the same method of operation.

(1) *General.* Each unit must carry a lifejacket for each person on board and in addition, a sufficient number of lifejackets must be carried for persons at each work station and industrial work site.

(2) *Stowage.* Lifejackets must be stowed as follows:

(i) The lifejackets must be readily accessible.

(ii) The additional lifejackets required by paragraph (b)(1) of this section must be stowed in places readily accessible to the work stations and industrial work sites.

(iii) Where, due to the particular arrangements of the unit, the lifejackets under paragraph (b)(1) of this section could become inaccessible, the OCMI may require an increase in the number of lifejackets to be carried, or suitable alternative arrangements.

(3) *Attachments and fittings.* Lifejackets must have the following attachments and fittings:

(i) Each lifejacket must have a lifejacket light approved under approval series 161.112 securely attached to the front shoulder area of the lifejacket. On a unit not in international service, a light approved under approval series 161.012 may be used. However, lifejacket lights bearing Coast Guard approval number 161.012/2/1 are not permitted unless the unit is certificated to operate only on waters between 32° N and 32° S latitude.

(ii) Each lifejacket must have a whistle firmly secured by a cord to the lifejacket.

(c) *Immersion suits or anti-exposure suits.* Each unit must carry immersion suits approved under approval series 160.171 or anti-exposure suits approved under approval series 160.153.

(1) *General.* Each unit, except units operating between 32 degrees north latitude and 32 degrees south latitude, must carry—

(i) Immersion suits or anti-exposure suits of suitable size for each person assigned to the rescue boat crew;

(ii) Immersion suits approved under approval series 160.171 of the appropriate size for each person on board, which count toward meeting the requirements of paragraph (c)(1)(i) of this section; and

(iii) In addition to the immersion suits required under paragraph (c)(1)(ii) of this section, each watch station, work station, and industrial work site must have enough immersion suits to equal the number of persons normally on watch in, or assigned to, the station or site at one time. However, an immersion suit is not required at a station or site for a person whose cabin or berthing area (and the immersion suits stowed in that location) is readily accessible to the station or site.

(2) *Attachments and fittings.* Immersion suits or anti-exposure suits must have the following attachments and fittings:

(i) Each immersion suit or anti-exposure suit must have a lifejacket light approved under approval series 161.112 securely attached to the front shoulder area of the immersion suit or anti-exposure suit. On a unit not in international service, a light approved under approval series 161.012 may be used. However, lifejacket lights bearing Coast Guard approval number 161.012/2/1 are not permitted on units certificated to operate on waters where water temperature may drop below 10° C (50° F).

(ii) Each immersion suit or anti-exposure suit must have a whistle firmly secured by a cord to the immersion suit or anti-exposure suit.

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

§ 108.595 Communications.

(a) *Radio lifesaving appliances.* Radio lifesaving appliance installations and arrangements must meet the requirements of 47 CFR part 80.

(b) *Distress flares.* Each unit must—

(1) Carry not less than 12 rocket parachute flares approved under approval series 160.136; and

(2) Stow the flares in a portable watertight container carried on the navigating bridge, or if the unit does not have a bridge, in the control room.

§ 108.597 Line-throwing appliance.

(a) *General.* Each unit in international service must have a line-throwing appliance that is approved under approval series 160.040. Each unit not in international service must carry a line-throwing appliance approved

under either approval series 160.040 or 160.031.

(b) *Stowage.* The line-throwing appliance and its equipment must be readily accessible for use.

(c) *Additional equipment.* Each unit must carry the following equipment for the line-throwing appliance:

(1) The equipment on the list provided by the manufacturer with the approved appliance; and

(2) An auxiliary line that—

(i) Has a breaking strength of at least 40 kiloNewtons (9,000 pounds-force);

(ii) Is, if synthetic, a dark color or certified by the manufacturer to be resistant to deterioration from ultraviolet light; and

(iii) Is—

(A) At least 450 meters (1,500 feet) long, if the line-throwing appliance is approved under approval series 160.040; or

(B) At least 150 meters (500 feet) long, if the line-throwing appliance is approved under approval series 160.031.

Subpart F—Cranes

CRANES

§ 108.601 Crane design.

(a) Each crane and crane foundation on a unit must be designed in accordance with the American Petroleum Institute Specification for Offshore Cranes, API Spec. 2C, Second Edition, February, 1972 (with supplement 2).

(b) In addition to the design requirements of paragraph (a), each crane must have the following:

(1) Each control marked to show its function.

(2) Instruments with built-in lighting.

(3) Fuel tank fills and overflows that do not run onto the engine exhaust.

(4) No gasoline engines.

(5) Spark arrestors fitted on engine exhaust pipes.

Subpart G—Equipment Markings and Instructions

§ 108.621 Equipment markings: General.

Unless otherwise provided, each marking required in this subpart must be—

(a) Printed in English;

(b) In red letters with a contrasting background;

(c) Permanent;

(d) Easy to be seen;

(e) At least 1.3 centimeters (½ inch) in height.

§ 108.623 General alarm bell switch.

Each general alarm bell switch must be marked ''GENERAL ALARM'' on a plate or other firm noncorrosive backing.

§ 108.625 General alarm bell.

Each general alarm bell must be identified by marking ''GENERAL ALARM—WHEN BELL RINGS GO TO YOUR STATION'' next to the bell.

§ 108.627 Carbon dioxide alarm.

Each carbon dioxide alarm must be identified by marking: ''WHEN ALARM SOUNDS VACATE AT ONCE. CARBON DIOXIDE BEING RELEASED'' next to the alarm.

§ 108.629 Fire extinguishing system branch line valve.

Each branch line valve of each fire extinguishing system must be marked with the name of the space or spaces it serves.

§ 108.631 Fixed fire extinguishing system controls.

(a) Each cabinet or space that contains a valve, control, or manifold of a fixed fire extinguishing system must be marked by one of the following: ''CARBON DIOXIDE FIRE APPARATUS'', ''FOAM FIRE APPARATUS'', or ''WATER SPRAY FIRE APPARATUS'' in letters at least 5 centimeters (2 inches) high.

(b) Instructions for the operation of a fixed fire extinguishing system must be posted next to a fire apparatus described in paragraph (a) of this section.

§ 108.633 Fire stations.

Each fire station must be identified by marking: ''FIRE STATION NO. —'' next to the station in letters and numbers at least 5 centimeters (2 inches) high.

§ 108.635 Self-contained breathing apparatus.

Each locker or space containing self-contained breathing apparatus must be marked: ''SELF CONTAINED BREATHING APPARATUS''.

§ 108.636 Work vests.

Each space containing a work vest must be marked: ''WORK VEST''.

§ 108.637 Hand portable fire extinguishers.

(a) Each hand portable fire extinguisher must be marked with a number that identifies it in relation to all other hand portable fire extinguishers.

(b) The location of each hand portable fire extinguisher must be marked with the same number that is marked on the extinguisher.

§ 108.639 Emergency lights.

Each emergency light must be marked: ''E''.

§ 108.641 Instructions for changing steering gear.

Instructions stating, in order, the different steps to be taken for changing to emergency and secondary steering gear must be posted in the steering gear room and at each secondary steering station in 1.3 centimeters (½ inch) letters and numerals of contrasting color to the background.

§ 108.643 Rudder orders.

At each steering station, the direction which the wheel or steering device must be moved for right rudder or left rudder must be marked in letters of contrasting color to the background on the wheel or steering device or in a place that is directly in the helmsman's line of vision to indicate ''RIGHT RUDDER'' and ''LEFT RUDDER''.

§ 108.645 Markings on lifesaving appliances.

(a) *Lifeboats and rescue boats.* Each lifeboat and rescue boat must be plainly marked as follows:

(1) Each side of each lifeboat and rescue boat bow must be marked in block capital letters and numbers with—

(i) The name of the unit; and

(ii) The name of the port required to be marked on the unit to meet the requirements of subpart 67.123 of this chapter.

(2) The number of persons the boat is equipped for, which may not exceed the number shown on its nameplate, must be clearly marked in permanent characters.

(3) The number of the boat and the unit's name, must be plainly marked or painted so that the markings are visible from above the boat.

(4) Type II retro-reflective material approved under approval series 164.018 must be placed on the boat and meet the arrangement requirements in IMO Resolution A.658(16).

(b) *Rigid liferafts.* Each rigid liferaft must be marked as follows:

(1) The name of the unit must be marked on each rigid liferaft.

(2) The name of the port required to be marked on the unit to meet the requirements of subpart 67.123 of this chapter.

(3) The length of the painter must be marked on each rigid liferaft.

(4) At each entrance of each rigid liferaft, the number of persons the rigid liferaft is equipped for, not exceeding the number shown on its nameplate, must be marked in letters and numbers at least 100 millimeters (4 inches) high, in a color contrasting to that of the liferaft.

[CGD 84–069, 61 FR 25298, May 20, 1996, as amended at 63 FR 52815, Oct. 1, 1998]

§ 108.646 Marking of stowage locations.

(a) Containers, brackets, racks, and other similar stowage locations for lifesaving equipment, must be marked with symbols in accordance with IMO Resolution A.760(18), indicating the devices stowed in that location for that purpose.

(b) If more than one device is stowed in that location, the number of devices must also be indicated.

(c) Survival craft should be numbered.

[CGD 84–069, 61 FR 25298, May 20, 1996, as amended at 63 FR 52815, Oct. 1, 1998]

§ 108.647 Inflatable liferafts.

The number of the liferaft and the number of persons it is permitted to

accommodate must be marked or painted in a conspicuous place in the immediate vicinity of each inflatable liferaft in block capital letters and numbers. The word ''liferaft'' or the appropriate symbol from IMO Resolution A.760(18) shall be used to identify the stowage location. Liferafts stowed on the sides of the unit should be numbered in the same manner as the lifeboats. This marking must not be on the inflatable liferaft container.

[CGD 84–069, 61 FR 25298, May 20, 1996]

§ 108.649 Lifejackets, immersion suits, and lifebuoys.

(a) Each lifejacket must be marked—

(1) In block capital letters with the name of the unit; and

(2) With type I retro-reflective material approved under approval series 164.018. The arrangement of the retro-reflective material must meet IMO Resolution A.658(16).

(b) The stowage positions for lifejackets, other than lifejackets stowed in staterooms, must be marked with either the word ''LIFEJACKET'' or with the appropriate symbol from IMO Resolution A.760(18).

(c) Each immersion suit or anti-exposure suit must be marked to identify the person or unit to which it belongs.

(d) Immersion suits or anti-exposure suits must be stowed so they are readily accessible, and the stowage positions must be marked with either the words ''IMMERSION SUITS'' or ''ANTI-EXPOSURE SUITS'', or with the appropriate symbol from IMO Resolution A.760(18).

(e) Each lifebuoy must be marked—

(1) In block capital letters with the unit's name and with the name of the port required to be marked on the unit under subpart 67.123 of this chapter; and

(2) With type II retro-reflective material approved under part 164, subpart 164.018 of this chapter. The arrangement of the retro-reflective material must meet IMO Resolution A.658(16).

(f) Each lifebuoy stowage position must be marked with either the words ''LIFEBUOY'' or ''LIFE BUOY'', or with the appropriate symbol from IMO Resolution A.760(18).

(g) Each lifejacket, immersion suit, and anti-exposure suit container must be marked in block capital letters and numbers with the minimum quantity, identity, and if sizes other than adult or universal sizes are used on the unit, the size of the equipment stowed inside the container. The equipment may be identified in words or with the appropriate symbol from IMO Resolution A.760(18).

[CGD 84–069, 61 FR 25298, May 20, 1996, as amended at 63 FR 52815, Oct. 1, 1998]

§ 108.650 EPIRBs and SARTs.

Emergency position indicating radiobeacons and search and rescue transponders. Each EPIRB and SART should have the name of the unit plainly marked or painted on its label, except for EPIRBs or SARTs in an inflatable liferaft or permanently installed in a survival craft.

[CGD 84–069, 61 FR 25299, May 20, 1996]

§ 108.651 Portable magazine chests.

Each portable magazine chest must be marked: ''PORTABLE MAGAZINE CHEST — FLAMMABLE — KEEP LIGHTS AND FIRE AWAY'' in letters at least 7.5 centimeters (3 inches) high.

§ 108.653 Helicopter facilities.

(a) Each helicopter fueling facility must be marked adjacent to the fueling hose storage: ''WARNING — HELICOPTER FUELING STATION — KEEP LIGHTS AND FIRE AWAY''.

(b) Each storage tank for helicopter fuel must be marked: ''DANGER — FLAMMABLE LIQUID''.

(c) Each access to a helicopter landing area must be marked: ''BEWARE OF TAIL ROTOR''.

(d) Each marking required by this section must be in letters at least 7.5 centimeters (3 inches) high.

§ 108.655 Operating instructions.

Each unit must have posters or signs displayed in the vicinity of each survival craft and the survival craft's launching controls that—

(a) Illustrate the purpose of controls;

(b) Illustrate the procedures for operating the launching device;

(c) Give relevant instructions or warnings;

(d) Can be easily seen under emergency lighting conditions; and

(e) Display symbols in accordance with IMO Resolution A.760(18).

[CGD 84–069, 61 FR 25299, May 20, 1996]

§ 108.657 Unit markings.

The hull of each unit must be marked in accordance with Parts 67 and 69 of this chapter.

§ 108.659 Lifesaving signal instructions.

On all vessels to which this subpart applies, there must be readily available to the offshore installation manager, master, or person in charge a placard containing instructions for the use of the lifesaving signals set forth in regulation 16, chapter V, of the International Convention for Safety of Life at Sea, 1974. These signals must be used by vessels or persons in distress when communicating with lifesaving stations and maritime rescue units.

[CGD 95–027, 61 FR 26008, May 23, 1996]

§ 108.661 Unit markings: Draft marks.

(a) Each unit must have draft marks for each foot of immersion—

(1) If the unit is a surface unit, on both the port and starboard sides of the stem and the stern-post or rudderpost or at any other place at the stern of the unit as may be necessary for easy observance;

(2) If the unit is a self-elevating unit, near each corner of the hull but not more than 4 required; and

(3) If the unit is a column-stabilized unit, on each corner column, continuing to the footing or lower displacement hull.

(b) The bottom of each mark must be at the draft indicated by that mark.

(c) Each mark must be—

(1) In numerals 15 centimeters (6 inches) high; and

(2) In contrasting color to the background.

(d) For the purposes of this section, ''draft'' means the distance from the bottom of the keel or the lowest shell plate on the outer surface of the unit to the surface of the water, except that where a unit has a permanent appendage extending below the bottom of the keel, ''draft'' means the distance from the lowest part of the appendage to the surface of the water.

(e) In cases where draft marks are obscured due to operational constraints or by protrusions, the vessel must be fitted with a reliable draft indicating system from which the draft can be determined.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 89–037, 57 FR 41823, Sept. 11, 1992]

§ 108.663 Unit markings: Load line.

Each unit that is assigned a load line must have the load line marked in accordance with Part 42 of this chapter.

§ 108.665 Appliances for watertight integrity.

Each watertight door, scuttle, and hatch required for watertight integrity, which may be opened during normal operations must be marked in letters of contrasting color to the background ''KEEP CLOSED''.

Subpart H—Miscellaneous Equipment

§ 108.697 Buoyant work vests.

(a) Each buoyant work vest on a unit must be approved under Subpart 160.053 or Subpart 160.077 of this chapter.

(b) Commercial hybrid PFD's carried as work vests must be—

(1) Used, stowed, and maintained in accordance with the procedures set out in the manual required for these devices by § 160.077–29 of this chapter and any limitation(s) market on them; and

(2) Of the same or similar design and have the same method of operation as each other hybrid PFD carried on board.

[CGD 78–174A, 51 FR 4351, Feb. 4, 1986]

§ 108.699 Substitution of life preservers.

A work vest may not be substituted for a required life preserver—

(a) For the life saving equipment requirements of this part; or

(b) For use during drills and emergencies.

§ 108.701 Sounding equipment.

Each self-propelled unit must have a mechanical or electronic sounding apparatus.

§ 108.703 Self-contained breathing apparatus.

(a) Each unit must be equipped with a self-contained breathing apparatus described in § 108.497(a) to use as protection against gas leaking from a refrigeration unit if it is equipped with any refrigeration unit using—

(1) Ammonia to refrigerate any space with a volume of more than 20 cubic feet; or

(2) Fluorocarbons to refrigerate any space with a volume of more than 1000 cubic feet.

(b) The self-contained breathing apparatus required in § 108.497 may be used for this purpose.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 86–036, 57 FR 48326, Oct. 23, 1992]

§ 108.705 Anchors, chains, wire rope, and hawsers.

(a) Each unit must be fitted with anchors, chains, wire rope, and hawsers in agreement with the standards established by the American Bureau of Shipping.

(b) Units which are equipped with anchors used as operational equipment are not required to have additional anchors if the operational anchors meet the requirements of paragraph (a) of this section.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by USCG–1999–6216, 64 FR 53226, Oct. 1, 1999]

§ 108.707 First aid kit.

Each unit must have a first-aid kit approved by the Mine Safety and Health Administration (Formerly Mining Enforcement and Safety Administration) of a size suitable for the number of persons allowed on board the unit that is stowed in a location that is accessible to persons on board.

§ 108.709 Litter.

Each unit must have a litter that is—

(a) Stowed in a location that is accessible to the persons on board; and

(b) Capable of being used on the type of helicopters serving the unit.

§ 108.713 International Code of Signals.

Each vessel on an international voyage which is required to carry a radiotelegraph or radiotelephone installation in accordance with Chapter IV of the Safety of Life at Sea Convention, 1960, must carry the International Code of Signals.

§ 108.715 Magnetic compass and gyrocompass.

(a) Each self-propelled unit in ocean or coastwise service must have a magnetic compass.

(b) Each self-propelled unit of 1,600 gross tons and over in ocean or coastwise service must have a gyrocompass in addition to the magnetic compass required in paragraph (a) of this section.

(c) Each unit that is required to have a gyrocompass must have an illuminated repeater for the gyrocompass that is at the main steering stand unless the gyrocompass is illuminated and is at the main steering stand.

§ 108.717 Radar.

Each self-propelled unit of 1,600 gross tons and over in ocean or coastwise service must have—

(a) A marine radar system for surface navigation; and

(b) Facilities on the bridge for plotting radar readings.

§ 108.719 Pilot boarding equipment.

(a) This section applies to each vessel that normally embarks or disembarks a pilot from a pilot boat or other vessel.

(b) Each vessel must have suitable pilot boarding equipment available for use on each side of the vessel. If a vessel has only one set of equipment, the equipment must be capable of being easily transferred to and rigged for use on either side of the vessel.

(c) Pilot boarding equipment must be capable of resting firmly against the vessel's side and be secured so that it is clear from overboard discharges.

(d) Each vessel must have lighting positioned to provide adequate illumination for the pilot boarding equipment and each point of access.

(e) Each vessel must have a point of access that has—

(1) A gateway in the rails or bulwark with adequate handholds; or

(2) Two handhold stanchions and a bulwark ladder that is securely attached to the bulwark rail and deck.

(f) The pilot boarding equipment required by paragraph (b) of this section must include at least one pilot ladder approved under subpart 163.003 of this chapter. Each pilot ladder must be of a single length and capable of extending from the point of access to the water's edge during each condition of loading and trim, with an adverse list of 15°.

(g) Whenever the distance from the water's edge to the point of access is more than 30 feet, access from a pilot ladder to the vessel must be by way of an accommodation ladder or equally safe and convenient means.

(h) Pilot hoists, if used, must be approved under subpart 163.002 of this chapter.

[CGD 79–032, 49 FR 25455, June 21, 1984]

Subpart I—Navigation Bridge Visibility

§ 108.801 Navigation bridge visibility.

Each mobile offshore drilling unit which is 100 meters (328 feet) or more in length and contracted for on or after September 7, 1990, must meet the following requirements:

(a) The field of vision from the navigation bridge, whether the vessel is in a laden or unladen condition, must be such that:

(1) From the conning position, the view of the sea surface is not obscured forward of the bow by more than the lesser of two ship lengths or 500 meters (1,640 feet) from dead ahead to 10 degrees on either side of the vessel. Within this arc of visibility any blind sector caused by cargo, cargo gear, or other permanent obstruction must not exceed 5 degrees.

(2) From the conning position, the horizontal field of vision extends over an arc from at least 22.5 degrees abaft the beam on one side of the vessel, through dead ahead, to at least 22.5 degrees abaft the beam on the other side of the vessel. Blind sectors forward of the beam caused by cargo, cargo gear, or other permanent obstruction must not exceed 10 degrees each, nor total more than 20 degrees, including any blind sector within the arc of visibility described in paragraph (a)(1) of this section.

(3) From each bridge wing, the field of vision extends over an arc from at least 45 degrees on the opposite bow, through dead ahead, to at least dead astern.

(4) From the main steering position, the field of vision extends over and arc from dead ahead to at least 60 degrees on either side of the vessel.

(5) From each bridge wing, the respective side of the vessel is visible forward and aft.

(b) Windows fitted on the navigation bridge must be arranged so that:

(1) Framing between windows is kept to a minimum and is not installed immediately in front of any work station.

(2) Front windows are inclined from the vertical plane, top out, at an angle of not less than 10 degrees and not more than 25 degrees.

(3) The height of the lower edge of the front windows is limited to prevent any obstruction of the forward view previously described in this section.

(4) The height of the upper edge of the front windows allows a forward view of the horizon at the conning position, for a person with a height of eye of 1.8 meters (71 inches), when the vessel is at a forward pitch angle of 20 degrees.

(c) Polarized or tinted windows must not be fitted.

[CGD 85–099, 55 FR 32248, Aug. 8, 1990]

Subpart J—Muster List

§ 108.901 Muster list and emergency instructions.

(a) *General.* Copies of clear instructions must be provided on the unit, detailing the actions that each person on board should follow in the event of an emergency.

(b) *Muster list.* Copies of the muster list must be posted in conspicuous places throughout the unit including on the navigating bridge, in the control room, and in accommodation spaces. The muster list must be posted at all times while the unit is in service. After the muster list has been prepared, if any change takes place that necessitates an alteration in the muster list,

the person in charge must either revise the muster list or prepare a new one. Muster lists must provide the following information:

(1) Each muster list must specify instructions for operating the general emergency alarm system.

(2) Each muster list must specify the emergency signals.

(3) Each muster list must specify the actions to be taken by the crew and industrial personnel when each signal is sounded.

(4) Each muster list must specify how the order to abandon the unit will be given.

(5) Each muster list must specify the persons that are assigned to make sure that lifesaving and firefighting appliances are maintained in good condition and ready for immediate use.

(6) The muster list must specify the duties assigned to the different industrial personnel and members of the crew that include—

(i) Closing the watertight doors, fire doors, valves, scuppers, sidescuttles, skylights, portholes, and other similar openings in the unit's hull;

(ii) Equipping the survival craft and other lifesaving appliances;

(iii) Preparing and launching the survival craft;

(iv) Preparing other lifesaving appliances;

(v) Mustering the visitors and other persons in addition to the crew and industrial personnel;

(vi) Using communication equipment;

(vii) Manning the emergency squad assigned to deal with fires and other emergencies;

(viii) Special duties assigned with respect to the use of firefighting equipment and installations;

(ix) Cover the duties of the crew and industrial personnel in case of collisions or other serious casualties; and

(x) Cover the duties of the crew and industrial personnel in case of severe storms.

(7) Each muster list must specify the duties assigned to industrial personnel and members of the crew in relation to visitors and other persons on board in case of an emergency that include—

(i) Warning visitors and other persons on board;

(ii) Seeing that visitors and other persons on board are suitably dressed and have donned their lifejackets or immersion suits correctly;

(iii) Assembling visitors and other persons on board at muster stations; and

(iv) Keeping order in the passageways and on the stairways and generally controlling the movements of the visitors and other persons on board;

(8) Each muster list must specify substitutes for key persons if they are disabled, taking into account that different emergencies require different actions.

(c) *Emergency instructions.* Illustrations and instructions in English and any other appropriate language, as determined by the OCMI, must be posted in each cabin used for persons who are not members of the crew or industrial personnel. They must be conspicuously displayed at each muster station and in other accommodation spaces to inform personnel of—

(1) The fire and emergency signal;

(2) Their muster station;

(3) The essential actions they must take in an emergency;

(4) The location of lifejackets, including child-size lifejackets;

(5) The method of donning lifejackets;

(6) If immersion suits are provided, the location of the immersion suits; and

(7) Fully illustrated instructions on the method of donning immersion suits.

[CGD 84–069, 61 FR 25299, May 20, 1996, as amended at 63 FR 52815, Oct. 1, 1998]

PART 109—OPERATIONS

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APPENDIX A TO PART 109—NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 4–78—INSPECTION AND CERTIFICATION OF EXISTING MOBILE OFFSHORE DRILLING UNITS

AUTHORITY: 43 U.S.C. 1333; 46 U.S.C. 3306, 6101, 10104; 49 CFR 1.46.

SOURCE: CGD 73–251, 43 FR 56828, Dec. 4, 1978, unless otherwise noted.

Subpart A—General

§ 109.101 Applicability.

No unit may be operated unless it complies with the regulations in this part.

§ 109.103 Requirements of the International Convention for Safety of Life at Sea, 1974.

No self-propelled unit of more than 500 gross tons may embark on an international voyage unless it is issued the appropriate Convention certificate as described in §§ 107.401 through 107.413 of this subchapter.

§ 109.105 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 paragraph (b) of this section, the Coast Guard must publish notice of change in the FEDERAL REGISTER and make the material available to the public. All approved material is on file at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC 20002, and at the U.S. Coast Guard, Office of Design and Engineering Standards (G–MSE), 2100 Second Street SW., Washington, DC 20593–0001 and is available from the sources indicated in paragraph (b) of this section.

(b) The material for incorporation by reference in this part and the sections affected are:

American Society for Testing and Materials (ASTM)

100 Barr Harbor Drive, West Conshohocken, PA 19428–2959.

ASTM Adjunct F 1626, Symbols for Use in Accordance with Regulation II–2/20 of the 1974 SOLAS Convention as amended PCN: 12–616260–01 (1996)—109.563

International Maritime Organization (IMO)

Publications Section, 4 Albert Embankment, London, SE1 7SR United Kingdom.

Resolution A.654.(16), Graphical Symbols for Fire Control Plans—109.563

[CGD 95–028, 62 FR 51208, Sept. 30, 1997, as amended by USCG 1998–4442, 63 FR 52191, Sept. 30, 1998; USCG 1999–5151, 64 FR 67182, Dec. 1, 1999]

§ 109.107 Designation of master or person in charge.

The owner of a unit or his agent shall designate an individual to be the master or person in charge of the unit.

§ 109.109 Responsibilities of master or person in charge.

(a) The master or person in charge shall—

(1) Ensure that the provisions of the Certificate of Inspection are adhered to; and

(2) Be fully cognizant of the provisions in the operating manual required by § 109.121.

(b) Nothing in this subpart shall be construed as limiting the master or person in charge, at his own responsibility, from diverting from the route prescribed in the Certificate of Inspection or taking such steps as he deems necessary and prudent to assist vessels in distress or for other emergency conditions.

§ 109.121 Operating manual.

(a) Each unit must have on board an operating manual approved by the Coast Guard as meeting the requirements of this section.

(b) The operating manual must be available to, and written in a manner that is easily understood by, the unit's operating personnel and include the following:

(1) A table of contents and general index.

(2) A general description of the unit, including major dimensions, tonnages, dry bulk capacities, damage stability standard to which designed, hook load capacity, rotary table capacity, set back load capacity, drilling derrick capacity, and the identification, the maximum deadweight in pounds and kilograms, and the rotor size in feet and meters of the helicopter used for the design of the helicopter deck.

(3) Limiting design data for each mode of operation, including draft, air gap, wave height, wave period, wind, current, temperature, and other environmental factors.

(4) Instructions on the use of the stability data.

(5) Lightweight data with a comprehensive listing of the inclusions and exclusions of semi-permanent equipment, together with guidance for the routine recording of lightweight alterations.

(6) Information identifying the type, location, and quantities of permanent ballast.

(7) Hydrostatic curves or tables.

(8) The maximum allowable deck loadings either listed or shown on a plan.

(9) A capacity plan showing the capacities and the vertical, longitudinal, and transverse centers of gravity of tanks and bulk material stowage spaces.

(10) Tank sounding tables or curves showing capacities, the vertical, longitudinal, and transverse centers of gravity in graduated intervals, and the free surface data of each tank.

(11) Stability information setting forth the maximum allowable height of the center of gravity in relation to draft data, displacement, and other applicable parameters unique to the design of the unit to determine compliance with the intact and damage stability criteria.

(12) Examples of loading conditions for each mode of operation and instructions for developing other acceptable loading conditions.

(13) Information concerning the use of any special crossflooding fitting for each operating condition which, if damage occurs, may require crossflooding for survival (surface units only) and the location of any valve that may require closure to prevent progressive flooding (all units).

(14) Guidance for preparing the unit for the passage of a severe storm and the specific actions and approximate length of time to complete them or to attain a designated level of preparedness.

(15) Guidance for operating the unit while changing its mode of operation and for preparing the unit to make a move and, for self-elevating units in the transit mode, information for preparing the unit to avoid structural damage during heavy weather, including the positioning and securing of legs, cantilever structures, and heavy cargo or large equipment which might shift position.

(16) A description of any inherent operational limitations for each mode of operation and for each change in mode of operation.

(17) Guidance for the person in charge to determine the cause of unexpected list and trim before taking corrective action.

(18) For column stabilized units, a description, a schematic diagram, and guidance for the operation of the ballast system and of the alternate means of ballast system operation, together with a description of their limitations, such as pump capacities at various angles of heel and trim.

(19) A description, a schematic diagram, and guidance for the operation of the bilge system and of the alternate means of bilge system operation, together with a description of their limitations, such as spaces not connected to the bilge system.

(20) General arrangement plans showing the location of: Watertight and weathertight compartments, and openings in the hull and structure; vents, closures, and mechanical, ventilating, and electrical emergency shutdowns; flooding alarms and fire and gas detectors; and access to different compartments and decks.

(21) A list of emergency shutdowns and guidance on restarting all mechanical, ventilating, and electrical equipment after activation of the emergency shutdowns.

(22) Procedures for evacuating personnel from the unit.

(23) A plan showing the hazardous locations described in §111.105–33 of this chapter.

(24) A schematic diagram of the emergency power system.

(Approved by the Office of Management and Budget under control number 2115–0505)

[CGD 83–071, 52 FR 6979, Mar. 6, 1987; 52 FR 9383, Mar. 24, 1987, as amended by CGD 95–028, 62 FR 51208, Sept. 30, 1997]

Subpart B—Tests, Drills, and Inspections

§ 109.201 Steering gear, whistles, general alarm, and means of communication.

The master or person in charge shall ensure that—

(a) Steering gear, whistles, general alarm bells, and means of communication between the bridge or control room and the engine room on self propelled units are inspected and tested—

(1) Within 12 hours before getting under way; and

(2) At least once each week if under way or on station; and

(b) Whistles and general alarm bells on all other units are inspected examined and tested at least once each week.

§ 109.203 Sanitation.

(a) The master or person in charge shall insure that the accommodation spaces are in a clean and sanitary condition.

(b) The chief engineer, or engineer in charge if no chief engineer is required, shall insure that the engineering spaces are in a clean and sanitary condition.

§ 109.205 Inspection of boilers and machinery.

The chief engineer or engineer in charge, before he assumes charge of the boilers and machinery of a unit shall inspect the boilers and machinery, other than industrial machinery, and report to the master or person in charge and the Officer in Charge, Marine Inspection, any parts that are not in operating condition.

§ 109.209 Appliances for watertight integrity.

(a) Before getting underway, the master or person in charge shall insure

that each appliance for watertight integrity is closed and watertight.

(b) If existing conditions warrant, the master or person in charge may permit appliances for watertight integrity to be open while afloat.

§ 109.211 Testing of emergency lighting and power systems.

(a) The master or person in charge shall insure that—

(1) Each emergency lighting and each emergency power system is tested at least once each week;

(2) Each emergency generator is tested at least once each month by operating it under load for at least 2 hours; and

(3) Each storage battery for emergency lighting and power systems is tested every six months under actual connected load for a period of at least 2 hours.

(b) After the 2 hour test period required in paragraph (a)(3) of this section, the voltage values under load or specific gravity of electrolyte must be measured. Measured values must be extrapolated to approximate the values that would result following a 12 hour test period. The test must be extended if a trend cannot be determined to allow extrapolation. The capacity of the battery corresponding to the extrapolated values of voltage or specific gravity must be sufficient to supply the actual connected load.

§ 109.213 Emergency training and drills.

(a) *Training materials.* Abandonment training material must be on board each unit. The training material must consist either of a manual of one or more volumes, written in easily understood terms and illustrated wherever possible, or audiovisual training aids, or both as follows:

(1) If a training manual is used, a copy must be made available to each person on board the unit. If audiovisual training aids are used, they must be incorporated into the onboard training sessions described under paragraph (g) of this section.

(2) The training material must explain, in detail—

(i) The procedure for donning lifejackets, immersion suits, and anti-exposure suits carried on board;

(ii) The procedure for mustering at the assigned stations;

(iii) The procedure for boarding, launching, and clearing the survival craft and rescue boats;

(iv) The method of launching from within the survival craft;

(v) The procedure for releasing from launching appliances;

(vi) The method and use of water spray systems in launching areas when required for the protection of aluminum survival craft or launching appliances;

(vii) Illumination in launching area;

(viii) The use of all survival equipment;

(ix) The use of all detection equipment for the location of survivors or survival craft;

(x) With illustrations, the use of radio lifesaving appliances;

(xi) The use of sea anchors;

(xii) The use of engine and accessories;

(xiii) The recovery of survival craft and rescue boats, including stowage and securing;

(xiv) The hazards of exposure and the need for warm clothing;

(xv) The best use of the survival craft for survival;

(xvi) The methods of retrieval, including the use of helicopter rescue gear (slings, baskets, stretchers), and unit's line throwing apparatus;

(xvii) The other functions contained in the muster list and emergency instructions; and

(xviii) The instructions for emergency repair of the lifesaving appliances.

(b) *Familiarity with emergency procedures.* Each of the crew members and industrial personnel with assigned emergency duties on the muster list must be familiar with their assigned duties before working on the unit.

(c) *Drills—general.* (1) Drills must, as far as practicable, be conducted as if there were an actual emergency.

(2) Each of the crew members and industrial personnel must participate in at least one abandonment drill and one fire drill every month. Drills must take place within 24 hours of a change in

crew or industrial personnel if more than 25 percent of the persons on board have not participated in an abandonment and fire drills on board the unit in the previous month.

(3) Drills must be held before the unit enters service for the first time after modification of a major character, or when a new crew is engaged.

(d) *Abandonment drills.* (1) Abandonment drills must include the following:

(i) Each drill must include summoning of industrial personnel and crew to muster stations with the general alarm, followed by drill announcements on the public address or other communication system, and ensuring that all on board are made aware of the order to abandon ship.

(ii) Each drill must include reporting to stations and preparing for the duties described in the muster list.

(iii) Each drill must include checking that industrial personnel and crew are suitably dressed.

(iv) Each drill must include checking that lifejackets or immersion suits are correctly donned.

(v) Each drill must include lowering of at least one lifeboat after any necessary preparation for launching.

(vi) Each drill must include starting and operating the lifeboat engine.

(vii) Each drill must include operating davits used for launching the liferafts.

(2) Different lifeboats must, as far as practicable, be lowered in compliance with the requirements of paragraph (d)(1)(v) of this section at successive drills.

(3) Each lifeboat must be launched with its assigned operating crew aboard, and maneuvered in the water at least once every 3 months, during an abandonment drill.

(4) As far as is reasonable and practicable, rescue boats other than lifeboats which are also rescue boats, must be launched each month with their assigned crew aboard and maneuvered in the water. In all cases this requirement must be complied with at least once every 3 months.

(5) If a unit is fitted with marine evacuation systems, drills must include an exercising of the procedures required for the deployment of such a system up to the point immediately preceding actual deployment of the system. This aspect of drills should be augmented by regular instruction using the on board training aids. Additionally, members of the crew or industrial personnel assigned to duties involving the marine evacuation system must be further trained by participation in a full deployment of a similar system into water, either on board a unit or ashore, at intervals normally not longer than 2 years, but in no case longer than 3 years.

(6) Emergency lighting for mustering and abandonment must be tested at each abandonment drill.

(7) On a unit carrying immersion suits or anti-exposure suits, immersion suits or anti-exposure suits must be worn by crew members and industrial personnel in at least one abandonment drill in any three-month period. If wearing the suit is impracticable due to warm weather, the crew members must be instructed on its donning and use.

(e) *Line-throwing appliance.* A drill must be conducted on the use of the line-throwing appliance at least once every 3 months. The actual firing of the appliance is at the discretion of the person in charge.

(f) *Fire drills.* (1) Fire drills must, as far as practicable, be planned in such a way that due consideration is given to regular practice in the various emergencies that may occur depending on the type of unit.

(2) Each fire drill must include—

(i) Reporting to stations, and preparing for the duties described in the muster list for the particular fire emergency being simulated;

(ii) Starting of fire pumps and the use of two jets of water to determine that the system is in proper working order;

(iii) Checking the fireman's outfits and other personal rescue equipment;

(iv) Checking the relevant communication equipment;

(v) Checking the operation of watertight doors, fire doors, and fire dampers and main inlets and outlets of ventilation systems in the drill area;

(vi) Checking the necessary arrangements for subsequent abandonment of the unit; and

(vii) Simulated operation of remote controls for stopping ventilation and fuel supplies to machinery spaces.

(3) The equipment used during drills must immediately be brought back to its fully operational condition, and any faults and defects discovered during the drills must be remedied as soon as possible.

(g) *Onboard training and instruction.* (1) Except as provided in paragraph (g)(2) of this section, onboard training in the use of the unit's lifesaving appliances, including survival craft equipment, and in the use of the unit's fire-extinguishing appliances must be given to each member of the crew and industrial personnel as soon as possible but not later than 2 weeks after they join the unit.

(2) If crew or industrial personnel are on a regularly scheduled rotating assignment to the unit, onboard training in the use of the unit's lifesaving appliances, including survival craft equipment, and in the use of the unit's fire-extinguishing appliances must be given not later than 2 weeks after the time of first joining the unit.

(3) The crew and industrial personnel must be instructed in the use of the unit's fire-extinguishing appliances, lifesaving appliances, and in survival at sea at the same interval as the drills. Individual instruction may cover different parts of the unit's lifesaving and fire-extinguishing appliances, but all the unit's lifesaving and fire-extinguishing appliances, must be covered within any period of 2 months.

(4) Crew and industrial personnel must be given instructions which include, but are not limited to—

(i) The operation and use of the unit's inflatable liferafts;

(ii) The problems of hypothermia, first aid treatment for hypothermia and other appropriate first aid procedures;

(iii) The special instructions necessary for use of the unit's lifesaving appliances in severe weather and severe sea conditions; and

(iv) The operation and use of fire-extinguishing appliances.

(5) Onboard training in the use of davit-launched liferafts must take place at intervals of not more than 4 months on each unit with davit-launched liferafts. Whenever practicable this must include the inflation and lowering of a liferaft. If this liferaft is a special liferaft intended for training purposes only, and is not part of the unit's lifesaving equipment, this liferaft must be conspicuously marked.

(6) Each of the industrial personnel without designated responsibility for the survival of others on board, must be instructed in at least—

(i) The emergencies which might occur on that particular type of unit;

(ii) The consequences of panic;

(iii) The location and actuation of fire alarm controls;

(iv) The location and proper method of use of firefighting equipment;

(v) Fire precautions;

(vi) The types of all lifesaving appliances carried on the unit and proper methods of using them, including—

(A) The correct method of donning and wearing a lifejacket, and if provided an immersion suit;

(B) Jumping into the water from a height while wearing a lifejacket and, if provided, an immersion suit;

(C) How to board survival craft from the unit and from the water;

(D) Operation and use of the unit's inflatable liferafts;

(E) Special instructions necessary for use of the unit's lifesaving appliances in severe weather and severe sea conditions;

(F) Swimming while wearing a lifejacket; and

(G) Keeping afloat without a lifejacket.

(vii) Where appropriate, how to survive in the water—

(A) In the presence of fire or oil on the water;

(B) In cold conditions; and

(C) If sharks may be present.

(viii) Problems of hypothermia, first aid treatment for hypothermia and other appropriate first aid procedures;

(ix) The need to adhere to the principles of survival; and

(x) The basic methods of boarding helicopters.

(7) Each member of the crew and each of the industrial personnel with designated responsibility for the survival of others on board must be instructed in at least the items covered in paragraph (g)(6) of this section, and—

(i) Methods of detection, isolation, control, and extinguishing of fire;

(ii) Checking and maintaining fire fighting equipment;

(iii) Marshaling of personnel; and

(iv) Abandonment of the unit, including—

(A) Launching survival craft;

(B) Getting survival craft quickly and safely clear of the unit; and

(C) Righting a capsized survival craft.

(v) Handling all survival craft and their equipment, including—

(A) Checking and maintaining their readiness for immediate use;

(B) Using equipment to the best advantage;

(C) Using the sea anchor;

(D) Remaining, as far as practicable, in the general vicinity of the unit, well clear of but not downwind of any hydrocarbons or fire;

(E) Recovering and, as far as practicable, caring for other survivors;

(F) Keeping a lookout;

(G) Operating equipment provided to aid in the detection of the survival craft by others, including radio distress alerting and radio emergency procedures; and

(H) Making proper use of food and drinking water and using protective measures in survival craft such as those for preventing exposure to cold, sun, wind, rain, and sea, and for preventing seasickness.

(vi) Cautioning on the preservation of body fluids and the dangers of drinking seawater;

(vii) Transferring personnel from survival craft to helicopters or to work boats;

(viii) Maintaining morale; and

(ix) Methods of helicopter rescue.

(h) *Records.* (1) When musters are held, details of abandonment drills, fire drills, other lifesaving appliances, and onboard training must be recorded in the unit's official logbook. Logbook entries must include the following:

(i) Logbook entries must identify the date and time of the drill, muster, or training session.

(ii) Logbook entries must identify the survival craft and fire-extinguishing equipment used in the drills.

(iii) Logbook entries must identify the inoperative or malfunctioning equipment and the corrective action taken.

(iv) Logbook entries must identify crew members and industrial personnel participating in drills or training sessions.

(v) Logbook entries must identify the subject of the onboard training session.

(2) If a full muster, drill, or training session is not held at the appointed time, an entry must be made in the logbook stating the circumstances and the extent of the muster, drill, or training session held.

[CGD 84–069, 61 FR 25299, May 20, 1996, as amended at 63 FR 52815, Oct. 1, 1998]

§ 109.223 Fire fighting equipment.

The master or person in charge shall insure that each hand portable fire extinguisher, semi-portable fire extinguisher, and fixed fire-extinguishing system is tested and inspected at least once each twelve months.

§ 109.227 Verification of vessel compliance with applicable stability requirements.

(a) The master or person-in-charge shall determine that the vessel complies with all applicable stability requirements in the vessel's trim and stability book, operating manual, stability letter, Certificate of Inspection, and Load Line Certificate, as the case may be, and then enter an attestation statement of the verification in the log book, at the following times:

(1) Prior to transitioning from the transit condition to the operating condition;

(2) Prior to transitioning from the operating condition to the transit condition;

(3) Prior to significant changes in deck load or ballast;

(4) At other times as required by the vessel's trim and stability book or operating manual; and

(5) At all other times necessary to assure the safety of the vessel.

(b) When determining compliance with applicable stability requirements the vessel's draft, trim, and stability must be determined as necessary and any stability calculations made in support of the determination must be retained on board the vessel for a one

month period or until a change of location, if shorter.

[CGD 89–037, 57 FR 41823, Sept. 11, 1992]

Subpart C—Operation and Stowage of Safety Equipment

§ 109.301 Operational readiness, maintenance, and inspection of lifesaving equipment.

(a) *Operational readiness.* Except as provided in §109.301(b)(3), each lifesaving appliance must be in good working order and ready for immediate use at all times when the unit is in operation.

(b) *Maintenance.* (1) The manufacturer's instructions for onboard maintenance of lifesaving appliances must be onboard and must include the following for each appliance—

(i) Checklists for use when carrying out the inspections required under §109.301(e);

(ii) Maintenance and repair instructions;

(iii) A schedule of periodic maintenance;

(iv) A diagram of lubrication points with the recommended lubricants;

(v) A list of replaceable parts;

(vi) A list of sources of spare parts; and

(vii) A log for records of inspections and maintenance.

(2) In lieu of compliance with paragraph (b)(1) of this section, The OCMI may accept a planned maintenance program that includes the items listed in that paragraph.

(3) If lifeboats, rescue boats or rigid liferafts are maintained and repaired while the unit is in operation, there must be a sufficient number of lifeboats and liferafts remaining available for use to accommodate all persons on board.

(c) *Spare parts and repair equipment.* Spare parts and repair equipment must be provided for each lifesaving appliance and component subject to excessive wear or consumption and that needs to be replaced regularly.

(d) *Weekly inspections and tests.* (1) Each survival craft, rescue boat, and launching appliance must be visually inspected to ensure its readiness for use.

(2) Each lifeboat engine and rescue boat engine must be run ahead and astern for a total of not less than 3 minutes, unless the ambient air temperature is below the minimum temperature required for starting the engine. During this time, demonstrations should indicate that the gear box and gear box train are engaging satisfactorily. If the special characteristics of an outboard motor fitted to a rescue boat would not allow the outboard motor to be run other than with its propeller submerged for a period of 3 minutes, the outboard motor should be run for such period as prescribed in the manufacturer's handbook.

(3) The general alarm system must be tested.

(e) *Monthly inspections.* (1) Each lifesaving appliance, including lifeboat equipment, must be inspected monthly using the checklists required under paragraph (b) of this section to make sure it is complete and in good working order. A report of the inspection, including a statement as to the condition of the equipment, must be recorded in the unit's official logbook.

(2) Each EPIRB and each SART other than an EPIRB or SART in an inflatable liferaft, must be tested monthly. The EPIRB must be tested using the integrated test circuit and output indicator to determine that it is operative.

(f) *Annual inspections.* Annual inspection and repair must include the following:

(1) Each survival craft, except for inflatable liferafts, must be stripped, cleaned, and thoroughly inspected and repaired, as needed, at least once in each year, including emptying and cleaning each fuel tank, and refilling it with fresh fuel.

(2) Each davit, winch, fall and other launching appliance must be thoroughly inspected and repaired, as needed, once in each year.

(3) Each item of survival equipment with an expiration date must be replaced during the annual inspection and repair, if the expiration date has passed.

(4) Each battery clearly marked with an expiration date, that is used in an item of survival equipment must be replaced during the annual inspection

and repair, if the expiration date has passed.

(5) Except for a storage battery used in a lifeboat or rescue boat, each battery without an expiration date that is used in an item of survival equipment must be replaced during the annual inspection and repair.

(g) *Servicing of inflatable lifesaving appliances, inflated rescue boats, and marine evacuation systems.*

(1) Each inflatable lifesaving appliance and marine evacuation system must be serviced—

(i) Within 12 months of its initial packing; and

(ii) Within 12 months of each subsequent servicing, except when servicing is delayed until the next scheduled inspection of the unit, provided the delay does not exceed 5 months.

(2) Each inflatable lifejacket must be serviced in accordance with servicing procedures meeting the requirements of part 160, subpart 160.176 of this chapter. Each hybrid inflatable lifejacket must be serviced in accordance with the owners manual and meet the requirements of part 160, subpart 160.077 of this chapter.

(3) Each inflatable liferaft must be serviced—

(i) Whenever the container of the raft is damaged, or the straps or seal broken; and

(ii) In accordance with servicing procedures meeting the requirements of part 160, subpart 160.151 of this chapter.

(4) Each inflated rescue boat must be repaired and maintained in accordance with the manufacturer's instructions. All repairs to inflated chambers must be made at a servicing facility approved by the Commandant, except for emergency repairs carried out on board the unit.

(h) *Periodic servicing of hydrostatic release units.* Each hydrostatic release unit, other than a disposable hydrostatic release unit, must be serviced—

(1) Within 12 months of its manufacture and within 12 months of each subsequent servicing, except when servicing is delayed until the next scheduled inspection of the unit, provided the delay does not exceed 5 months; and

(2) In accordance with repair and testing procedures meeting the requirements of part 160, subpart 160.062 of this chapter.

(i) *Periodic servicing of launching appliances and release gear.* (1) Launching appliances must be serviced at the intervals recommended in the manufacturer's instructions, or as set out in the shipboard planned maintenance program.

(2) Launching appliances must be thoroughly examined at intervals not exceeding 5 years and upon completion of the examination, the launching appliance must be subjected to a dynamic test of the winch brake.

(3) Lifeboat and rescue boat release gear must be serviced at the intervals recommended in the manufacturer's instructions, or as set out in the planned maintenance program.

(4) Lifeboat and rescue boat release gear must be subjected to a thorough examination by properly trained personnel familiar with the system at each inspection for certification.

(5) Lifeboat and rescue boat release gear must be operationally tested under a load of 1.1 times the total mass of the lifeboat when loaded with its full complement of persons and equipment, whenever overhauled, or at least once every 5 years.

(j) *Maintenance of falls.* (1) Each fall used in a launching appliance must be turned end-for-end at intervals of not more than 30 months and must be renewed when necessary due to deterioration or at intervals of not more than 5 years, whichever is earlier.

(2) As an alternative to paragraph (j)(1) of this section, each fall may be inspected annually and renewed whenever necessary due to deterioration or at intervals of not more than 4 years, whichever is earlier.

(k) *Rotational deployment of marine evacuation systems.* In addition to or in conjunction with the servicing intervals of marine evacuation systems required by paragraph (g)(1) of this section, each marine evacuation system must be deployed from the unit on a rotational basis. Each marine evacuation system must be deployed at least once every 6 years.

[CGD 84–069, 61 FR 25301, May 20, 1996, as amended by CGD 85–205, 62 FR 35392, July 1, 1997; CGD 84–069, 63 FR 52816, Oct. 1, 1998]

§ 109.323 Manning of survival craft and supervision.

(a) There must be a sufficient number of trained persons on board the survival craft for mustering and assisting untrained persons.

(b) There must be a sufficient number of deck officers, able seamen, or certificated persons on board to operate the survival craft and launching arrangements required for abandonment by the total number of persons on board.

(c) There must be one person placed in charge of each survival craft to be used. The person in charge must—

(1) Be a deck officer, able seaman, or certificated person. The OCMI, considering the number of persons permitted on board, and the characteristics of the unit, may permit persons practiced in the handling and operation of liferafts or inflatable buoyant apparatus to be placed in charge of liferafts or inflatable buoyant apparatus;

(2) Have another person designated second-in-command of each lifeboat permitted to carry more than 40 persons. This person should be a deck officer, able seaman, or certificated person; and

(3) Have a list of the survival craft crew and must see that the crewmembers are acquainted with their duties. The second-in-command of a lifeboat must also have a list of the lifeboat crew.

(d) There must be a person assigned to each motorized survival craft who is capable of operating the engine and carrying out minor adjustments.

(e) The person in charge must make sure that the persons required under paragraphs (a), (b), and (c) of this section are equitably distributed among the unit's survival craft.

[CGD 84–069, 61 FR 25302, May 20, 1996]

§ 109.329 Fire pumps.

The master or person in charge shall insure that at least one of the fire pumps required in §108.415 is ready for use on the fire main system at all times.

§ 109.331 Firehoses and hydrants.

The master or person in charge shall insure that—

(a) At least one length of firehose with a combination nozzle is connected to each fire hydrant required by this subchapter, at all times, except that during heavy weather a firehose in an exposed location may be temporarily removed from the fire hydrant and stowed in an accessible, nearby location;

(b) A fire hose required by this subchapter is not used for any purpose other than firefighting, fire drills, and testing;

(c) Access to each fire hydrant is not blocked;

(d) Each firehose, except a firehose temporarily removed from an exposed location, is stowed on a rack or reel required by this subchapter; and

(e) Each low velocity spray applicator for a fire hose nozzle is attached to the nozzle or stowed next to the fire hydrant to which the fire hose is attached.

§ 109.333 Fire main cutoff valves.

The master or person in charge shall insure that each fire main cutoff valve is open and sealed to prevent closing, except that a cutoff valve may be closed to protect the portion of the fire main system on an exposed deck from freezing.

§ 109.334 Working over water.

The master or person in charge shall insure that each person working over the water is wearing a life preserver or a buoyant work vest.

§ 109.335 Stowage of work vests.

The master or person in charge shall insure that no work vest is stowed where life preservers are stowed.

§ 109.337 Fireman's outfit.

The master or person in charge shall insure that—

(a) At least 2 persons who are trained in the use of the fireman's outfit are on board at all times; and

(b) Each fireman's outfit and its spare equipment is stowed in a separate and accessible location.

(c) A fireman's outfit is not used for any purpose other than fire fighting except as provided in §108.703.

§ 109.339 Location of fire axes.

The master or person in charge shall insure that the fire axes required in § 108.499 of this subchapter are located in the enclosures for fire hoses marked in accordance with § 108.633 of this subchapter, if the fire axes are not located in plain view.

§ 109.347 Pilot boarding equipment.

(a) The master or person in charge shall ensure that pilot boarding equipment is maintained as follows:

(1) The equipment must be kept clean and in good working order.

(2) Each damaged step or spreader step on a pilot ladder must be replaced in kind with an approved replacement step or spreader step, prior to further use of the ladder. The replacement step or spreader step must be secured by the method used in the original construction of the ladder, and in accordance with manufacturer instructions.

(b) The master or person in charge shall ensure compliance with the following during pilot boarding operations:

(1) Only approved pilot boarding equipment may be used.

(2) The pilot boarding equipment must rest firmly against the hull of the vessel and be clear of overboard discharges.

(3) Two man ropes, a safety line and an approved lifebuoy with an approved water light must be at the point of access and be immediately available for use during boarding operations.

(4) Rigging of the equipment and embarkation/debarkation of a pilot must be supervised in person by a deck officer.

(5) Both the equipment over the side and the point of access must be adequately lit during night operations.

(6) If a pilot hoist is used, a pilot ladder must be kept on deck adjacent to the hoist and available for immediate use.

[CGD 79–032, 49 FR 25455, June 21, 1984]

Subpart D—Reports, Notifications, and Records

REPORTS AND NOTIFICATIONS

§ 109.411 Notice and reporting of casualty.

The requirements for providing notice and reporting of marine casualties are contained in Part 4 of this chapter.

[CGD 84–099, 52 FR 47536, Dec. 14, 1987]

§ 109.415 Retention of records after casualty.

(a) The owner, agent, master, or person in charge of a unit for which a report of casualty is made under § 109.411 shall insure that all records maintained on the unit are retained on board the unit for at least 3 months after the report of casualty is made or until advised by the Officer in Charge, Marine Inspection, that records need not be retained on board.

(b) The records which must be retained in accordance with paragraph (a) of this section include:

(1) Rough and smooth deck log.

(2) Rough and smooth engine room log.

(3) Tour reports.

(4) Bell books.

(5) Navigation charts in use at the time of casualty.

(6) Navigation work books.

(7) Compass deviation cards.

(8) Gyrocompass records.

(9) Storage plans.

(10) Record of drafts.

(11) Notices to mariners.

(12) Radiograms sent and received.

(13) The radio log.

(14) Personnel list.

(15) Crane record book.

(c) The owner, agent, master, or person in charge shall, upon request, make the records described in this section available for examination by any Coast Guard official authorized to investigate the casualty.

§ 109.419 Report of unsafe machinery.

If a boiler, unfired pressure vessel, or other machinery on a unit is unsafe to

operate, the master or person in charge shall report the existence of the unsafe condition to the Officer in Charge, Marine Inspection.

§ 109.421 Report of repairs to boilers and pressure vessels.

Before making repairs, except normal repairs and maintenance such as replacement of valves or pressure seals, to boilers or unfired pressure vessels in accordance with §50.05–10 of this chapter, the master or person in charge shall report the nature of the repairs to the Officer in Charge, Marine Inspection.

§ 109.425 Repairs and alterations: Fire detecting and extinguishing equipment.

(a) Before making repairs or alterations, except for routine maintenance, minor repairs, or emergency repairs or alterations to fire detecting and extinguishing equipment, the master or person in charge must report the nature of the repairs or alterations to the OCMI.

(b) When emergency repairs or alterations, other than minor emergency repairs, have been made to fire-detecting or fire-extinguishing equipment, the master or person in charge must report the nature of the repairs or alterations to the OCMI.

[CGD 84–069, 63 FR 52816, Oct. 1, 1998]

RECORDS

§ 109.431 Logbook.

(a) The master or person in charge of a unit, that is required by 46 U.S.C. 11301 to have an official logbook, shall maintain the logbook on Form CG–706. When the voyage is completed, the master or person in charge shall file the logbook with the Officer in Charge, Marine Inspection.

(b) The master or person in charge of a unit that is not required by 46 U.S.C. 11301 to have an official logbook, shall maintain, on board, an unofficial logbook for making the entries required by this subpart. This logbook must be retained on board until the unit's next reinspection or inspection for certification.

[CGD 73–251, 43 FR 56828, Dec. 4, 1978, as amended by CGD 95–028, 62 FR 51208, Sept. 30, 1997; USCG–1999–6216, 64 FR 53227, Oct. 1, 1999]

§ 109.433 Logbook entries.[1]

The master or person in charge shall insure that the following applicable entries are made in the logbook required by this subpart:

(a) The date of each test of the steering gear, whistle, general alarm, and communications equipment and the condition of the equipment.

(b) The time and date of each opening and closing, while the unit is afloat, of each required appliance for watertight integrity not fitted with a remote operating control or alarm system and the reasons for the action.

(c) The date of each test of emergency lighting and power systems and the condition and performance of the equipment.

(d) The logbook must include information on emergency training drills required in §109.213(h).

(e) Prior to getting underway, the fore and aft drafts, the position of the loadline marks in relation to the surface of the water, and the density of the water in which the vessel is floating, if in fresh or brackish water.

(f) After loading and prior to getting underway and at all other times necessary to assure the safety of the vessel, a statement verifying vessel compliance with applicable stability requirements as required by §109.227.

(g) The date of each inspection of each accommodation space.

(h) The date of each inspection required in §109.573 if performed by the master or person in charge.

[CGD 73–251, 43 FR 56828, Dec. 4, 1978, as amended by CGD 83–067, 49 FR 39162, Oct. 4, 1984; CGD 89–037, 57 FR 41824, Sept. 11, 1992; CGD 84–069, 61 FR 25303, May 20, 1996]

§ 109.435 Record of fire fighting equipment inspection.

(a) The master or person in charge shall ensure that a record of each test and inspection required in §109.223 is maintained on board, until the unit is reinspected or inspected for certification.

[1] NOTE: 46 U.S.C. 11301 requires that certain entries be made in an official logbook, in addition to the entries required by this section; and 46 U.S.C. 11302 prescribes the manner of making those entries.

(b) The record required in paragraph (a) of this section must show—

(1) The date of each test and inspection;

(2) The number or other identification of each item of equipment tested or inspected; and

(3) The name of the person, and the company he represents if any, who conducts the test or inspection.

§ 109.437 Crane record book.

The master or person in charge shall ensure that the following are maintained in a crane record book:

(a) Descriptive information which will identify each crane including—

(1) The API name plate data required by Section 11 of API Spec. 2C, Second Edition, February 1972; and

(2) The rates load chart for each line reeving and boom length which may be utilized.

(b) Information required by Section 3 of the American Petroleum Institute *Recommended Practice for Operation and Maintenance of Offshore Cranes,* API RP 2D, First Edition (October 1972) with supplement 1.

(c) Dates and results of frequent inspections and tests required in paragraph (b) of this section.

(d) Dates and results of periodic inspections and tests required in paragraph (b) of this section.

(e) Date and result of each rated load test.

(f) Date and description of each replacement or renewal of wire rope, hooks, and other load components.

(g) Date and description of each failure of the crane, or any component or safety feature.

(h) Date and description of each repair to the crane structure, boom, or equipment.

§ 109.439 Crane certificates.

The master or person in charge shall insure that the following certificates and records for each crane are maintained on the unit:

(a) Each certificate issued by a crane certifying authority.

(b) Each record and original certificate, or certified copy of a certificate, or manufacturers or testing laboratories, companies or organizations for—

(1) Loose gear;

(2) Wire rope; and

(3) The annealing of wrought iron gear.

Subpart E—Emergency Signals

§ 109.503 Emergency signals.

(a) Emergency stations signals are established as follows:

(1) The signal to man emergency stations is a rapid succession of short soundings of both the general alarm bell and the whistle, if a whistle is installed, for a period of not less than 10 seconds.

(2) The signal to secure from emergency stations is the sounding of both the general alarm bell and the whistle, if a whistle is installed, three times.

(b) The abandon unit stations signals are established as follows:

(1) The signal to man abandon unit stations is a continuous sounding of both the general alarm and the whistle, if a whistle is installed.

(2) If whistle signals are used to direct the handling of lifeboats and davit-launched liferafts, they must be—

(i) One short blast to lower the lifeboats and davit-launched liferafts; and

(ii) Two short blasts to stop lowering the lifeboats and davit-launched liferafts.

(3) The signal to secure from abandon unit stations is the sounding of both the general alarm bell and the whistle, if a whistle is installed, three times.

[CGD 73–251, 43 FR 56828, Dec. 4, 1978, as amended by CGD 84–069, 61 FR 25303, May 20, 1996]

Subpart F—Cranes

§ 109.521 Cranes: General.

The master or person in charge shall ensure that each crane is operated and maintained in accordance with the API *Recommended Practice for Operation and Maintenance of Offshore Cranes,* API RP 2D, First Edition (Oct. 1972) with supplement 1.

§ 109.525 Cranes: Working loads.

The master or person in charge shall ensure that tables indicating the maximum safe working loads for the various working angles of the boom, where the boom is rated at varying capacities depending on the radius, and the maximum and minimum radius at which the boom may be safely used, are conspicuously posted near the controls and are visible to the operator when working the crane.

§ 109.527 Cranes: Operator designation.

(a) The master or person in charge shall designate, in writing, each crane operator.

(b) The master or person in charge shall ensure that only designated operators operate cranes.

(c) The master or person in charge shall ensure that each designated operator is familiar with the provisions of the API *Recommended Practice for Operation and Maintenance of Offshore Cranes,* API RP 2D, First Edition (Oct. 1972) with supplement 1.

Subpart G—Miscellaneous

§ 109.555 Propulsion boilers.

The master or person in charge and the engineer in charge shall ensure that—

(a) Steam pressure does not exceed that allowed by the certificate of inspection; and

(b) The safety valves, once set, are not tampered with or made inoperative.

[CGD 73–251, 43 FR 56828, Dec. 4, 1978, as amended by CGD 95–028, 62 FR 51208, Sept. 30, 1997]

§ 109.557 Flammable and combustible liquids: Carriage.

The master or person in charge shall ensure that—

(a) Flammable and combustible liquids in bulk are not carried, except as allowed by endorsement to the Certificate of Inspection;

(b) Portable tanks are handled and stowed in accordance with subparts 98.30 and 98.33 of this chapter and the provisions of 49 CFR parts 171 through 179 that apply to portable tanks; and

(c) Grades B and lower liquids are—

(1) Authorized, by the Commandant, to be carried; and

(2) Carried only in fixed independent or integral tanks.

[CGD 73–251, 43 FR 56828, Dec. 4, 1978, as amended by CGD 84–043, 55 FR 37413, Sept. 11, 1990]

§ 109.559 Explosives and radioactive materials.

Except as authorized by the master or person in charge, no person may use explosives or radioactive materials and equipment on a unit.

§ 109.563 Posting of documents.

The master or person in charge shall ensure that the following are posted under glass in the pilot house or control center:

(a) General arrangement plans for each deck showing—

(1) Each fire retardant bulkhead;

(2) Each fire detecting, manual alarm, and fire extinguishing system;

(3) Each fire door;

(4) Each means of ingress to compartments; and

(5) Each ventilating system, including the location of each damper, fan, and remote means of stopping the fans.

(6) For units constructed on or after September 30, 1997, and for existing units which have their plans redrawn, the symbols used to identify the aforementioned details shall be in accordance with IMO Assembly resolution A.654(16). The identical symbols can be found in ASTM Adjunct F 1626 (incorporated by reference, see § 109.105).

(b) The stability letter issued by the Coast Guard.

(c) Each SOLAS and Coast Guard certificate issued to the unit.

[CGD 73–251, 43 FR 56828, Dec. 4, 1978, as amended by CGD 95–028, 62 FR 51208, Sept. 30, 1997; USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

§ 109.564 Maneuvering characteristics.

(a) The master or person in charge of each self-propelled unit of 1,600 gross tons and over shall ensure that a maneuvering information fact sheet is prominently displayed in the pilothouse.

(b) For surface type units, the maneuvering information in Subpart 97.19 of this chapter must be displayed.

(c) The maneuvering information requirements for column stabilized, self-elevating, and other units of unusual design will be specified on a case by case basis.

§ 109.565 Charts and nautical publications.

The master or person in charge of a self-propelled unit shall ensure that the unit has the following adequate, up to date, and appropriate items for the intended voyage:

(a) Charts.
(b) Sailing directions.
(c) Coast pilots.
(d) Light lists.
(e) Notices to mariners.
(f) Tide Tables.
(g) Current Tables.
(h) All other nautical publications necessary.[1]

§ 109.573 Riveting, welding, and burning operations.

Except as allowed by this section—

(a) The master or person in charge shall ensure that there is no riveting, welding, or burning—

(1) In a fuel tank;

(2) On the boundary of a fuel tank;

(3) On pipelines, heating coils, pumps, fittings, or other appurtenances connected to fuel tanks; or

(4) On the boundary of spaces adjacent to tanks carrying Grades A, B, or C flammable liquids in bulk.

(b) The operations prohibited in paragraph (a) of this section may be allowed if—

(1) An inspection conducted in accordance with the ''Standard for the Control of Gas Hazards on Vessels to be Repaired,'' N.F.P.A. No. 306–1974, is made—

(i) In ports or navigable waters of the United States, its territories and possessions, by—

(A) A marine chemist certified by the National Fire Protection Association; or

(B) If a certified marine chemist is not available, a person designated by the Officer in Charge, Marine Inspection; or

(ii) In all other locations by—

(A) A marine chemist certified by the National Fire Protection Association;

(B) If a certified marine chemist is not available, a person designated by the Officer in Charge, Marine Inspection; or

(C) If the persons required in paragraphs (b)(1)(ii) (A) and (B) of this section are not available, the master or person in charge; or a welding supervisor designated, in writing, by the master or person in charge; and

(2) A certificate is issued by the person conducting the inspection stating—

(i) That he conducted the inspection in accordance with the standard in paragraph (b)(1) of this section;

(ii) The operations that may be conducted; and

(iii) A list of precautions to be followed during the operations;

(c) The master or person in charge shall ensure that the precautions in paragraph (b)(2)(iii) of this section are followed.

§ 109.575 Accumulation of liquids on helicopter decks.

The master or person in charge shall ensure that no liquids are allowed to accumulate on the helicopter decks.

§ 109.577 Helicopter fueling.

(a) The master or person in charge shall designate persons to conduct helicopter fueling operations.

(b) Portable tanks are handled and stowed in accordance with subparts 98.30 and 98.33 of this chapter and the provisions of 49 CFR parts 171 through 179 that apply to portable tanks; and

[CGD 73–251, 43 FR 56828, Dec. 4, 1978, as amended by CGD 84–043, 55 FR 37413, Sept. 11, 1990]

§ 109.585 Use of auto pilot.

Except as provided in 33 CFR 164.15, when the automatic pilot is used in areas of high traffic density, conditions of restricted visibility, and all other hazardous navigational situations, the master or person in charge shall ensure that—

(a) It is possible to immediately establish manual control of the unit's steering;

[1] NOTE: For U.S. units in or on the navigable waters of the United States. See 33 CFR 164.33.

(b) A competent person is ready at all times to take over steering control; and

(c) The changeover from automatic to manual steering and vice versa is made by, or under the supervision of, the officer of the watch.

APPENDIX A TO PART 109—NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 4–78—INSPECTION AND CERTIFICATION OF EXISTING MOBILE OFFSHORE DRILLING UNITS

1. *Purpose.* To promulgate instructions for the inspection and certification of existing mobile offshore drilling units. This NVIC is also being published as appendix A of 46 CFR Subchapter IA.

2. *Background.* Mobile Offshore Drilling Units are recognized internationally through the Intergovernmental Maritime Consultative Organization as being a ''special purpose ship'' designed and operated to carry out an industrial function at sea. Contemporary U.S. Vessel regulations in Title 46 CFR do not adequately cover the safety considerations which are unique to the hull and structural designs, industrial equipment and operating procedures incorporated in drilling vessels. To provide appropriate and adequate standards, the Coast Guard with the assistance of the National Offshore Operations Advisory Committee, and following the provisions of the Administrative Procedures Act, developed Subchapter IA, Regulations for Mobile Offshore Drilling Units, 46 CFR Parts 107–109 and amendments to 46 CFR Subchapters ''F'', Marine Engineering Regulations, and ''J'', Electrical Engineering Regulations. These regulations, published in FEDERAL REGISTER (43 FR 56788 December 4, 1978) will apply to all units contracted for on or after the effective date of the regulations.

3. *Discussion.* a. This NVIC elaborates the ''grandfather provisions'' of 46 CFR 107.211 and 107.215 in applying Subchapter IA to the approximately 150 *existing* ocean-going U.S. flag mobile offshore drilling units. ''Existing'' Mobile Offshore Drilling Units are those vessels which have been contracted for before the effective date of the regulations including:

(1) Units in Service.

(2) Units under construction.

(3) Units contracted for which are to be constructed and delivered prior to January 1, 1981.

b. Existing *uncertificated* mobile drilling units of which there are approximately 92 of the bottom bearing configuration, i.e., jackup and submersible types, have not previously been required to comply with vessel inspection regulations. Some units have met the load line requirements of Subchapter ''E'' for International Voyages. Many of the older units are not classed by a classification society. Bottom bearing units operating on the Outer Continental Shelf of United States have been required to meet the safety requirements of 33 CFR Subchapter ''N'' as artificial islands. On January 3, 1979, existing bottom bearing units are subject to the ''grandfather provisions'' in §107.211(c) of Subchapter IA.

c. Existing *certificated* mobile offshore drilling units, for the purposes of this NVIC, are column-stabilized and ship-shape types of which approximately 58 are currently certificated, or have made application for an original Certificate of Inspection or intend to make application for an original inspection for certification under 46 CFR Subchapter ''I'' on the basis of the unit being contracted for prior to the effective date of the new regulations. These units may continue to meet the structural, equipment, material and arrangement standards which were applicable to the hull, engineering, electrical and industrial systems when the units were contracted for. In addition they must meet the provisions of d.(1), d.(4)(d), d.(7)(b), d.(8), d.(9), d.(10)(b), d.(11) and d.(12) of paragraph 3 of this NVC in accordance with §107.215(c)(2) of Subchapter IA.

d. *Inspection Provisions for Existing Uncertificated Units.* The intent of the ''grandfather'' provisions of this NVIC for existing uncertificated units is to ascertain through inspection that the material condition of the unit and its equipment meet reasonable levels of safety. To this end, the following determinations will be made:

- The design, construction and arrangements of the hull, machinery electrical and industrial systems do not reveal manifestly unsafe aspects.
- There is no excessive deterioration of the hull structure or equipment foundations.
- There are no intrinsic fire or explosion hazards.
- There are no personnel hazards such as unguarded moving machinery, potential electrical shock conditions or lack of handrails.
- The unit is seaworthy and exhibits satisfactory stability.

(1) *General.* (a) Repairs and minor alterations to hull structure or equipment may be made to the same standards as the original installation. However, new installations or major alterations which affect vessel or personnel safety shall meet the applicable standards of Subchapter IA.

(b) Existing items of safety equipment not meeting the applicable specifications or requirements set forth in Subchapter IA may be continued in service as long as they are maintained in good working order to the satisfaction of the OCMI. Such safety equipment and installations requiring extensive repairs shall be replaced and shall meet the

applicable specifications and requirements of Subchapter IA.

(c) The OCMI has discretion to accept alternatives or equivalents which meet the established standards, and to give special consideration to departures from the regulations when it can be shown that special circumstances warrant such departures.

(2) *Plan Submittal.* (a) For units not classed by the American Bureau of Shipping or other recognized classification society, (see 46 CFR 108.109) the OCMI must have sufficient plans and information submitted to him which will describe such things as the unit's size, construction, configuration, arrangement of tanks, decks and spaces; and the machinery and electrical installation. In addition, the OCMI may require submittal of any additional data he considers necessary in order to proceed with the original inspections.

(b) For units classed by the American Bureau of Shipping or other recognized classification society, the plans and information described in Subchapter IA §107.305 (a), (b), (v), and (ii) and a general description of the machinery and electrical installation shall be submitted to the OCMI for information. The OCMI may accept continued classification as proof of structural, mechanical, and electrical sufficiency. However, the OCMI may require additional plans and information if necessary.

(3) *Hull Structure.* (a) No structural changes will be required unless manifestly unsafe conditions exist.

(b) Existing uncertificated units must be drydocked or have a special examination in lieu of drydocking as required by 46 CFR, 107–261.

(c) Achievement of one compartment subdivision is not required where extensive modification of the original design would be necessary; however, watertight integrity of the hull and structural boundaries must be maintained. Bulkheads and decks designed to be watertight must be maintained as such where they are penetrated by pipes, electrical cable, reach rods, ventilation systems, etc.

(4) *Stability*. (a) The stability of each existing unit will be reviewed by the Coast Guard. The plans indicated in 46 CFR Subchapter IA §107.305(q) through (u-l) must be submitted to the cognizant OCMI or Merchant Marine Technical Office.

(b) Lightship data from a Coast Guard witnessed and approved stability test is required for each existing, uncertificated unit. Alternatively other evidence of lightship values will be considered on a case by case basis.

(c) In general, compliance with the intact stability standards of 46 CFR Subchapter IA, §§108.303 through 108.309 is required. Where existing units were designed to a lesser standard of stability than that specified in §§108.303 through 108.309, some relaxation based on proven past performance may be granted at the discretion of the OCMI and limiting conditions, if any, set forth in the operating manual. In no case will the minimum wind speed for adequate stability be reduced below 50 knots.

(d) An operating manual shall be prepared for each unit. Each operating manual must contain the information indicated in 46 CFR Subchapter IA, §109.121(d) and be submitted to the cognizant OCMI or Merchant Marine Technical Office for review.

(5) *Load Line.* (a) All units are required to obtain and maintain a valid Load Line Certificate. The structure and stability of the unit must be proven adequate for the voyages and areas of operation intended.

(b) The American Bureau of Shipping or other recognized classification society will issue Load Line Certificates and conduct initial and annual load line surveys. Coast Guard and the American Bureau of Shipping inspections may be conducted simultaneously, but it is the owner's responsibility to arrange coordinated inspection schedules.

(c) The structural review conducted by the American Bureau of Shipping or other recognized classification society for load line assignment may be accepted by the Coast Guard as proof of structural adequacy of the hull.

(d) The stability review must be completed prior to issuance of a Load Line Certificate. The Coast Guard will inform the American Bureau of Shipping or other recognized classification society of the results of the stability review, and will indicate any stability limitations to be placed on the Load Line Certificate.

(e) Freeboard calculations for self-elevating units with barge type hulls will be made in accordance with 46 CFR, Part 42. The bow height requirements of 46 CFR 42.20–70 may be relaxed to approximately 33% of the normal requirement for barge shapes moving at speeds less than 6 knots. No relaxation of the addition to freeboard for deficiency in sheer is allowed. The freeboard for units other than self-elevating units with barge type hulls will be based upon compliance with the intact and damage stability standards applicable at the time the unit was contracted for.

(f) All units *delivered after the date of this NVIC* regardless of contract date, must obtain a Load Line Certificate as soon as operationally feasible.

(6) *Route and Operating Area Limitations.* (a) Units classed by the American Bureau of Shipping or other recognized classification society for ocean service generally will be certificated by the Coast Guard for ocean routes.

(b) Unclassed units which have proven structural and stability adequacy by continued safe operation in a specific geographic area, such as the Gulf of Mexico, will be limited by the Certificate of Inspection and

Load Line Certificate to that area. To qualify for an unlimited oceans route, such a unit must be reviewed for adequacy of the structure and stability by the Coast Guard and meet the Load Line requirements of d. (5) above.

(c) Any unit which intends to move or operate outside the geographical area indicated on the Certificate of Inspection must receive prior approval from the OCMI.

(7) *Fire Protection.* (a) *Structural fire protection.* All units must meet the provisions of §108.123, Insulation of Combustible Materials and §108.127, Storage Lockers for Combustibles. All existing interior stairways which are open at each end must be enclosed at one level. On units where wood was utilized in the construction of accommodation spaces, each space must be equipped with a smoke or heat detector either battery powered or operating on the AC power supply. All detectors must have the Underwriters Laboratories, Inc., label (UL) or the Factory Mutual Laboratories (FM) label.

(b) *Fire Extinguishing Systems.* Systems and equipment must be provided which will meet or be equivalent to the applicable specifications and provisions required by Subchapter IA. Installed fire extinguishing systems, which provide equivalent or greater protection than systems required by Subpart E, Subchapter IA may be continued in use as long as they are in good material condition and will function as designed. Where practicable, existing washdown systems may be utilized as the firemain. Where wood was utilized in the construction of accommodation spaces, the applicable requirements of 46 CFR Subchapter IA, Table 108.495(a) should be doubled.

(8) *Lifesaving Equipment.* (a) Each unit must have lifesaving equipment (lifeboats and davit launched liferafts) for 200 percent of the total persons allowed on board. Except for submersible type units, the installation of lifeboats for 100 percent of the persons (on board) is required in accordance with 46 CFR 108.503 of Subchapter IA. Consideration will be given to those units where existing arrangement and structure do not provide sufficient room for installation of the lifeboats or where the added weight of the lifeboats, davits and winches will materially reduce the variable load capacity of the unit. In such cases, davit launched inflatable liferafts with a combined personnel capacity of the required lifeboats, and a rescue boat approved by the OCMI may be acceptable equivalents. Submersible type units may substitute Coast Guard approved throw over type inflatable liferafts and an approved rescue boat for the required lifeboats.

(b) For the second part of the total 200 percent primary lifesaving requirement, lifeboats installed in accordance with 33 CFR, Subchapter ''N'' Part 144 or Coast Guard approved life floats may be retained as provided for in 3.d(1)(b) of this Circular. They will be considered collectively with the Coast Guard approved liferafts for calculating the amount of equipment to provide for 100 percent of personnel on board.

(c) Adequate access to all lifesaving equipment must be provided.

(9) *Cranes.* (a) Plan approval will not normally be required of any crane which conforms to the specifications of the manufacturer as originally installed. A rated load test as described in §107.260 of Subchapter IA will be required unless the crane has been load tested while under certification by an approved certifying authority as provided for in 46 CFR 107.258. Prior to the rated load test, the crane should be identified by manufacturer and model number to determine that the correct load rating chart is being used. The owner must submit to the OCMI details and calculations of any alterations to a crane which were accomplished without manufacturer's documentation in order to verify the rated load of the crane.

(10) *Electrical.* (a) Multiple power sources do not require an emergency generator; however, storage batteries or approved relay-controlled battery operated lanterns are required to be installed for the emergency lighting system and provide 12 hours of lighting.

(b) Electrical equipment installed in Class I, division 1 and 2 locations, as defined in Subchapter IA, §108.170 must be of a suitable type and in good material condition.

(11) *Unfired Pressure Vessels.* (a) Unfired pressure vessels built and stamped in accordance with Section VIII of the ASME Code may be continued in service as long as they remain in satisfactory condition. At the original and subsequent inspections for certification, ASME Code pressure vessels must be tested and examined in accordance with the requirements in 46 CFR 61.10–5.

(b) Unfired pressure vessels which cannot be identified as being constructed to any recognized standard may be continued in service provided that no obvious defects are noted. These pressure vessels shall be hydrostatically tested to one and one half times the working pressure. For pressure vessels that can not be reasonably hydrostatically tested, nondestructive testing may be used to verify the pressure vessels condition for continued serviceability. These pressure vessels will then be stamped with a Coast Guard identification number and periodically tested and examined in accordance with the requirements in 46 CFR 61.10–5.

(12) *Marine Sanitation Devices.* (a) All units must meet the provisions of 33 CFR Part 159, Coast Guard Marine Sanitation Devices Regulations. The discharge requirements are compatible with the OCS Orders of the U.S. Geological Survey.

4. *Action*. a. The owner of each *existing certificated* unit must provide the cognizant OCMI a proposed plan to accomplish the requirements in paragraph 3. c. of this NVIC within 60 days from the effective date of the regulations. Most items should be approved at the unit's next inspection for certification; however, where major equipment installations are concerned, the owner may be allowed up to two years to comply with the requirements from the time the OCMI completes his assessment of the proposals.

b. *Application for Original Inspection for Certification*. Not later than sixty days from January 3, 1979, application for original inspection for certification of all *existing uncertificated units*, shall be submitted to the appropriate OCMI. The plans or descriptive data specified in paragraph 3.d(2) of this NVIC along with a proposed plan to bring the unit into compliance should, if possible, be submitted with the application for inspection. If not feasible to assemble all required information in this time frame, an estimated date of submittal shall be indicated on the application. Arrangements should be made to commence the original inspection for certification with due consideration for the unit's operating situation.

c. To the extent possible the same inspection team will conduct the inspection of all existing uncertificated units in a geographical area. It may be advantageous to conduct the original inspection in conjunction with an impending special or periodic survey, drydocking or availability period. Units under construction will receive primary consideration by the OCMI for the allocation of time and personnel so that any problems can be identified while the unit is in the most advantageous situation to apply corrections.

d. The variety of designs and arrangements presented by existing uninspected MODU's makes it impractical to prescribe detailed standards for all existing units. The procedures followed to implement this NVC must provide the necessary flexibility. Items which must be taken into consideration in applying this NVIC are listed below. Categorizing units into groups to which the same items apply will be of value during the inspection process. These items are:

- Type
- Builder
- Model
- Date build
- Classed by ABS or other classification society
- Load Line assignment
- Operating history (including geographical areas)
- Present location

e. *Issuance of the Original Certificate of Inspection*. The intent of the original inspection of *existing uncertificated units* is to identify and commence correction of any unsafe conditions and/or equipment deficiencies and to issue the unit an original Certificate of Inspection. A reasonable period of time will be permitted to correct minor deficiencies. Those items directly affecting personnel safety and health will require immediate attention to correct the unsafe condition. Extensive deficiencies, such as those involving structural aspects or equipment may require up to two years to remedy. Additional times may be allowed if repair facilities are not available to coastal areas adjacent to the unit's area of operation. Where manifestly unsafe conditions are found, the OCMI may require that the unit discontinue operations until such conditions are corrected. If the owner or operator feels aggrieved by the decision of the OCMI, the appeals procedures of 46 CFR 2.01–70 are applicable.

f. Questions concerning this NVIC should be referred to the Commandant (G–MOC).

[CGD 73–251, 43 FR 56828, Dec. 4, 1978, as amended by CGD 96–041, 61 FR 50730, Sept. 27, 1996]

INDEX

SUBCHAPTER I—CARGO AND MISCELLANEOUS VESSELS AND SUBCHAPTER I-A—MOBILE OFFSHORE DRILLING UNITS (MODUs)

EDITORIAL NOTE: This listing is provided for informational purposes only. It is compiled by and kept current by the Coast Guard, Department of Transportation. In general, reference in this index pertains to new construction or installations. For existing vessels or installations see the ''application'' in the text covering the particular referenced part, subpart, section, etc.

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SUBCHAPTER J—ELECTRICAL ENGINEERING

PART 110—GENERAL PROVISIONS

Subpart 110.01—Applicability

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110.20–1 Equivalents.

Subpart 110.25—Plan Submittal

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Subpart 110.30—Testing and Inspection

110.30–1 General.
110.30–3 Initial inspection.
110.30–5 Inspection for certification.
110.30–7 Repairs or alterations.

AUTHORITY: 33 U.S.C. 1509; 43 U.S.C 1333; 46 U.S.C. 3306, 3307, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p.277; 49 CFR 1.45, 1.46; § 110.01–2 also issued under 44 U.S.C. 3507.

SOURCE: CGD 74–125A, 47 FR 15232, Apr. 8, 1982, unless otherwise noted.

Subpart 110.01—Applicability

§ 110.01–1 General.

(a) This subchapter applies to all electrical installations on vessels subject to subchapters D, H, I, I–A, K, L, O, Q, R, T, U, and W of this chapter whenever those subchapters require an electrical installation to be in accordance with this subchapter.

(b) This subchapter applies only to electrical installations contracted for after September 30, 1996.

(c) Installations and equipment accepted by the Coast Guard as meeting the applicable requirements in this subchapter in effect on the date the installation was contracted for and which are maintained in good and serviceable condition to the satisfaction of the Officer in Charge, Marine Inspection, may be continued in use until replacement is ordered by the Officer in Charge, Marine Inspection, or as specified in the regulations.

(d) [Reserved]

(e) Electrical systems internal to a pressure vessel for human occupancy (PVHO) need not meet the requirements of this subchapter, but must meet the requirements of Subpart B (Commercial Diving Operations) of part 197 of this chapter.

[CGD 74–125A, 47 FR 15232, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28271, June 4, 1996]

§ 110.01–2 OMB control numbers assigned pursuant to the Paperwork Reduction Act.

(a) *Purpose.* This section collects and displays the control numbers assigned to information collection and recordkeeping requirements in this subchapter by the Office of Management and Budget (OMB) pursuant to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*). The Coast Guard intends that this section comply with the requirements of 44 U.S.C. 3507(f) which requires that agencies display a current control number assigned by the Director of the OMB for each approved agency information collection requirement.

(b) *Display.*

46 CFR part or section where identified or described	Current OMB control No.
Subpart 110.25	2115–0115

[49 FR 38121, Sept. 27, 1984]

§ 110.01–3 Repairs and alterations.

(a) Repairs and replacements in kind must comply with either the regulations in this subchapter or those in effect when the vessel was built.

(b) Alterations and modifications, such as re-engining, re-powering, upgrading of the main propulsion control system, or replacing extensive amounts

of cabling, must comply with the regulations in this subchapter.

(c) Conversions specified in 46 U.S.C. 2101(14a), such as the addition of a midbody or a change in the service of the vessel, are handled on a case-by-case basis by the Commanding Officer, Marine Safety Center.

[CGD 94–108, 61 FR 28271, June 4, 1996, as amended at 62 FR 23906, May 1, 1997]

§ 110.01–4 Right of appeal.

Any person directly affected by a decision or action taken under this subchapter, by or on behalf of the Coast Guard, may appeal therefrom in accordance with subpart 1.03 of this chapter.

[CGD 88–033, 54 FR 50380, Dec. 6, 1989]

Subpart 110.10—Reference Specifications, Standards, and Codes

§ 110.10–1 Incorporation by reference.

(a) Certain material is incorporated by reference into this subchapter 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 paragraph (b) of this section, the Coast Guard must publish notice of change in the FEDERAL REGISTER; and the material must be available to the public. All approved material is available for inspection at the Office of the Federal Register, 800 North Capitol Street NW., Suite 700, Washington, DC, and at the U.S. Coast Guard, (G–MSE), 2100 Second Street SW., Washington, DC 20593–0001, and is available from the sources indicated in paragraph (b) of this section.

(b) The material approved for incorporation by reference in this subchapter and the sections affected are as follows:

American Bureau of Shipping (ABS) American Bureau of Shipping, ABS Plaza, 16855 Northchase Drive, Houston, TX 77060:	
Rules for Building and Classing Steel Vessels, 1996	110.15–1; 111.01–9; 111.12–1(a); 111.12–3; 111.12–5; 111.12–7; 111.33–11; 111.35–1; 111.70–1(a); 111.105–31(n); 111.105–39(a); 111.105–40(a); 113.05–7.
Rules for Building and Classing Mobile Offshore Drilling Units, 1994.	111.12–1(a); 111.12–3; 111.12–5; 111.12–7; 111.33–11; 111.35–1; 111.70–1(a).
American National Standards Institute (ANSI), American National Standards Institute, 11 West 42nd Street, New York, NY 10036:	
ANSI/ASME A17.1, Safety Code for Elevators and Escalators, 1993.	111.91–1
ANSI/ASME A17.1A, Addenda to ANSI/ASME A17.1, Safety Code for Elevators and Escalators (including Errata, 1995), 1994.	111.91–1.
ANSI/IEEE C37.04, Rating Structure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis, 1979.	111.54–1(c).
ANSI C37.12, For AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis—Specification Guide, 1991.	111.54–1(c).
American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959:	
ASTM B 117–97, Standard Practice for Operating Salt Spray (Fog) Apparatus.	110.15–1.
ASTM D 4066–96a, Standard Classification System for Nylon Injection and Extrusion Materials (PA).	111.60–1.
Institute of Electrical and Electronic Engineers (IEEE), IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854:	

IEEE Std C37.13, IEEE Standard for Low-Voltage AC Power Circuit Breakers used in Enclosures, 1990.	111.54–1(c).
IEEE Std C37.14, IEEE Standard for Low-Voltage DC Power Circuit Breakers Used in Enclosures, 1992.	111.54–1(c).
IEEE Std 45–1983, IEEE Recommended Practice for Electric Installations on Shipboard, 1983.	111.05–7; 111.15–2(b); 111.30–1; 111.30–5(a); 111.30–19(a); 111.33–3(a); 111.33–5(a); 111.40–1; 111.60–1(a); 111.60–2; 111.60–3; 111.60–5(a); 111.60–6(a); 111.60–11(c); 111.60–13(a); 111.60–19(b); 111.60–21; 111.60–23(d); 111.75–5(b); 111.105–3; 111.105–31(e); 111.105–41; 111.107–1(c); 113–65–5.
IEEE Std 100–1992, The New IEEE Standard Dictionary of Electrical and Electronics Terms, 1992.	110.15–1(a).
IEEE Std 320, Application Guide for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis (ANSI/IEEE C37.010–79), 1979.	111.54–1(c).
IEEE Std 331, Application Guide for Low-Voltage AC Nonintegrally Fused Power Circuit Breakers (Using Separately Mounted Current-Limiting Fuses) (ANSI/IEEE C37.27), 1987.	111.54–1(c).
IEEE Std 1202–1991, IEEE Standard for Flame Testing of Cables for Use in Cable Tray in Industrial and Commercial Occupancies, 1991.	111.60–2; 111.60–6(a); 111.107–1(c).
International Association of Drilling Contractors (IADC), International Association of Drilling Contractors, PO Box 4287, Houston, TX 77210–4287:	
IADC–DCCS–1/1991, Guidelines for Industrial System DC Cable for Mobile Offshore Drilling Units, 1991.	111.60–1(f).
International Electrotechnical Commission (IEC), (Also available from ANSI—address above.) International Electrotechnical Commission, 3, rue de Varembe, Geneva, Switzerland:	
IEC 56, High-Voltage Alternating-Current Circuit-Breakers, 1987, (Including Amendment 1, 1992, Amendment 2, 1995, and Amendment 3, 1996).	111.54–1.
IEC 68–2–52, Basic Environmental Testing Procedures, Part 2: Tests. Test KB: Salt Mist, Cyclic (Sodium Chloride Solution), 1984.	110.15–1(b).
IEC 79–0, Electrical Apparatus for Explosive Gas Atmospheres, Part 0: General Requirements, 1983 (Including Amendment 2, 1991).	111.105–1; 111.105–3; 111.105–5; 111.105–7; 111.105–15(b); 111.105–17(b).
IEC 79–1, Electrical Apparatus for Explosive Gas Atmospheres, Part 1: Construction and Test of Flameproof Enclosures of Electrical Apparatus, 1990 [Including the First Supplement to the Second Edition (1971), 1975, and Amendment 1 to the Third Edition (1990), 1993].	111.105–3; 111.105–5; 111.105–9; 111.105–15(b); 111.105–17(b).
IEC 79–2, Electrical Apparatus for Explosive Gas Atmospheres, Part 2: Electrical Apparatus—Type of Protection ''p'', 1983.	111.105–3; 111.105–5; 111.105–7(b); 111.105–15(b); 111.105–17(b).
IEC 79–5, Electrical Apparatus for Explosive Gas Atmospheres, Part 5: Sand-Filled Apparatus. First Edition (1967), Incorporating the First Supplement, (1969).	111.105–3; 111.105–5; 111.105–15(a); 111.105–15(b); 111.105–17(b).
IEC 79–6, Electrical Apparatus for Explosive Gas Atmospheres, Part 6: Oil-Immersion ''o'', 1995.	111.105–3; 111.105–5; 111.105–15(a); 111.105–15(b); 111.105–17(b).
IEC 79–7, Electrical Apparatus for Explosive Gas Atmospheres, Part 7: Increased Safety ''e'', 1990 (Including Amendment 1, 1991, and Amendment 2 1993).	111.105–3; 111.105–5; 111.105–15(a); 111.105–15(b); 111.105–17(b).
IEC 79–11, Electrical Apparatus for Explosive Gas Atmospheres, Part 11: Intrinsic Safety ''i'', 1991.	111.105–3; 111.105–5; 111.105–11(a); 111.105–15(b); 111.105–17(b).

IEC 79–15, Electrical Apparatus for Explosive Gas Atmospheres, Part 15: Electrical Apparatus with Type of Protection ''n'', 1987.	111.105–3; 111.105–5; 111.105–15(a); 111.105–5(b); 111.105–17(b).
IEC 79–18, Electrical Apparatus for Explosive Gas Atmospheres, Part 18: Encapsulation ''m'', 1992.	111.105–3; 111.105–5; 111.105–15(a); 111.105–15(b); 111.105–17(b).
IEC 92–3, Electrical Installation in Ships, Part 3: Cables (construction, testing and installations) Second Edition, 1965, as amended through August, 1982.	111.05–7; 111.60–1(a); 111.60–3(a); 111.60–3(c); 111.81–1(d).
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IEC 92–306, Electrical Installations in Ships, Part 306: Equipment—Luminaires and Accessories, 1980.	111.75–20(a); 111.81–1(d).
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(c) The word ''should,'' when used in material incorporated by reference, is to be construed the same as the words ''must'' or ''shall'' for the purposes of this subchapter.

[CGD 94–108, 61 FR 28271, June 4, 1996; 61 FR 33045, June 26, 1996; 61 FR 36786–36787, July 12, 1996; 61 FR 49691, Sept. 23, 1996, as amended at 62 FR 23906, May 1, 1997; CGD 97–057, 62 FR 51046, Sept. 30, 1997; USCG 1999–5151, 64 FR 67182, Dec. 1, 1999; USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

Subpart 110.15—Terms Used in This Subchapter

§ 110.15–1 Definitions.

As used in this subchapter—

(a) The electrical and electronic terms are defined in IEEE Std 100 or IEC 92–101.

(b) In addition to the definitions in paragraph (a) of this section—

Coastwise Vessel means a vessel that normally navigates the waters of any ocean or the Gulf of Mexico 20 nautical miles or less offshore and is certificated for coastwise navigation by the Coast Guard.

Commandant means the Commandant of the Coast Guard.

Corrosion resistant material or finish means any material or finish that meets the testing requirements of ASTM B 117 (incorporated by reference, see §110.10–1) or test Kb in IEC 68–2–52 for 200 hours and does not show pitting, cracking, or other deterioration more severe than that resulting from a similar test on passivated AISI Type 304 stainless steel.

Corrosive location means a location exposed to the weather on vessels operating in salt water or a location on board which may be exposed to the corrosive effects of the cargo carried or of the vessel's systems.

Dead ship condition is the condition in which the main propulsion plant, boilers and auxiliaries are not in operation due to the absence of power.

Dripproof means enclosed so that equipment meets at least a NEMA 250 Type 1 with dripshield, NEMA 250 Type 2, NEMA 250 Type 12, or IEC IP 22 rating.

Embarkation station means a location from which persons embark into survival craft or are assembled before embarking into survival craft.

Emergency squad means the crew designated on the station bill as the nucleus of a damage control party.

Flashpoint means the minimum temperature at which a liquid gives off a vapor in sufficient concentration to form an ignitable mixture with air near the surface of the liquid, as specified by the appropriate test procedure and apparatus.

Great Lakes vessel means a vessel that navigates exclusively on the Great Lakes and their connecting and tributary waters.

Independent laboratory means a laboratory that is accepted by the Commandant under part 159 of this chapter for the testing and listing or certification of electrical equipment.

Location not requiring an exceptional degree of protection means a location which is not exposed to the environmental conditions outlined in the definition for locations requiring exceptional degrees of protection. This location requires the degree of protection of §111.01–9 (c) or (d) of this chapter. These locations include—

(1) An accommodation space;

(2) A dry store room;

(3) A passageway adjacent to quarters;

(4) A water closet without a shower or bath;

(5) A radio, gyro and chart room; and

(6) A location with similar environmental conditions.

Location requiring an exceptional degree of protection means a location exposed to weather, seas, splashing, pressure-directed liquids, or similar moisture conditions. These locations include—

(1) On deck;

(2) A machinery space;

(3) A cargo space;

(4) A location within a galley or pantry area, laundry, or water closet which contains a shower or bath; and

(5) Other spaces with similar environmental conditions.

Marine inspector or *inspector* means a civilian employee or military member of the Coast Guard assigned by an Officer in Charge, Marine Inspection, or the Commandant to perform duties with respect to the inspection, enforcement, and administration of vessel safety and navigation laws and regulations.

Nonsparking fan means nonsparking fan as defined in ABS Rules for Building and Classing Steel Vessels, section 4/5B7.7.

Ocean vessel means a vessel that navigates the waters of any ocean or the Gulf of Mexico more than 20 nautical miles offshore and is certificated by the Coast Guard for ocean navigation.

Qualified person means a person who by virtue of that person's knowledge, ability, experience, specialized training, or licensing can competently and safely perform required electrical duties or functions.

Waterproof means watertight; except that, moisture within or leakage into the enclosure is allowed if it does not interfere with the operation of the equipment enclosed. In the case of a generator or motor enclosure, *waterproof* means watertight; except that, leakage around the shaft may occur if the leakage is prevented from entering the oil reservoir and the enclosure provides for automatic drainage.

Watertight means enclosed so that equipment meets at least a NEMA 250 Type 4 or 4X or an IEC IP 56 rating.

[CGD 94–108, 61 FR 28274, June 4, 1996, as amended at 62 FR 23907, May 1, 1997; 62 FR 27659, May 20, 1997; USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

Subpart 110.20—Equivalents

§ 110.20–1 Equivalents.

The Commanding Officer, Marine Safety Center (MSC), may approve any arrangement, fitting, appliance, apparatus, equipment, calculation, information, or test that provides a level of safety equivalent to that established by specific provisions of this subchapter. Requests for approval must be submitted to the Marine Safety Center. If necessary, the Marine Safety Center may require engineering evaluations and tests to demonstrate the equivalence of the substitute.

[CGD 94–108, 61 FR 28275, June 4, 1996]

Subpart 110.25—Plan Submittal

§ 110.25–1 Plans and information required for new construction.

The following plans, if applicable to the particular vessel, must be submitted for Coast Guard review in accordance with § 110.25–3:

NOTE: A Navigation and Vessel Inspection Circular on the Subject of ''Coast Guard Review of Merchant Vessel Plans and Specifications'' is available from the offices listed in § 110.25–3. The Circular recommends practices and procedures for plan submittals.

(a) Elementary one-line wiring diagram of the power system, supported, by cable lists, panelboard summaries, and other information including—

(1) Type and size of generators and prime movers;

(2) Type and size of generator cables, bus-tie cables, feeders, and branch circuit cables;

(3) Power, lighting, and interior communication panelboards with number of circuits and rating of energy consuming devices;

(4) Type and capacity of storage batteries;

(5) Rating of circuit breakers and switches, interrupting capacity of circuit breakers, and rating or setting of overcurrent devices;

(6) Computations of short circuit currents in accordance with Subpart 111.52; and

(7) Overcurrent protective device coordination analysis for each generator distribution system of 1500 kilowatts or above that includes selectivity and shows that each overcurrent device has an interrupting capacity sufficient to interrupt the maximum asymmetrical short-circuit current available at the point of application.

(b) Electrical plant load analysis including connected loads and computed operating loads for each condition of operation.

(c) Elementary and isometric or deck wiring plans, including the location of each cable splice, a list of symbols, and the manufacturer's name and identification of each item of electrical equipment, of each—

(1) Steering gear circuit and steering motor controller;
(2) General emergency alarm system;
(3) Sound-powered telephone or other fixed communication system;
(4) Power-operated boat winch;
(5) Fire detecting and alarm system;
(6) Smoke detecting system;
(7) Electric watertight door system;
(8) Fire door holding systems;
(9) Public address system;
(10) Manual alarm system; and
(11) Supervised patrol system.

(d) Deck wiring or schematic plans of power systems and lighting systems, including symbol lists, with manufacturer's name and identification of each item of electric equipment, and showing:
(1) Locations of cables;
(2) Cable sizes and types;
(3) Locations of each item of electric equipment;
(4) Locations of cable splices.

(e) Switchboard wiring diagram.

(f) Switchboard material and nameplate list.

(g) Elementary wiring diagram of metering and automatic switchgear.

(h) Description of operation of propulsion control and bus transfer switchgear.

(i) For vessels with hazardous locations for which part 111, subpart 111.105, is applicable, plans showing the extent and classification of all hazardous locations, including information on—
(1) Equipment identification by manufacturer's name and model number;
(2) Equipment use within the system;
(3) Cable parameters;
(4) Equipment locations;
(5) Installation details; and
(6) A certificate of testing, and listing or certification, by an independent laboratory, where required by the respective standard.

(j) Plans and installation instructions for each approved component of an intrinsically safe system listed or certified by an independent laboratory (see §111.105–11 of this chapter).

(k) Motor starter elementary wiring diagram, enclosure drawing, and starter application.

(l) Plans and information sufficient to evaluate equipment to be considered for equivalency under §110.20–1.

(m) Plans and information sufficient to evaluate equipment or systems required to meet the specifications of this Subchapter but not to be approved by the Commandant.

NOTE TO PARAGRAPH (m): This equipment evaluation is generally performed by the Commanding Officer, Marine Safety Center and includes items such as cable splices, signalling lights, shore connection boxes, submersible pumps, engine order telegraph systems, shaft speed and thrust indicator systems, and steering gear failure alarm systems.

(n) Plans and information sufficient to evaluate equipment required by this subchapter to meet a reference standard or military specification.

NOTE TO PARAGRAPH (n): This equipment evaluation is generally performed by the Commanding Officer, Marine Safety Center, and includes items such as circuit breakers, switches, lighting fixtures, air heating equipment, busways, outlet boxes, and junction boxes. Items required to meet an IEEE, IEC, NEMA, UL, ANSI, or other industry standard or a military specification are considered acceptable if manufacturer's certification of compliance is indicated on a material list or plan. However, if the standards require third-party testing and listing or certification, proof of listing or certification by an independent laboratory must also be submitted.

(o) Detailed analysis showing compliance with the MC cable requirements in §111.60–23(b) of this chapter.

[CGD 74–125A, 47 FR 15232, Apr. 8, 1982, as amended by CGD 81–030, 53 FR 17846, May 18, 1988; CGD 94–108, 61 FR 28275, June 4, 1996; 62 FR 23907, May 1, 1997]

§110.25–3 Procedure for submitting plans.

(a) The plans required by §110.25–1 must be submitted to one of the following Coast Guard offices:
(1) Commanding Officer, U.S. Coast Guard Marine Safety Center (MSC), 400 Seventh St., SW., Washington, DC 20590–0001.
(2) The Officer in Charge, Marine Inspection at or nearest the place where the vessel is to be built.

(b) [Reserved]

(c) Three copies of each plan are required so that one can be returned to the submitter. If the submitter desires additional copies of approved plans, he should submit enough for the necessary distribution.

NOTE: The Coast Guard and the American Bureau of Shipping (ABS) coordinate plan review for vessels classed by the ABS in order to eliminate duplication of effort. An applicant for plan review of a vessel that is classed by the ABS should consult Commanding Officer, Marine Safety Center, to determine applicable procedures for submitting plans.

[CGD 74–125A, 47 FR 15232, Apr. 8, 1982, as amended by CGD 82–063b, 48 FR 4781, Feb. 3, 1983; CGD 85–048b, 51 FR 15498, Apr. 24, 1986; CGD 88–070, 53 FR 34534, Sept. 7, 1988; CGD 89–025, 54 FR 19571, May 8, 1989; CGD 95–072, 60 FR 50465, Sept. 29, 1995; CGD 94–108, 61 FR 28275, June 4, 1996; CGD 96–041, 61 FR 50730, Sept. 27, 1996]

EDITORIAL NOTE: By CGD 96–041, 61 FR 50730, Sept. 27, 1996, paragraph (a)(1) of §110.25–3 was amended by removing the word ''(G–MSC)''. However, by CGD 94–108, 61 FR 28275, June 4, 1996, the word ''(G–MSC)'' was removed and the word ''(MSC)'' was addded in its place.

Subpart 110.30—Testing and Inspection

§110.30–1 General.

(a) This section supplements the general requirements for testing and inspecting vessels in other parts of this chapter.

(b) In the inspection of electric equipment and installations, the rules of the American Bureau of Shipping for materials and construction, and the certificate of classification that refers to them, except as otherwise provided by this subchapter, are accepted as standard.

(c) This subpart must not be construed to imply that shop tests or factory inspections of electric apparatus or equipment of the types conducted by the American Bureau of Shipping are conducted by the Coast Guard. Shop tests of electric apparatus or equipment are conducted by the Coast Guard only when required by this chapter or when requested, either by the manufacturer, shipbuilder, owner, or the Coast Guard, and agreed to by all.

[CGD 74–125A, 47 FR 15232, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28275, June 4, 1996]

§110.30–3 Initial inspection.

The initial inspection, which may be a series of inspections during the construction of the vessel, includes a complete inspection of the electric installation and electric equipment or apparatus. The inspection is to determine that the arrangement, materials, and their installations meet this chapter and the approved plans. The inspection also is to determine that the workmanship of all equipment and apparatus and the installation is satisfactory.

§110.30–5 Inspection for certification.

Electric installations and electric equipment must be inspected at the inspection for certification and periodic inspection to determine mechanical and electrical condition and performance. Particular note must be made of circuits added or modified after the original issuance of the Certificate of Inspection.

[USCG 1999–4976, 65 FR 6504, Feb. 9, 2000]

§110.30–7 Repairs or alterations.

The Officer in Charge, Marine Inspection must be notified before—

(a) Alterations or modifications that deviate from approved plans; or

(b) Repairs, alterations, or modifications that affect the safety of the vessel.

[CGD 94–108, 61 FR 28275, June 4, 1996]

PART 111—ELECTRIC SYSTEMS—GENERAL REQUIREMENTS

Subpart 111.01—General

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111.01–7 Accessibility and spacing.
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111.05–3 Design, construction, and installation; general.
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111.05–9 Masts.

SYSTEM GROUNDING

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111.05–13 Grounding connection.
111.05–15 Neutral grounding.
111.05–17 Generation and distribution system grounding.
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GROUND DETECTION

111.05–21 Ground detection.
111.05–23 Location of ground indicators.
111.05–25 Ungrounded systems.
111.05–27 Grounded neutral alternating current systems.
111.05–29 Dual voltage direct current systems.

GROUNDED CONDUCTORS

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111.12–9 Generator cables.
111.12–11 Generator protection.
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Subpart 111.20—Transformer Construction, Installation, and Protection

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111.20–5 Temperature rise.
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Subpart 111.25—Motors

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Subpart 111.30—Switchboards

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111.30–5 Construction.
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111.30–15 Nameplates.
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Subpart 111.33—Power Semiconductor Rectifier Systems

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111.33–3 Nameplate data.
111.33–5 Installation.
111.33–7 Alarms and shutdowns.
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Subpart 111.35—Electric Propulsion

111.35–1 Electrical propulsion installations.

Subpart 111.40—Panelboards

111.40–1 Panelboard standard.
111.40–5 Enclosure.
111.40–7 Location.
111.40–9 Locking device.
111.40–11 Numbered switching unit and panelboard directory.
111.40–13 Rating.
111.40–15 Overcurrent device.

Subpart 111.50—Overcurrent Protection

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111.50–2 Systems integration.
111.50–3 Protection of conductors.
111.50–5 Location of overcurrent protective devices.
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Subpart 111.51—Coordination of Overcurrent Protective Devices

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Subpart 111.52—Calculation of Short-Circuit Currents

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AUTHORITY: 46 U.S.C. 3306, 3703; 49 CFR 1.46.

SOURCE: CGD 74–125A, 47 FR 15236, Apr. 8, 1982, unless otherwise noted.

Subpart 111.01—General

§ 111.01–1 General.

(a) Electric installations on vessels must ensure:

(1) Maintenance of services necessary for safety under normal and emergency conditions.

(2) Protection of passengers, crew, other persons, and the vessel from electrical hazards.

(3) Maintenance of system integrity through compliance with the applicable system requirements (IEEE, NEC, IEC, etc.) to which plan review has been approved.

(b) Combustible material should be avoided in the construction of electrical equipment.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28275, June 4, 1996; 62 FR 23907, May 1, 1997]

§ 111.01–3 Placement of equipment.

(a) Electric equipment must be arranged, as far as practicable, to prevent mechanical damage to the equipment from the accumulation of dust, oil vapors, steam, or dripping liquids.

(b) Apparatus that may arc must be ventilated or be in ventilated compartments in which flammable gases, acid fumes, and oil vapors cannot accumulate. Skylights and ventilators must be arranged to prevent flooding of the apparatus.

§ 111.01–5 Protection from bilge water.

Each of the following in or around the bilge area must be arranged or constructed so that it cannot be damaged by bilge water:

(a) Generators.
(b) Motors.
(c) Electric coupling.
(d) Electric cable.

[CGD 94–108, 61 FR 28275, June 4, 1996]

§ 111.01–7 Accessibility and spacing.

(a) The design and arrangement of electric apparatus must afford accessibility to each part as needed to facilitate proper inspection, adjustment, maintenance, or replacement.

(b) Within an enclosure, the spacing between energized components (or between an energized component and

ground) must be to the appropriate industry standard for the voltage and current utilized in the circuit. Additionally, spacing within any enclosure must be sufficient to facilitate servicing.

[CGD 94–108, 61 FR 28275, June 4, 1996]

§ 111.01–9 Degrees of protection.

(a) Interior electrical equipment exposed to dripping liquids or falling solid particles must be manufactured to at least NEMA 250 Type 2 or IEC IP 22 degree of protection as appropriate for the service intended.

(b) Electrical equipment in locations requiring exceptional degrees of protection as defined in § 110.15–1 of this chapter must be enclosed to meet at least the minimum degrees of protection in ABS Rules for Building and Classing Steel Vessels, table 4/5B.1, or appropriate NEMA 250 Type for the service intended. Each enclosure must be designed in such a way that the total rated temperature of the equipment inside the enclosure is not exceeded.

(c) Central control consoles and similar control enclosures must be manufactured to at least NEMA 250 Type 2 or IEC IP 22 degree of protection regardless of location.

(d) Equipment for interior locations not requiring exceptional degrees of protection must be manufactured to at least NEMA 250 Type 1 with dripshield or IEC IP 11.

NOTE TO § 111.01–9: The degrees of protection specified in this section are described in NEMA Standards Publication No. 250 and IEC IP Code 529 and designated in ABS Rules for Building and Classing Steel Vessels, table 4/5B.1.

[CGD 94–108, 61 FR 28275, June 4, 1996, as amended at 62 FR 23907, May 1, 1997]

§ 111.01–11 Corrosion-resistant parts.

Each enclosure and part of electric equipment that can be damaged by corrosion must be made of corrosion-resistant materials or of materials having a corrosion resistant finish.

§ 111.01–13 Limitations on porcelain use.

Porcelain must not be used for lamp sockets, switches, receptacles, fuse blocks, or other electric equipment where the item is solidly mounted by machine screws or their equivalent, unless the porcelain piece is resiliently mounted.

§ 111.01–15 Temperature ratings.

(a) In this subchapter, an ambient temperature of 40°C is assumed except as otherwise stated.

(b) A 50°C ambient temperature is assumed for all rotating electrical machinery in boiler rooms, engine rooms, auxiliary machinery rooms, and weather decks, unless it can be shown that a 45°C ambient temperature will not be exceeded in these spaces.

(c) A 45°C ambient temperature is assumed for cable and all other non-rotating electrical equipment in boiler rooms, in engine rooms, in auxiliary machinery rooms, and on weather decks. For installations using UL 489 SA marine type circuit breakers the ambient temperature for that component is assumed to be 40°C. For installations using Navy type circuit breakers the ambient temperature for that component is assumed to be 50°C.

(d) Unless otherwise indicated in this subchapter, a 55°C ambient temperature is assumed for all control and instrumentation equipment.

(e) If electrical equipment is utilized in a space in which the equipment's rated ambient temperature is below the assumed ambient temperature of the space, its load must be derated. The assumed ambient temperature of the space plus the equipment's actual temperature rise at its derated load must not exceed the equipment's total rated temperature (equipment's rated ambient temperature plus its rated temperature rise).

[CGD 94–108, 61 FR 28276, June 4, 1996, as amended at 62 FR 23907, May 1, 1997]

§ 111.01–17 Voltage and frequency variations.

Unless otherwise stated, electrical equipment must function at variations of at least ±5 percent of rated frequency and +6 percent to −10 percent of rated voltage. This limitation does not address transient conditions.

[CGD 94–108, 61 FR 28276, June 4, 1996]

§ 111.01–19 Inclination of the vessel.

(a) All electrical equipment must be designed and installed to operate for the particular location and environment in which it is to be used. Additionally, electrical equipment necessary for the maneuvering, navigation, and safety of the vessel or its personnel must be designed and installed to operate under any combination of the following conditions:

(1) 15 degrees static list, 22.5 degrees dynamic roll; and

(2) 7.5 degrees static trim.

(b) All emergency installations must be designed and installed to operate when the vessel is at 22.5 degrees list and 10 degrees trim.

[CGD 94–108, 61 FR 28276, June 4, 1996, as amended at 62 FR 23907, May 1, 1997]

Subpart 111.05—Equipment Ground, Ground Detection, and Grounded Systems

§ 111.05–1 Purpose.

This subpart contains requirements for the grounding of electric systems, circuits, and equipment.

NOTE: Circuits are grounded to limit excessive voltage from lightning, transient surges, and unintentional contact with higher voltage lines, and to limit the voltage to ground during normal operation. Conductive materials enclosing electric conductors and equipment, or forming part of that equipment, are grounded to prevent a voltage above ground on the enclosure materials.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28276, June 4, 1996]

EQUIPMENT GROUND

§ 111.05–3 Design, construction, and installation; general.

(a) An electric apparatus must be designed, constructed, and installed to prevent any person from accidentally contacting energized parts.

(b) Exposed, noncurrent-carrying metal parts of fixed equipment that may become energized because of any condition must be grounded.

(c) Exposed, noncurrent-carrying metal parts of portable equipment must be grounded through a conductor in the supply cable to the grounding pole in the receptacle.

(d) If the installation of the electrical equipment does not ensure a positive ground to the metal hull or equivalent conducting body, the apparatus must be grounded to the the hull with a grounding conductor.

§ 111.05–7 Armored and metallic-sheathed cable.

When installed, the metallic armor or sheath must meet the installation requirements of IEC 92–3 or section 20 of IEEE Std 45.

[CGD 94–108, 61 FR 28276, June 4, 1996]

§ 111.05–9 Masts.

Each nonmetallic mast and topmast must have a lightning ground conductor in accordance with section 10 of IEC 92–401.

[CGD 94–108, 62 FR 23907, May 1, 1997]

SYSTEM GROUNDING

§ 111.05–11 Hull return.

(a) A vessel's hull must not carry current as a conductor except for the following systems:

(1) Impressed current cathodic protection systems.

(2) Limited and locally grounded systems, such as a battery system for engine starting that has a one-wire system and the ground lead connected to the engine.

(3) Insulation level monitoring devices if the circulation current does not exceed 30 milliamperes under the most unfavorable conditions.

(4) Welding systems with hull return except vessels subject to 46 CFR Subchapter D.

§ 111.05–13 Grounding connection.

Each grounded system must have only one point of connection to ground regardless of the number of power sources operating in parallel in the system.

§ 111.05–15 Neutral grounding.

(a) Each propulsion, power, lighting, or distribution system having a neutral bus or conductor must have the neutral grounded.

(b) The neutral of a dual-voltage system must be solidly grounded at the generator switchboard.

§ 111.05–17 Generation and distribution system grounding.

The neutral of each grounded generation and distribution system must:

(a) Be grounded at the generator switchboard, except the neutral of an emergency power generation system must be grounded with:

(1) No direct ground connection at the emergency switchboard;

(2) The neutral bus permanently connected to the neutral bus on the main switchboard; and

(3) No switch, circuit breaker, or fuse in the neutral conductor of the bus-tie feeder connecting the emergency switchboard to the main switchboard; and

(b) Have the ground connection accessible for checking the insulation resistance of the generator to ground before the generator is connected to the bus.

§ 111.05–19 Tank vessels; grounded distribution systems.

(a) If the voltage of a distribution system is less than 1,000 volts, line to line, a tank vessel must not have a grounded distribution system.

(b) If the voltage of a distribution system on a tank vessel is 1,000 volts or greater, line to line, and the distribution system is grounded (including high-impedance grounding), any resulting current must not flow through a hazardous (classified) location.

[CGD 94–108, 61 FR 28276, June 4, 1996, as amended at 62 FR 23907, May 1, 1997]

GROUND DETECTION

§ 111.05–21 Ground detection.

There must be ground detection for each:

(a) Electric propulsion system;

(b) Ship's service power system;

(c) Lighting system; and

(d) Power or lighting distribution system that is isolated from the ship's service power and lighting system by transformers, motor generator sets, or other devices.

§ 111.05–23 Location of ground indicators.

Ground indicators must:

(a) Be at the vessel's ship's service generator distribution switchboard for the normal power, normal lighting, and emergency lighting systems;

(b) Be at the propulsion switchboard for propulsion systems; and

(c) Be readily accessible.

(d) Be provided (at the distribution switchboard or at another location, such as a centralized monitoring position for the circuit affected) for each feeder circuit that is isolated from the main source by a transformer or other device.

NOTE TO PARAGRAPH (d): An alarm contact or indicating device returned to the main switchboard via a control cable, that allows the detecting equipment to remain near the transformer or other isolating device for local troubleshooting, is allowed.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28276, June 4, 1996; 62 FR 23907, May 1, 1997]

§ 111.05–25 Ungrounded systems.

Each ungrounded system must be provided with a suitably sensitive ground detection system located at the respective switchboard which provides continuous indication of circuit status to ground with a provision to momentarily remove the indicating device from the reference ground.

[CGD 94–108, 61 FR 28276, June 4, 1996]

§ 111.05–27 Grounded neutral alternating current systems.

Grounded neutral and high-impedance grounded neutral alternating current systems must have a suitably sensitive ground detection system which indicates current in the ground connection, is able to withstand the maximum available fault current without damage, and provides continuous indication of circuit status to ground. A provision must be included to compare indications under fault conditions with those under normal conditions.

[CGD 94–108, 62 FR 23907, May 1, 1997]

§ 111.05–29 Dual voltage direct current systems.

Each dual voltage direct current system must have a suitably sensitive ground detection system which indicates current in the ground connection, has a range of at least 150 percent of

neutral current rating and indicates the polarity of the fault.

[CGD 94–108, 61 FR 28276, June 4, 1996]

GROUNDED CONDUCTORS

§ 111.05–31 Grounding conductors for systems.

(a) A conductor for grounding a direct-current system must be the larger of:

(1) The largest conductor supplying the system; or

(2) No. 8 AWG (8.4mm²).

(b) A conductor for grounding the neutral of an alternating-current system must meet Table 111.05–31(b).

TABLE 111.05–31(b)—NEUTRAL GROUNDING CONDUCTOR FOR ALTERNATING-CURRENT SYSTEM

Size of the largest generator cable or equivalent for parallel generators—AWG–MCM (mm²)		Size of the system grounding conductor—AWG(mm²)
Greater than	Less than or equal to	
.....	2 (33.6)	8 (8.4)
2 (33.6)	0 (53.5)	6 (13.3)
0 (53.5)	3/0 (85.0)	4 (21.2)
3/0 (85.0)	350 MCM (177)	2 (33.6)
350 MCM (177)	600 MCM (304)	0 (53.5)
600 MCM (304)	1100 MCM (557)	2/0 (67.5)
1100 MCM (557)	.....	3/0 (85.0)

§ 111.05–33 Equipment safety grounding (bonding) conductors.

(a) Each equipment grounding conductor must be sized in accordance with article 250–95 of the National Electrical Code (the NEC) (NFPA 70).

(b) Each equipment grounding conductor (other than a system grounding conductor) of a cable must be permanently identified as a grounding conductor in accordance with the requirements of article 310–12(b) of the NEC.

[CGD 94–108, 61 FR 28276, June 4, 1996, as amended at 62 FR 23907, May 1, 1997]

§ 111.05–37 Overcurrent devices.

(a) A permanently grounded conductor must not have an overcurrent device unless the overcurrent device simultaneously opens each ungrounded conductor of the circuit.

(b) The neutral conductor of the emergency-main switchboard bus-tie must not have a switch or circuit breaker.

[CGD 94–108, 61 FR 28276, June 4, 1996]

Subpart 111.10—Power Supply

§ 111.10–1 Definitions.

As used in this Subpart:

(a) *Ships's service loads* mean electrical equipment for all auxiliary services necessary for maintaining the vessel in a normal, operational and habitable condition. Ship's service loads include, but are not limited to, all safety, lighting, ventilation, navigational, communications, habitability, and propulsion auxiliary loads. Electrical propulsion motor, bow thruster motor, cargo transfer, drilling, cargo refrigeration for other than Class 5.2 organic peroxides and Class 4.1 self-reactive substances, and other industrial type loads are not included.

(b) *Drilling loads* means all loads associated exclusively with the drilling operation including power to the drill table, mud system, and positioning equipment.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28276, June 4, 1996; 62 FR 23907, May 1, 1997]

§ 111.10–3 Two generating sources.

In addition to the emergency power sources required under part 112 of this chapter, each self-propelled vessel and each mobile offshore drilling unit must have at least two electric generating sources.

[CGD 94–108, 61 FR 28276, June 4, 1996]

§ 111.10–4 Power requirements, generating sources.

(a) The aggregate capacity of the electric ship's service generating sources required in §111.10–3 must be sufficient for the ship's service loads.

(b) With the ship's service generating source of the largest capacity stopped, the combined capacity of the remaining electric ship's service generating source or sources must be sufficient to supply those services necessary to provide normal operational conditions of propulsion and safety, and minimum comfortable conditions of habitability. Habitability services include cooking, heating, air conditioning (where installed), domestic refrigeration, mechanical ventilation, sanitation, and fresh water.

(c) The capacity of the ship's service generating sources must be sufficient for supplying the ship's service loads without the use of a generating source which is dependent upon the speed or direction of the main propelling engines or shafting.

(d) Operating generators must provide a continuous and uninterrupted source of power for the ship's service load under normal operational conditions. Any vessel speed change or throttle movement must not cause a ship's service load power interruption.

(e) Vessels with electric propulsion that have two or more constant-voltage generators which supply both ship's service and propulsion power do not need additional ship's service generators provided that with any one propulsion/ship's service generator out of service the capacity of the remaining generator(s) is sufficient for the electrical loads necessary to provide normal operational conditions of propulsion and safety, and minimum comfortable conditions of habitability.

(f) A generator driven by a main propulsion unit (such as a shaft generator) which is capable of providing electrical power continuously, regardless of the speed and direction of the propulsion shaft, may be considered one of the ship's service generating sets required by §111.10–3. A main-engine-dependent generator which is not capable of providing continuous electrical power may be utilized as a supplemental generator provided that a required ship's service generator or generators having sufficient capacity to supply the ship's service loads can be automatically brought on line prior to the main-engine-dependent generator tripping offline due to a change in the speed or direction of the main propulsion unit.

[CGD 94–108, 61 FR 28277, June 4, 1996; 61 FR 36787, July 12, 1996]

§111.10–5 Multiple energy sources.

Failure of any single generating set energy source such as a boiler, diesel, gas turbine, or steam turbine must not cause all generating sets required in §111.10–3 to be inoperable.

§111.10–7 Dead ship.

(a) The generating plant of each self-propelled vessel must provide the electrical services necessary to start the main propulsion plant from a dead ship condition.

(b) If the emergency generator is used for part or all of the electric power necessary to start the main propulsion plant from a dead ship condition, the emergency generator must be capable of providing power to all emergency lighting, emergency internal communications systems, and fire detection and alarm systems in addition to the power utilized for starting the main propulsion plant. Additional requirements are in §112.05–3(c) of this chapter.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28277, June 4, 1996]

§111.10–9 Ship's service supply transformers; two required.

If transformers are used to supply the ship's service distribution system required by this subpart for ships and mobile offshore drilling units, there must be at least two installed, independent power transformers. With the largest transformer out of service, the capacity of the remaining units must be sufficient to supply the ship service loads.

NOTE TO §111.10–9: A ship's service supply system would consist of transformers, overcurrent protection devices, and cables, and would normally be located in the system between a medium voltage bus and a low voltage ship's service switchboard.

[CGD 94–108, 61 FR 28277, June 4, 1996; 61 FR 33045, June 26, 1996]

Subpart 111.12—Generator Construction and Circuits

§111.12–1 Prime movers.

(a) Prime movers must meet part 58, subpart 58.10, of this chapter, sections 4/5C2.15 and 4/5C2.17 of the ABS Rules for Building and Classing Steel Vessels and, for mobile offshore drilling units, section 4/3.21 of the ABS Rules for Building and Classing Mobile Offshore Drilling Units. Additional requirements for prime movers for emergency generators are in part 112, subpart 112.50, of this chapter.

(b) Each generator prime mover must have an overspeed device that is independent of the normal operating governor and adjusted so that the speed cannot exceed the maximum rated speed by more than 15 percent.

(c) Each prime mover must shut down automatically upon loss of lubricating pressure to the generator bearings if the generator is directly coupled to the engine. If the generator is operating from a power take-off, such as a shaft driven generator on a main propulsion engine, the generator must automatically declutch (disconnect) from the prime mover upon loss of lubricating pressure to generator bearings.

[CGD 94–108, 61 FR 28277, June 4, 1996; 61 FR 33045, June 26, 1996, as amended at 62 FR 23907, May 1, 1997]

§ 111.12–3 Excitation.

Excitation must meet sections 4/5C2.19.1, 4/5D2.5.1, 4/5D2.5.2, and 4/5D2.17.6 of the ABS Rules for Building and Classing Steel Vessels or, for a mobile offshore drilling unit, section 4/3.23 of the ABS Rules for Building and Classing Mobile Offshore Drilling Units, except a static exciter must not be used for excitation of an emergency generator unless it is provided with a permanent magnet or a residual magnetism type exciter that has the capability of voltage build-up after two months of no operation.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28277, June 4, 1996; 62 FR 23908, May 1, 1997]

§ 111.12–5 Generator construction and testing.

Each generator must meet the applicable construction and test requirements of section 4/5 of the ABS Rules for Building and Classing Steel Vessels or, for mobile offshore drilling units, section 4/3 of the ABS Rules for Building and Classing Mobile Offshore Drilling Units.

[CGD 94–108, 61 FR 28277, June 4, 1996; 61 FR 33045, June 26, 1996, as amended at 62 FR 23908, May 1, 1997]

§ 111.12–7 Voltage regulation and parallel operation.

Voltage regulation and parallel operation must meet sections 4/5C2.19.2, 4/5C2.19.3, 4/5C2.21.2, and 4/5C2.21.3 of the ABS Rules for Building and Classing Steel Vessels or, for mobile offshore drilling units, sections 4/3.31 and 4/3.33 of the ABS Rules for Building and Classing Mobile Offshore Drilling Units.

[CGD 94–108, 61 FR 28277, June 4, 1996; 61 FR 33045, June 26, 1996, as amended at 62 FR 23908, May 1, 1997]

§ 111.12–9 Generator cables.

(a) The current-carrying capacity of generator cables must not be:

(1) Less than 115 percent of the continuous generator rating; or

(2) Less than 115 percent of the overload for a machine with a 2 hour or greater overload rating.

(b) Generator cables must not be in the bilges.

§ 111.12–11 Generator protection.

(a) *Applicability.* This section applies to each generator except a propulsion generator.

(b) *General.* Each ship's service generator and emergency generator must be protected by an individual, tripfree, air circuit breaker whose tripping characteristics can be set or adjusted to closely match the generator capabilities and meet the coordination requirements of Subpart 111.51. Each circuit breaker must contain the trips required by this section.

(c) *Type of trips.* A circuit breaker for a generator must:

(1) Open upon the shutting down of the prime mover;

(2) Have longtime overcurrent trips or relays set as necessary to coordinate with the trip settings of the feeder circuit breakers; and

(3) Not have an instantaneous trip with the exception that an instantaneous trip is required if:

(i) Three or more alternating-current generators can be paralleled; or

(ii) The circuit breaker is for a direct current generator.

(d) *Setting of longtime overcurrent trips.* The pickup setting of the longtime

overcurrent trip of a generator circuit breaker must not be larger than:

(1) 115 percent of the generator rating for a continuous rated machine; or

(2) 115 percent of the overload rating for a machine with a 2-hour or greater overload rating.

(e) *Setting of instantaneous trips.* The instantaneous trip of a generator circuit breaker must be set above, but as close as practicable to, the maximum asymmetrical short circuit available from any one of the generators that can be paralleled.

(f) *Reverse-power and reverse-current trips.* Each generator arranged for parallel operation must have reverse-power or reverse-current trips.

(g) *Location.* A ship's service generator overcurrent protective device must be on the ship's service generator switchboard. The generator and its switchboard must be in the same space. (For the purposes of this section, the following are not considered separate from the machinery space: (1) A control room that is inside of the machinery casing and (2) a dedicated switchgear and semiconductor rectifier (SCR) compartment on a mobile offshore drilling unit that is separate from but directly adjacent to and on the same level as the generator room).

(h) *Three-wire, single-phase and four-wire, three-phase generators.* There must be circuit breaker poles for each generator lead, except in the neutral lead.

(i) *Three-wire, direct-current generators.* Each three-wire, direct current generator must meet the following requirements:

(1) *Circuit breaker poles.* There must be separate circuit breaker poles for the positive and negative leads, and, unless the main poles provide protection, for each equalizer lead. If there are equalizer poles for a three-wire generator, each overload trip must be of the ''Algebraic'' type. If there is a neutral pole in the generator circuit breaker, there must not be an overload trip element for the neutral pole. In this case, there must be a neutral overcurrent relay and alarm system that is set to function at a current value not more than the neutral rating.

(2) *Equalizer buses.* For each three-wire generator, the circuit breaker must protect against a short circuit on the equalizer bus.

(j) *Circuit breaker reclosing.* Generator circuit breakers must not automatically close after tripping.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 81–030, 53 FR 17847, May 18, 1988; CGD 94–108, 61 FR 28277, June 4, 1996; 62 FR 23908, May 1, 1997]

§ 111.12–13 Propulsion generator protection.

For general requirements, see § 111.35–1 of this chapter.

Subpart 111.15—Storage Batteries and Battery Chargers: Construction and Installation

§ 111.15–1 General.

Each battery must meet the requirements of this subpart.

[CGD 94–108, 61 FR 28277, June 4, 1996]

§ 111.15–2 Battery construction.

(a) A battery cell, when inclined at 40 degrees from the vertical, must not spill electrolyte.

(b) Each fully charged lead-acid battery must have a specific gravity that meets section 16 of IEEE Std 45.

(c) Batteries must not evolve hydrogen at a rate exceeding that of a similar size lead-acid battery under similar charging condition.

(d) Batteries must be constructed to take into account the environmental conditions of a marine installation, including temperature, vibration, and shock.

[CGD 94–108, 61 FR 28277, June 4, 1996]

§ 111.15–3 Battery categories.

(a) A battery installation is classified as one of three types, based upon power output of the battery charger, as follows:

(1) *Large.* A large battery installation is one connected to a battery charger that has an output of more than 2 kw computed from the highest possible charging current and the rated voltage of the battery installation.

(2) *Moderate.* A moderate battery installation is one connected to a battery charger that has an output of between 0.2 kw and 2 kw computed from the highest possible charging current and

the rated voltage of the battery installation.

(3) *Small.* A small battery installation is one connected to a battery charger that has an output of less than 0.2 kw computed from the highest possible charging current and the rated voltage of the battery installation.

(b) Batteries that generate less hydrogen under normal charging and discharging conditions than an equivalent category of lead-acid batteries (e.g., sealed batteries) may have their battery category reduced to an equivalent category of lead-acid batteries.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28278, June 4, 1996]

§ 111.15–5 Battery installation.

(a) *Large batteries.* Each large battery installation must be in a room that is only for batteries or a box on deck. Installed electrical equipment must meet the hazardous location requirements in subpart 111.105 of this part.

(b) *Moderate batteries.* Each moderate battery installation must be in a battery room, in a box on deck, or in a box or locker in another space such as an engineroom, storeroom, or similar space, except if a moderate battery installation is in a ventilated compartment such as the engineroom and is protected from falling objects, a box or locker is not required. A moderate battery installation must not be in a sleeping space. An engine cranking battery for one or more engines must be as close as possible to the engine or engines.

(c) *Small batteries.* Small size battery installations must not be located in poorly-ventilated spaces, such as closets, or in living spaces, such as staterooms.

(d) *Battery trays.* Each battery tray must be chocked with wood strips or their equivalent to prevent movement, and each tray must have non-absorbent insulating supports on the bottom and similar spacer blocks at the sides, or equivalent provisions for air circulation space all around each tray. Each battery tray must provide adequate accessibility for installation, maintenance, and removal of the batteries.

(e) *Nameplates.* Each battery must be provided with the name of its manufacturer, model number, type designation, either the cold cranking amp rating or the amp-hour rating at a specific discharge and, for a lead-acid battery, the fully charged specific gravity value. This information must be permanently fixed to the battery.

(f) *Lining in battery rooms and lockers.* (1) Each battery room and locker must have a watertight lining that is—

(i) On each shelf to a height of at least 76 mm (3 inches); or

(ii) On the deck to a height of at least 152 mm (6 inches).

(2) For lead-acid batteries, the lining must be 1.6 mm (1/16 inch) thick lead or other material that is corrosion-resistant to the electrolyte of the battery.

(3) For alkaline batteries, the lining must be 0.8 mm (1/32 inch) thick steel or other material that is corrosion-resistant to the electrolyte of the battery.

(g) *Lining of battery boxes.* Each battery box must have a watertight lining to a height of at least 76 mm (3 inches) that meets paragraphs (f)(2) and (f)(3) of this section.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28278, June 4, 1996; 61 FR 36787, July 12, 1996; 62 FR 23908, May 1, 1997]

§ 111.15–10 Ventilation.

(a) *General.* Each room, locker, and box for storage batteries must be arranged or ventilated to prevent accumulation of flammable gas.

(b) *Power ventilation.* If power ventilation is required, the following must be met:

(1) The power ventilation system must be separate from ventilation systems for other spaces.

(2) Electric motors must be outside the duct and compartment and:

(i) Have an explosion-proof motor for a Class I, Division 1, Group B location; or

(ii) Be at least 10 ft. (3 m) from the exhaust end of the duct.

(3) Each blower must have a non-sparking fan.

(4) The power ventilation system must be interlocked with the battery charger so that the battery cannot be charged without ventilation.

(c) *Large battery installations.* Each battery room for large battery installations must have a power exhaust ventilation system and have openings for intake air near the floor that allow the passage of the quantity of air that must be expelled. The quantity of the air expelled must be at least:

$q=3.89(i)(n)$.

where: q=quantity of expelled air in cubic feet per hour.

i=Maximum charging current during gas formation, or one-fourth of the maximum obtainable charging current of the charging facility, whichever is greater.

n=Number of cells.

(d) *Moderate and small battery installations.* Each battery room or battery locker for moderate or small battery installations must have louvers near the bottom of the room or locker for air, and must be ventilated by:

(1) Ventilation that meets paragraph (c) of this section;

(2) An exhaust duct:

(i) That ends in a mechanically ventilated space or in the weather;

(ii) That extends from the top of the room or locker to at least 3 ft. (1 m) above the top of the room or locker;

(iii) That is at an angle of 45 degrees or less from the vertical; and

(iv) That has no appliances, such as flame arresters, that impede free passage of air or gas mixtures; or

(3) A duct from the top of the room or locker to an exhaust ventilation duct.

(e) *Deck boxes.* Except for a deck box for a small battery installation, each deck box must have a duct from the top of the box to at least 4 ft. (1.2 m) above the box ending in a gooseneck or mushroom head that prevents entrance of water. Holes for air must be on at least two parallel sides of each box.

(f) *Weathertight.* Each deck box must be weathertight.

(g) *Boxes for small battery installations.* Each box for a small battery installation must have openings near the top to allow escape of gas. If the installation is in a non-environmentally-controlled location, the installation must prevent the ingress of water.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28278, June 4, 1996]

§ 111.15–20 Conductors.

(a) Each conductor penetration to a battery room must be made watertight.

(b) The termination of each cable must be sealed to prevent the entrance of electrolyte by spray or creepage.

(c) Each connecting cable must have sufficient capacity to carry the maximum charging current or maximum discharge current, whichever is greater, while maintaining the proper voltage at the load end.

[CGD 94–108, 61 FR 28278, June 4, 1996, as amended at 62 FR 23908, May 1, 1997]

§ 111.15–25 Overload and reverse current protection.

(a) An overload protective device must be in each battery conductor, except conductors of engine cranking batteries and batteries with a nominal potential of 6 volts or less. For large storage battery installations, the overcurrent protective devices must be next to, but outside of, the battery room.

(b) Except when a rectifier is used, the charging equipment for all batteries with a nominal voltage more than 20 percent of line voltage must protect automatically against reversal of current.

§ 111.15–30 Battery chargers.

Each battery charger enclosure must meet § 111.01–9. Additionally, each charger must be suitable for the size and type of battery installation that it serves. Chargers incorporating grounded autotransformers must not be used. Except for rectifiers, chargers with a voltage exceeding 20 percent of the line voltage must be provided with automatic protection against reversal of current.

[CGD 94–108, 61 FR 28278, June 4, 1996; 61 FR 36787, July 12, 1996]

Subpart 111.20—Transformer Construction, Installation, and Protection

§ 111.20–1 General requirements.

Each transformer winding must be resistant to moisture, sea atmosphere, and oil vapor, unless special precautions are taken, such as enclosing the winding in an enclosure with a high degree of ingress protection.

[CGD 94–108, 61 FR 28278, June 4, 1996]

§ 111.20–5 Temperature rise.

(a) The temperature rise, based on an ambient temperature of 40 degrees C, must not exceed the following:

(1) For Class A insulation, 55 degrees C.

(2) For Class B insulation, 80 degrees C.

(3) For Class F insulation, 115 degrees C.

(4) For Class H insulation, 150 degrees C.

(b) If the ambient temperature is higher than 40 degrees C, the transformer must be derated so that the total temperature stated in this section is not exceeded. The temperature must be taken by the resistance method.

§ 111.20–10 Autotransformers.

An autotransformer must not supply feeders or branch circuits.

§ 111.20–15 Transformer overcurrent protection.

Each transformer must have protection against overcurrent that meets article 450 of the NEC or IEC 92–303.

[CGD 94–108, 61 FR 28278, June 4, 1996]

Subpart 111.25—Motors

§ 111.25–1 General requirements.

The requirements for generators contained in § 111.12–5 apply to motors.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 62 FR 23908, May 1, 1997]

§ 111.25–5 Marking.

(a) Each motor must have a marking or nameplate that meets either article 430–7 of the NEC or IEC 92–301 (clause 16).

(b) The marking or nameplate for each motor that is in a corrosive location must be corrosion-resistant.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28278, June 4, 1996]

§ 111.25–15 Duty cycle.

Each motor must be rated for continuous duty, except a motor for an application listed in Table 111.25–15 or a similar duty must meet the minimum short-time rating stated in the table.

TABLE 111.25–15

Application of motor	Minimum short-time rating of motor, in hours
Deck winch and direct acting capstan.	Half.
Deck winch with hydraulic transmission.	Continuous at no load followed by ½ hr. at full load.
Direct acting windlass	One fourth.
Windlass with hydraulic transmission.	Half hour idle pump operation, followed by ¼ hr. full load operation.
Steering gear, direct acting	One.
Steering gear, indirect drive	Continuous operation at 15 pct. load followed by 1 hr. at full load.
Watertight door operators	1/12.
Boat winches	1/12.

Subpart 111.30—Switchboards

§ 111.30–1 Location and installation.

Each switchboard must meet the location and installation requirements of section 17.1 of IEEE Std 45 or IEC 92–302, as applicable.

[CGD 94–108, 61 FR 28278, June 4, 1996]

§ 111.30–3 Accessibility of switchboard components and connections.

Each component and bus bar connection on a switchboard that is not accessible from the rear, except a bus bar connection for a draw-out type circuit breaker, must be within 0.5 m (20 in.) of the front of the switchboard.

§ 111.30–4 Circuit breakers removable from the front.

Circuit breakers, when installed on generator or distribution switchboards, must be mounted or arranged in such a manner that the circuit breaker may

be removed from the front without unbolting bus or cable connections or deenergizing the supply, unless the switchboard is divided into sections, such that each section is capable of providing power to maintain the vessel in a navigable condition, and meets § 111.30–24 (a) and (b).

[CGD 94–108, 61 FR 28278, June 4, 1996]

§ 111.30–5 Construction.

(a) All low voltage and medium voltage switchboards (as low and medium are determined within the standard used) must meet—

(1) For low voltages, either section 17.2 of IEEE Std 45 or IEC 92–302, clause 6; or

(2) For medium voltages, either section 17.3 of IEEE Std 45 or IEC 92–503, as appropriate.

(b) Each switchboard must be fitted with a dripshield unless the switchboard is a deck-to-overhead mounted type which cannot be subjected to leaks or falling objects.

[CGD 94–108, 61 FR 28278, June 4, 1996, as amended at 62 FR 23908, May 1, 1997]

§ 111.30–11 Deck coverings.

Non-conducting deck coverings, such as non-conducting mats or gratings, suitable for the specific switchboard voltage must be installed for personnel protection at the front and rear of the switchboard and must extend the entire length of, and be of sufficient width to suit, the operating space.

[CGD 94–108, 62 FR 23908, May 1, 1997]

§ 111.30–15 Nameplates.

(a) Each device must have a nameplate showing the device's function.

(b) Each nameplate for a circuit breaker must show the electrical load served and the setting of the circuit breaker.

§ 111.30–17 Protection of instrument circuits.

(a) Each circuit that supplies a device on a switchboard, except a circuit under paragraph (b) of this section, must have overcurrent protection.

(b) A circuit that supplies a device on a switchboard must not have overload protection if it supplies:

(1) An electric propulsion control;

(2) A voltage regulator;

(3) A ship's service generator circuit breaker tripping control; or

(4) A device that creates a hazard to the vessel if deenergized.

(c) If short circuit protection is used in any of the circuits listed in paragraph (b) of this section, it must be set at not less than 500% of the expected current.

(d) A secondary circuit of a current transformer must not be fused, and the circuit from a current transformer to a device that is not in the switchboard must have a high voltage protector to short the transformer during an open circuit.

§ 111.30–19 Buses and wiring.

(a) *General.* Each bus must meet the requirements of either—

(1) Section 17.11 of IEEE Std 45; or

(2) IEC 92–302 (clause 6).

(b) *Wiring.* Instrumentation and control wiring must be—

(1) Suitable for installation within in a switchboard enclosure and be rated at 90° C or higher;

(2) Stranded copper;

(3) No. 14 AWG (2.10 mm^2) or larger or must be ribbon cable or similar conductor size cable recommended for use in low-power instrumentation, monitoring, or control circuits by the equipment manufacturer;

(4) Flame retardant meeting ANSI/UL 1581 test VW–1 or IEC 332–1; and

(5) Extra flexible, if used on a hinged panel.

[CGD 94–108, 61 FR 28278, June 4, 1996, as amended at 62 FR 23908, May 1, 1997]

§ 111.30–24 Generation systems greater than 3000 kw.

Except on a non-self-propelled mobile offshore drilling unit (MODU) and a non-self-propelled floating Outer Continental Shelf facility, when the total installed electric power of the ship's service generation system is more than 3000 kW, the switchboard must have the following:

(a) At least two sections of the main bus that are connected by:

(1) A non-automatic circuit breaker;

(2) A disconnect switch; or

(3) Removable links.

(b) As far as practicable, the connection of generators and duplicated

equipment equalized between the sections of the main bus.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28279, June 4, 1996]

§ 111.30–25 Alternating-current ship's service switchboards.

(a) Except as allowed in paragraph (g) of this section, each alternating-current ship's service switchboard must have the equipment required by paragraphs (b) through (f) of this section.

(b) For each connected generator, each switchboard must have the following:

(1) A circuit breaker that meets § 111.12–11 and § 111.50–5.

(2) A disconnect switch or link for each generator conductor, except a switchboard having a draw-out or plug-in type generator circuit breaker that disconnects:

(i) Each generator conductor; or

(ii) If there is a switch in the generator neutral, each ungrounded conductor.

(3) A pilot lamp connected between the generator and the circuit breaker.

(4) An ammeter with a selector switch that connects the ammeter to show the current in each phase.

(5) A voltmeter with a selector switch that connects the voltmeter to show the:

(i) Generator voltage of each phase; and

(ii) Bus voltage of one phase.

(6) A voltage regulator and voltage regulator functional cut-out switch.

(c) For each generator that is not excited from a variable voltage or rotary amplifier that is controlled by a voltage regulator unit acting on the exciter field, each switchboard must have:

(1) A generator field rheostat;

(2) A double-pole field switch;

(3) Discharge clips; and

(4) A discharge resistor.

(d) If generators are arranged for parallel operation, each switchboard must have:

(1) A speed control for the prime mover of each generator;

(2) An indicating wattmeter for each generator; and

(3) A synchroscope and synchronizing lamp that have a selector switch to show synchronization for paralleling generators.

(e) Each switchboard must have the following:

(1) Ground detection that meets Subpart 111.05 for the:

(i) Ship's service power system;

(ii) Normal lighting system; and

(iii) Emergency lighting system.

(2) A frequency meter with a selector switch to connect the meter to each generator.

(3) An exciter field rheostat.

(f) For each shore power connection each switchboard must have:

(1) A circuit breaker or fused switch;

(2) A pilot light connected to the shore side of the circuit breaker or fused switch; and

(3) One of the voltmeters under paragraph (b)(5) of this section connected to show the voltage of each phase of the shore power connection.

(g) The equipment under paragraphs (b), (d), (e), and (f) of this section, except the equipment under paragraphs (b)(1), (b)(2), and (f)(1), must be on the ship's service switchboard or on a central control console that:

(1) Is in the same control area as the main ship's service switchboard or can remotely control the ship's service generator circuit breaker;

(2) Has a generator section that has only generator functions;

(3) Has the generator section segregated from each other console section by a fire-resistant barrier; and

(4) Has cabling from the main switchboard to the generator section of the console that:

(i) Has only generator control and generator instrumentation circuits; and

(ii) Is protected from mechanical damage.

§ 111.30–27 Direct current ship's service switchboards.

(a) Each direct current ship's service switchboard must have the equipment required by paragraphs (b) through (f) of this section.

(b) For each connected generator, each switchboard must have the following:

(1) A circuit breaker that meets § 111.12–11 and § 111.50–5.

(2) A disconnect switch or link for each generator conductor, except a switchboard having a draw-out or plug-in type generator circuit breaker that disconnects—

(i) Each conductor; or

(ii) If there is a switch in the generator neutral, each ungrounded conductor.

(3) A field rheostat.

(4) A pilot lamp connected between the generator and circuit breaker.

(c) For each two-wire generator, each switchboard must have:

(1) An ammeter; and

(2) A voltmeter with a selector switch that connects the voltmeter to show:

(i) Generator voltage; and

(ii) Bus voltage.

(d) For each three-wire generator, each switchboard must have the following:

(1) An ammeter for:

(i) The positive lead; and

(ii) The negative lead.

(2) A center zero type ammeter for the neutral ground connection.

(3) A voltmeter with a selector switch that connects the voltmeter to show generator and bus voltage:

(i) Positive to negative;

(ii) Positive to neutral; and

(iii) Neutral to negative.

(e) Each switchboard must have ground detection that meets Subpart 111.05 for the:

(1) Main power system;

(2) Main lighting system; and

(3) Emergency lighting system.

(f) For each shore power connection, each switchboard must have:

(1) A circuit breaker or fused switch; and

(2) A pilot light connected to the shore side.

(g) One of the voltmeters under paragraph (c)(2) or (d)(3) of this section must be connected to show:

(1) For each two-wire system, shore connection voltage; and

(2) For each three-wire system, shore connection voltage:

(i) Positive to negative;

(ii) Positive to neutral; and

(iii) Neutral to negative.

§ 111.30–29 Emergency switchboards.

(a) Each emergency generator must have an emergency switchboard.

(b) There must be a test switch at the emergency switchboard to simulate a failure of the normal power source and cause the emergency loads to be supplied from the emergency power source.

(c) The emergency switchboard must be as near as practicable to the emergency power source but not in the same space as a battery emergency power source.

(d) Each alternating-current emergency switchboard must have the equipment required by paragraphs (c) through (e) of this section.

(e) For each connected emergency generator, each emergency switchboard must have:

(1) A circuit breaker that meets § 111.12–11;

(2) A disconnect switch or link for each emergency generator conductor, except for a switchboard with a draw out or plug-in type generator circuit breaker that disconnects:

(i) Each generator conductor; and

(ii) If there is a switch in the generator neutral, each ungrounded conductor; and

(3) A pilot lamp connected between the generator and circuit breaker.

(f) For each emergency generator that is not excited from a variable voltage or rotary amplifier exciter that is controlled by a voltage regulator unit acting on the exciter field, each emergency switchboard must have:

(1) A generator field rheostat;

(2) A double pole field switch;

(3) Discharge clips; and

(4) A discharge resistor.

(g) Each emergency switchboard must have the following:

(1) An ammeter with a selector switch that connects the ammeter to show the current for each phase.

(2) A voltmeter with a selector switch that connects the voltmeter to show:

(i) Generator voltage of each phase; and

(ii) Bus voltage of one phase.

(3) Ground detection that meets subpart 111.05 for the emergency lighting system.

(4) A frequency meter.

(5) An exciter field rheostat.

(6) A voltage regulator and a voltage regulator functional cut-out switch.

(h) Each direct-current emergency switchboard must have the:

(1) Equipment under §111.30–27 (b) through (d); and

(2) Ground detection under subpart 111.05 for the emergency lighting system.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28279, June 4, 1996]

Subpart 111.33—Power Semiconductor Rectifier Systems

§111.33–1 General.

This subpart is applicable to all power semiconductor rectifier systems. In addition to the regulations contained in this subpart, the requirements of §§111.30–11, 111.30–19 and 111.30–21 of this part must be met, if applicable.

§111.33–3 Nameplate data.

(a) Each semiconductor rectifier system must have a nameplate of durable material affixed to the unit that meets the requirements of—

(1) Section 45.11 of IEEE Std 45; or

(2) IEC 92–304 (clause 8).

(b) Each semiconductor rectifier system must have a nameplate containing the words ''marine semiconductor rectifier,'' and the following information:

(1) Manufacturer's name and address.

(2) Manufacturer's serial number.

(3) Type.

(4) Rated AC volts.

(5) Rated AC amperes.

(6) Number of phases.

(7) Frequency.

(8) Rated DC volts.

(9) Rated DC amperes.

(10) Ambient temperature range.

(11) Duty cycle.

(12) Cooling medium.

(c) If, on small rectifiers, the information required by paragraph (a) of this section cannot be shown because of space limitations, the nameplate must be at least large enough to contain the manufacturer's name and serial number. The remaining information must be shown on the schematic diagram.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28279, June 4, 1996]

§111.33–5 Installation.

Each semiconductor rectifier system must meet the installation requirements, as appropriate, of—

(a) Sections 45.2, 45.7, and 45.8 of IEEE Std 45; or

(b) IEC 92–304.

[CGD 94–108, 61 FR 28279, June 4, 1996]

§111.33–7 Alarms and shutdowns.

Each power semiconductor rectifier must have a high temperature alarm or shutdown, except as provided in §111.33–11.

§111.33–9 Ventilation exhaust.

The exhaust of each forced-air semiconductor rectifier system must:

(a) Terminate in a location other than a hazardous location under Subpart 111.105 of this part; and

(b) Not impinge upon any other electric device.

§111.33–11 Propulsion systems.

Each power semiconductor rectifier system in a propulsion system must meet sections 4/5D2.17.9 and 4/5D2.17.10 of ABS Rules for Building and Classing Steel Vessels or, for mobile offshore drilling units, section 4/3.84 of ABS Rules for Building and Classing Mobile Offshore Drilling Units.

[CGD 94–108, 61 FR 28279, June 4, 1996, as amended at 62 FR 23908, May 1, 1997]

Subpart 111.35—Electric Propulsion

§111.35–1 Electrical propulsion installations.

Each electric propulsion system installation must meet sections 4/5D2.5, 4/5D2.11, 4/5D2.13, 4/5D2.17.8e, 4/5D2.17.9, and 4/5D2.17.10 of ABS Rules for Building and Classing Steel Vessels or, for mobile offshore drilling units, sections 4/3.79, 4/3.81, 4/3.83, and 4/3.84 of ABS

Rules for Building and Classing Steel Vessels.

[CGD 94–108, 61 FR 28279, June 4, 1996, as amended at 62 FR 23908, May 1, 1997]

Subpart 111.40—Panelboards

§ 111.40–1 Panelboard standard.

Each panelboard must meet section 23.1 of IEEE Std 45.

[CGD 94–108, 62 FR 23908, May 1, 1997]

§ 111.40–5 Enclosure.

Each panelboard must have a noncombustible enclosure that meets §§ 111.01–7 and 111.01–9.

[CGD 94–108, 61 FR 28279, June 4, 1996]

§ 111.40–7 Location.

Each panelboard must be accessible but not in a bunker or a cargo hold, except a cargo hold on a roll-on/roll-off vessel.

[CGD 94–108, 61 FR 28279, June 4, 1996]

§ 111.40–9 Locking device.

The door of each panelboard enclosure that is accessible to any passenger must have a locking device.

§ 111.40–11 Numbered switching unit and panelboard directory.

(a) Each panelboard switching unit must be numbered.

(b) Each panelboard must have:

(1) A circuit directory cardholder; and

(2) A circuit directory that has:

(i) The circuit designation of each circuit;

(ii) A description of the load of each circuit; and

(iii) The rating or setting of the overcurrent protective device for each circuit.

§ 111.40–13 Rating.

Each panelboard must have a current rating not less than the feeder circuit capacity.

§ 111.40–15 Overcurrent device.

The total load on any overcurrent device located in a panelboard must not exceed 80 percent of its rating if, in normal operation, the load will continue for 3 hours or more; except if the assembly, including the overcurrent device, is rated for continuous duty at 100% of its rating.

Subpart 111.50—Overcurrent Protection

§ 111.50–1 Protection of equipment.

Overcurrent protection of electric equipment must meet the following listed subparts of this chapter:

(a) Appliances, Subpart 111.77.

(b) Generators, Subpart 111.12.

(c) Motors, motor circuits, and controllers, Subpart 111.70.

(d) Transformers, Subpart 111.20.

§ 111.50–2 Systems integration.

The electrical characteristics of each overcurrent protective device must be compatible with other devices and its coordination must be considered in the design of the entire protective system.

NOTE TO § 111.50–2: The electrical characteristics of overcurrent protective devices may differ between standards. The interchangeability and compatibility of components complying with differing standards cannot be assumed.

[CGD 94–108, 61 FR 28279, June 4, 1996]

§ 111.50–3 Protection of conductors.

(a) *Purpose.* The purpose of overcurrent protection for conductors is to open the electric circuit if the current reaches a value that will cause an excessive or dangerous temperature in the conductor or conductor insulation. A grounded conductor is protected from overcurrent if a protective device of a suitable rating or setting is in each ungrounded conductor of the same circuit.

(b) *Overcurrent protection of conductors.* Each conductor must be protected in accordance with its current carrying capacity, except a conductor for the following circuits which must meet the following listed subparts of this chapter:

(1) Propulsion circuits, Subpart 111.35.

(2) Steering circuits, subchapter F of this chapter.

(3) Motor circuits, Subpart 111.70.

(4) Flexible cord and fixture wire for lighting circuits, Subpart 111.75.

(5) Switchboard circuits, Subpart 111.30.

(c) *Fuses and circuit breakers.* If the allowable current carrying capacity of the conductor does not correspond to a standard fuse or circuit breaker rating which meets article 240–6 of the NEC or IEC 92–202 and the next larger standard fuse or circuit breaker rating is used, it must not be larger than 150 percent of the current carrying capacity of the conductor. The effect of temperature on the operation of fuses and thermally controlled circuit breakers must be taken into consideration.

(d) *Parallel overcurrent protective devices.* An overcurrent protective device must not be connected in parallel with another overcurrent protective device.

(e) *Thermal devices.* A thermal cutout, thermal relay, or other device not designed to open a short circuit, must not be used for protection of a conductor against overcurrent due to a short circuit or ground, except in a motor circuit as described in Article 430 of the National Electrical Code or in IEC 92-202.

(f) *Ungrounded conductors.* A fuse or overcurrent trip unit of a circuit breaker must be in each ungrounded conductor. A branch switch or circuit breaker must open all conductors of the circuit, except grounded conductors.

(g) *Grounded conductor.* An overcurrent device must not be in a permanently grounded conductor, except:

(1) An overcurrent device that simultaneously opens all conductors of the circuit, unless prohibited by §111.05–17 for the bus-tie feeder connecting the emergency and main switchboards; and

(2) For motor-running protection described in Article 430 of the National Electrical Code or in IEC 92-202.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28279, June 4, 1996; CGD 97–057, 62 FR 51047, Sept. 30, 1997]

§111.50–5 Location of overcurrent protective devices.

(a) *Location in circuit.* Overcurrent devices must be at the point where the conductor to be protected receives its supply, except as follows:

(1) The generator overcurrent protective device must be on the ship's service generator switchboard. (See §111.12–11(g) for additional requirements.)

(2) The overcurrent protection for the shore connection conductors must meet §111.30–25.

(3) If the overcurrent device that protects the larger conductors also protects the smaller conductors, an overcurrent device is not required at the supply to the smaller conductors.

(4) If the overcurrent device protecting the primary side of a single phase transformer (two wire with single-voltage secondary) also protects the conductors connected to the secondary side, as determined by multiplying the current-carrying capacity of the secondary conductor by the secondary to primary transformer voltage ratio, and this protection meets §111.20–15 of this chapter, an overcurrent device is not required at the supply to the secondary side conductors.

(b) *Location on vessel.* Each overcurrent device:

(1) Must be:

(i) Readily accessible; and

(ii) In a distribution panelboard, switchboard, motor controller, or similar enclosure; and

(2) Must not be:

(i) Exposed to mechanical damage; and

(ii) Near an easily ignitable material or where explosive gas or vapor may accumulate.

§111.50–7 Enclosures.

(a) Each enclosure of an overcurrent protective device must meet Sections 240–30 and 240–33 of the National Electrical Code.

(b) No enclosure may be exposed to the weather unless accepted by the Commandant.

§111.50–9 Disconnecting and guarding.

Disconnecting and guarding of overcurrent protective devices must meet Part D of Article 240 of the National Electrical Code.

Subpart 111.51—Coordination of Overcurrent Protective Devices

§ 111.51–1 Purpose.

The purpose of this subpart is to provide continuity of service for equipment vital to the propulsion, control or safety of the vessel under short-circuit conditions through coordination and selective operation of overcurrent protective devices.

§ 111.51–3 Protection of vital equipment.

(a) The coordination of overcurrent protective devices must be demonstrated for all potential plant configurations.

(b)Overcurrent protective devices must be installed so that:

(1) A short-circuit on a circuit that is not vital to the propulsion, control, or safety of the vessel does not trip equipment that is vital; and

(2) A short-circuit on a circuit that is vital to the propulsion, control, or safety of the vessel is cleared only by the protective device that is closest to the point of the short-circuit.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 62 FR 23908, May 1, 1997]

Subpart 111.52—Calculation of Short-Circuit Currents

§ 111.52–1 General.

The available short-circuit current must be computed—

(a) From the aggregate contribution of all generators that can simultaneously operate in parallel;

(b) From the largest probable motor load; and

(c) With a three phase fault on the load terminals of the protective device.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28279, June 4, 1996]

§ 111.52–3 Systems below 1500 kilowatts.

The following short-circuit assumptions must be made for a system with an aggregate generating capacity below 1500 kilowatts, unless detailed computations in accordance with § 111.52–5 are submitted:

(a) The maximum short-circuit current of a direct current system must be assumed to be 10 times the aggregate normal rated generator currents plus six times the aggregate normal rated currents of all motors that may be in operation.

(b) The maximum asymmetrical short-circuit current for an alternating current system must be assumed to be 10 times the aggregate normal rated generator currents plus four times the aggregate normal rated currents of all motors that may be in operation.

(c) The average asymmetrical short-circuit current for an alternating-current system must be assumed to be 8½ times the aggregate normal rated generator currents plus 3½ times the aggregate normal rated currents of all motors that may be in operation.

§ 111.52–5 Systems 1500 kilowatts or above.

Short-circuit calculations must be submitted for systems with an aggregate generating capacity of 1500 kilowatts or more by utilizing one of the following methods:

(a) Exact calculations using actual impedance and reactance values of system components.

(b) Estimated calculations using the Naval Sea Systems Command Design Data Sheet DDS 300–2.

(c) Estimated calculations using IEC 363.

(d) The estimated calculations using a commercially established analysis procedure for utility or industrial applications.

[CGD 94–108, 61 FR 28279, June 4, 1996]

Subpart 111.53—Fuses

§ 111.53–1 General.

(a) Each fuse must—

(1) Meet the general provisions of article 240 of the NEC or IEC 92–202 as appropriate;

(2) Have an interrupting rating sufficient to interrupt the asymmetrical RMS short-circuit current at the point of application; and

(3) Be listed by an independent laboratory.

(b) Renewable link cartridge-type fuses must not be used.

(c) Each fuse installation must provide for ready access to test the condition of the fuse.

[CGD 94–108, 61 FR 28279, June 4, 1996; 61 FR 33045, June 26, 1996]

Subpart 111.54—Circuit Breakers

§ 111.54–1 Circuit breakers.

(a) Each Circuit breaker must—

(1) Meet the general provision of article 240 of the NEC or IEC 92–202, as appropriate;

(2) Meet subpart 111.55 of this part; and

(3) Have an interrupting rating sufficient to interrupt the maximum asymmetrical short-circuit current available at the point of application.

(b) Molded case circuit breakers must not be used in circuits having a nominal voltage of more than 600 volts (1,000 volts for circuits containing circuit breakers manufactured to IEC requirements). Each molded case circuit breaker must meet UL 489 and its marine supplement 489 SA or IEC 947–2 Part 2, except as noted in paragraph (e) of this section.

(c) Circuit breakers, other than the molded case type, that are for use in one of the following systems must meet the following requirements:

(1) An alternating current system having a nominal voltage of 600 volts or less, or 1,000 volts for IEC standard circuit breakers must meet—

(i) IEEE C37.13;

(ii) IEEE Std 331; or

(iii) IEC 947–2, Part 2.

(2) A direct current system of 3,000 volts or less must meet ANSI C37.14 or IEC 947–2, Part 2.

(3) An alternating current system having a nominal voltage greater than 600 volts, or greater than 1,000 volts for IEC standard circuit breakers must meet—

(i) ANSI/IEEE C37.04 including all referenced supplements, IEEE Std 320 including all referenced supplements, and ANSI C37.12; or

(ii) IEC 56.

(d) A circuit breaker must not:

(1) Be dependent upon mechanical cooling to operate within its rating; or

(2) Have a long-time-delay trip element set above the continuous current rating of the trip element or of the circuit breaker frame.

(e) Each circuit breaker located in an engineroom, boilerroom, or machinery space must be calibrated for a 50 degree C ambient temperature. If the circuit breaker is located in an environmentally controlled machinery control room where provisions are made for ensuring an ambient temperature of 40 degree C or less, a circuit breaker must have at least the standard 40 degrees C ambient temperature calibration.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28279, June 4, 1996; 61 FR 33045, June 26, 1996; 62 FR 23908, May 1, 1997]

§ 111.54–3 Remote control.

Remotely controlled circuit breakers must have local manual means of operation.

[CGD 81–030, 53 FR 17847, May 18, 1988]

Subpart 111.55—Switches

§ 111.55–1 General.

(a) Each switch must meet Article 380 of the National Electrical Code.

(b) Each switch that is in the weather must be in a watertight enclosure and be externally operable.

§ 111.55–3 Circuit connections.

The load side of each circuit must be connected to the fuse end of a fused-switch or to the coil end of a circuit breaker, except a generator which is connected to either end of a circuit breaker.

Subpart 111.59—Busways

§ 111.59–1 General.

Each busway must meet article 364 of the NEC.

[CGD 94–108, 61 FR 28280, June 4, 1996]

§ 111.59–3 No mechanical cooling.

A busway must not need mechanical cooling to operate within its rating.

[CGD 94–108, 61 FR 28280, June 4, 1996]

Subpart 111.60—Wiring Materials and Methods

§ 111.60–1 Cable construction and testing.

(a) Each marine shipboard cable must meet all the construction and identification requirements of either IEEE Std 45, IEC 92–3, MIL–C–24640A, or MIL–C–24643A and the respective flammability tests contained therein and be of a copper stranded type.

NOTE TO PARAGRAPH (a): MIL–C–915 cable is acceptable only for repairs and replacements in kind. MIL–C–915 cable is no longer acceptable for alterations, modifications, conversions, or new construction. (See § 110.01–3 of this chapter).

(b) Each cable constructed to IEC 92–3 must meet the flammability requirements of IEC 332–3, Category A.

(c) Electric cable that has a polyvinyl chloride insulation with a nylon jacket (Type T/N) must meet the requirements for polyvinyl chloride insulated cable in section 18 of IEEE Std 45, except—

(1) The thickness of the polyvinyl chloride insulation must meet UL 83 for type THWN wire;

(2) Each conductor must have a nylon jacket;

(3) The thickness of the nylon jacket must meet UL 83 for type THWN wire;

(4) The material of the nylon jacket must meet ASTM D 4066 (incorporated by reference, see § 110.10–1 of this chapter);

(5) The cable must have identification provided by a durable printing or embossing on the cable jacket or a marker under the cable jacket that gives, at intervals not exceeding 610 mm (24 inches), the information required by section 18.8 of IEEE Std 45; and

(6) Type T (T/N) insulations are limited to a 75° C maximum conductor temperature rating.

(d) Electrical cable regardless of construction must meet, at a minimum, all of the performance and marking requirements of section 18 of IEEE Std 45.

(e) Medium voltage electric cable must meet the requirements of IEEE Std 45 and UL 1072, where applicable, for cables rated above 5,000 volts.

(f) Direct current electric cable, for industrial applications only, may be applied in accordance with IADC–DCCS–1/1991.

[CGD 94–108, 61 FR 28280, June 4, 1996, as amended at 62 FR 23908, May 1, 1997; USCG 1999–5151, 64 FR 67182, Dec. 1, 1999]

§ 111.60–2 Specialty cable for communication and RF applications.

Specialty cables that cannot pass the flammability test contained in IEEE Std 45, IEEE Std 1202, ANSI/UL 1581 test VW–1, or IEC 332–3 Category A due to unique construction properties, such as certain coaxial cables, must—

(a) Be installed physically separate from all other cable; and

(b) Have fire stops installed—

(1) At least every 7 meters (21.5 feet) vertically, up to a maximum of 2 deck heights;

(2) At least every 15 meters (46 feet) horizontally;

(3) At each penetration of an A or B Class boundary;

(4) At each location where the cable enters equipment; or

(5) In a cableway that has an A–60 fire rating.

[CGD 94–108, 61 FR 28280, June 4, 1996]

§ 111.60–3 Cable application.

(a) Cable constructed in accordance with IEEE Std 45 must meet the cable application section 19 of IEEE Std 45. Cable constructed in accordance with IEC 92–3 must meet the requirements of section 19 of IEEE Std 45 except 19.6.1, 19.6.4, and 19.8. Cable constructed in accordance with IEC 92–3 must comply with the ampacity values of IEC 92–352, Table 1.

(b) Type T/N cables must meet section 19 of IEEE Std 45 for Type T insulation.

(c) Cables constructed in accordance with IEEE Std 45 must be derated in accordance with Table A6, Note 6 of IEEE Std 45. Cables constructed in accordance with IEC 92–3 must be derated in accordance with IEC 92–352, paragraph 8. MIL–C–24640A and MIL–C–24643A cable must be derated in accordance with MIL–HDBK–299(SH).

(d) Cables for special applications defined in section 19 of IEEE Std 45 must meet the provisions of that section.

[CGD 94–108, 61 FR 28280, June 4, 1996, as amended at 62 FR 23908, May 1, 1997]

§ 111.60–4 Minimum cable conductor size.

Each cable conductor must be #18 AWG (0.82 mm^2) or larger except—

(a) Each power and lighting cable conductor must be #14 AWG (2.10 mm^2) or larger; and

(b) Each thermocouple, pyrometer, or instrumentation cable conductor must be #22 AWG (0.33 mm^2) or larger.

[CGD 94–108, 61 FR 28280, June 4, 1996]

§ 111.60–5 Cable installation.

(a) Each cable installation must meet—

(1) Sections 20 and 22, except 20.11, of IEEE Std 45; or

(2) IEC 92–3 and paragraph 8 of IEC 92–352.

(b) Each cable installation made in accordance with paragraph 8 of IEC 92–352 must utilize the conductor ampacity values of Table I of IEC 92–352.

(c) Cable must not be located in any tanks except to supply equipment or instrumentation specially designed for and compatible with such location and whose function require its installation in the tank. The cable must be compatible with the liquid or gas in the tank or be protected by an enclosure.

(d) Braided cable armor or cable metallic sheath must not be used as the grounding conductor.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28280, June 4, 1996]

§ 111.60–6 Fiber optic cable.

Each fiber optic cable must—

(a) Be constructed to pass the flammability test contained in IEEE Std 45, IEEE Std 1202, ANSI/UL 1581 test VW–1, or IEC 332–3 Category A; or

(b) Be installed in accordance with § 111.60–2.

[CGD 94–108, 61 FR 28280, June 4, 1996]

§ 111.60–7 Demand loads.

Generator, feeder, and bus-tie cables must be selected on the basis of a computed load of not less than the demand load given in Table 111.60–7.

TABLE 111.60–7—DEMAND LOADS

Type of circuit	Demand load
Generator cables	115 percent of continuous generator rating.
Switchboard bus-tie, except ship's service to emergency switchboard bus-tie.	75 percent of generating capacity of the larger switchboard.
Emergency switchboard bus-tie	115 percent of continuous rating of emergency generator.
Motor feeders	Article 430, National Electrical Code.
Galley equipment feeder	100 percent of either the first 50 KW or one-half the connected load, whichever is the larger, plus 65 percent of the remaining connected load, plus 50 percent of the rating of the spare switches or circuit breakers on the distribution panel.
Lighting feeder	100 percent of the connected load plus the average active circuit load for the spare switches or circuit breakers on the distribution panels.
Grounded neutral of a dual voltage feeder	100 percent of the capacity of the ungrounded conductors when grounded netural is not protected by a circuit breaker overcurrent trip, or not less than 50 percent of the capacity of the ungrounded conductors when the grounded neutral is protected by a circuit breaker overcurrent trip or overcurrent alarm.

§ 111.60–9 Segregation of vital circuits.

(a) *General.* A branch circuit that supplies equipment vital to the propulsion, control, or safety of the vessel must not supply any other equipment.

(b) *Passenger vessels.* (1) Each passenger vessel with firescreen bulkheads that form main fire zones must have distribution systems arranged so that fire in a main fire zone does not interfere with essential services in another main fire zone.

(2) Main and emergency feeders passing through a main fire zone must be separated vertically and horizontally as much as practicable.

§ 111.60–11 Wire.

(a) Wire must be in an enclosure.

(b) Wire must be component insulated.

(c) Wire, other than in switchboards, must meet the requirements in sections 19.6.4 and 19.8 of IEEE Std 45; MIL–W–76D; MIL–W–16878F; UL 44; UL 83; or equivalent standard.

(d) Switchboard wire must meet subpart 111.30 of this part.

(e) Wire must be of the copper stranded type.

[CGD 94–108, 61 FR 28281, June 4, 1996, as amended at 62 FR 23908, May 1, 1997; 62 FR 27659, May 20, 1997]

§ 111.60–13 Flexible electric cord and cables.

(a) *Construction and testing.* Each flexible cord and cable must meet the requirements in section 19.6.1 of IEEE Std 45, article 400 of the NEC, NEMA WC 3, NEMA WC 8, or UL 62.

(b) *Application.* A flexible cord must be used:

(1) Only as allowed under Sections 400–7 and 400–8 of the National Electrical Code; and

(2) In accordance with Table 400–4 of the National Electrical Code.

(c) *Allowable current-carrying capacity.* A flexible cord must not carry more current than allowed under Table 400–5 of the National Electrical Code, NEMA WC 3 or NEMA WC 8.

(d) *Conductor size.* Each flexible cord must be No. 18 AWG (0.82 mm^2) or larger.

(e) *Splices.* Each flexible cord and cable must be without splices or taps except for a cord or cable No. 12 AWG (3.3 mm^2) or larger spliced for repairs in accordance with § 111.60–19.

(f) *Pull at joints and terminals.* Each flexible cord and cable must be connected to a device or fitting by a knot, tape, or special fitting so that tension is not transmitted to joints or terminal screws.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28281, June 4, 1996]

§ 111.60–17 Connections and terminations.

(a) In general, connections and terminations to all conductors must retain the original electrical, mechanical, flame-retarding, and, where necessary, fire-resisting properties of the cable. All connecting devices must be suitable for copper stranded conductors.

(b) If twist-on type of connectors are used, the connections must be made within an enclosure and the insulated cap of the connector must be secured to prevent loosening due to vibration.

(c) Twist-on type of connectors may not be used for making joints in cables, facilitating a conductor splice, or extending the length of a circuit.

[CGD 94–108, 61 FR 28281, June 4, 1996]

§ 111.60–19 Cable splices.

(a) A cable must not be spliced in a hazardous location, except in intrinsically safe systems.

(b) Each cable splice must be made in accordance with section 20.11 of IEEE Std 45.

[CGD 94–108, 61 FR 28281, June 4, 1996]

§ 111.60–21 Cable insulation tests.

All electric power and lighting cable and associated equipment must be checked for proper insulation resistance to ground and between conductors. The insulation resistance must not be less than that in section 46.2.1 of IEEE Std 45.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28281, June 4, 1996]

§ 111.60–23 Metal-clad (Type MC) cable.

(a) Metal-clad (Type MC) cable permitted on board a vessel must be continuous corrugated metal-clad cable.

(b) The cable must—

(1) Have a corrugated gas-tight, vapor-tight, and watertight sheath of aluminum or other suitable metal that is close-fitting around the conductors and fillers and that has an overall jacket of an impervious PVC or thermoset material; and

(2) Be certified or listed by an independent laboratory as meeting the requirements of UL 1569.

(c) The cable is not allowed in areas or applications exposed to high vibration, festooning, repeated flexing, excessive movement, or twisting, such as in engine rooms, on elevators, or in the

area of drill floors, draw works, shakers, and mud pits.

(d) The cable must be installed in accordance with article 334 of the NEC. The ampacity values found in table A6 of IEEE Std 45 may not be used.

(e) The side wall pressure on the cable must not exceed 1,000 pounds per foot of radius.

(f) Equipment grounding conductors in the cable must be sized in accordance with article 250–95 of the NEC. System grounding conductors must be of a cross-sectional area not less than that of the normal current carrying conductors of the cable. The metal sheath must be grounded but must not be used as a required grounding conductor.

(g) On an offshore floating drilling and production facility, the cable may be used as interconnect cable between production modules and between fixed distribution panels within the production modules, except that interconnection between production and temporary drilling packages is prohibited. Also, the cable may be used within columns, provided that the columns are not subject to the conditions described in paragraph (c) of this section.

(h) When the cable is used within a hazardous (classified) location, terminations or fittings must be listed, and must be appropriate, for the particular Type MC cable used and for the environment in which they are installed.

[CGD 94–108, 62 FR 23908, May 1, 1997]

Subpart 111.70—Motor Circuits, Controllers, and Protection

§ 111.70–1 General.

(a) Each motor circuit, controller, and protection must meet the requirements of ABS Rules for Building and Classing Steel Vessels, sections 4/5A5.13, 4/5B2.13, 4/5B2.15, and 4/5C4; ABS Rules for Building and Classing Mobile Offshore Drilling Units, sections 4/3.87 through 4/3.94 and 4/3.115.6; or IEC 92–301, as appropriate, except the following circuits:

(1) Each steering gear motor circuit and protection must meet part 58, subpart 58.25, of this chapter.

(2) Each propulsion motor circuit and protection must meet subpart 111.35 of this part.

(b) In ungrounded three-phase alternating current systems, only two motor-running protective devices (overload coil or heater type relay within the motor and controller) need be used in any two ungrounded conductors, except when a wye-delta or a delta-wye transformer is used.

(c) The motor disconnecting means must be an externally operable switch or circuit breaker.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28281, June 4, 1996; 62 FR 23909, May 1, 1997]

§ 111.70–3 Motor controllers and motor control centers.

(a) *General.* The enclosure for each motor controller or motor control center must meet NEMA No. ICS 2 and NEMA No. 2.3 1983 or meet Table 5 of IEC 92–201, as appropriate, for the location where it is installed. In addition, each enclosure in a hazardous location must meet subpart 111.105 of this part. NEMA No. 2.4 provides guidance on the differences between NEMA and IEC devices for motor service.

(b) *Low-voltage release.* Each motor controller for a fire pump, elevator, steering gear, or auxiliary that is vital to the vessel's propulsion system, except a motor controller for a vital propulsion auxiliary which can be restarted from a central control station, must have low-voltage release if automatic restart after a voltage failure or its resumption to operation is not hazardous. If automatic restart is hazardous, the motor controller must have low-voltage protection. Motor controllers for other motors must not have low-voltage release unless the starting current and the short-time sustained current of the additional low-voltage release load is within the capacity of one ship's service generator. Automatic sequential starting of low-voltage release controllers is acceptable to meet this paragraph.

(c) *Low-voltage protection.* Each motor controller must have low-voltage protection, except for the following motor controllers:

(1) A motor controller that has low-voltage release under paragraph (b) of this section.

(2) A motor controller for a motor of less than 2 horsepower (1.5 kW).

(d) *Identification of controllers.* (1) Each motor controller and motor control center must be marked externally with the following information:

(i) Manufacturer's name or identification.

(ii) Voltage.

(iii) Number of phases.

(iv) Current.

(v) kW (Horsepower).

(vi) Identification of motor being controlled.

(vii) Current rating of trip setting.

(2) Each controller must be provided with heat durable and permanent elementary wiring/schematic diagrams of the controller located on the door interior.

[CGD 94–108, 61 FR 28281, June 4, 1996; 61 FR 33045, June 26, 1996]

§ 111.70–5 Heater circuits.

(a) If an enclosure for a motor, master switch, or other equipment has an electric heater inside the enclosure that is energized from a separate circuit, the heater circuit must be disconnected from its source of potential by a disconnect device independent of the enclosure containing the heater. The heater disconnecting device must be adjacent to the equipment disconnecting device. A fixed sign, warning the operator to open both devices, must be on the enclosure of the equipment disconnect device, except as in paragraph (b) of this section.

(b) If the location of the enclosure for a motor, master switch, or other equipment for deck machinery is remote from the motor and controller disconnect device, a sign must be fixed to the enclosure if the disconnect arrangement required by paragraph (a) of this section is not used. The sign must warn the operator of the presence of two sources of potential within the enclosure and show the location of the heater circuit disconnect device.

(c) Electric heaters installed within motor controllers and energized from a separate circuit must be disconnected in the same manner as required by paragraph (a) of this section or by § 111.70–7(d).

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28282, June 4, 1996]

§ 111.70–7 Remote control, interlock, and indicator circuits.

(a) *Overcurrent protection.* A conductor of a control, interlock, or indicator circuit of a motor controller must be protected against overcurrent unless:

(1) The conductor is wholly within the controller enclosure;

(2) The rating or setting of the branch circuit overcurrent device is not more than 300 percent of the current-carrying capacity of the control, interlock, or indicator circuit conductor;

(3) There is an overcurrent device in each side of the line that has a rating or setting of not more than 300 percent of the current-carrying capacity of the control, electrical interlock, or indicator circuit conductor, except if under operating conditions there is no appreciable difference in potential between the external conductors, overcurrent protection need only be at the supply of that side of the line; or

(4) The opening of the control, interlock, or indicator circuit creates a hazard.

NOTE: For overcurrent protection of steering gear control and indicator circuits, see Subpart 111.93 of this chapter.

(b) *Accidental ground.* The controller must be designed to prevent an accidental ground in a remote control circuit from causing the stop switches to fail to operate or causing the motor to start.

(c) *Source of potential.* The potential for a control, interlock, or indicator circuit must be derived from the load side of the motor and controller disconnect device, except if the control functions require circuits that must be common to two or more controllers, the switching arrangement in paragraph (d) of this section must be met.

(d) *Switching.* In the design of a control, interlock, or indicator circuit, all practicable steps must be taken to eliminate all but one source of power in an enclosure. If the control functions make it impracticable to energize

a control interlock or indicator circuit from the load side of a motor and controller disconnect device and the voltage of the control, interlock, or indicator circuit is more than 24 volts, there must be one of the following alternative methods of switching:

(1) Each conductor of a control, interlock, or indicator circuit must be disconnected from all sources of potential by a disconnect device independent of the motor and controller disconnect device. The two independent devices must be adjacent to each other, and a fixed sign, warning the operator to open both devices to disconnect completely the motor and controller, must be on the exterior of the door of the main disconnect device.

(2) Each conductor of a control, interlock, or indicator circuit must be disconnected from all sources of power by a disconnect device actuated by the opening of the controller door, or the power must first be disconnected to allow opening of the door. The disconnect device and its connections, including each terminal block for terminating the vessel's wiring, must have no electrically uninsulated or unshielded surface. When this type of disconnect device is used for vital auxiliary circuits, a nameplate must be affixed to the vital auxiliary motor controller door that warns that opening the door will trip a vital auxiliary offline.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28282, June 4, 1996; 62 FR 23909, May 1, 1997]

Subpart 111.75—Lighting Circuits and Protection

§ 111.75–1 Lighting feeders.

(a) *Passenger vessels.* On a passenger vessel with fire bulkheads forming main vertical and horizontal fire zones, the lighting distribution system, including low location egress lighting where installed, must be arranged so that, to the maximum extent possible, a fire in any main vertical and horizontal fire zone does not interfere with the lighting in any other fire zone. This requirement is met if main and emergency feeders passing through any zone are separated both vertically and horizontally as widely as practicable.

(b) *Machinery spaces.* Lighting for enginerooms, boilerrooms, and auxiliary machinery spaces must be supplied from two or more feeders. One of these feeders must be a ship's service feeder.

NOTE: Special requirements for emergency lighting, feeders, and branch circuits are in subpart 112.43 of this chapter.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28282, June 4, 1996; 61 FR 33045, June 26, 1996]

§ 111.75–5 Lighting branch circuits.

(a) *Loads.* A lighting distribution panel must not supply branch circuits rated at over 30 amperes.

(b) *Connected load.* The connected load on a lighting branch circuit must not be more than 80 percent of the rating of the overcurrent protective device, computed on the basis of the fixture ratings and in accordance with IEEE Std 45, section 21.6.

(c) *Lighting fixtures on lighting circuits.* Each lighting fixture must be on a lighting branch circuit.

(d) *Overcurrent protection.* Each lighting branch circuit must be protected by an overcurrent device rated at 20 amperes or less, except as allowed under paragraph (e) of this section.

(e) *25 or 30 ampere lighting branch circuits.* Lighting branch circuits rated at 25 and 30 amperes supplying only fixed nonswitched lighting fixtures for cargo hold or deck lighting having only lampholders of the mogul type, or other lampholding devices required for lamps of more than 300 watts, may be supplied by a 30 ampere branch circuit wired with at least No. 10 AWG (5.3 mm^2) conductors if each fixture wire used in wiring each lighting fixture is No. 12 AWG (3.3 mm^2) or larger.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28282, June 4, 1996; 62 FR 23909, May 1, 1997]

§ 111.75–15 Lighting requirements.

(a) *Lights in passageways, public spaces, and berthing compartments.* The supply to lights in each passageway, public space, or berthing compartment accommodating more than 25 persons must be divided between two or more branch circuits, one of which may be an emergency branch circuit.

(b) *Lights in machinery spaces.* Alternate groups of lights in an engineroom, boilerroom, or auxiliary machinery space must be arranged so that the failure of one branch circuit does not leave an area without light.

(c) *Illumination of passenger and crew spaces.* (1) Each space used by passengers or crew must be fitted with lighting that provides for a safe habitable and working environment under normal conditions.

(2) Sufficient illumination must be provided by the emergency lighting source under emergency conditions to effect damage control procedures and to provide for safe egress from each space.

(d) *Berth lights.* Each crew berth must have a fixed berth light that is not wired with a flexible cord. The berth light must have minimum horizontal projection so that the light may not be covered with bedding.

(e) *Exit lights.* Each exit light required on passenger vessels under §112.15–1 of this subchapter must have the word ''Exit'' in red block letters at least 2 inches (50 mm) high.

(f) *Pilot ladders.* There must be a means for lighting each station from which a pilot may be deployed.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28282, June 4, 1996]

§ 111.75–16 Lighting of survival craft and rescue boats.

(a) During preparation, launching, and recovery, each survival craft and rescue boat, its launching appliance, and the area of water into which it is to be launched or recovered must be adequately illuminated by lighting supplied from the emergency power source.

(b) The arrangement of circuits must be such that the lighting for adjacent launching stations for survival craft or rescue boats is supplied by different branch circuits.

[CGD 94–108, 61 FR 28282, June 4, 1996]

§ 111.75–17 Navigation lights.

Each navigation light system must meet the following:

(a) *Feeders.* On vessels required to have a final emergency power source by §112.05–5(a) of this chapter, each navigation light panel must be supplied by a feeder from the emergency switchboard (see §112.43–13). The feeder must be protected by overcurrent devices rated or set at a value of at least twice that of the navigation light panel main fuses.

(b) *Navigation light indicator panel.* Each self-propelled vessel must have a navigation light indicator panel in the navigating bridge to control side, masthead, and stern lights. The panel must visually and audibly signal the failure of each of these navigation lights. Each light source must be connected to a separate fused branch circuit. The panel must have a fused feeder disconnect switch, and the fuses must have at least twice the rating of the largest branch circuit fuse and must be greater than the maximum panel load.

(c) *Dual light sources.* Each self-propelled vessel must have duplicate light sources for the side, masthead, and stern lights.

(d) *Navigation lights.* Each navigation light must meet the following:

(1) Meet the technical details of the applicable navigation rules.

(2) Be certified by an independent laboratory to the requirements of UL 1104 or an equivalent standard under §110.20-1 of this chapter. Portable battery powered lights need meet only the requirements of the standard applicable to those lights.

(3) Be labeled with a label stating the following:

(i) ''MEETS _____.'' (Insert the identification name or number of the standard under paragraph (d)(2) of this section to which the light was type-tested.)

(ii) ''TESTED BY _____.'' (Insert the name or registered certification mark of the independent laboratory that tested the fixture to the standard under paragraph (d)(2) of this section).

(iii) Manufacturer's name.

(iv) Model number.

(v) Visibility of the light in nautical miles.

(vi) Date on which the fixture was type-tested.

(vii) Identification of bulb used in the compliance test.

(4) If it is a flashing light, have its intensity determined by the formula:

$$Ie=G/(0.2+t2-t1)$$

Where

Ie=Luminous Intensity.

G=Integral of Idt evaluated between the limits of t1 and t2.

t1=Time in seconds of the beginning of the flash.

t2=Time in seconds of the end of the flash.

I=Instantaneous intensity during the flash.

NOTE: The limits, t1 and t2, are to be chosen so as to maximize Ie.

(e) *Installation of navigation lights.* Each navigation light must:

(1) Be installed so that its location and its angle of visibility meet the applicable navigation rules;

(2) Except as permitted by the applicable navigation rules, be arranged so that light from a navigation light is not obstructed by any part of; the vessel's structure or rigging;

(3) Be wired by a short length of heavy-duty, flexible cable to a watertight receptacle outlet next to the light or, for permanently mounted fixtures, by direct run of fixed cable; and

(4) If it is a double-lens, two-lamp type, have each lamp connected to its branch circuit conductors either by an individual flexible cable and watertight receptacle plug or, for permanently mounted fixtures, by an individual direct run of fixed cable.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28282, June 4, 1996; 61 FR 33045, June 26, 1996; 62 FR 23909, May 1, 1997]

§ 111.75–18 Signaling lights.

Each self-propelled vessel over 150 gross tons when engaged on an international voyage must have on board an efficient daylight signaling lamp that may not be solely dependent upon the vessel's main source of electrical power and that meets the following:

(a) The axial luminous intensity of the beam must be at least 60,000 candelas.

(b) The luminous intensity of the beam in every direction within an angle of 0.7 degrees from the axial must be at least 50 percent of the axial luminous intensity.

[CGD 94–108, 61 FR 28282, June 4, 1996]

§ 111.75–20 Lighting fixtures.

(a) The construction of each lighting fixture for a non-hazardous location must meet—

(1) UL 595, until May 3, 1999;

(2) UL 1570, UL 1571, or UL 1572, as applicable, including marine supplement; or

(3) IEC 92–306.

(b) Each fixture globe, lens, or diffuser must have a high strength guard or be made of high strength material, except in an accommodation space, navigating bridge, gyro room, radio room, galley, or similar space where it is not subject to damage.

(c) No fixture may be used as a connection box for a circuit other than the branch circuit supplying the fixture.

(d) Lighting fixtures must be installed as follows:

(1) Each fixture in the weather or in a location exposed to splashing water must be watertight. Each fixture in a damp or wet location must at least be dripproof.

(2) Each fixture and lampholder must be fixed. A fixture must not be supported by the screw shell of a lampholder.

(3) Each pendent-type fixture must be suspended by and supplied through a threaded, rigid conduit stem.

(4) Each tablelamp, desklamp, floorlamp, and similar equipment must be secured in place so that it cannot be displaced by the roll or pitch of the vessel.

(e) Non-emergency and decorative interior lighting fixtures in environmentally-protected, non-hazardous locations need only meet the applicable UL type-fixture standards in UL 1570 through 1574 (and either the general section of the marine supplement or the general section of UL 595), UL 595, or IEC 92–306. These fixtures must have vibration clamps on fluorescent tubes longer than 102 cm (40 inches), secure mounting of glassware, and rigid mounting.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28283, June 4, 1996; 61 FR 36787, July 12, 1996; 62 FR 23909, May 1, 1997]

Subpart 111.77—Appliances and Appliance Circuits

§ 111.77–1 Overcurrent protection.

If a circuit supplies only one appliance or device, the rating or setting of the branch circuit overcurrent device must not be more than 150 percent of the rating of the appliance or device, or 15 amperes, whichever is greater.

§ 111.77–3 Appliances.

All electrical appliances, including, but not limited to, cooking equipment, dishwashers, refrigerators, and refrigerated drinking water coolers, must meet UL safety and construction standards or equivalent standards under §110.20-1 of this chapter. Also, this equipment must be suitably installed for the location and service intended.

[CGD 94–108, 61 FR 28283, June 4, 1996; 61 FR 33045, June 26, 1996]

Subpart 111.79—Receptacles

§ 111.79–1 Receptacle outlets; general.

(a) There must be a sufficient number of receptacle outlets in the crew accommodations for an adequate level of habitability.

(b) There must be a sufficient number of receptacle outlets throughout the machinery space so that any location can be reached by a portable power cord having a length not greater than 24 meters (75 feet).

(c) Each receptacle outlet must be compatible with the voltage and current of the circuit in which it is installed.

(d) Each receptacle outlet must be suitable for the environment in which it is installed and constructed to the appropriate NEMA or IEC protection standard as referenced in §111.01–9. Special attention must be given to outlets in hazardous locations.

(e) A receptacle outlet must not have any exposed live parts with the plug opening uncovered.

[CGD 94–108, 61 FR 28283, June 4, 1996]

§ 111.79–3 Grounding pole.

Each receptacle outlet that operates at 100 volts or more must have a grounding pole.

§ 111.79–9 Transmitting power between receptacles.

(a) If it is necessary to transmit current in one direction between two receptacle outlets by a flexible cable with a plug on each end, such as a battery charging lead between a receptacle outlet on a ship and a receptacle outlet in a lifeboat, the plug that may be energized when not in the receptacle outlet must be female.

(b) If a receptacle outlet may be used as a source of power and as a receiver of power, such as the receptacles on barges that may have to supply power to adjoining barges in some makeup and receive power from the towboat or adjoining barge in other makeups, the receptacles must be male and reverse service. Plugs of flexible cable must be female and must be at both ends of the flexible lead. The female plug must meet §111.79–7.

§ 111.79–11 Lifeboat receptacles.

Each receptacle outlet on a lifeboat for connection to a vessel's electrical system must allow the plug to pull free when the lifeboat is lowered.

§ 111.79–13 Different voltages and power types.

If receptacle outlets on a vessel are supplied by different voltages (e.g., 110 volts and 220 volts) or by different types of power (e.g., AC and DC), each receptacle outlet must preclude the plugging of a portable device into a receptacle outlet of an incompatible voltage or type of power.

[CGD 94–108, 61 FR 28283, June 4, 1996]

§ 111.79–15 Receptacles for refrigerated containers.

Receptacles for refrigerated containers must meet one of the following:

(a) Each receptacle for refrigerated containers must have a switch

interlocked in such a way that the receptacle's contacts are deenergized before the making or breaking of the connection between the plug and receptacle contacts.

(b) Each group of receptacles for refrigerated containers must have:

(1) A switch near the receptacles that disconnects all power to those receptacles; and

(2) A sign stating that the switch should be opened before cables are disconnected from the receptacles or refrigerated containers.

(c) Each receptacle for refrigerated containers must be designed for circuit breaking service.

Subpart 111.81—Outlet Boxes and Junction Boxes

§ 111.81–1 Outlet boxes and junction boxes; general.

(a) The requirements of this subpart apply to each outlet box used with a lighting fixture, wiring device, or similar item, including each separately installed connection and junction box.

(b) An outlet box must be at each outlet, switch, receptacle, or junction point.

(c) Each outlet or junction box must have a cover unless a fixture canopy, switch cover, receptacle cover, or other cover is used.

(d) Each outlet box and junction box installation must meet article 370 of the NEC, UL 50, UL 514 series, or IEC Series 92 Publications (e.g., IEC 92–306), as appropriate.

(e) Each outlet or junction box must be securely attached to its mounting and be affixed so as to maintain its designated degree of protection.

(f) Each outlet and junction box must be suitable for the environment in which it is installed and be constructed to the appropriate NEMA or IEC standard.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28283, June 4, 1996]

§ 111.81–3 Cables entering boxes.

Each cable entering a box or fitting must be protected from abrasion and must meet the following:

(a) Each opening through which a conductor enters must be closed.

(b) Cable armor must be secured to the box or fitting.

(c) Each cable entrance in a damp or wet location must be made watertight by a terminal or stuffing tube.

Subpart 111.83—Shore Connection Boxes

§ 111.83–1 General.

Each shore connection box must be of a size that accommodates the connections of the flexible and fixed cables.

§ 111.83–5 Bottom entrance and protected enclosures.

Each shore connection box must have a bottom entrance for the shore connection cable. The box must provide protection to the shore connection when the connection is in use.

Subpart 111.85—Electric Oil Immersion Heaters

§ 111.85–1 Electric oil immersion heaters.

Each oil immersion heater must have the following:

(a) An operating thermostat.

(b) Heating elements that have no electrical contact with the oil.

(c) A high temperature limiting device that:

(1) Opens all conductors to the heater;

(2) Is manually reset; and

(3) Actuates at a temperature below the flashpoint of the oil.

(d) Either—

(1) A low-fluid-level device that opens all conductors to the heater if the operating level drops below the manufacturer's recommended minimum safe level; or

(2) A flow device that opens all conductors to the heater if there is inadequate flow.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28283, June 4, 1996]

Subpart 111.87—Electric Air Heating Equipment

§ 111.87–1 Applicability.

This subpart applies to electrically energized units or panels for heating a

room or compartment. This subpart does not apply to electrically energized units for heating the air in an enclosed apparatus, such as a motor or controller.

§ 111.87–3 General requirements.

(a) Each electric heater must meet UL safety and construction standards or equivalent standards under § 110.20-1 of this chapter.

(b) Each heater element must be an enclosed type. The heater element case or jacket must be of a corrosion-resistant material.

(c) Each heater must have a thermal cutout of the manually-reset type that prevents overheating and must have a thermal regulating switch.

(d) Each heater for bulkhead mounting must have its top slanted or otherwise designed to prevent hanging anything on the heater. If a heater is portable, it must have a clip or bracket to hold the heater in a fixed position.

(e) The external temperature of a heater enclosing case must not be over 125 degrees C, except that the external temperature of the enclosing case of a flush-mounted heater must not be over 100 degrees C. If a heater is mounted on or next to a deck or bulkhead, the heater must not cause the temperature of the nearest deck or bulkhead to be over 55 degrees C. For test purposes, an ambient temperature of 25 degrees C must be used.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28283, June 4, 1996; 61 FR 33045, June 26, 1996; 61 FR 36608, July 11, 1996]

Subpart 111.91—Elevators and Dumbwaiters

§ 111.91–1 Power, control, and interlock circuits.

Each electric power, control, and interlock circuit of an elevator or dumbwaiter must meet ANSI/ASME A17.1 and A17.1A.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28283, June 4, 1996]

Subpart 111.95—Electric Power-Operated Boat Winches

§ 111.95–1 Applicability.

(a) The electric installation of each electric power-operated boat winch must meet the requirements in this subpart, except that limit switches must be adapted to the installation if there are no gravity davits.

(b) The provisions of this subpart supplement the requirements for boat winches in other parts of this chapter under which vessels are certificated and in subchapter Q, Equipment approvals.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28283, June 4, 1996]

§ 111.95–3 General requirements.

(a) Each electrical component (e.g., enclosure, motor controller, or motor) must be constructed to the appropriate NEMA or IEC degree of protection requirement for the service and environment in which it is installed.

(b) Each main line emergency disconnect switch, if accessible to an unauthorized person, must have a means to lock the switch in the open-circuit position with a padlock or its equivalent. The switch must not lock in the closed-circuit position.

[CGD 94–108, 61 FR 28283, June 4, 1996]

§ 111.95–7 Wiring of boat winch components.

(a) If the motor controller of a boat winch power unit is next to the winch, the main line emergency switch must disconnect all parts of the boat winch power unit, including the motor controller and limit switches, from all sources of potential. Other power circuit switches must be connected in series with the main line emergency switch and must be ahead of the motor controller. The main line emergency switch must be the motor and controller disconnect required by Subpart 111.70 and must have a horsepower rating of at least that of the winch motor.

(b) If the motor controller of a boat winch power unit is remote from the winch, there must be a switch at the

controller that can disconnect the entire winch electric installation from all sources of potential. The switch must be in series with and on the supply side of the main line emergency switch.

(c) Each davit arm limit switch, whether connected in the power circuit or in the control circuit, must disconnect all ungrounded conductors of the circuit controlled.

(d) If one motor is used with two winches, there must be a main line emergency switch, a clutch interlock switch, and a master switch for each winch, except that a single main line emergency switch located as required by paragraph (e) of this section may be used for both winches. The main line emergency switches must be connected, in series, ahead of the motor controller. The master switches must be connected in parallel and each, in series, with the corresponding clutch interlock switch for that winch. Each clutch interlock switch must open the circuit to its master switch, except when the power unit is clutched to the associated winch. There must be a means to prevent the power unit from being clutched to both winches simultaneously.

(e) The main line emergency disconnect switch must be adjacent to the master switch, within reach of the winch operator, accessible to the person in charge of the boat stowage, and for gravity davit installations, in a position from which the movement of boat davit arms can be observed as they approach the final stowed position.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28283, June 4, 1996]

Subpart 111.97—Electric Power-Operated Watertight Door Systems

§ 111.97–1 Applicability.

This subpart applies to electric power-operated watertight door systems required under Subpart H of Part 170 of this chapter.

[CGD 79–023, 48 FR 51008, Nov. 4, 1983]

§ 111.97–3 General requirements.

Each watertight door operating system must meet Subpart H, §170.270 of this chapter.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

§ 111.97–5 Electric and hydraulic power supply.

(a) Each electric motor-driven door operating system must have the same source of power as the emergency lighting and power system.

(b) The temporary emergency power source and the final emergency power source must each be capable of operating all doors simultaneously or sequentially as allowed by §170.270(c) of this chapter.

(c) The power supply for each hydraulically operated watertight door system that uses a hydraulic system common to more than one watertight door must be an accumulator tank with enough capacity to open all doors once and to close all doors two times and be supplied by one or more motor-driven hydraulic pumps that can operate from the final source of the emergency lighting and power system.

(d) The motor-driven hydraulic pumps must automatically maintain the accumulator tank pressure within the design limits, be above the uppermost continuous deck, and be controlled from above the uppermost continuous deck.

(e) The accumulator tank capacity required in paragraph (c) of this section must be available when the accumulator tank pressure is at the automatic pump ''cut-in'' pressure.

(f) The source of power for each hydraulically operated watertight door system using an independent hydraulic system for each door operator must meet paragraphs (a) and (b) of this section.

(g) The power supply for other types of watertight door operators must be accepted by the Commandant.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28283, June 4, 1996; USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

§ 111.97–7 Distribution.

(a) Each distribution panelboard for a watertight door system must be above the uppermost continuous deck and must have means for locking.

(b) Each feeder supplying a watertight door operating system must be above the uppermost continuous deck.

(c) Each watertight door operating system must have a separate branch circuit.

§ 111.97–9 Overcurrent protection.

Overcurrent devices must be arranged to isolate a fault with as little disruption of the system as possible. The relationship between the load and the rating or setting of overcurrent devices must meet the following:

(a) The rating or setting of each feeder overcurrent device must be not less than 200 percent of its maximum load.

(b) The rating or setting of a branch circuit overcurrent device must be not more than 25 percent of that of the feeder overcurrent device.

Subpart 111.99—Fire Door Holding and Release Systems

§ 111.99–1 Applicability.

This subpart applies to fire door holding and release systems, if fitted.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28284, June 4, 1996]

§ 111.99–3 Definitions.

As used in this subpart—

Central control panel means a manually-operated device on the navigating bridge or in the fire control room for releasing one or more fire doors.

Fire door means a door that is in a fire boundary, such as a stairway enclosure or main vertical zone bulkhead, that is not usually kept closed.

Fire door holding magnet means an electronmagnet for holding a fire door open.

Local control panel means a manually-operated device next to a fire door for releasing the door so that the fire door self-closing mechanism may close the door.

[CGD 94–108, 61 FR 28284, June 4, 1996; 61 FR 33045, June 26, 1996]

§ 111.99–5 General.

Fire door release systems, if installed, must meet SOLAS 74, regulation II–2/30.4.3.

[CGD 94–108, 61 FR 28284, June 4, 1996]

Subpart 111.101—Submersible Motor-Driven Bilge Pumps

§ 111.101–1 Applicability.

This subpart applies to each submersible motor-driven bilge pump required on certain vessels under §56.50–55(a)(2)(i) of this chapter.

§ 111.101–3 General requirements.

(a) Each electric motor driving a submersible bilge pump must be in an open end air bell of rugged construction and be of a size that does not allow water to enter the motor if the compartment that the motor is in is flooded to the uppermost continuous deck.

(b) The motor, if of the open type, must be protected from splashing water from the bottom.

(c) The cable to each motor must enter through the open bottom of the air bell.

(d) Each motor must be able to operate continuously at rated load under any condition, dry or with water in the air bell at any level up to the maximum allowed under paragraph (a) of this section.

(e) Each motor controller must be above the uppermost continuous deck. There must be a master switch at the controller and a master switch at the motor. The master switch at the motor must be disconnected from the circuit when the motor is started or stopped from the master switch at the controller.

(f) Each motor must be energized from the final emergency power source.

Subpart 111.103—Remote Stopping Systems

§ 111.103–1 Power ventilation systems except machinery space ventilation systems.

Each power ventilation system must have:

(a) A control to stop the ventilation that is:

(1) Outside the space ventilated; and

(2) Grouped with the controls for every power ventilation system to which this section is applicable; and

(b) In addition to the control required by paragraph (a), a stop control that is:

(1) As far as practicable from the control required by paragraph (a) and grouped with the controls for every power ventilation system to which this section is applicable; or

(2) The circuit breakers for ventilation grouped on the main switchboard and marked, ''In Case of Fire Trip to Stop Ventilation.''

NOTE: The requirements of this section do not apply to closed ventilation systems for motors or generators, diffuser fans for refrigerated spaces, room circulating fans, or exhaust fans for private toilets of an electrical rating comparable to that of a room circulating fan.

§ 111.103–3 Machinery space ventilation.

(a) Each machinery space ventilation system must have two controls to stop the ventilation, one of which may be the supply circuit breaker.

(b) The controls required in paragraph (a) of this section must be grouped so that they are operable from two positions, one of which must be outside the machinery space.

§ 111.103–7 Ventilation stop stations.

Each ventilation stop station must:

(a) Be protected by an enclosure with a glass-paneled door on the front;

(b) Be marked, ''In Case of Fire Break Glass and Operate Switch to Stop Ventilation;''

(c) Have the ''stop'' position of the switch clearly identified;

(d) Have a nameplate that identifies the system controlled; and

(e) Be arranged so that damage to the switch or cable automatically stops the equipment controlled.

§ 111.103–9 Machinery stop stations.

(a) Each forced draft fan, induced draft fan, blower of an inert gas system, fuel oil transfer pump, fuel oil unit, fuel oil service pump, and any other fuel oil pumps must have a stop control that is outside of the space containing the pump or fan.

(b) Each stop control must meet § 111.103–7.

Subpart 111.105—Hazardous Locations

§ 111.105–1 Applicability.

This subpart applies to installations in hazardous locations as defined in the NEC and in IEC 79–0.

NOTE TO § 111.105–1: Chemicals and materials in addition to those listed in Table 500–2 of the NEC and IEC 79–12 are listed in subchapter O of this chapter.

[CGD 94–108, 61 FR 28284, June 4, 1996]

§ 111.105–3 General requirements.

All electrical installations in hazardous locations must comply with the general requirements of section 43 of IEEE Std 45 and either the NEC articles 500–505 or IEC series 79 publications. When installations are made in accordance with the NEC articles, marine shipboard cable that complies with subpart 111.60 of this chapter may be used instead of rigid metal conduit, if installed fittings are approved for the specific hazardous location and the cable type.

[CGD 94–108, 61 FR 28284, June 4, 1996]

§ 111.105–5 System integrity.

In order to maintain system integrity, each individual electrical installation in a hazardous location must comply specifically with NEC articles 500–505, as modified by § 111.105–3, or IEC series 79 publications, but not in combination in a manner that would compromise system integrity or safety. Hazardous location equipment must be approved as suitable for use in the specific hazardous atmosphere in which it is installed. The use of non-approved equipment is prohibited.

[CGD 94–108, 61 FR 28284, June 4, 1996]

§ 111.105–7 Approved equipment.

When this subpart or the NEC states that an item of electrical equipment must be approved or when IEC 79–0 states that an item of electrical equipment must be tested or approved in order to comply with IEC 79 series publications, that item must be—

(a) Listed or certified by an independent laboratory as approved for use in the hazardous locations in which it is installed; or

(b) Purged and pressurized equipment that meets NFPA No. 496 or IEC 79–2.

[CGD 94–108, 61 FR 28284, June 4, 1996]

§ 111.105–9 Explosionproof and flameproof equipment.

Each item of electrical equipment that is required in this subpart to be explosionproof under the NEC classification system must be approved as meeting UL 1203. Each item of electrical equipment that is required in this subpart to be flameproof must be approved as meeting IEC 79–1.

[CGD 94–108, 61 FR 28284, June 4, 1996]

§ 111.105–11 Intrinsically safe systems.

(a) Each system required under this subpart to be intrinsically safe must use approved components meeting UL 913 or IEC 79–11(I_a).

(b) Each electric cable of an intrinsically safe system must—

(1) Be 50 mm (2 inches) or more from cable of non-intrinsically safe circuits, partitioned by a grounded metal barrier from other non-intrinsically safe electric cables, or a shielded or metallic armored cable; and

(2) Not contain conductors for non-intrinsically safe systems.

(c) As part of plan approval, the manufacturer must provide appropriate installation instructions and restrictions on approved system components. Typical instructions and restrictions include information addressing—

(1) Voltage limitations;

(2) Allowable cable parameters;

(3) Maximum length of cable permitted;

(4) Ability of system to accept passive devices;

(5) Acceptability of interconnections with conductors or other equipment for other intrinsically safe circuits; and

(6) Information regarding any instructions or restrictions which were a condition of approval of the system or its components.

(d) Each intrinsically safe system must meet ISA RP 12.6, except Appendix A.1.

[CGD 94–108, 61 FR 28284, June 4, 1996, as amended at 62 FR 23909, May 1, 1997]

§ 111.105–15 Additional methods of protection.

Each item of electrical equipment that is—

(a) A sand-filled apparatus must meet IEC 79–5;

(b) An oil-immersed apparatus must meet either IEC 79–6 or NEC article 500–2;

(c) Type of protection ''e'' must meet IEC 79–7;

(d) Type of protection ''n'' must meet IEC 79–15; and

(e) Type of protection ''m'' must meet IEC 79–18.

[CGD 94–108, 61 FR 28284, June 4, 1996]

§ 111.105–17 Wiring methods for hazardous locations.

(a) Through runs of marine shipboard cable meeting subpart 111.60 of this part are required for all hazardous locations. Armored cable may be used to enhance ground detection capabilities. Additionally, Type MC cable may be used subject to the restrictions in § 111.60–23.

(b) Where conduit is installed, the applicable requirements of either the NEC or IEC 79 must be followed.

(c) Each cable entrance into explosionproof or flameproof equipment must be made with approved seal fittings, termination fittings, or glands that meet the requirements of § 111.105–9.

(d) Each cable entrance into Class II and Class III (Zone 10, 11, Z, or Y) equipment must be made with dust-tight cable entrance seals approved for the installation.

[CGD 94–108, 61 FR 28284, June 4, 1996, as amended at 62 FR 23909, May 1, 1997]

§ 111.105–19 Switches.

A switch that is explosionproof or flameproof, or that controls any explosionproof or flameproof equipment, under § 111.105–19 must have a pole for each ungrounded conductor.

[CGD 94–108, 61 FR 28284, June 4, 1996]

§ 111.105–21 Ventilation.

A ventilation duct which ventilates a hazardous location has the classification of that location. Each fan for ventilation of a hazardous location must be nonsparking.

[CGD 94–108, 61 FR 28285, June 4, 1996]

§ 111.105–27 Belt drives.

Each belt drive in a hazardous location must have:

(a) A conductive belt; and

(b) Pulleys, shafts, and driving equipment grounded to meet NFPA No. 77.

§ 111.105–29 Combustible liquid cargo carriers.

(a) Each vessel that carries combustible liquid cargo with a closed-cup flashpoint of 60 degrees C (140 degrees F) or higher must have:

(1) Only intrinsically safe electric systems in cargo tanks; and

(2) No storage battery in any cargo handling room.

(b) If a submerged cargo pump motor is in a cargo tank, it must meet the requirements of § 111.105–31(d).

(c) Where the cargo is heated to within 15°C of its flashpoint, the cargo pumproom must meet the requirements of § 111.105–31(f) and the weather locations must meet § 111.105–31(l).

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28285, June 4, 1996; 61 FR 36787, July 12, 1996; 61 FR 39695, July 30, 1996]

§ 111.105–31 Flammable or combustible cargo with a flashpoint below 60 degrees C (140 degrees F), liquid sulphur carriers and inorganic acid carriers.

(a) *Applicability.* Each vessel that carries combustible or flammable cargo with a closed-cup flashpoint lower than 60 degrees C (140 degrees F) or liquid sulphur cargo, or inorganic acid cargo must meet the requirements of this section, except—

(1) A vessel carrying bulk liquefied flammable gases as a cargo, cargo residue, or vapor which must meet the requirements of § 111.105–32; and

(2) A vessel carrying carbon disulfide must have only intrinsically safe electric equipment in the locations listed in paragraphs (e) through (l) of this section.

(b) *Cable location.* Electric cable must be as close as practicable to the centerline and must be away from cargo tank openings.

(c) *Lighting circuits.* An enclosed hazardous space that has explosionproof lighting fixtures must:

(1) Have at least two lighting branch circuits;

(2) Be arranged so that there is light for relamping any deenergized lighting circuit; and

(3) Not have the switch within the space for those spaces containing explosionproof lighting fixtures under paragraphs (g), (i) and (j) of this section.

(d) *Submerged cargo pump motors.* If a submerged cargo pump motor is in a cargo tank:

(1) Low liquid level, motor current, or pump discharge pressure must automatically shutdown power to the motor if the pump loses suction;

(2) An audible and visual alarm must be actuated by the shutdown of the motor; and

(3) There must be a lockable circuit breaker or lockable switch that disconnects power to the motor.

(e) *Cargo tanks.* A cargo tank is a Class I, Division 1 (IEC Zone 0) location which has additional electrical equipment restrictions outlined in IEEE Std 45 and IEC 92–502. Cargo tanks must not contain any electrical equipment except the following:

(1) Intrinsically safe equipment.

(2) Submerged cargo pump motors and their associated cable.

(f) *Cargo handling rooms.* A cargo handling room must not have any electric cable or other electric equipment, except:

(1) Intrinsically safe equipment;

(2) Explosionproof lighting fixtures;

(3) Cables supplying intrinsically safe equipment in the cargo handling room; and

(4) Marine shipboard cables that supply explosionproof lighting fixtures that are in the cargo handling room.

(g) *Lighting of cargo handling rooms.* Lighting for a cargo handling room except a cargo handling room under paragraph (h) of this section, must be lighted through fixed glass lenses in the bulkhead or overhead. Each fixed glass lens must be wire-inserted glass that is

at least .025 inches (6.35 mm) thick and arranged to maintain the watertight and gastight integrity of the structure. The fixed glass lens may form a part of a listing fixture if the following are met:

(1) There is no access to the interior of the fixture from the cargo handling room.

(2) The fixture is vented to the engineroom or a similar nonhazardous area.

(3) The fixture is wired from outside the cargo handling room.

(4) The temperature on the cargo handling room surface of the glass lens, based on an ambient temperature of 40 degrees C, is not higher than 180 degrees C.

(h) A cargo handling room which precludes the lighting arrangement of paragraph (g) of this section, or where the lighting arrangement of paragraph (g) of the section does not give the required light, must have explosionproof lighting fixtures.

(i) *Enclosed spaces.* An enclosed space that is immediately above, below, or next to a cargo tank must not contain any electric equipment except equipment allowed for cargo handling rooms in paragraphs (f) and (g), and:

(1) Through runs of marine shipboard cable; and

(2) Watertight enclosures with bolted and gasketed covers containing only:

(i) Depth sounding devices;

(ii) Log devices; and

(iii) Impressed-current cathodic protection system electrodes.

(j) *Cargo hose stowage space.* A cargo hose stowage space must not have any electrical equipment except explosionproof lighting fixtures and through runs of marine shipboard cable.

(k) *Cargo piping in a space.* A space that has cargo piping must not have any electrical equipment except explosionproof lighting fixtures and through runs of marine shipboard cable.

(l) *Weather locations.* The following locations in the weather are Class I, Division 1 (Zone 1) locations (except the open deck area on an inorganic acid carrier which is considered a nonhazardous location) and may have only approved intrinsically safe, explosionproof, or purged and pressurized electrical equipment, and through runs of marine shipboard cable if the location is—

(1) Within 10 feet (3 m) of:

(i) A cargo tank vent outlet;

(ii) A cargo tank ullage opening;

(iii) A cargo pipe flange;

(iv) A cargo valve;

(v) A cargo handling room entrance; or

(vi) A cargo handling room ventilation opening; or

(2) On a tankship and on the open deck over the cargo area and 10 feet (3 m) forward and aft of the cargo area on the open deck and up to 8 feet (2.4 m) above the deck.

(3) Within 5 meters (16 ft) of cargo pressure/vacuum valves with an unlimited height; or

(4) Within 10 meters (33 ft) of vent outlets for free flow of vapor mixtures and high velocity vent outlets for the passage of large amounts of vapor, air or inert gas mixtures during cargo loading and ballasting or during discharging.

(m) *Other spaces.* Except for those spaces listed in paragraphs (e) through (k), a space that has a direct opening to any space listed in paragraphs (e) through (l) must have only the electric installations that are allowed for the space to which it opens.

(n) *Duct keel ventilation or lighting.* (1) The lighting and ventilation system for each pipe tunnel, double bottom, or duct keel must meet ABS Rules for Building and Classing Steel Vessels, section 4/5E1.15.

(2) If a fixed gas detection system is installed, it must meet the requirements of SOLAS 74 and ABS Rules for Building and Classing Steel Vessels, section 4/5.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 82–096, 49 FR 4947, Feb. 9, 1984; CGD 94–108, 61 FR 28285, June 4, 1996; 61 FR 33045, June 26, 1996; 62 FR 23909, May 1, 1997]

§ 111.105–32 Bulk liquefied flammable gas and ammonia carriers.

(a) Each vessel that carries bulk liquefied flammable gases or ammonia as a cargo, cargo residue, or vapor must meet the requirements of this section.

(b) As used in this section:

(1) The terms ''gas-safe'' and ''gas-dangerous'' spaces are used as defined in §154.7 of this chapter.

(2) The term ''gas-dangerous'' does not include the weather deck of an ammonia carrier.

(c) Each submerged cargo pump motor design must receive concept approval by the Commandant (G–MSE) and its installation must receive plan approval by the Commanding Officer, Marine Safety Center.

(d) Electrical equipment must not be installed in a gas-dangerous space or zone, except:

(1) Intrinsically safe electrical equipment and wiring, and

(2) Other equipment as allowed in this section.

(e) A submerged cargo pump motor, if installed in a cargo tank, must meet §111.105–31(d).

(f) Electrical equipment must not be installed in a hold space that has a tank that is not required to have a secondary barrier under §154.459 of this chapter, except:

(1) Through runs of marine shipboard cable;

(2) Explosionproof lighting fixtures;

(3) Depth sounding devices in gastight enclosures;

(4) Log devices in gastight enclosures;

(5) Impressed current cathodic protection system electrodes in gastight enclosures; and

(6) Armored or MI type cable for a submerged cargo pump motor.

(g) Electrical equipment must not be installed in a space that is separated by a gastight steel boundary from a hold space that has a tank that must have a secondary barrier under the requirements of §154.459 of this chapter, except:

(1) Through runs of marine shipboard cable;

(2) Explosionproof lighting fixtures;

(3) Depth sounding devices in gastight enclosures;

(4) Log devices in gastight enclosures;

(5) Impressed current cathodic protection system electrodes in gastight enclosures;

(6) Explosionproof motors that operate cargo system valves or ballast system valves;

(7) Explosionproof bells for general alarm systems; and

(8) Armored or MI type cable for a submerged cargo pump motor.

(h) A cargo-handling room must not have any installed electrical equipment, except explosionproof lighting fixtures.

(i) A space for cargo hose storage or a space that has cargo piping must not have any installed electrical equipment, except:

(1) Explosionproof lighting fixtures; and

(2) Through runs of marine shipboard cable.

(j) A gas dangerous zone on the open deck must not have any installed electrical equipment, except:

(1) Explosionproof equipment that is necessary for the operation of the vessel; and

(2) Through runs of marine shipboard cable.

(k) A space, except those named in paragraphs (f) through (i) of this section, that has a direct opening to gas-dangerous spaces or zones must have no electrical equipment except as allowed in the gas-dangerous space or zone.

(l) Each gas-dangerous space that has lighting fixtures must have at least two branch circuits for lighting.

(m) Each switch and each overcurrent protective device for any lighting circuit that is in a gas-dangerous space must open all conductors of the circuit simultaneously.

(n) Each switch and each overcurrent protective device for lighting in a gas-dangerous space must be in a gas-safe space.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 77–069, 52 FR 31626, Aug. 21, 1987; CGD 94–108, 61 FR 28285, June 4, 1996; 62 FR 23909, May 1, 1997]

§111.105–33 Mobile offshore drilling units.

(a) *Applicability.* This section applies to each mobile offshore drilling unit.

(b) *Definitions.* As used in this section:

(1) ''Enclosed spaces'' are locations delineated by floors, bulkheads, or decks which may have doors or windows.

(2) ''Semi-enclosed spaces'' are locations where natural conditions of ventilation are notably different from those on open deck due to the presence of structures such as roofs, windbreaks, and bulkheads which are so arranged that dispersion of gas may not occur.

(c) The internal space of each pressure vessel, tank, and pipe for drilling mud and for gas venting must have only intrinsically safe electric equipment.

(d) The following are Class I, Division 1 locations:

(1) An enclosed space that contains any part of the mud circulating system that has an opening into the space and is between the well and final degassing discharge.

(2) An enclosed or semi-enclosed location that is below the drill floor and contains a possible source of gas release such as the top of a drilling nipple.

(3) An enclosed space that is on the drill floor and is not separated by a solid, gas-tight floor from the spaces specified in paragraph (d)(2) of this section.

(4) A space that would normally be considered a Division 2 location under paragraph (e) of this section but where combustible or flammable gases might accumulate. This could include pits, ducts, and similar structures downstream of the final degassing discharge.

(5) A location in the weather or a semi-enclosed location, except as provided in paragraph (d)(2) of this section, that is within 5 feet (1.5 m) of the boundary of any:

(i) Equipment or opening specified in paragraph (d)(1) of this section;

(ii) Ventilation outlet, access, or other opening to a Class I, Division 1 space; or

(iii) Gas vent outlet.

(6) Except as provided in paragraph (f) of this section, an enclosed space that has an opening into a Class I, Division 1 location.

(e) The following are Class I, Division 2 locations:

(1) An enclosed space that has any open portion of the mud circulating system from the final degassing discharge to the mud suction connection at the mud pit.

(2) A location in the weather that is:

(i) Within the boundaries of the drilling derrick up to a height of 10 feet (3m) above the drill floor;

(ii) Below the drill floor and within a radius of 10 feet (3m) of a possible source of release, such as the top of a drilling nipple; or

(iii) Within 5 feet (1.5m) of the boundaries of any ventilation outlet, access, or other opening to a Class I, Division 2 space.

(3) A location that is:

(i) Within 5 feet (1.5m) of a semi-enclosed Class I, Division 1 location indicated in paragraph (d)(2) of this section; or

(ii) Within 5 feet (1.5m) of a Class I, Division 1 space indicated in paragraph (d)(5).

(4) A semi-enclosed area that is below and contiguous with the drill floor to the boundaries of the derrick or to the extent of any enclosure which is liable to trap gases.

(5) A semi-enclosed derrick to the extent of its enclosure above the drill floor, or to a height of 10 feet (3m) above the drill floor, whichever is greater.

(6) Except as provided in paragraph (f) of this section, an enclosed space that has an opening into a Class I, Division 2 location.

(f) An enclosed space that has direct access to a Division 1 or Division 2 location is the same division as that location, except:

(1) An enclosed space that has direct access to a Division 1 location is not a hazardous location if:

(i) The access has self-closing gas-tight doors that form an air lock;

(ii) The ventilation causes greater pressure in the space than in the Division 1 location; and

(iii) Loss of ventilation overpressure is alarmed at a manned station;

(2) An enclosed space that has direct access to a Division 1 location can be considered as a Division 2 location if:

(i) The access has a self-closing, gas-tight door that opens into the space and that has no hold-back device;

(ii) Ventilation causes the air to flow with the door open from the space into the Division 1 location; and

(iii) Loss of ventilation is alarmed at a manned control station; and

(3) An enclosed space that has direct access to a Division 2 location is not a hazardous location if:

(i) The access has a self-closing, gas-tight door that opens into the space and that has no hold-back device;

(ii) Ventilation causes the air to flow with the door open from the space into the Division 2 location; and

(iii) Loss of ventilation actuates an alarm at a manned control station.

(g) Electrical equipment and devices installed in spaces made non-hazardous by the methods indicated in paragraph (f) of this section must be limited to essential equipment.

§ 111.105–35 Vessels carrying coal.

(a) The following are Class II, Division 1, (Zone 10 or Z) locations on a vessel that carries coal:

(1) The interior of each coal bin and hold.

(2) Each compartment that has a coal transfer point where coal is transferred, dropped, or dumped.

(3) Each open area within 3 meters (10 ft) of a coal transfer point where coal is dropped or dumped.

(b) Each space that has a coal conveyer on a vessel that carries coal is a Class II, Division 2, (Zone 11 or Y) space.

(c) A space that has a coal conveyer on a vessel that carries coal must have electrical equipment approved for Class II, Division 2, (Zone 11 or Y) hazardous locations, except watertight general emergency alarm signals.

[CGD 94–108, 61 FR 28285, June 4, 1996]

§ 111.105–37 Flammable anesthetics.

Each electric installation where a flammable anesthetic is used or stored must meet NFPA No. 99.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28285, June 4, 1996]

§ 111.105–39 Additional requirements for vessels carrying vehicles with fuel in their tanks.

Each vessel that carries vehicles with fuel in their tanks must meet the requirements of ABS Rules for Building and Classing Steel Vessels, section 4/5E3, except as follows:

(a) If the ventilation requirement of ABS Rules for Building and Classing Steel Vessels, section 4/5E3 is not met, all installed electrical equipment must be suitable for a Class I, Division 1; Zone 0; or Zone 1 hazardous location.

(b) If the vessel is fitted with an approved fixed gas detection system set at 25 percent the LEL, each item of the installed electrical equipment must meet the requirements for a Class I, Division 1; Class I, Division 2; Zone 0; Zone 1; or Zone 2 hazardous location.

[CGD 94–108, 61 FR 28285, June 4, 1996, as amended at 62 FR 23909, May 1, 1997]

§ 111.105–40 Additional requirements for RO/RO vessels.

(a) Each RO/RO vessel must meet ABS Rules for Building and Classing Steel Vessels, section 4/5E4.

(b) Each item of installed electrical equipment must meet the requirements for a Class I, Division 1; Class I, Division 2; Zone 0; Zone 1; or Zone 2 hazardous location when installed 460 mm (18 inches) or more above the deck of closed cargo spaces. Electrical equipment installed within 460 mm (18 inches) of the deck must be suitable for either a Class I, Division 1; Zone 0; or Zone 1 hazardous location.

(c) Where the ventilation requirement of ABS Rules for Building and Classing Steel Vessels, section 4/5E4 is not met—

(1) All installed electrical equipment must be suitable for a Class I, Division 1; Zone 0; or Zone 1 hazardous location; or

(2) If fitted with an approved fixed gas detection system (set at 25 percent of the LEL), each item of installed electrical equipment must meet the requirements for either a Class I, Division 1; Class I, Division 2; Zone 0; Zone 1; or Zone 2 hazardous location.

[CGD 94–108, 61 FR 28285, June 4, 1996; 61 FR 33045, June 26, 1996, as amended at 62 FR 23909, May 1, 1997]

§ 111.105–41 Battery rooms.

Each electrical installation in a battery room must meet subpart 111.15 of this part and IEEE Std 45.

[CGD 94–108, 61 FR 28285, June 4, 1996]

§ 111.105–43 Paint stowage or mixing spaces.

A space for the stowage or mixing of paint must not have any electric equipment, except:

(a) Intrinsically safe electric equipment approved for a Class I, Division 1, Group D (Zone 0 or Zone 1) location;

(b) Explosionproof electric equipment approved for a Class I, Division 1, Group D (Zone 0 or Zone 1) location; or

(c) Through runs of marine shipboard cable.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28285, June 4, 1996; 62 FR 23909, May 1, 1997]

§ 111.105–45 Vessels carrying agricultural products.

(a) The following areas are Class II, Division 1, (Zone 10 or Z) locations on vessels carrying bulk agricultural products that may produce dust explosion hazards:

(1) The interior of each cargo hold or bin.

(2) Areas where cargo is transferred, dropped, or dumped and locations within 1 meter (3 feet) of the outer edge of these areas in all directions.

(b) The following areas are Class II, Division 2, (Zone 11 or Y) locations on vessels carrying bulk agricultural products that may produce dust explosion hazards:

(1) All areas within 2 meters (6.5 feet) of a Division 1 (Zone 10 or Z) location in all directions except when there is an intervening barrier, such as a bulkhead or deck.

NOTE TO § 111.105–45: Information on the dust explosion hazards associated with the carriage of agricultural products is contained in Coast Guard Navigation and Vessel Inspection Circular 9–84 (NVIC 9–84) ''Electrical Installations in Agricultural Dust Locations.''

[CGD 94–108, 61 FR 28285, June 4, 1996]

Subpart 111.107—Industrial Systems

§ 111.107–1 Industrial systems.

(a) For the purpose of this subpart, an industrial system is a system that—

(1) Is not a ship's service load, as defined in § 111.10–1;

(2) Is used only for the industrial function of the vessel;

(3) Is not connected to the emergency power source; and

(4) Does not have specific requirements addressed elsewhere in this subchapter.

(b) An industrial system that meets the applicable requirements of the NEC must meet only the following:

(1) The switchgear standards in part 110, subpart 110.10, of this chapter.

(2) Part 110, subpart 110.25, of this chapter—Plan Submittal.

(3) Subpart 111.01 of this part—General.

(4) Subpart 111.05 of this part—Equipment Ground, Ground Detection, and Grounded Systems.

(5) Sections 111.12–1(b) and 111.12–1(c)—Prime movers.

(6) Subpart 111.105 of this part—Hazardous Locations.

(c) Cables that penetrate a watertight or fire boundary deck or bulkhead must—

(1) Be installed in accordance with § 111.60–5 and meet the flammability test requirements of IEEE Std 1202, section 18.13.5 of IEEE Std 45, or IEC 332–3, Category A; or

(2) Be specialty cable installed in accordance with § 111.60–2.

[CGD 94–108, 61 FR 28286, June 4, 1996, as amended at 62 FR 23910, May 1, 1997]

PART 112—EMERGENCY LIGHTING AND POWER SYSTEMS

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AUTHORITY: 46 U.S.C. 3306, 3703; 49 CFR 1.46.

SOURCE: CGD 74–125A, 47 FR 15267, Apr. 8, 1982, unless otherwise noted.

Subpart 112.01—Definitions of Emergency Lighting and Power Systems

§ 112.01–1 Purpose.

The purpose of this subpart is to define types of emergency lighting and power systems.

§ 112.01–5 Manual emergency lighting and power system.

A manual emergency lighting and power system is one in which a single manual operation, such as the manual operation of a switch from an ''off'' to an ''on'' position, is necessary to cause the emergency power source to supply power to the emergency loads.

§ 112.01–10 Automatic emergency lighting and power system.

An automatic emergency lighting and power system is one in which a reduction in potential from the ship's service power and lighting plant causes

the emergency power source to supply power to the emergency loads.

§ 112.01–15 Temporary emergency power source.

A temporary emergency power source is one of limited capacity that carries, for a short time, selected emergency loads while an emergency power source of larger capacity is being started.

§ 112.01–20 Final emergency power source.

A final emergency power source is one that functions after the temporary emergency power source is disconnected.

Subpart 112.05—General

§ 112.05–1 Purpose.

(a) The purpose of this part is to ensure a dependable, independent, and dedicated emergency power source with sufficient capacity to supply those services that are necessary for the safety of the passengers, crew, and other persons in an emergency and those additional loads that may be authorized under paragraph (c) of this section.

(b) No load may be powered from an emergency power source, except:

(1) A load required by this part to be powered from the emergency power source;

(2) A bus-tie to the main switchboard that meets § 112.05–3; and

(3) Emergency loads that may be necessary to maintain or restore the propulsion plant, such as control systems, controllable pitch propellers, hydraulic pumps, control air compressors, and machinery necessary for dead-ship start-up.

(c) Other loads may be authorized by the Commanding Officer, Marine Safety Center (MSC), to be connected to the emergency source of power to provide an increased level of safety in recognition of a unique vessel mission or configuration. When these loads are authorized, the emergency power source must—

(1) Be sized to supply these loads using a unity (1.0) service factor; or

(2) Be provided with automatic load shedding that removes these loads and operates before the emergency generator trips due to overload. The automatic load shedding circuit breakers must be manually reset.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28286, June 4, 1996; 61 FR 36787, July 12, 1996]

§ 112.05–3 Main-emergency bus-tie.

Each bus-tie between a main switchboard and an emergency switchboard must:

(a) Disconnect automatically upon loss of potential at the emergency switchboard;

(b) Be arranged to prevent parallel operation of an emergency power source with any other source of electric power, except for interlock systems for momentary transfer of loads; and

(c) If arranged for feedback operation, open automatically upon overload of the emergency power source before the emergency power source is tripped off the line from the overload.

§ 112.05–5 Emergency power source.

(a) The emergency power source must meet table 112.05–5(a) and have the capacity to supply all loads that are simultaneously connected to it, except a load on a bus-tie to the main switchboard or non-required loads that are connected in accordance with § 112.05–1(c).

TABLE 112.05–5(a)

Size of vessel and service	Type of emergency power source or lighting	Period of operation and minimum capacity of emergency power
Passenger vessels:		
Ocean, Great Lakes, or coastwise; or on an international voyage.	Temporary emergency power source; and final emergency power source (automatically connected storage battery or an automatically started generator).	36 hours.[1] [2]
Other than Ocean, Great Lakes, or coastwise and not on an international voyage.	Final emergency power source (automatically connected storage battery or an automatically started generator).	8 hours or twice the time of run, whichever is less.[2]

TABLE 112.05–5(a)—Continued

Size of vessel and service	Type of emergency power source or lighting	Period of operation and minimum capacity of emergency power
Cargo vessels; miscellaneous self-propelled vessels; tankships; barges with sleeping accommodations for more than 6 persons; mobile offshore drilling units; and oceanographic vessels:		
Ocean, Great Lakes, or coastwise and 500 GT or more; on an international voyage and 500 GT or more; or all waters and 1600 GT or more.	Final emergency power source (automatically connected storage battery or an automatically started generator).	18 hours.[1] [2]
Ocean, Great Lakes, or coastwise and less than 500 GT; or other than ocean, Great Lakes, or coastwise, 300 GT or more but less than 1600 GT, and not on an international voyage..	Emergency lighting provided by an automatically connected or manually controlled storage battery; automatically or manually started generator; or relay-controlled, battery-operated lanterns.[3] [4].	6 hours or twice the time of run, whichever is less.

[1] A 12-hour power supply may be especially considered for vessels engaged regularly in voyages of short duration.
[2] The capacity for the operation of the steering gear, as required by § 111.93, is for a period of 30 minutes continuous operation.
[3] The emergency lighting requirements of § 112.15–1 (b), (c), (f), and (g) must be met.
[4] Requirements of Subpart 112.39 must be met by the relay-controlled, battery-operated lanterns.

(b) The emergency power source must be independent of the ship's service lighting and powerplant and propulsion plant, except for the compressed air starting means allowed in § 112.50–7(c)(3)(i). A stop control for an emergency generator must be only in the space that has the emergency generator, except a remote mechanical reach rod is permitted for the fuel oil shut-off valve to an independent fuel oil tank located in the space.

(c) The complete emergency installation must function at full rated power when the vessel is upright or inclined to the maximum angle of heel that results from the assumed damage defined in 33 CFR part 155 or in subchapter S of this chapter for the specific vessel type or 22.5 degrees, whichever is greater; when the trim of the ship is 10 degrees, either in the fore or aft direction, or is in any combination of angles within those limits.

(d) The emergency power source, its associated transforming equipment, and the emergency switchboard must be located aft of the collision bulkhead, outside of the machinery casing, and above the uppermost continuous deck. Each compartment containing this equipment must be readily accessible from the open deck and must not contain machinery not associated with, or equipment not in support of, the normal operation of the emergency power source. Equipment in support of the normal operation of the emergency power source includes, but is not limited to, ventilation fans, CO_2 bottles, space heaters, and internal communication devices, such as sound powered phones.

(e) No compartment that has an emergency power source or its vital components may adjoin a Category A machinery space or those spaces containing the main source of electrical power and its vital components.

(f) Except for a cable for connecting equipment in the engineroom or boilerroom, no cable supplied from the emergency switchboard may penetrate the boundaries of the engineroom, boilerroom, uptakes, or casings of these spaces. These cables must be kept clear of the bulkheads and decks forming these boundaries. No emergency circuit in an engineroom or a boilerroom may supply equipment in any other space.

(g) The emergency switchboard must be as near as practicable to the emergency power source but not in the same space as a battery emergency power source.

(h) If the emergency power source is a generator, the emergency switchboard must be in the same space as the emergency power source.

(i) The prime mover of an emergency generator must be either a diesel engine or a gas turbine.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28286, June 4, 1996; 62 FR 23910, May 1, 1997]

Subpart 112.15—Emergency Loads

§ 112.15–1 Temporary emergency loads.

On vessels required by § 112.05–5(a) to have a temporary emergency power source, the following emergency lighting and power loads must be arranged so that they can be energized from the temporary emergency power source:

(a) Navigation lights.

(b) Enough lights throughout machinery spaces to allow essential operations and observations under emergency conditions and to allow restoration of service.

(c) Lighting, including low location lighting if installed, for passageways, stairways, and escape trunks in passenger quarters, crew quarters, public spaces, machinery spaces, damage control lockers, emergency equipment lockers, and work spaces sufficient to allow passengers and crew to find their way to open decks and to survival craft, muster stations, and embarkation stations with all watertight doors and fire doors closed.

(d) Illuminated signs with the word ''EXIT'' in red letters throughout a passenger vessel so the direction of escape to the open deck is obvious from any portion of the vessel usually accessible to the passengers or crew, except machinery spaces, and except stores and similar spaces where the crew are not normally employed. There must be sufficient signs so that the direction of escape is obvious, with all fire doors in stairway enclosures and main vertical zone bulkheads closed and all watertight doors closed. For the purpose of this paragraph, an individual stateroom or other similar small room is not required to have a sign, but the direction of escape must be obvious to a person emerging from the room.

(e) Illumination to allow safe operation of each power operated watertight door.

(f) At least one light in each space where a person may be maintaining, repairing, or operating equipment, stowing or drawing stores or equipment, or transiting, such as public spaces, work spaces, machinery spaces, workshops, galleys, emergency fire pumprooms, bow thruster rooms, storage areas for paint, rope, and other stores, underdeck passageways in cargo areas, steering gear rooms, windlass rooms, normally accessible duct keels with valve operators, cargo handling rooms, and holds of roll-on/roll-off vessels.

(g) Lighting for survival craft launching, including muster stations, embarkation stations, the survival craft, its launching appliances and the area of the water where it is to be launched.

(h) Electric communication systems that are necessary under temporary emergency conditions and that do not have an independent storage battery source of power.

(i) Each power operated watertight door system.

(j) All shipwide communications systems necessary for the transmittal of information during an emergency.

(k) Each fire door holding and release system.

(l) Supply to motor generator or other conversion equipment if a temporary emergency power source of alternating current is necessary for essential communication systems or emergency equipment.

(m) Each daylight signaling light.

(n) Each smoke detector system.

(o) Each electrically controlled or powered ship's whistle.

(p) Each fire detection system; and gas detection system if installed.

(q) All lighting relative to helicopter operations and landing if installed, unless provided for by another source of power (such as independent batteries separately charged by solar cells).

(r) Each general emergency alarm system required by SOLAS 74.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28286, June 4, 1996]

§ 112.15–5 Final emergency loads.

On vessels required to have a final emergency power source by § 112.05–5(a) of this chapter, the following emergency lighting and power loads must be arranged so that they can be energized from the final emergency power source:

(a) Each load under § 112.15–1.

(b) The machinery, controls, and alarms for each passenger elevator.

(c) Each charging panel for:

(1) Temporary emergency batteries;

(2) Starting batteries for diesel engines or gas turbines that drive emergency generators; and

(3) General alarm batteries.

(d) One of the bilge pumps, if the emergency power source is its source of power to meet Part 56 of this chapter.

(e) One of the fire pumps, if the emergency power source is its source of power to meet the requirements of the subchapter under which the vessel is certificated.

(f) Each sprinkler system, water spray extinguishing system, or foam system pump.

(g) If necessary, the lube oil pump for each propulsion turbine and reduction gear, propulsion diesel reduction gear, and ship's service generator turbine which needs external lubrication.

(h) Each rudder angle indicator.

(i) Each radio or global maritime distress and safety system (GMDSS) component.

(j) Each radio direction finder, loran, radar, gyrocompass, depth sounder, global positioning system (GPS), satellite navigation system (SATNAV), speed log, rate-of-turn indicator and propeller pitch indicator.

(k) Each steering gear feeder, if required by part 58, subpart 58.25, of this chapter.

(l) Each general emergency alarm flashing light required by §113.25–10 of this chapter.

(m) Each electric blow-out-preventer control system.

(n) Any permanently installed diving equipment that is dependent upon the vessel's or drilling unit's power.

(o) Each emergency generator starting compressor, as allowed by §112.50–7(c)(3)(ii).

(p) Each steering gear failure alarm required by part 113, subpart 113.43, of this chapter.

(q) The ballast control system on each column-stabilized mobile offshore drilling unit.

(r) Each vital system automation load required by part 62 of this chapter.

(s) Motor-operated valves for each cargo oil and fuel oil system, if the emergency power source is the source of power to meet §56.60(d) of this chapter.

(t) Each ship's stabilizer wing, unless a separate source of emergency power is supplied.

(u) Each indicator that shows the position of the stabilizer wings, if the emergency power source is its emergency source of power.

(v) Each smoke extraction fan (not including smoke detector sampling) and CO_2 exhaust fan for spaces.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28287, June 4, 1996; 61 FR 36787, July 12, 1996]

§112.15–10 Loads on systems without a temporary emergency power source.

If there is no temporary emergency power source, the loads under §112.15–1 must be arranged so that they can be energized from the final emergency power source.

Subpart 112.20—Emergency Systems Having a Temporary and a Final Emergency Power Source

§112.20–1 General.

This subpart contains requirements applicable to emergency power installations having both a temporary and a final emergency power source.

§112.20–3 Normal source for emergency loads.

(a) The normal source for emergency loads must be the ship's service generating plant.

(b) The power from the ship's service generating plant for the emergency loads must be supplied to the emergency switchboard through automatic transfer switches.

§112.20–5 Failure of power from the normal source or final emergency power source.

(a) If there is a reduction of potential of the normal source by 15 to 40 percent, the loads under §112.15–1 must be automatically supplied from the temporary emergency power source.

(b) For systems in which a reduction of frequency of the normal source or final emergency power source adversely affects the emergency system and emergency loads, there must be means to transfer the loads under

§ 112.15–1 to the temporary emergency power source upon a reduction in the frequency of the normal source or final emergency power source.

§ 112.20–10 Diesel or gas turbine driven emergency power source.

Simultaneously with the operation of the transfer means under § 112.20–5, the diesel engine or gas turbine driving the final emergency power source must start automatically with no load on the final emergency power source.

§ 112.20–15 Transfer of emergency loads.

(a) When the potential of the final emergency power source reaches 85 to 95 percent of normal value, the emergency loads under § 112.15–5 must transfer automatically to the final emergency power source and, on a passenger vessel, this transfer must be accomplished in no more than 45 seconds after failure of the normal source of power.

(b) When the potential from the normal source has been restored, the emergency loads must be manually or automatically transferred to the normal source, and the final emergency power source must be manually or automatically stopped.

(c) If the potential of the final emergency power source is less than 75 to 85 percent of normal value while supplying the emergency loads, the temporary emergency loads under § 112.15–1 must transfer automatically to the temporary emergency power source.

Subpart 112.25—Emergency Systems Having an Automatic Starting Diesel Engine or Gas Turbine Driven Emergency Power Source as the Sole Emergency Power Source

§ 112.25–1 General.

This subpart contains requirements applicable to emergency power installations having an automatic starting diesel engine or gas turbine driven emergency power source as the sole emergency power source.

§ 112.25–3 Normal source for emergency loads.

(a) The normal source for emergency loads must be the ship's service generating plant.

(b) The power from the ship's service generating plant for the emergency loads must be supplied to the emergency switchboard by an automatic transfer switch located at the emergency switchboard.

§ 112.25–5 Failure of power from the normal source.

If there is a reduction of potential of the normal source by 15 to 40 percent, the diesel engine or gas turbine driving the final emergency power source must start automatically with no load on the emergency power source.

§ 112.25–10 Transfer of emergency loads.

(a) When the potential of the final emergency source reaches 85 to 95 percent of normal value, the emergency loads under § 112.15–5 must transfer automatically to the final emergency power source and this transfer must be accomplished in no more than 45 seconds after failure of the normal source of power.

(b) When the potential from the normal source has been restored, the emergency loads must be manually or automatically transferred to the normal source, and the final emergency power source must be manually or automatically stopped.

Subpart 112.30—Emergency Systems Having an Automatically Connected Storage Battery as the Sole Emergency Power Source

§ 112.30–1 General.

This subpart contains requirements applicable to emergency power installations having an automatically connected storage battery as the sole emergency power source.

§ 112.30–3 Normal source for emergency loads.

(a) The normal source for emergency loads must be the ship's service generating plant.

(b) The power from the ship's service generating plant for the emergency loads must be supplied to the emergency loads through automatic transfer switches.

§ 112.30–5 Transfer of emergency loads.

If there is a reduction of potential of the normal source by 15 to 40 percent, the emergency loads under §112.15–5 must transfer automatically from the normal source to the emergency power source.

§ 112.30–10 Restoration of normal source potential.

When the potential from the normal source is restored to 85 to 95 percent of its normal value, the emergency loads must transfer automatically to the normal source.

Subpart 112.35—Manually Controlled Emergency Systems Having a Storage Battery or a Diesel Engine or Gas Turbine Driven Generator as the Sole Emergency Power Source

§ 112.35–1 General.

This subpart contains requirements applicable to emergency power installations having a manually controlled storage battery, diesel engine, or gas turbine driven generator as the sole emergency power source.

§ 112.35–3 Normal source for emergency loads.

The normal source for emergency loads must be the ship's service generating plant.

§ 112.35–5 Manually started emergency systems.

Manually started emergency lighting and power systems must be activated by one manual operation, such as the manual operation of a switch from an ''off'' to an ''on'' position, to cause the emergency system to supply its connected loads.

§ 112.35–7 Activating means.

The activating means must be in the navigating bridge or in a location where the means can be controlled by the chief engineer.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28287, June 4, 1996]

Subpart 112.37—Temporary Emergency Power Source

§ 112.37–1 General.

Each temporary source of emergency power required by Table 112.05–5(a) must consist of a storage battery of sufficient capacity to supply the temporary emergency loads for not less than one-half hour.

Subpart 112.39—Battery Operated Lanterns

§ 112.39–1 General.

(a) Each battery-operated, relay-controlled lantern used in accordance with Table 112.05–5(a) must:

(1) Have rechargeable batteries;

(2) Have an automatic battery charger that maintains the battery in a fully charged condition; and

(3) Not be readily portable.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28287, June 4, 1996]

§ 112.39–3 Operation.

(a) The lanterns must be capable of providing light for at least 3 hours.

(b) The lantern must be relay-controlled so that the loss of normal power causes the lanterns to light.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28287, June 4, 1996]

Subpart 112.40—Alternating-Current Temporary Source of Supply

§ 112.40–1 General requirements.

Installations requiring alternating current for the operation of communication equipment or other apparatus essential under temporary emergency conditions must be provided with the necessary conversion equipment. If the conversion equipment operates both under normal conditions and under temporary emergency conditions, the

conversion equipment must be provided in duplicate.

Subpart 112.43—Emergency Lighting Systems

§ 112.43–1 Switches.

An emergency lighting system must not have a switch, except:

(a) In a distribution panel;

(b) As required in § 112.43–7; or

(c) In a circuit that serves a hazardous space such as a paint room or cargo handling room if the switch is located outside of the hazardous location.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28287, June 4, 1996]

§ 112.43–5 Controls on island type vessels.

On an island type vessel, such as a containership, emergency lights for illumination of survival craft launching operations must be controlled from a central location within the island nearest the launching operations or from the navigating bridge.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28287, June 4, 1996]

§ 112.43–7 Navigating bridge distribution panel.

(a) Except as allowed in paragraph (b) of this section, the following emergency lights must be supplied from a distribution panel on the navigating bridge:

(1) Navigation lights not supplied by the navigation light indicator panel.

(2) Lights for survival craft launching operations under § 111.75–16, except as allowed in § 112.43–5.

(3) Signaling lights.

(4) Emergency lights:

(i) On open decks;

(ii) On the navigating bridge;

(iii) In the chartroom;

(iv) In the fire control room; and

(v) For navigation equipment.

(b) On a mobile offshore drilling unit, the distribution panel required in paragraph (a) of this section must be in the control room.

(c) Each distribution panel required in paragraphs (a) and (b) of this section must have a fused switch or circuit breaker for each branch circuit.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28287, June 4, 1996]

§ 112.43–9 Signaling lights.

Each signaling light must be supplied by a branch circuit that supplies no other equipment.

§ 112.43–11 Illumination for launching operations.

Branch circuits supplying power to lights for survival craft launching operations must supply no other equipment and meet § 111.75–16 of this chapter.

[CGD 94–108, 61 FR 28287, June 4, 1996]

§ 112.43–13 Navigation light indicator panel supply.

Each navigation light indicator panel must be supplied:

(a) Directly from the emergency switchboard; or

(b) Be a through feed, without switch or overcurrent protection, from the feeder supply the navigating bridge emergency lighting panel.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28287, June 4, 1996]

§ 112.43–15 Emergency lighting feeders.

For a vessel with fire bulkheads forming fire zones, at least one emergency lighting feeder must supply only the emergency lights between two adjacent main vertical fire zone bulkheads. The emergency lighting feeder must be separated as widely as practicable from any general lighting feeder supplying the same space.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28287, June 4, 1996]

Subpart 112.45—Visible Indicators

§ 112.45–1 Visible indicators.

There must be visible indicators in the machinery space to show;

(a) When an emergency battery is discharging; and

(b) When the automatically controlled emergency power source is supplying the emergency loads.

Subpart 112.50—Emergency Diesel and Gas Turbine Engine Driven Generator Sets

§ 112.50–1 General.

(a) The prime mover of a generator set must have:

(1) All accessories necessary for operation and protection of the prime mover; and

(2) A self-contained cooling system of a size that ensures continuous operation with 100 degrees F (37 degrees C) air.

(b) The fuel used must have a flashpoint of not less than 110 degrees F (43 degrees C).

(c) The room that has the generator set must have intake and exhaust ducts to supply adequate cooling air.

(d) The generator set must be capable of carrying its full rated load within 45 seconds after cranking is started with the intake air, room ambient temperature, and starting equipment at O°C. The generator's prime mover must not have a starting aid to meet this requirement, except that a thermostatically-controlled electric water-jacket heater connected to the final emergency bus is permitted.

(e) The generator set must start by hydraulic, compressed air, or electrical means.

(f) The generator set must maintain proper lubrication when inclined to the angles specified in §112.05–5(c), and must be arranged so that it does not spill oil under a vessel roll of 30 degrees to each side of the vertical.

(g) The generator set must shut down automatically upon loss of lubricating oil pressure, overspeed, or operation of a fixed fire extinguishing system in the emergency generator room (see §111.12–1(b) for detailed overspeed trip requirements).

(h) If the prime mover is a diesel engine, there must be an audible alarm that sounds on low oil pressure and high cooling water temperature.

(i) If the prime mover is a gas turbine, it must meet the shutdown and alarm requirements in §58.10–15(g) of this chapter.

(j) An independent fuel supply must be provided for the prime mover.

(k) Each emergency generator that is arranged to be automatically started must be equipped with a starting device with an energy-storage capability of at least six consecutive starts. A second, separate source of starting energy may provide three of the required six starts. If a second source is provided, the system need only provide three consecutive starts.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28287, June 4, 1996]

§ 112.50–3 Hydraulic starting.

A hydraulic starting system must meet the following:

(a) The hydraulic starting system must be a self-contained system that provides the cranking torque and engine starting RPM recommended by the engine manufacturer. The hydraulic starting system must be capable of six consecutive starts, unless a second, separate source of starting energy capable of three consecutive starts is provided. A second, separate source of starting energy may provide three of the required six starts. If a second source is provided, the hydraulic system need only provide three consecutive starts.

(b) The stored hydraulic pressure must be automatically maintained within the predetermined pressure limits.

(c) The means of automatically maintaining the hydraulic system within the predetermined pressure limits must be electrically energized from the final emergency bus.

(d) There must be a means to manually recharge the hydraulic system.

(e) Charging of the hydraulic starting system must not cause insufficient hydraulic pressure for engine starting.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28287, June 4, 1996]

§ 112.50–5 Electric starting.

An electric starting system must have a starting battery with sufficient capacity for at least six consecutive starts. A second, separate source of starting energy may provide three of the required six starts. If a second

source is provided, the electrical starting system need only provide three consecutive starts.

[CGD 94–108, 61 FR 28288, June 4, 1996]

§ 112.50–7 Compressed air starting.

A compressed air starting system must meet the following:

(a) The starting, charging, and energy storing devices must be in the emergency generator room, except for the main or auxiliary air compressors addressed in paragraph (c)(3)(i) of this section.

(b) The compressed air starting system must provide the cranking torque and engine starting RPM recommended by the engine manufacturer.

(c) The compressed air starting system must have an air receiver that meets the following:

(1) Has a capacity for at least six consecutive starts. A second, separate source of starting energy may provide three of the required consecutive starts. If a second source is provided, the compressed air starting system need only provide three consecutive starts.

(2) Supplies no other system.

(3) Is supplied from one of the following:

(i) The main or auxiliary compressed air receivers with a nonreturn valve in the emergency generator room and a handcranked, diesel-powered air compressor for recharging the air receiver.

(ii) An electrically driven air compressor that is automatically operated and is powered from the emergency power source. If this compressor supplies other auxiliaries, there must be a non-return valve at the inlet of the starting air receiver and there must be a handcranked, diesel-powered air compressor for recharging the air receiver.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28288, June 4, 1996]

Subpart 112.55—Storage Battery Installation

§ 112.55–1 General.

Each storage battery installation must meet Subpart 111.15 of this chapter.

§ 112.55–5 Emergency lighting loads.

When supplying emergency lighting loads, the storage battery initial voltage must not exceed the standard system voltage by more than 5 percent.

§ 112.55–10 Storage battery charging.

(a) Each storage battery installation for emergency lighting and power, and starting batteries for an emergency diesel or gas turbine driven generator set, must have apparatus to automatically maintain the battery fully charged.

(b) When the ship's service generating plant is available, the battery must have a continuous trickle charge, except that after discharge the battery must be charged automatically at a higher rate.

(c) Charging operations must not cause an absence of battery power.

(d) There must be instruments to show the rate of charge.

§ 112.55–15 Capacity of storage batteries.

(a) A storage battery for an emergency lighting and power system must have the capacity—

(1) To close all watertight doors two times;

(2) To open all watertight doors once; and

(3) To carry the remaining emergency loads continuously for the time prescribed in § 112.05–5(a), table 112.05–5(a).

(b) At the end of the time specified in paragraph (a) of this section, the potential of the storage battery must be at least 88 percent of the standard voltage.

[CGD 74–125A, 47 FR 15267, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28288, June 4, 1996; 61 FR 39695, July 30, 1996]

PART 113—COMMUNICATION AND ALARM SYSTEMS AND EQUIPMENT

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SOURCE: CGD 74–125A, 47 FR 15272, Apr. 8, 1982, unless otherwise noted.

Subpart 113.05—General Provisions

§ 113.05–5 Approved equipment.

If approved equipment is required in this part, that equipment must be specifically approved by the Commandant.

NOTE: Many specifications for equipment that must be approved are in Subchapter Q for this chapter.

§ 113.05–7 Environmental tests.

Communication, alarm system, control, and monitoring equipment must meet the environmental tests of—

(a) Table 4/11.1 of ABS Rules for Building and Classing Steel Vessels or the applicable ENV category of Lloyd's

Register Type approval System—Test Specification No. 1; and

(b) IEC 533 as appropriate.

[CGD 94–108, 61 FR 28288, June 4, 1996, as amended at 62 FR 23910, May 1, 1997]

Subpart 113.10—Fire and Smoke Detecting and Alarm Systems

§ 113.10–1 Approved equipment.

Each alarm annunciator, fire detector, test station, manual station, and vibrating bell must be approved under Subpart 161.002 of this chapter and meet the requirements of this subpart.

§ 113.10–3 Cable runs.

Cable runs between the fire alarm annunciator and fire detecting or fire alarm zones must be as direct as practicable and, where practicable, must not be in staterooms, lockers, or other enclosed spaces in order to reduce the risk of damage by a localized fire or other cause.

§ 113.10–5 Common return.

A conductor must not be used as a common return from more than one zone.

§ 113.10–7 Connection boxes.

Each connection box must be constructed in accordance with NEMA 250 Type 4 or 4X or IEC IP 56 requirements.

[CGD 94–108, 61 FR 28288, June 4, 1996, as amended at 62 FR 23910, May 1, 1997]

§ 113.10–9 Power supply.

(a) *General.* There must be at least two sources of power for the electrical equipment of each fire detecting and alarm system. The normal source must be the main power source. The other source must be the emergency power source or an automatically charged battery. If the other source is an automatically charged battery, the charger must be supplied from the final emergency power source. Upon loss of power to the system from the normal source, the system must be automatically supplied from the other source.

(b) *Batteries.* Each battery used in a fire detecting and alarm system must meet Subpart 111.15 of this chapter.

(c) *Capacity of power supply branch circuit.* The capacity of each branch circuit providing power to a fire detection or alarm system must not be less than 125 percent of the maximum load.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28288, June 4, 1996]

Subpart 113.20—Automatic Sprinkler Systems

§ 113.20–1 Sprinkler alarm system.

Each sprinkler alarm system, including annunciator, power supply, alarm switches, and bells, must meet Subpart 76.25 of this chapter.

§ 113.20–3 Connection boxes.

Each connection box and each switch enclosure in an automatic sprinkler system must be constructed in accordance with NEMA 250 Type 4 or 4X or IEC IP 56 requirements.

[CGD 94–108, 61 FR 28288, June 4, 1996, as amended at 62 FR 23910, May 1, 1997]

Subpart 113.25—General Emergency Alarm Systems

EDITORIAL NOTE: Nomenclature changes appear at CGD 94–108, 61 FR 28288, June 4, 1996.

§ 113.25–1 Applicability.

(a) This subpart, except §§ 113.25–25 and 113.25–30, applies to each manned vessel of over 100 gross tons, except barges, scows, and similar vessels.

(b) Section 113.25–25 applies to each manned ocean and coastwise barge of over 100 gross tons if the crew is divided into watches for the purpose of steering.

(c) Section 113.25–30 applies to each barge of 300 or more gross tons that has sleeping accommodations for more than six persons.

§ 113.25–3 Requirements.

Each vessel must have a general emergency alarm system that meets the requirements of this subpart.

§ 113.25–5 Location of contact makers.

(a) *Passenger vessels and cargo and miscellaneous vessels.* Each passenger vessel, cargo vessel, and miscellaneous vessel must have a manually operated

contact maker for the general emergency alarm system:

(1) In the navigating bridge; and

(2) At the feeder distribution panel if the general alarm power supply is not in or next to the navigating bridge.

(b) *Tank vessels.* Each tank vessel must have a manually operated contact maker for the general emergency alarm system:

(1) In the navigating bridge;

(2) At the deck officers' quarters farthest from the engineroom;

(3) in the engineroom;

(4) At the location of the emergency means of stopping cargo transfer required under 33 CFR 155.780; and

(5) At the feeder distribution panel if the general alarm power supply is not in or next to the navigating bridge.

(c) *Mobile offshore drilling units.* Each mobile offshore drilling unit must have a manually operated contact maker for the general emergency alarm system:

(1) In the main control room;

(2) At the drilling console;

(3) At the feeder distribution panel;

(4) In the navigating bridge, if a navigating bridge is installed; and

(5) In a routinely occupied space that is as far as practicable from all other contact makers.

(d) *Additional contact maker.* A vessel must not have more than one other contact maker that operates the general emergency alarm system in addition to those required under paragraph (a), (b), or (c) of this section unless the installation of other contact makers has been accepted by the Commandant.

(e) *Special system.* If a vessel has an emergency squad when operating, has a manual fire alarm system, or is an ocean-going passenger vessel, it must have:

(1) An independent manually operated contact maker in the navigating bridge that is connected to operate only the general emergency alarm signal in crew's quarters and machinery spaces; or

(2) A separate alarm system that sounds in the crew's quarters and machinery spaces.

§ 113.25–6 Power supply.

(a) The power supply for the general emergency alarm system must meet the requirements of SOLAS 74, regulations III–6.4.2 and III/50.

(b) The emergency power source for the general emergency alarm system must meet the requirements of SOLAS 74, regulation II–1/42 or II–1/43, as applicable.

[CGD 94–108, 61 FR 28288, June 4, 1996]

§ 113.25–7 Power supply overcurrent protection.

(a) If the general emergency alarm system is the only load supplied by the general emergency alarm system battery or batteries, the battery or batteries must have an enclosed fused switch or circuit breaker that has a means of locking. The fused switched or circuit breaker must be outside of, and next to, the battery room or battery locker, and the capacity of the fuses or circuit breaker must be at least 200 percent of the connected load.

(b) If the general emergency alarm system is supplied from an emergency or interior communication switchboard, or if duplicate general alarm batteries supply other loads as allowed under §113.25–6(e)(2), there must be a fused switch or circuit breaker supplying the general emergency alarm system that has a means of locking.

§ 113.25–8 Distribution of general emergency alarm system feeders and branch circuits.

(a) Each system must have a feeder distribution panel to divide the system into the necessary number of zone, feeders, except where, because of the arrangement of the vessel, only one zone feeder is necessary; then a branch circuit distribution panel or feeder distribution panel must be used.

(b) The feeder distribution panel must have overcurrent protection for each zone feeder, but there must be no disconnect switches.

(c) The feeder distribution panel must be in an enclosed space next to the general alarm power supply.

(d) Each system must have at least one feeder for each vertical fire zone that has general emergency alarm signal.

(e) Each system must have one or more branch circuit distribution panels for each zone feeder, with at least one fused branch circuit for each deck

level. The distribution panel must be above the uppermost continuous deck, in the zone served, and there must be no disconnect switches for the branch circuits.

(f) A branch circuit must not supply emergency alarm signal on more than one deck level, except for a single branch circuit supplying all levels of a single space containing more than one deck level if all other requirements of this section are met.

(g) On a vessel not divided into fire zones by main vertical fire bulkheads, the general emergency alarm system must be arranged into vertical service zones not more than 40 meters (131 feet) long, and there must be a general alarm feeder for each of these zones that has general emergency alarm signal.

(h) General alarm feeders and branch circuit cables must be in passageways and must not be in staterooms, lockers, galleys, machinery spaces, or other enclosed spaces, unless it is necessary to supply general emergency alarm signal in those spaces.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28288, June 4, 1996]

§ 113.25–9 Location of general emergency alarm signal.

General emergency alarm signal must:

(a) Be located in passenger and crew quarters areas where they can alert persons in spaces where those persons may be maintaining, repairing, or operating equipment, stowing or drawing stores or equipment, or transiting, such as public spaces, work spaces, machinery spaces, workshops, galleys, emergency firepump room, bow thruster rooms, storage areas for paint, rope, and other stores, underdeck passageways in cargo areas, steering gear rooms, windless rooms, holds of roll-on/roll-off vessels, and, except those that are accessible only through bolted manhole covers, duct keels with valve operators; and

(b) Be audible in the spaces identified in paragraph (a) of this section with all normally closed doors and accesses closed; and

(c) Be installed in cabins without loudspeaker installation. Other audible devices, such as electronic alarm transducers, are permitted.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28288, June 4, 1996]

§ 113.25–10 Emergency red-flashing lights.

(a) In a space described in § 113.25–9(a), where the general emergency alarm signal cannot be heard over the background noise, there must be a red-flashing light or rotating beacon, in addition to the general emergency alarm signal, that:

(1) Has sufficient intensity above the background lighting that would alert personnel in the space;

(2) Is activated whenever the general emergency alarm signal in the space are activated; and

(3) Is supplied by the general emergency alarm system power supply or the vessel emergency power source through a relay that is operated by the general emergency alarm system.

(b) A red-flashing light or rotating beacon must be installed so that it is visible in the cargo pump rooms of vessels that carry combustible liquid cargoes. The installation must be in accordance with the requirements of part 111, subpart 111.105, of this chapter.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28288, June 4, 1996; 62 FR 23910, May 1, 1997]

§ 113.25–11 Contact makers.

Each contact maker must—

(a) Have normally open contacts and be constructed in accordance with NEMA 250 Type 4 or 4X or IEC IP 56 requirements;

(b) Have a switch handle that can be maintained in the ''on'' position;

(c) Have the ''off'' and ''on'' positions of the operating handle permanently marked; and

(d) Have an inductive load rating not less than the connected load or, on large vessels, have auxiliary devices to interrupt the load current.

[CGD 94–108, 61 FR 28288, June 4, 1996, as amended at 62 FR 23910, May 1, 1997]

§ 113.25–12 Alarm signals.

(a) Each general emergency alarm signal must be an electrically-operated

bell, klaxon, or other warning device capable of producing a signal or tone distinct from any other audible signal on the vessel.

(b) Electronic devices used to produce the general emergency alarm signal must meet the requirements of subpart 113.50 of this part.

(c) The minimum sound pressure levels for the emergency alarm tone in interior and exterior spaces must be 80 dB(A) and at least 10 dB(A) above ambient noise levels existing during normal equipment operation with the vessel underway in moderate weather.

[CGD 94–108, 61 FR 28289, June 4, 1996]

§ 113.25–14 Electric cable and distribution fittings.

Each cable entrance to an emergency alarm signal or distribution fitting must be made watertight by a terminal or stuffing tube.

§ 113.25–15 Distribution panels.

Each distribution panel must:

(a) Be watertight;

(b) Need a tool to be opened.

§ 113.25–16 Overcurrent protection.

(a) Each fuse in a general emergency alarm system must meet the requirements of part 111, subpart 111.53, of this chapter.

(b) Each overcurrent protection device must cause as wide a differential as possible between the rating of the branch circuit overcurrent protection device and that of the feeder overcurrent protection device.

(c) The capacity of the feeder overcurrent device must be as near practicable to 200 percent of the load supplied. The capacity of a branch circuit overcurrent device must not be higher than 50 percent of the capacity of the feeder overcurrent device.

[CGD 94–108, 61 FR 28289, June 4, 1996]

§ 113.25–20 Marking of equipment.

(a) Each general emergency alarm system fused switch and distribution panel must have a fixed nameplate on the outside of its cover that has a description of its function. The rating of fuses must also be shown on the outside of the cover of a fused switch.

(b) Each general alarm contact maker must be marked ''GENERAL ALARM'' in red letters on a corrision-resistant plate or on a sign.

(c) A contact maker that operates only the general emergency alarm signal in crew quarters, machinery spaces, and work spaces must be marked ''CREW ALARM'' by the method described in paragraph (b) of this section.

(d) Each general emergency alarm signal must be marked ''GENERAL ALARM—WHEN EMERGENCY ALARM SIGNAL RINGS GO TO YOUR STATION'' in red letters at least ½ inch high.

(e) Each general emergency alarm system distribution panel must have a directory attached to the inside of its cover giving the designation of each circuit, the area supplied by each circuit, and the rating of each circuit fuse.

§ 113.25–25 General emergency alarm systems for manned ocean and coastwise barges.

A manned ocean or coastwise barge of more than 100 gross tons, if it is one that operates with the crew divided into watches for steering the vessel, must have an emergency alarm signal installation. The system must:

(a) Have an automatically charged battery as the power source;

(b) Have a manually operated contact maker at the steering station and in the crew accommodation area; and

(c) Must meet the requirements of § 113.25.7 and §§ 113.25–9 through 113.25–20 of this subpart.

§ 113.25–30 General emergency alarm systems for barges of 300 or more gross tons with sleeping accommodations for more than six persons.

The general emergency alarm system for a barge of 300 or more gross tons with sleeping accommodations for more than six persons must meet the requirements of Subpart 113.25, except as follows:

(a) The number and location of contact makers must be determined by the design, service, and operation of the barge.

NOTE: Contact makers in the primary work area, quarters area, galley and mess area,

machinery spaces, and the navigating bridge or control area should be considered.

(b) If a distribution panel cannot be above the uppermost continuous deck because of the design of the barge and is installed below the deck, it must be as near the deck as practicable.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28289, June 4, 1996]

Subpart 113.27—Engineers' Assistance-Needed Alarm

§ 113.27–1 Engineers' assistance-needed alarm.

Each self-propelled ocean, Great Lakes, or coastwise vessel must have a manually-operated engineers' assistance-needed alarm that is:

(a) Operated from:

(1) The engine control room, if the vessel has an engine control room; or

(2) The maneuvering platform, if the vessel has no engine control room;

(b) Audible in the engineers' accommodation spaces; and

(c) Powered from the general alarm power source.

Subpart 113.30—Internal Communications

§ 113.30–1 Applicability.

This subpart applies to each self-propelled vessel.

§ 113.30–3 Means of communications.

(a) An emergency means of communication required by this subpart must—

(1) Be comprised of either fixed or portable equipment; and

(2) Provide common talking means of two-way voice communication and calling among the navigating bridge, emergency control stations, muster stations, embarkation stations, and other strategic positions listed in § 113.30–5.

(b) The means of communication and calling must be a sound-powered telephone or other reliable voice communication method and must be independent of the vessel's electrical system.

[CGD 94–108, 61 FR 28289, June 4, 1996]

§ 113.30–5 Requirements.

(a) *Communication.* Each vessel must have a means of communication among the following:

(1) Navigating bridge.

(2) Steering gear room, if outside the engineroom.

(3) Alternative steering station if outside of the steering gear room.

(4) Engine control room, if the vessel has an engine control room.

(5) Maneuvering platform, if the vessel has no engine control room.

(6) Control room, if the vessel is a mobile offshore drilling unit.

(7) The engineering officers' accommodations, if the vessel is an automated, self-propelled vessel under § 62.50–20(f) of this chapter.

(b) *Gyrocompass.* Each vessel that has a master gyrocompass that is not in or next to the navigating bridge must have a means of communication between the master gyrocompass and the navigating bridge repeater compass.

(c) *Radar.* Each vessel that has a radar plan position indicator that is not in or next to the navigating bridge must have a means of communication between the navigating bridge and the radar plan position indicator.

(d) *Emergency lockers.* If the emergency equipment lockers or spaces used by the emergency squad are not next to the navigating bridge or, on a mobile offshore drilling unit, next to the control room, there must be a means of communication between the navigating bridge or control room and the emergency equipment lockers or spaces.

(e) *Radio and radio direction finder.* Communication to the radio and radio direction finder must meet the following requirements:

(1) Each vessel that has a radio installation must have a means of comunication between the radio room, the navigating bridge, or, if the vessel is a mobile offshore drilling unit, the control room, and any other place from which the vessel may be navigated under normal conditions, other than a place that is only for emergency functions, a place that is only for docking or maneuvering, or a place that is for navigating the vessel in close quarters. A location that has the apparatus that is necessary to steer the vessel, give

engine orders, and control the whistle, is a place from which the vessel may be navigated.

(2) If the operating position of the emergency radio installation is not in the compartment normally used for operating the main radio installation, there must be means of communication between the emergency radio room, the navigating bridge, or, if the vessel is a mobile offshore drilling unit, the control room, and any other place from which the vessel may be navigated under normal conditions; other than a place that is only for emergency functions, a place that is only for docking or maneuvering, or a place that is for navigating the vessel in close quarters.

(3) Each vessel equipped with radio direction-finding apparatus that is not in or next to the navigating bridge must have a means of communication between the navigating bridge and the direction-finding apparatus.

(4) The communication system required by this paragraph must be independent of all other systems on the vessel. The location of the termination of these systems is subject to approval by the Federal Communication Commission.

(f) *Fire or smoke detecting systems.* Each vessel equipped with a fire or smoke detecting system, if control units are not in the navigating bridge, must have means of communication between the navigating bridge and the stations where the control units are located.

(g) *Lookout.* Each vessel must have a means of communication between the navigating bridge and the bow or forward lookout station unless direct voice communication is possible.

(h) *Engineroom local control station.* Each self-propelled vessel equipped with control from the navigating bridge must have a means of communication between the local station for the control of the speed or direction of thrust of the propulsion machinery and the engine control room, unless an engine order telegraph is installed in accordance with §113.35–3. Each communication station at a local control station must—

(1) Be on a circuit separate from any other station required by this section; and

(2) Provide the capability of reliable voice communication when the vessel is underway.

(i) *Mobile offshore drilling units.* Each non-self-propelled mobile offshore drilling unit must have a means of communication among the control room, drill floor, machinery space, and silicon controlled rectifier (SCR) room (if installed). Each column-stabilized mobile offshore drilling unit must have a means of communication between the ballast control room and the spaces that contain the ballast pumps and valves.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28289, June 4, 1996; 62 FR 23910, May 1, 1997]

§113.30–20 General requirements.

(a) The communications stations listed in §113.30–5(a) through (d), (f), (g), and (i) and other communications stations for the operation of the vessel, such as the captain's and chief engineer's offices and staterooms, emergency power room, carbon dioxide (or other extinguishing agent) control room, and firepump room, must not be on the same circuit as communications stations installed to meet the requirements of §§113.30–5(e) and 113.30–5(h).

(b) If a communications station is in the weather and on the same circuit as other required stations, there must be a cut-out switch on the navigating bridge that can isolate this station from the rest of the stations, unless the system possesses other effective means of station isolation during a fault condition.

(c) Jack boxes or headsets must not be on a communications system that includes any station required by this subpart, except for a station installed to meet §§113.30–5(h) or 113.30–25(d).

[CGD 94–108, 61 FR 28289, June 4, 1996]

§113.30–25 Detailed requirements.

(a) Each sound-powered telephone station must include a permanently-wired handset with a push-to-talk button and a hanger for the handset, except those stations detailed in paragraph (d) of this section. The hanger must be constructed so that it holds the handset away from the bulkhead

and so that the handset will not be dislodged by the motion of the vessel.

(b) Each voice communication station device in the weather must be in a proper enclosure as required in §111.01–9 of this chapter. The audible signal device must be outside the station enclosure.

(c) Each station in a navigating bridge or a machinery space must be in an enclosure meeting at least NEMA 250 Type 2 or IEC IP 22 requirements.

(d) In a noisy location, such as an engine room, there must be a booth or other equipment to permit reliable voice communication during vessel operation.

(e) In a location where the voice communication station audible signal device cannot be heard throughout the space, there must be an additional audible signal device or visual device, such as a light, which is energized from the final emergency bus.

(f) If two or more voice communication stations are near each other, there must be a means that indicates the station called.

(g) Each voice communication talking circuit must be electrically independent of each calling circuit. A short circuit, open circuit, or ground on either side of a calling circuit must not affect a talking circuit. Circuits must be insulated from ground.

(h) Each connection box must meet at least NEMA 250 Type 4 or 4X or IEC IP 56 requirements.

(i) Voice communication cables must run as close to the fore and aft centerline of the vessel as practicable. The cable must not run through high fire-risk spaces, such as machinery rooms and galleys, unless it is technically impractical to route them otherwise or they are required to serve circuits in the high-risk area. Cable running through or into these high-risk areas must meet the requirements of EC 331.

[CGD 94–108, 61 FR 28289, June 4, 1996; 61 FR 33045, June 26, 1996; 61 FR 36787, July 12, 1996, as amended at 62 FR 23910, May 1, 1997]

Subpart 113.35—Engine Order Telegraph Systems

§ 113.35–1 Definitions.

As used in this subpart:

(a) *Indicator* means an instrument in the engine room to receive and acknowledge engine orders; and

(b) *Transmitter* means an instrument to send engine orders to the engineroom and receive acknowledgement from the engineroom.

§ 113.35–3 General requirements.

(a) Each self-propelled vessel, except as provided in paragraph (d) of this section, must have an electric or mechanical engine order telegraph system from the navigating bridge to the engineroom.

(b) On a vessel with more than one propulsion engine, each engine must have this system.

(c) On a double-ended vessel that has two navigating bridges, this system must be between the engineroom and each navigating bridge.

(d) If a small vessel has no engine order telegraph system between the navigating bridge and the engineroom, the propulsion plant must be controlled entirely from the navigating bridge, with no means of normal engine control from the engineroom.

(e) On vessels equipped with pilothouse control, each local control station in the engineroom must have an indicator if:

(1) Manual operation from the local control station is an alternative means of control; and

(2) The local control station is not immediately adjacent to the engineroom control station; and

(3) Reliable voice communication and calling that meets the requirements of §113.30–5(h) is not provided.

(f) Engine order telegraph and remote propulsion control systems must be electrically separate and independent, except that a single mechanical operator control device with separate transmitters and connections for each system may be used.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 81–030, 53 FR 17847, May 18, 1988; CGD 94–108, 61 FR 28290, June 4, 1996]

§ 113.35–5 Electric engine order telegraph systems.

(a) Each electric engine order telegraph system must have transmitters and indicators that are electrically connected to each other.

(b) Each engineroom indicator must be capable of acknowledgment of orders.

(c) There must be an audible signal at each instrument. The signal at both locations must sound continuously when the transmitter and the indicator do not show the same order.

(d) Each telegraph instrument must meet the protection requirements of §111.01–9 of this chapter.

(e) Each system must have an alarm which—

(1) Automatically sounds and visually signals a loss of power to the system;

(2) Is on the navigating bridge; and

(3) Has a means to reduce the audible signal from 100 percent to not less than 50 percent.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28290, June 4, 1996]

§113.35–7 Electric engine order telegraph systems; operations.

(a) Where two or more transmitters, located on or on top of, or on the wings of, the navigating bridge operate a common indicator in the engineroom, the transmitters must:

(1) Operate in synchronism as required in paragraph (b) of this section; or

(2) Operate under the control of a transmitter transfer control in accordance with paragraph (c) of this section.

(b) All transmitter handles and pointers must operate in synchronism. Where the transmitters are mechanically interlocked to effect synchronous operation, the requirements of §113.35–13 must be met.

(c) Except for a transmitter in an unattended navigating bridge on a double-ended vessel, each transmitter must operate under the control of a transmitter transfer control so that movement of any one transmitter handle automatically connects that transmitter electrically to the engineroom indicator and simultaneously disconnects electrically all other transmitters. The reply pointers of all transmitters must operate in synchronism at all times.

(d) On a double-ended vessel that has two navigating bridges, a manually operated transfer switch which will disconnect the system in the unattended navigating bridge must be provided.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982. Redesignated and amended by CGD 94–108, 61 FR 28290, June 4, 1996]

§113.35–9 Mechanical engine order telegraph systems.

(a) Each mechanical engine order telegraph system must consist of transmitters and indicators mechanically connected to each other, as by means of chains and wires.

(b) Each transmitter and each indicator must have an audible signal device to indicate, in the case of an indicator, the receipt of an order, and in the case of a transmitter, the acknowledgment of an order. The audible signal device must not be dependent upon any source of power for operation other than that of the movement of the transmitter or indicator handle.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28290, June 4, 1996]

§113.35–13 Mechanical engine order telegraph systems; operation.

If more than one transmitter operates a common indicator in the engineroom, all the transmitters must be mechanically interlocked and operate in synchronism. A failure of the transmission wire or chain at any transmitter must not interrupt or disable any other transmitter.

§113.35–15 Mechanical engine order telegraph systems; application.

If a mechanical engine order telegraph system is installed on any vessel to provide the communication required by this subpart, the length of cables or other mechanical limitations must not prevent the efficient operation of the system.

§113.35–17 Vessels with navigating bridge control.

Each vessel with navigating bridge throttle control must have a positive mechanical stop on each telegraph transmitter that prevents movement

to the ''Navigating Bridge Control'' position without positive action by the operator.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28290, June 4, 1996]

Subpart 113.37—Shaft Speed and Thrust Indicators

§ 113.37–1 Applicability.

This subpart applies to all self-propelled vessels.

§ 113.37–5 General requirements.

(a) A vessel equipped with fixed pitch propellers must have on the navigating bridge and at the engineroom control station a propeller speed and direction indicator for each shaft.

(b) A vessel equipped with controllable pitch propellers must have on the navigating bridge and at the engineroom control station a propeller speed and pitch position indicator for each shaft.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28290, June 4, 1996]

§ 113.37–10 Detailed requirements.

(a) Each indicator must be independent of the propulsion control system. A failure of the propulsion control system must not affect the operation of the indicators.

(b) Each electric component or its enclosure must meet NEMA 250 Type 4 or 4X or IEC IP 56 requirements.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28290, June 4, 1996]

Subpart 113.40—Rudder Angle Indicator Systems

§ 113.40–1 Applicability.

This subpart applies to self-propelled vessels.

§ 113.40–5 General requirements.

The position of the rudder, if power-operated, must be shown at the principal steering station. If there is non-follow-up steering control at the alternative steering station, there must be a separate rudder angle indicator system for that station that is electrically independent from each other rudder angle indicator system.

§ 113.40–10 Detailed requirements.

(a) Each rudder angle indicator system must have a transmitter at the rudder head that is actuated by movement of the rudder with the angular movements of the rudder transmitted to a remote indicator or indicators. This system must be independent of all other systems and not receive power or signal from the steering gear control, autopilot, or dynamic positioning systems. However, the indicator may be physically located on a control console, such as an integrated bridge system, if it is readily visible by the helmsman at the steering stand.

(b) Each electric component or its enclosure must meet NEMA 250 Type 4 or 4X or IEC IP 56 requirements.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28290, June 4, 1996; 62 FR 23910, May 1, 1997]

Subpart 113.43—Steering Failure Alarm Systems

§ 113.43–1 Applicability.

This subpart applies to each vessel of 1600 gross tons and over that has power driven main or auxiliary steering gear.

§ 113.43–3 Alarm system.

(a) Each vessel must have a steering failure alarm system that actuates an audible and visible alarm in the pilothouse when the actual position of the rudder differs by more than 5 degrees from the rudder position ordered by the followup contol systems, required by part 58, subpart 58.25, of this chapter, for more than:

(1) 30 seconds for ordered rudder position changes of 70 degrees;

(2) 6.5 seconds for ordered rudder position changes of 5 degrees; and

(3) The time period calculated by the following formula for ordered rudder positions changes between 5 degrees and 70 degrees:

$$t = (R/2.76)+4.64$$

Where
t = maximum time delay in seconds
R = ordered rudder change in degrees

(b) The alarm system must be separate from, and independent of, each steering gear control system, except for input received from the steering wheel shaft.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 62 FR 23910, May 1, 1997]

§ 113.43–5 Power supply.

Each steering failure alarm system must be supplied by a circuit that:

(a) Is independent of other steering gear system and steering alarm circuits;

(b) Is fed from the final emergency power source through the emergency distribution panel in the wheelhouse, if installed; and

(c) Has no overcurrent protection except short-circuit protection by an instantaneous fuse or circuit breaker rated or set at 400 to 500 percent of:

(1) The current-carrying capacity of the smallest alarm system interconnecting conductors; or

(2) The normal load of the system.

Subpart 113.45—Refrigerated Spaces Alarm Systems

§ 113.45–5 General requirements.

(a) Each refrigerated space that is accessible to the vessel's personnel and that can be locked from the outside so that it cannot be opened from the inside, must have an audible alarm system that can be operated from within the refrigerated space.

(b) The alarm activator must be in the refrigerated space at its exit.

(c) The audible signal must sound at a manned location.

(d) If there is a common audible signal for more than one lockable refrigerated space, there must be an annunciator for locating the space from which the signal was initiated.

Subpart 113.50—Public Address Systems

§ 113.50–1 Applicability.

This subpart applies to each vessel required to have a general emergency alarm system in accordance with § 113.25–1.

[CGD 94–108, 61 FR 28290, June 4, 1996]

§ 113.50–5 General requirements.

(a) Each vessel must have an amplifier-type announcing system that will supplement the general emergency alarm. This system must provide for the transmission of orders and information throughout the vessel by means of microphones and loudspeakers connected through an amplifier. If a decentralized-type system is used, its overall performance must not be affected by the failure of a single call station. This system may be combined with the general emergency alarm and fire detecting and alarm systems. The public address system must be protected against unauthorized use.

(b) The announcing station must be located adjacent to the general emergency alarm contact maker on the navigating bridge.

(c) There must be a means to silence all other audio distribution systems at the announcing station.

(d) The system may be arranged to allow broadcasting separately to, or to any combination of, various areas on the vessel. If the amplifier system is used for the general emergency alarm required by subpart 113.25 of this part, the operation of a general emergency alarm contact maker must activate all speakers in the system, except that a separate crew alarm may be used as allowed by § 113.25–5(e)(2).

(e) The amplifier, and any device used to produce the general emergency alarm signal, must be provided in duplicate.

(f) The power supply must be in accordance with the requirements of §§ 113.25–6 and 113.25–7.

(g) Each electrical subsystem in a weather location must be watertight or in a watertight enclosure (NEMA 250 Type 4 or 4X or IEC IP 56).

[CGD 94–108, 61 FR 28290, June 4, 1996, as amended at 62 FR 23910, May 1, 1997]

§ 113.50–10 Additional requirements for passenger vessels.

Each passenger vessel must have a public address system capable of broadcasting separately or collectively to the following stations:

(a) Survival craft stations, port.

(b) Survival craft stations, starboard.

(c) Survival craft embarkation stations, port.

(d) Survival craft embarkation stations, starboard.

(e) Public spaces used for passenger assembly points.

(f) Crew quarters.

(g) Accommodation spaces and service spaces.

[CGD 94–108, 61 FR 28290, June 4, 1996]

§ 113.50–15 Loudspeakers.

(a) Loudspeakers must be located to eliminate feedback or other interference which would degrade communication.

(b) Loudspeakers must be located to provide intelligible and audible one-way communication throughout the vessel. Weatherdeck loudspeakers must be watertight and suitably protected from the effects of the wind and seas.

(c) There must be a sufficient number of loudspeakers throughout the vessel. The public address system must be installed with regard to acoustically marginal conditions and not require any action from the addressee. With the vessel underway in normal conditions, the minimum sound pressure levels for broadcasting emergency announcements must be—

(1) In interior spaces, 75 dB(A) or, if the background noise level exceeds 75 dB(A), then at least 20 dB(A) above maximum background noise level; and

(2) In exterior spaces, 80 dB(A) or, if the background noise level exceeds 80 dB(A), then at least 15 dB(A) above maximum background noise level.

(d) Loudspeakers must not have external volume controls or local cutout switches.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28291, June 4, 1996; 61 FR 36787, July 12, 1996]

§ 113.50–20 Distribution of cable runs.

(a) Each system must have a feeder distribution panel to divide the system into the necessary number of zone feeders. Where, because of the arrangement of the vessel, only one zone feeder is necessary, a branch circuit distribution panel must be used.

(b) The feeder distribution panel must be in an enclosed space next to the public address system power supply.

(c) Each system must have at least one feeder for each vertical fire zone.

(d) Each system must have one or more branch circuit distribution panels for each zone feeder, with at least one branch circuit for each deck level. The distribution panel must be above the uppermost continuous deck, in the zone served, and there must be no disconnect switches for the branch circuits.

(e) A branch circuit must not supply speakers on more than one deck level, except for a single branch circuit supplying all levels of a single space if all other requirements of this section are met.

(f) On a vessel not divided into vertical fire zones by main vertical fire bulkheads, the vessel must be divided into vertical zones not more than 40 meters (131 feet) long. There must be a feeder for each of these zones.

(g) Feeders and branch circuit cables must be in passageways. They must not be in staterooms, lockers, galleys, or machinery spaces, unless it is necessary to supply public address speakers in those spaces.

[CGD 94–108, 61 FR 28291, June 4, 1996]

Subpart 113.65—Whistle Operators

§ 113.65–5 General requirements.

Each whistle operator must meet section 37.19 of IEEE Standard No. 45.

[CGD 74–125A, 47 FR 15272, Apr. 8, 1982, as amended by CGD 82–036, 48 FR 655, Jan. 6, 1983; CGD 94–108, 61 FR 28291, June 4, 1996]

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SUBCHAPTER J—ELECTRICAL ENGINEERING

EDITORIAL NOTE: This listing is provided for informational purposes only. It is compiled by and kept current by the U.S. Coast Guard, Department of Transportation.

Part, subpart, or section

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SUBCHAPTER K—SMALL PASSENGER VESSELS CARRYING MORE THAN 150 PASSENGERS OR WITH OVERNIGHT ACCOMMODATIONS FOR MORE THAN 49 PASSENGERS

PART 114—GENERAL PROVISIONS

Sec.

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114.900 OMB control numbers.

AUTHORITY: 46 U.S.C. 2103, 3306, 3307, 3703; 49 U.S.C. App. 1804; 49 CFR 1.45, 1.46. Section 114.900 also issued under 44 U.S.C. 3507.

SOURCE: CGD 85–080, 61 FR 885, Jan. 10, 1996, unless otherwise noted.

§ 114.100 Purpose.

The purpose of this subchapter is to implement applicable sections of Subtitle II of Title 46, United States Code, which require the inspection and certification of small passenger vessels.

§ 114.110 General applicability.

(a) Except as in paragraph (b) of this section, this subchapter applies to each vessel of less than 100 gross tons that carries more than 150 passengers, or has overnight accommodations for more than 49 passengers, and that—

(1) Carries at least one passenger for hire;

(2) Is chartered with or without a crew provided or specified by the owner or the owner's representative; or

(3) If a submersible vessel, carries at least one passenger for hire.

NOTE TO PARAGRAPH (A): For a vessel of less than 100 gross tons that carries 150 or less passengers or has overnight accommodations for 49 or less passengers, see subchapter T of this chapter.

(b) This subchapter does not apply to:

(1) A vessel operating exclusively on inland waters that are not navigable waters of the United States;

(2) An oceanographic research vessel;

(3) A boat forming part of a vessel's lifesaving equipment and that is not used for carrying passengers except in emergencies or during emergency drills;

(4) A vessel of a foreign country that is a party to the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS), to which the United States Government is currently a party, and which has on board a current valid SOLAS Passenger Ship Safety Certificate; or

(5) A vessel of a foreign country, whose government has inspection laws approximating those of the United States and which by its laws accords similar privileges to vessels of the United States, which has on board a current valid certificate of inspection, permitting the carrying of passengers, issued by its government.

(c) Unless otherwise provided, an existing vessel that is not required to comply with a requirement in this subchapter may comply with the regulation that was applicable to the vessel on March 10, 1996.

(d) A vessel required by this subchapter to meet applicable sections of subchapter H shall follow the phase-in schedule for certain equipment and requirements found in this subchapter.

[CGD 85–080, 61 FR 885, Jan. 10, 1996, as amended at 62 FR 51347, Sept. 30, 1997]

§ 114.112 Specific applicability for individual parts.

At the beginning of certain parts of this subchapter, a more specific application is given for all or particular portions of that part. This application sets forth the type, size, service, or age of a vessel to which certain portions of that part apply or particular dates by which an existing vessel must comply with certain portions of that part.

§ 114.120 Vessels on an international voyage.

A mechanically propelled vessel that carries more than 12 passengers on an international voyage must comply with the applicable requirements of SOLAS as well as this subchapter.

§ 114.122 Load lines.

A vessel of 24 meters (79 feet) in length or more, the keel of which was laid or that was at a similar stage of construction on or after July 21, 1968, and that is on a voyage other than a domestic voyage is subject to load line assignment, certification, and marking in subchapter E (Load Lines) of this chapter.

§ 114.400 Definitions of terms used in this subchapter.

(a) Terms used in this subchapter are defined in paragraph (b) of this section. The number in parenthesis after certain terms describing areas on a vessel refers to the applicable column and row number where that area is listed in Tables 116.415 (b) and (c) of part 116 of this subchapter.

(b) General terms:

Accommodation space (5, 6, or 7 depending on size, fire load, and furnishings) means a space that does not contain any cooking appliance other than a microwave oven or other low heat (maximum heating element temperature less than 121°C (250°F)) appliance used as a—

(1) Public space;
(2) Hall;
(3) Dining room and messroom;
(4) Lounge or cafe;
(5) Public sales room;
(6) Overnight accommodation space;
(7) Barber shop or beauty parlor;
(8) Office or conference room;
(9) Medical treatment room or dispensary; or
(10) Game or hobby room.

Anniversary date means the day and the month of each year, which corresponds to the date of expiration of the Certificate of Inspection.

Approval series means the first six digits of a number assigned by the Coast Guard to approved equipment. Where approval is based on a subpart of subchapter Q of this chapter, the approval series corresponds to the number of the subpart. A listing of approved equipment, including all of the approval series, is published periodically by the Coast Guard in Equipment Lists (COMDTINST M16714.3 series), available from the Superintendent of Documents.

Area of refuge means an area that is separated from the effects of fire and flooding where passengers and crew can gather to await disembarking in the event of fire or flooding. To qualify as an area of refuge, the area must provide separation from the effect of fire and flooding for the maximum amount of time required to complete disembarking of the vessel, or one hour, whichever is less.

Atrium (5 or 7 depending on fire load and furnishings) means a continuous deck opening connecting more than two deck levels within an accommodation space that is covered at the top of the series openings and is used for purposes other than an enclosed stairway, or a utility trunk for pipe, cable, or ductwork.

Auxiliary machinery space (12) means a space containing only pumps, tanks, electrical machinery, ventilation or air conditioning equipment, refrigeration machinery, resistors steering machinery, etc., with not more than 2.5 kilograms per square meter (0.5 pounds per square foot) of combustible storage.

Balcony (5 or 7 depending on fire load and furnishings) means a deck opening connecting two deck levels within an accommodation space creating two freely communicating levels within the same space.

Beam or *B* means the maximum width of a vessel from:

(1) Outside of planking to outside of planking on wooden vessels; and

(2) Outside of frame to outside of frame on all other vessels.

Bulbous bow means a design of bow in which the forward underwater frames ahead of the forward perpendicular are swelled out at the forefoot into a bulbous formation.

Bulkhead deck means the uppermost deck to which watertight bulkheads and the watertight shell extend.

Cable means single or multiple insulated conductors with an outer protective jacket.

Cargo space (11) means a:

(1) Cargo hold;
(2) Refrigerated cargo space;
(3) A trunk leading to or from a space listed above; or
(4) A vehicle space.

Char length means the numeric value in inches assigned to a material when tested in accordance with NFPA 261 by an independent laboratory.

Coast Guard District Commander or *District Commander* means an officer of the Coast Guard designated as such by the Commandant to command Coast Guard activities within a district.

Coastwise means a route that is not more than 20 nautical miles offshore on any of the following waters:
(1) Any ocean;
(2) The Gulf of Mexico;
(3) The Caribbean Sea;
(4) The Bering Sea;
(5) The Gulf of Alaska; or
(6) Such other similar waters as may be designated by a Coast Guard District Commander.

Cockpit vessel means vessel with an exposed recess in the weather deck extending not more than one-half of the length of the vessel measured over the weather deck.

Cold water means water where the monthly mean low water temperature is normally 15 degrees Celsius (59 degrees Fahrenheit) or less.

Commandant means the Commandant of the Coast Guard or an authorized Headquarters staff officer designated in §1.01 of this chapter.

Consideration means an economic benefit, inducement, right, or profit including pecuniary payment accruing to an individual, person, or entity, but not including a voluntary sharing of the actual expenses of the voyage, by monetary contribution or donation of fuel, food, beverage, or other supplies.

Continuous B-Class ceiling means an approved structural ceiling composed of B-Class panels that terminates only at an approved A-Class or B-Class bulkhead.

Control space (1) means a space containing:
(1) An emergency source of power, excluding generators;
(2) Navigating and radio equipment that is normally manned;
(3) Centralized fire control or detection equipment, such as fixed gas extinguishing system controls; or
(4) Machinery controls not located within a machinery space.

Corrosion-resistant material or *corrosion-resistant* means made of one of the following materials in a grade suitable for its intended use in a marine environment:
(1) Silver;
(2) Copper;
(3) Brass;
(4) Bronze;
(5) Aluminum alloys with a copper content of no more than 0.4 percent;
(6) Copper-nickel;
(7) Plastics;
(8) Stainless steel;
(9) Nickel-copper; or
(10) A material, which when tested in accordance with ASTM B 117 (incorporated by reference, see §114.600) for 200 hours, does not show pitting, cracking, or other deterioration.

Crew accommodation space (5 or 7 depending on fire load and furnishings) means an accommodation space designated for the use of crew members and where passengers are normally not allowed to occupy.

Critical radiant flux means the numeric value assigned to a material when tested in accordance with ASTM E–648 by an independent laboratory.

Custom engineered means, when referring to a fixed gas fire extinguishing system, a system that is designed for a specific space requiring individual calculations for the extinguishing agent volume, flow rate, piping, and similar factors.

Dead cover means a metal cover to close or protect a port light to avoid glass breakage in case of heavy weather.

Distribution panel means an electrical panel that receives energy from the switchboard and distributes the energy to energy consuming devices or other panels.

Draft means the vertical distance from the molded baseline of a vessel amidships to the waterline.

Dripproof means enclosed equipment so constructed or protected that falling drops of liquid or solid particles striking the enclosure at any angle from 0 to 15 degrees downward from the

vertical do not interfere with the operation of the equipment. A National Electrical Manufacturers Association type 1 enclosure with a dripshield is considered to be dripproof.

Embarkation deck (4) means;

(1) The deck from which davit launched survival craft are designed to be boarded; or

(2) If no davit launched survival craft are carried aboard the vessel, the main deck or lowest deck available for embarking or debarking passengers.

Embarkation station (4) means the place on the vessel from which a survival craft is boarded.

Enclosed space means a compartment that is not exposed to the atmosphere when all access and ventilation closures are secured.

Existing vessel means a vessel that is not a new vessel.

Exit means—

(1) A stairtower or a stairway which terminates at an area of refuge or embarkation station; or

(2) A door which leads directly to an area of refuge or embarkation station.

Exposed waters is a term used in connection with stability criteria and means:

(1) Waters, except the Great Lakes, more than 20 nautical miles from a harbor of safe refuge;

(2) Those portions of the Great Lakes more than 20 nautical miles from a harbor of safe refuge from October 1 of one year through April 15 of the next year (winter season); and

(3) Those waters less than 20 nautical miles from a harbor of safe refuge that the cognizant Officer in Charge, Marine Inspection, determines are not partially protected waters or protected waters because they present special hazards due to weather or other circumstances.

Ferry means a vessel that:

(1) Operates in other than ocean or coastwise service;

(2) Has provisions only for deck passengers or vehicles, or both;

(3) Operates on a short run on a frequent schedule between two points over the most direct water route; and

(4) Offers a public service of a type normally attributed to a bridge or tunnel.

Fiber reinforced plastic means plastics reinforced with fibers or strands of some other material.

Fire control boundary means a deck or bulkhead meeting the requirements for A-Class, B-Class, or C-Class or C'-Class construction in accordance with §116.415 of this subchapter.

Fire load means a measure in kilograms per square meter (pounds per square foot) equaling the weight of all combustible material that is in a compartment and comprises its construction, as defined in §116.427(b) of this subchapter, divided by the floor area of that compartment.

Flame spread means the numeric value assigned to a material when tested in accordance with ASTM E 84 (incorporated by reference, see §114.600) or UL 723 by an independent laboratory.

Flash point means the temperature at which a liquid gives off a flammable vapor when heated using the Pensky-Martens Closed Cup Tester method in accordance with ASTM D 93 (incorporated by reference, see §114.600).

Float-free launching or arrangement means that method of launching a survival craft whereby the survival craft is automatically released from a sinking vessel and is ready for use.

Flush deck vessel means a vessel with a continuous weather deck located at the uppermost sheer line of the hull.

Freeing port means any direct opening through the vessel's bulwark or hull to quickly drain overboard water that has been shipped on exposed decks.

Galley (9) means a space containing appliances with cooking surfaces that may exceed 121°C (250° F), such as ovens, griddles, and deep fat fryers.

Great Lakes means a route on the waters of any of the Great Lakes.

Gross tonnage and *gross tons* is an indicator of a vessel's approximate volume as determined in accordance with Part 69 (Measurement of Vessels) of this chapter and recorded on the vessel's Tonnage Certificate (formerly Certificate of Admeasurement).

Harbor of safe refuge means a port, inlet, or other body of water normally sheltered from heavy seas by land and in which a vessel can navigate and safely moor. The cognizant Officer in Charge, Marine Inspection, shall determine the suitability of a location as a

harbor of safe refuge. The suitability will vary for each vessel, depending on the vessel's size, maneuverability, and mooring gear.

Hardwood means oak or a similar wood with a specific gravity of approximately 0.6 and having fire resistant properties similar to oak.

Hazardous condition means any condition that could adversely affect the safety of any vessel, bridge, structure, or shore area or the environmental quality of any port, harbor, or navigable water of the United States. This condition could include, but is not limited to, fire, explosion, grounding, leaking, damage, illness of a person on board, or a manning shortage.

High risk accommodation space (6 or 7 depending on size) means an accommodation space that contains a fire load greater than 15 kilograms per square meter (3 pounds per square foot), or a cleaning gear locker which contains storage space for materials other than flammable liquids and which has a deck area less than 5 square meters.

High risk service spaces (9) include—

(1) Galley;

(2) Large laundry or drying room;

(3) Garbage or trash disposal storage area;

(4) Paint or lamp locker;

(5) Cleaning gear locker or small storeroom in an accommodation area;

(6) Mail or baggage room; and

(7) Pantries and storerooms which contain flammable liquids or have a deck area not less than 5 square meters including connecting alleyways and stairs.

High seas means all waters that are neither territorial seas (the waters in a belt 3 nautical miles wide, that is adjacent to the coast and seaward of the territorial sea baseline) nor internal waters of the United States or of any foreign country.

High speed craft means a craft that is operable on or above the water and has characteristics so different from those of conventional displacement ships, to which the existing international conventions, particularly SOLAS, apply, that alternative measures should be used to achieve an equivalent level of safety. In order to be considered a high speed craft, the craft must be capable of a maximum speed equal to or exceeding $V=3.7 \times displ.^{1667}$ h, where ''V'' is the maximum speed and ''displ'' is the vessel displacement corresponding to the design waterline in cubic meters.

Independent laboratory means a laboratory accepted under § 159.010 in subchapter Q of this chapter, or other standard specified by the Commandant.

Inflatable survival craft or *inflatable life jacket* means one that depends upon nonrigid, gas filled chambers for buoyancy, and is normally kept uninflated until ready for use.

Interior finish means any coating, overlay or veneer that is applied to interior surfaces such as bulkheads, linings, or suspended ceilings for decorative or other purposes. It includes not only the visible finish, but also all material used in its composition and application. In general, a paint is not considered an interior finish.

International voyage means a voyage between a country to which SOLAS applies and a port outside that country. A country, as used in this definition, includes every territory for the international relations of which a contracting government to the convention is responsible or for which the United Nations is the administering authority. For the U.S., the term ''territory'' includes the Commonwealth of Puerto Rico, all possessions of the United States, and all lands held by the United States under a protectorate or mandate. For the purposes of this subchapter, vessels are not considered as being on an ''international voyage'' when solely navigating the Great Lakes and the St. Lawrence River as far east as a straight line drawn from Cap des Rosiers to West Point, Anticosti Island and, on the north side of Anticosti Island, the 63rd meridian.

Lakes, bays, and sounds means a route on any of the following waters:

(1) A lake other than the Great Lakes;

(2) A bay;

(3) A sound; or

(4) Such other similar waters as may be designated by a Coast Guard District Commander.

Launching appliance means a device for transferring a survival craft or rescue boat from its stowed position safely to the water. For a launching appliance using a davit, the term includes the davit winch, and falls.

Length when used in terms of the vessel's length (excluding bow sprits, bumpkins, rudders, outboard motor brackets, handles, and other similar fittings, attachments, and extensions), means:

(1) The length listed on the vessel's Certificate of Documentation issued under the provisions of Part 67 (Documentation of Vessels) of this chapter or Certificate of Number issued under the provisions of 33 CFR Part 173, Subpart B (Numbering); or

(2) For a vessel that does not have a Certificate of Documentation or a Certificate of Number, the ''registered length'' as defined in §69.53 in subchapter G of this chapter or, for a vessel that is less than 24 meters (79 feet) in overall length and is measured using simplified measurement, the registered length as defined in §69.203 in subchapter G of this chapter; or

(3) For the purposes of Part 179 in subchapter T of this chapter, the ''length'' of a vessel with a bulbous bow means the larger of the length as defined in the first paragraph of this definition or the straight line horizontal measurement from the forwardmost tip of the bulbous bow to the aftermost part of the vessel measured parallel to the center line.

Length between perpendiculars or *LBP* means the horizontal distance measured between perpendiculars taken at the forwardmost and aftermost points on the waterline corresponding to the deepest operating draft.

Limited coastwise means a route that is not more than 20 nautical miles from a harbor of safe refuge.

Lining means a bulkhead panel.

Low risk accommodation space (5) means an accommodation space that contains only fire resistant furnishings and a fire load not greater than 15 kilograms per square meter (3 pounds per square foot).

Low risk service spaces (8) include—

(1) Cleaning gear lockers which have a deck area less than 5 meters containing only slop sinks, and having no room for stowing materials other than brooms, mops, or soap;

(2) Small laundries or drying rooms containing only a tub, washing machine, and/or household type electric dryer;

(3) Workshops that are not part of a machinery space;

(4) Washrooms and toilet spaces; and

(5) Motion picture projection rooms.

Machinery space (10) means a space, including a trunk, alleyway, stairway, or duct to such a space, that contains—

(1) Propulsion machinery of any type;

(2) Steam or internal combustion machinery;

(3) Oil transfer equipment;

(4) Electrical motors of more than 10 hp;

(5) One or more oil-fired boilers or heaters; or

(6) Electrical generating machinery.

Main horizontal zone means a vehicle space that is separated from the remainder of the vessel by horizontal fire control boundaries required by the structural fire protection requirements of this subchapter.

Main transverse watertight bulkhead means a transverse bulkhead that must be maintained watertight in order for the vessel to meet the damage stability and subdivision requirements of this subchapter.

Main vertical zone means that section of a vessel into which the hull, superstructure, and deckhouse are required to be divided by vertical fire control boundaries required by the structural fire protection requirements of this subchapter.

Major conversion means a conversion of a vessel that, as determined by the Commandant:

(1) Substantially changes the dimensions or carrying capacity of the vessel;

(2) Changes the type of vessel;

(3) Substantially prolongs the life of the vessel; or

(4) Otherwise so changes the vessel that it is essentially a new vessel.

Marine inspector or *inspector* means any civilian employee or military member of the Coast Guard assigned by an Officer in Charge. Marine Inspection, or the Commandant to perform duties with respect to the inspection, enforcement, and administration of

vessel safety and navigation laws and regulations.

Master means the individual having command of the vessel and who is the holder of a valid license that authorizes the individual to serve as master of a small passenger vessel.

Means of escape means a continuous and unobstructed way of exit travel from any point in a vessel to an embarkation station or area of refuge. A means of escape can be both vertical and horizontal, and includes doorways, corridors, stairtowers, stairways, and public spaces. High risk service spaces, low risk service spaces, cargo spaces, machinery spaces, auxiliary machinery spaces, control spaces, rest rooms, barber shops, sales rooms, hazardous areas determined by the cognizant OCMI, escalators, and elevators must not be any part of a means of escape. It consists of three distinct components:

(1) The exit access;

(2) The exit; and

(3) The exit discharge.

New vessel means a vessel:

(1) The initial construction of which began on or after March 11, 1996;

(2) Which was issued an initial Certificate of Inspection on or after September 11, 1996;

(3) Which underwent a major conversion that was initiated on or after March 11, 1996; or

(4) Which underwent a major conversion that was completed and for which an amended Certificate of Inspection was issued on or after September 11, 1996.

Noncombustible material means any material approved in accordance with § 164.009 in subchapter Q of this chapter, or other standard specified by the Commandant.

Non-self-propelled vessel means a vessel that does not have installed means of propulsion, including propulsive machinery, masts, spars, or sails.

Oceans means a route that is more than 20 nautical miles offshore on any of the following waters:

(1) Any ocean;

(2) The Gulf of Mexico;

(3) The Caribbean Sea;

(4) The Bering Sea;

(5) The Gulf of Alaska; or

(6) Such other similar waters as may be designated by a Coast Guard District Commander.

Officer In Charge, Marine Inspection, or *OCMI* means an officer of the Coast Guard designated as such by the Commandant and who, under the direction of the Coast Guard District Commander, is in charge of a marine inspection zone, described in Part 1 of this chapter, for the performance of duties with respect to the inspection, enforcement, and administration of vessel safety and navigation laws and regulations. The ''cognizant OCMI'' is the OCMI that has immediate jurisdiction over a vessel for the purpose of performing the duties previously described.

Open boat means a vessel not protected from entry of water by means of a complete weathertight deck, or by a combination of a partial weathertight deck and superstructure that is structurally suitable for the waters upon which the vessel operates.

Open deck (13) means a deck that is permanently open to the weather on one or more sides and, if covered, any spot on the overhead is less than 4.5 meters (15 feet) from the nearest opening to the weather.

Open to the atmosphere means a compartment that has at least 9,375 square millimeters (15 square inches) of open area directly exposed to the atmosphere for each cubic meter (foot) of net compartment volume.

Operating station means the principal steering station on the vessel from which the individual on duty normally navigates the vessel.

Overnight accommodations or overnight accommodation space (5, 6 or 7 depending on size, fire load and furnishings) means an accommodation space for use by passengers or by crew members, that has one or more berths, including beds or bunks, for passengers or crew members to rest for extended periods. Staterooms, cabins, and berthing areas are normally overnight accommodation spaces. Overnight accommodations do not include spaces that contain only seats, including reclining seats.

Pantry means a space used for food storage, and may include microwaves or other low heat [not exceeding 121°C

(250°F)] appliances for food preparation.

Partially enclosed space means a compartment that is neither open to the atmosphere nor an enclosed space.

Partially protected waters is a term used in connection with stability criteria and means:

(1) Waters not more than 20 nautical miles from a harbor of safe refuge, unless determined by the cognizant OCMI to be exposed waters;

(2) Those portions of rivers, estuaries, harbors, lakes, and similar waters that the cognizant OCMI determines not to be protected waters; and

(3) Waters of the Great Lakes from April 16 through September 30 of the same year (summer season).

Passenger means an individual carried on a vessel, except:

(1) The owner or an individual representative of the owner, or in the case of a vessel under charter, an individual charterer or individual representative of the charterer;

(2) The master; or

(3) A member of the crew engaged in the business of the vessel who has not contributed consideration for carriage and who is paid for on board services.

Passenger accommodation space (5, 6 or 7 depending on size, fire load, and furnishings) means an accommodation space designated for the use of passengers.

Passenger for hire means a passenger for whom consideration is contributed as a condition of carriage on the vessel, whether directly or indirectly flowing to the owner, charterer, operator, agent, or any other person having an interest in the vessel.

Pilothouse control means that controls to start and stop the engines and control the direction and speed of the propeller of the vessel are located at the operating station.

Piping system includes piping, fittings, and appurtenances as described in §56.07–5 in subchapter F of this chapter.

Port light means a hinged glass window, generally circular, in a vessel's side or deckhouse for light and ventilation.

Protected waters is a term used in connection with stability criteria and means sheltered waters presenting no special hazards such as most rivers, harbors, and lakes, and is not determined to be exposed waters or partially protected waters by the OCMI.

Pre-engineered means, when referring to a fixed gas fire extinguishing system, a system that is designed and tested to be suitable for installation without modification, as a complete unit in a space of a set volume, regardless of the specific design of the vessel on which it is installed.

Rivers means a route on any of the following waters:

(1) A river;

(2) A canal; or

(3) Such other similar waters as may be designated by a Coast Guard District Commander.

Safety areas include any of the following spaces:

(1) Control spaces;

(2) Stairways and stairtowers;

(3) Corridors;

(4) Embarkation stations;

(5) Areas of refuge; or

(6) Embarkation spaces.

Sailing vessel means a vessel principally equipped for propulsion by sail even if the vessel has an auxiliary means of propulsion.

Scantlings means the dimensions of all structural parts such as frames, girders, and plating, used in building a vessel.

Scupper means a pipe or tube of at least 30 millimeters (1.25 inches) in diameter leading down from a deck or sole and through the hull to drain water overboard.

Self-bailing cockpit means a cockpit, with watertight sides and floor (sole), that is designed to free itself of water by gravity drainage through scuppers.

Service space means a high risk service space or a low risk service space.

Ship's service loads means services necessary for maintaining the vessel in normal operational and habitable conditions. These loads include, but are not limited to, safety, lighting, ventilation, navigational, and communications loads.

Short international voyage means an international voyage where:

(1) The vessel is not more than 200 nautical miles from a port or place in which the passengers and crew could be placed in safety; and

(2) The total distance between the last port of call in the country in which the voyage began and the final port of destination does not exceed 600 nautical miles.

Smoke developed rating means the numeric value assigned to a material when tested in accordance with ASTM E 84 (incorporated by reference, see § 114.600) or UL 723 by an independent laboratory.

Specific optical density means the numeric value assigned to a material when tested in accordance with ASTM E 662 (incorporated by reference, see § 114.600) by an independent laboratory.

Stairtower (2) means a fully enclosed group of stairways located within a common enclosure.

Stairway (2) means an inclined means of escape between two decks.

Standard fire test means a test in which a specimen is exposed in a test furnace to temperatures corresponding to the standard time-temperature curve. The specimen must resemble, as closely as possible, the intended construction and include, where appropriate, at least one joint. The standard time-temperature curve is defined by a smooth curve drawn through the following points, starting at ambient temperature:

(1) At the end of 05 minutes—556 °C (1,033 °F);

(2) At the end of 10 minutes—659 °C (1,218 °F);

(3) At the end of 15 minutes—718 °C (1,324 °F);

(4) At the end of 30 minutes—821 °C (1,509 °F); and

(5) At the end of 60 minutes—925 °C (1,697 °F).

Steel or equivalent material means steel or any noncombustible material that, by itself or due to insulation provided, has structural and integrity properties equivalent to steel at the end of the standard fire test.

Stepped main vertical zone means a main vertical zone in which the main vertical zone bulkhead is not in a continuous plane on adjoining decks.

Survival craft means a lifeboat, rigid liferaft, inflatable liferaft, life float, inflatable buoyant apparatus, buoyant apparatus, or a small boat carried aboard a vessel in accordance with § 117.200(b) of this subchapter.

Switchboard means an electrical panel that receives power from a generator, battery, or other electrical power source and distributes power directly or indirectly to all equipment supplied by the generating plant.

Trunk means a vertical shaft or duct for the passage of pipes, wires, or other devices.

Vehicle space (11) means a space not on an open deck, for the carriage of motor vehicles with fuel in their tanks, into and from which such vehicles can be driven and to which passengers have access.

Veneer means a thin covering of combustible material on bulkheads, bulkhead panels, or furniture.

Vessel includes every description of watercraft or other artificial contrivance, used or capable of being used as a means of transportation on water.

Vessel of the United States means a vessel documented or numbered under the laws of the United States, the states of the United States, Guam, Puerto Rico, the Virgin Islands, American Samoa, the District of Columbia, the Northern Mariana Islands, and any other territory or possession of the United States.

Warm water means water where the monthly mean low water temperature is normally more than 15 degrees Celsius (59 degrees Fahrenheit).

Watertight means designed and constructed to withstand a static head of water without any leakage, except that ''watertight'' for the purposes of electrical equipment means enclosed so that water does not enter the equipment when a stream of water from a hose with a nozzle one inch in diameter that delivers at least 246 liters (65 gallons) per minute is sprayed on the enclosure from any direction from a distance of ten feet for five minutes.

Weather deck means a deck that is partially or completely exposed to the weather from above or from at least two sides.

Weathertight means that water will not penetrate in any sea condition, except that ''weathertight equipment'' means equipment constructed or protected so that exposure to a beating rain will not result in the entrance of water.

Well deck vessel means a vessel with a weather deck fitted with solid bulwarks that impede the drainage of water over the sides or a vessel with an exposed recess in the weather deck extending more than one-half of the length of the vessel measured over the weather deck.

Wire means an individual insulated conductor without an outer protective jacket.

Work space means a space, not normally occupied by a passenger, in which a crew member performs work and includes, but is not limited to, a galley, operating station, or machinery space.

[CGD 85–080, 61 FR 887, Jan. 10, 1996; 61 FR 20556, May 7, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997; CGD 85–080, 62 FR 51347, Sept. 30, 1997; 62 FR 64305, Dec. 5, 1997; USCG 1999–4976, 65 FR 6504, Feb. 9, 2000; USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

§ 114.540 Equivalents.

(a) The Commandant may approve any arrangement, fitting, appliance, apparatus, equipment, calculation, information, or test which provides a level of safety equivalent to that established by specific provisions of this subchapter. Requests for approval must be submitted to the Marine Safety Center. If necessary, the Marine Safety Center may require engineering evaluations and tests to demonstrate the equivalence of the substitute.

(b) The Commandant may accept compliance by a high speed craft with the provisions of the International Maritime Organization (IMO) ''Code of Safety for High Speed Craft'' as an equivalent to compliance with applicable requirements of this subchapter. Requests for a determination of equivalency for a particular vessel must be submitted to the Marine Safety Center.

(c) The Commandant may approve a novel lifesaving appliance or arrangement as an equivalent if it has performance characteristics at least equivalent to the appliance or arrangement required under this part, and:

(1) Is evaluated and tested under IMO Resolution A.520(13), ''Code of Practice for the Evaluation, Testing and Acceptance of Prototype Novel Life-Saving Appliances and Arrangements''; or

(2) Has successfully undergone an evaluation and tests that are substantially equivalent to those recommendations.

[CGD 85–080, 61 FR 885, Jan. 10, 1996, as amended at 62 FR 51348, Sept. 30, 1997]

§ 114.550 Special consideration.

In applying the provisions of this subchapter, the OCMI may give special consideration to authorizing departures from the specific requirements when unusual circumstances or arrangements warrant such departures and an equivalent level of safety is provided. The OCMI of each marine inspection zone in which a vessel operates must approve any special consideration granted to the vessel.

§ 114.560 Appeals.

Any person directly affected by a decision or action taken under this subchapter, by or on behalf of the Coast Guard, may appeal therefrom in accordance with §1.03 in subchapter A of this chapter.

§ 114.600 Incorporation by reference.

(a) Certain material is incorporated by reference into this subchapter with the approval of the Director of the Federal Register in accordance with Title 5 United States Code (U.S.C.) 552(a) and Title 1 Code of Federal Regulations (CFR) Part 51. To enforce any edition other than that specified in paragraph (b) of this section, the Coast Guard must publish a notice of change in the FEDERAL REGISTER and make the material available to the public. All approved material is on file at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700 Washington, DC, and at the U.S. Coast Guard, Office of Operating and Environmental Standards (G–MSO), 2100 Second Street SW., Washington, DC 20593–0001 and is available from the sources indicated in paragraph (b) of this section.

(b) The material approved for incorporation by reference in this subchapter and the sections affected are:

American Boat and Yacht Council (ABYC)

3069 Solomons Island Road, Edgewater, MD 21037

A–1–93—Marine Liquified Petroleum Gas (LPG) Systems.....121.240
A–3–93—Galley Stoves.....121.200
A–7–70—Boat Heating Systems.....121.200
A–22–93—Marine Compressed Natural Gas (CNG) Systems.....121.240
H–25–94—Portable Gasoline Fuel Systems for Flammable Liquids.....119.458
P–1–93—Installation of Exhaust Systems for Propulsion and Auxiliary Engines.....116.405; 119.425; 119.430

American Bureau of Shipping (ABS)

ABS Plaza, 16855 Northchase Drive, Houston, TX 77060

Rules for Building and Classing Aluminum Vessels, 1975.....116.300
Rules for Building and Classing Steel Vessels, 1995.....119.410; 120.360
Rules for Building and Classing Steel Vessels Under 61 Meters (200 Feet) in Length, 1983.....116.300
Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways, 1995.....116.300
Guide for High Speed Craft, 1997.....116.300

American National Standards Institute (ANSI)

11 West 42nd Street, New York, NY 10036

A 17.1–1984, including supplements A 17.1a and b–1985—Safety Code for Elevators and Escalators.....120.540
B 31.1–1986—Code for Pressure Piping, Power Piping.....119.710
Z 26.1–1977, including 1980 supplement—Safety Glazing Materials For Glazing Motor Vehicles Operating on Land Highways.....116.1030

American Society for Testing and Materials (ASTM)

100 Barr Harbor Drive, West Conshohocken, PA 19428–2959

ASTM B 96–93, Standard Specification for Copper-Silicon Alloy Plate, Sheet, Strip, and Rolled Bar for General Purposes and Pressure Vessels.....119.440
ASTM B 117–97, Standard Practice for Operating Salt Spray (Fog) Apparatus.....114.400
ASTM B 122/B 122M–95, Standard Specification for Copper-Nickel-Tin Alloy , Copper-Nickel-Zinc Alloy (Nickel Silver), and Copper-Nickel Alloy Plate, Sheet, Strip, and Rolled Bar.....119.440
ASTM B 127–98, Standard Specification for Nickel-Copper Alloy (UNS NO4400) Plate, Sheet, and Strip.....119.440
ASTM B 152–97a, Standard Specification for Copper Sheet, Strip, Plate, and Rolled Bar.....119.440
ASTM B 209–96, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.....119.440
ASTM D 93–97, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester.....114.400
ASTM D 635–97, Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.....119.440
ASTM D 2863–95, Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-like Combustion of Plastics (Oxygen Index).....119.440
ASTM E 84–98, Standard Test Method for Surface Burning Characteristics of Building Materials.....116.405; 116.422; 116.423
ASTM E 648–97, Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.....114.400; 116.423
ASTM E 662–97, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.....114.400; 116.423

Institute of Electrical and Electronics Engineers, Inc. (IEEE)

IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854

Standard 45–1977—Recommended Practice for Electrical Installations on Shipboard.....120.340

International Maritime Organization (IMO)

International Maritime Organization, Publications Section, 4 Albert Embankment, London SE1 7SR United Kingdom

Code of Practice for the Evaluation, Testing and Acceptance of Prototype Novel Life-Saving Appliances and Arrangements—Resolution A.520(13), dated 17 November 1983 ..... 114.540(c)
Use and Fitting of Retro-Reflective Materials on Life-Saving Appliances, Resolution A.658(16), dated 20 November 1989.....122.604
Fire Test Procedures For Ignitability of Bedding Components, Resolution A.688(17) dated 06 November 1991.....116.405(j)
Symbols Related to Life-Saving Appliances and Arrangements, Resolution A.760(18) dated 17 November 1993.....122.604(g)

National Fire Protection Association (NFPA)

1 Batterymarch Park, Quincy, MA 02269–9101

NFPA 10–1994—Portable Fire Extinguishers 115.810
NFPA 13–1996—Installation of Sprinkler Systems.....116.439
NFPA 17–1994—Dry Chemical Extinguishing Systems.....118.425
NFPA 17A–1994—Wet Chemical Extinguishing Systems.....118.425
NFPA 70–1996—National Electrical Code (NEC)
Section 250–95 .....120.370
Section 310–13 .....120.340
Section 310–15 .....120.340
Article 430.....120.320
Article 445.....120.320
NFPA 92B–1995—Smoke Management Systems in Malls, Atria, and Large Areas.....116.440
NFPA 261–1994—Test For Determining Resistance of Mock-up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes 114.400; 116.423
NFPA 302–1994—Pleasure and Commercial Motor Craft, Chapter 6.....121.200; 121.240
NFPA 306–1993—Control of Gas Hazards on Vessels 115.710
NFPA 701–1996—Fire Tests For Flame-Resistant Textiles and Films 116.423
NFPA 1963–1993—Fire Hose Connections.....118.320

Underwriters Laboratories Inc. (UL)

12 Laboratory Drive, Research Triangle Park, NC 27709

UL 19–1992—Lined Fire Hose and Hose Assemblies.....118.320
UL 174–1989, as amended through June 23, 1994—Household Electric Storage Tank Water Heaters.....119.320
UL 486A–1992—Wire Connectors and Soldering Lugs For Use With Copper Conductors.....120.340
UL 489–1995—Molded-Case Circuit Breakers and Circuit Breaker Enclosures.....120.380
UL 595–1991—Marine Type Electric Lighting Fixtures.....120.410
UL 710–1990, as amended through September 16, 1993—Exhaust Hoods For Commercial Cooking Equipment 118.425
UL 723–1993, as amended through April 20, 1994—Surface Burning Characteristics of Building Materials 114.400; 116.422; 116.423; 116.425
UL 1056–1989—Fire Test of Upholstered Furniture.....116.423
UL 1058–1989, as amended through April 19, 1994—Halogenated Agent Extinguishing System Units.....118.410
UL 1102–1992—Non integral Marine Fuel Tanks 119.440
UL 1104–1981, as amended through May 4, 1988—Marine Navigation Lights 120.420
UL 1110–1988, as amended through May 16, 1994—Marine Combustible Gas Indicators 119.480
UL 1453–1988, as amended through June 7, 1994—Electric Booster and Commercial Storage Tank Water Heaters 119.320
UL 1570–1995—Fluorescent Lighting Fixtures.....120.410
UL 1571–1995—Incandescent Lighting Fixtures.....120.410
UL 1572–1995—High Intensity Discharge Lighting Fixtures.....120.410
UL 1573–1995—Stage and Studio Lighting Units.....120.410
UL 1574–1995—Track Lighting Systems 120.410

[CGD 85–080, 61 FR 885, Jan. 10, 1996, as amended by CGD 96–041, 61 FR 50730, Sept. 27, 1996; CGD 97–057, 62 FR 51047, Sept. 30, 1997; CGD 85–080, 62 FR 51348, Sept. 30, 1997; USCG 1999–5151, 64 FR 67182, Dec. 1, 1999; USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

§ 114.800 Approved equipment and material.

(a) Equipment and material that is required by this subchapter to be approved or of an approved type, must have been manufactured and approved in accordance with the design and testing requirements in subchapter Q (Equipment, Construction, and Materials: Specifications and Approval) of this chapter or as otherwise specified by the Commandant.

(b) Coast Guard publication COMDTINST M16714.3 (Series) ''Equipment Lists, Items Approved, Certificated or Accepted under Marine Inspection and Navigation Laws,'' lists approved equipment by type and manufacturer. COMDTINST M16714.3 (Series) may be obtained from New Orders, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250–7954.

[CGD 85–080, 61 FR 885, Jan. 10, 1996, as amended at 62 FR 51348, Sept. 30, 1997]

§ 114.900 OMB control numbers.

(a) *Purpose.* This section lists the control numbers assigned to information collection and recordkeeping requirements in this subchapter by the

Office of Management and Budget (OMB) pursuant to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et. seq.*). The Coast Guard intends that this section comply with the requirements of 44 U.S.C. 3507(f), which requires that agencies display a current control number assigned by the Director of OMB for each approved agency information collection requirement.

(b) *Display.*

46 CFR Section where identified and described	Current OMB Control No.
115.105(a)	2115–0578
115.202	2115–0578
115.204	2115–0578
115.302	2115–0578
115.306	2115–0578
115.310	2115–0578
115.500(a)	2115–0578
115.612	2115–0578
115.700	2115–0578
115.704	2115–0578
115.710	2115–0578
115.810(b)	2115–0578
115.920(c)	2115–0578
115.930	2115–0578
116.202	2115–0578
116.330	2115–0578
116.340	2115–0578
116.520	2115–0578
116.530	2115–0578
116.610(f)	2115–0578
120.220(d)	2115–0578
120.320(d) and (e)	2115–0578
121.420	2115–0578
121.506	2115–0578
122.202	2115–0003
122.206	2115–0003
122.208	2115–0578
122.220	2115–0578
122.230	2115–0578
122.280	2115–0578
122.282	2115–0578
122.340(c)	2115–0578
122.402	2115–0578
122.420	will be displayed when assigned by OMB
122.502	2115–0578
122.503	2115–0578
122.504	2115–0578
122.506	2115–0578
122.510	2115–0578
122.514	2115–0578
122.515	2115–0578
122.516	2115–0578
122.518	2115–0578
122.520	will be displayed when assigned by OMB
122.524	will be displayed when assigned by OMB
122.602	2115–0578
122.604	2115–0578
122.606	2115–0578
122.608	2115–0578
122.610	2115–0578
122.612	2115–0578
122.702	2115–0578
122.704(c)	2115–0578
122.728(c)	will be displayed when assigned by OMB

PART 115—INSPECTION AND CERTIFICATION

Subpart A—Certificate of Inspection

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Subpart I—International Convention for Safety of Life at Sea, 1974, as Amended (SOLAS)

115.900 Applicability.
115.910 Passenger Ship Safety Certificate.
115.920 Exemptions.
115.925 Safety Management Certificate.
115.930 Equivalents.

AUTHORITY: 33 U.S.C. 1321(j); 46 U.S.C. 2103, 3205, 3306, 3307; 49 U.S.C. App. 1804; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp., p. 743; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGD 85–080, 61 FR 892, Jan. 10, 1996, unless otherwise noted.

Subpart A—Certificate of Inspection

§ 115.100 When required.

(a) A vessel to which this subchapter applies may not be operated without having on board a valid U.S. Coast Guard Certificate of Inspection.

(b) Except as noted in § 115.114 of this part, each vessel inspected and certificated under the provisions of this subchapter must, when any passengers are aboard during the tenure of the certificate, be in full compliance with the terms of the certificate.

(c) If necessary to prevent delay of the vessel, a temporary Certificate of Inspection may be issued pending the issuance and delivery of the regular Certificate of Inspection. The temporary certificate must be carried in the same manner as the regular certificate and is considered the same as the regular Certificate of Inspection which it represents.

(d) A vessel on a foreign voyage between a port in the United States and a port in a foreign country, whose Certificate of Inspection expires during the voyage, may lawfully complete the voyage without a valid Certificate of Inspection provided the voyage is completed within 30 days of expiration and the certificate did not expire within 15 days of sailing on the foreign voyage from a U.S. port.

§ 115.103 Description.

The Certificate of Inspection issued to a vessel describes the vessel, the route(s) that it may travel, the minimum manning requirements, the survival and rescue craft carried, the minimum fire extinguishing equipment and life jackets required to be carried, the maximum number of passengers and total persons that may be carried, the number of passengers the vessel may carry in overnight accommodation spaces, the name of the owner and managing operator, any equivalences accepted or authorized by the Commandant or any Officer in Charge, Marine Inspection (OCMI) in accordance with § 114.540 or § 114.550 of this subchapter and such other conditions of operations as may be determined by the cognizant OCMI.

[CGD 85–080, 61 FR 892, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997]

§ 115.105 How to obtain or renew.

(a) A Certificate of Inspection is obtained or renewed by making application on Form CG 3752, ''Application for Inspection of U.S. Vessel,'' to the Coast Guard OCMI of the marine inspection zone in which the inspection is to be made. Form CG–3752 may be obtained at any U.S. Coast Guard Marine Safety Office or Marine Inspection Office.

(b) The application for initial inspection of a vessel being newly constructed or converted must be submitted prior to the start of the construction or conversion.

(c) The construction, arrangement, and equipment of each vessel must be acceptable to the cognizant OCMI as a prerequisite of the issuance of the initial Certificate of Inspection. Acceptance is based on the information, specifications, drawings and calculations

available to the OCMI, and on the successful completion of an initial inspection for certification.

(d) A Certificate of Inspection is renewed by the issuance of a new Certificate of Inspection.

(e) The condition of the vessel and its equipment must be acceptable to the cognizant OCMI as a prerequisite to the Certificate of Inspection renewal. Acceptance is based on the condition of the vessel as found at the inspection for certification.

[CGD 85–080, 61 FR 892, Jan. 10, 1996, as amended by USCG 1999–4976, 65 FR 6504, Feb. 9, 2000]

§ 115.107 Period of validity for a Certificate of Inspection.

(a) A Certificate of Inspection is valid for 1 year for vessels carrying more than 12 passengers on international voyages.

(b) A Certificate of Inspection is valid for 5 years for all other vessels.

(c) A Certificate of Inspection may be suspended and withdrawn or revoked by the cognizant OCMI at any time for noncompliance with the requirements of this subchapter.

[USCG 1999–4976, 65 FR 6504, Feb. 9, 2000]

§ 115.110 Routes permitted.

(a) The area of operation for each vessel and any necessary operational limits are determined by the cognizant OCMI, and recorded on the vessel's Certificate of Inspection. Each area of operation, referred to as a route, is described on the Certificate of Inspection under the major headings ''Oceans,'' ''Coastwise,'' ''Limited Coastwise,'' ''Great Lakes,'' ''Lakes, Bays, and Sounds,'' or ''Rivers,'' as applicable. Further limitations imposed or extensions granted are described by reference to bodies of waters, geographical points, distance from geographical points, distances from land, depths of channel, seasonal limitations, and similar factors.

(b) Operation of a vessel on a route of lesser severity than those specifically described or designated on the Certificate of Inspection is permitted unless expressly prohibited on the certificate of Inspection. The general order of severity of routes is: oceans, coastwise, limited coastwise, Great Lakes, lakes, bays and sounds, and rivers. The cognizant OCMI may prohibit a vessel from operating on a route of lesser severity than the primary route a vessel is authorized to operate on if local conditions necessitate such a restriction.

(c) Non-self-propelled vessels are prohibited from operating on an oceans, coastwise, limited coastwise, or Great Lakes route unless the Commandant approves such a route.

(d) When designating a permitted route or imposing any operational limits on a vessel, the OCMI may consider:

(1) Requirements of this subchapter for which compliance is based on the route of the vessel;

(2) The performance capabilities of the vessel based on design, scantlings, stability, subdivision, propulsion, speed, operating modes, maneuverability, other characteristics; and

(3) The suitability of the vessel for night-time operations and use in all weather conditions.

§ 115.112 Total persons permitted.

The cognizant OCMI determines the total number of persons permitted to be carried on a vessel. In determining the total number of persons permitted to be carried, the OCMI may consider stability restrictions and subdivision requirements of the vessel, the vessel's route, general arrangement, means of escape, lifesaving equipment, the minimum manning requirements, and the maximum number of passengers permitted in accordance with § 115.113 of this part.

§ 115.113 Passengers permitted.

(a) The maximum number of passengers permitted must be not more than that allowed by the requirements of this section, except as authorized by the OCMI under paragraph (d) of this section.

(b) The maximum number of passengers permitted on any vessel may be the greatest number permitted by the length of rail criterion, deck area criterion, or fixed seating criterion described in this paragraph or a combination of these criteria as allowed by paragraph (c) of this section.

(1) *Length of rail criterion.* One passenger may be permitted for each 760

millimeters (30 inches) of rail space available to the passengers at the periphery of each deck. The following rail space may not be used in determining the maximum number of passengers permitted:

(i) Rail space in congested areas unsafe for passengers, such as near anchor handling equipment or line handling gear, in the way of sail booms, running rigging, or paddle wheels, or along pulpits;

(ii) Rail space on stairways; and

(iii) Rail space where persons standing in the space would block the line of vision of the licensed individual operating the vessel.

(2) *Deck area criterion.* One passenger may be permitted for each 0.9 square meters (10 square feet) of deck area available for the passengers' use. In computing such deck area, the areas occupied by the following must be excluded:

(i) Areas for which the number of persons permitted is determined using the fixed seating criteria;

(ii) Obstructions, including stairway and elevator enclosures, elevated stages, bars, and cashier stands, but not including slot machines, tables, or other room furnishings;

(iii) Toilets and washrooms;

(iv) Spaces occupied by and necessary for handling lifesaving equipment, anchor handling equipment or line handling gear, or in the way of sail booms or running rigging;

(v) Spaces below deck that are unsuitable for passengers or that would not normally be used by passengers;

(vi) Interior passageways less than 840 millimeters (34 inches) wide and passageways on open deck, less than 710 millimeters (28 inches) wide;

(vii) Bow pulpits, swimming platforms and areas that do not have a solid deck, such as netting on multihull vessels;

(viii) Deck areas in way of paddle wheels; and

(ix) Aisle area provided in accordance with §116.820(d) of this chapter.

(3) *Fixed seating criterion.* One passenger may be permitted for each 455 millimeter (18 inches) of width of fixed seating provided by §116.820 of this chapter. Each sleeping berth in overnight accommodation spaces shall be counted as only one seat.

(c) Different passenger capacity criteria may be used on each deck of a vessel and added together to determine the total passenger capacity of that vessel. Where seats are provided on part of a deck and not on another, the number of passengers permitted on a vessel may be the sum of the number permitted by the seating criterion for the space having seats and the number permitted by the deck area criterion for the space having no seats. The length of rail criterion may not be combined with either the deck area criterion or the fixed seating criterion when determining the maximum number of passengers permitted on an individual deck.

(d) For a vessel operating on short runs on protected waters such as a ferry, the cognizant OCMI may give special consideration to increases in passenger allowances.

§115.114 Alternative requirements for a vessel operating as other than a small passenger vessel.

(a) When authorized by the cognizant OCMI by an endorsement of the vessel's Certificate of Inspection, a small passenger vessel carrying six or less passengers, or operating as a commercial fishing vessel or other uninspected vessel, or carrying less than twelve passengers and operating as a recreational vessel, need not meet requirements of:

(1) Subparts C, D, and E, of part 117 of this chapter if the vessel is in satisfactory compliance with the lifesaving equipment regulations for an uninspected vessel or recreational vessel in similar service;

(2) Subpart C of part 116 of this chapter and subchapter S of this chapter if the vessel is in satisfactory compliance with applicable regulations for an uninspected vessel or recreational vessel in a similar service or if the owner of the vessel otherwise establishes to the satisfaction of the cognizant OCMI that the vessel is seaworthy for the intended service; and

(3) Sections 121.404, 121.408, and 121.410 of this subchapter providing the vessel is in satisfactory compliance

with any navigational equipment requirements for an uninspected or recreational vessel in a similar service.

(b) A vessel operating under the alternative regulations of paragraph (a) of this section must:

(1) Not alter the arrangement of the vessel nor remove any equipment required by the certificate for the intended operation, without the consent of the congnizant OCMI;

(2) Comply with minimum manning specified on the Certificate of Inspection, which may include reduced manning depending on the number of passengers and operation of the vessel;

(3) When carrying from one to six passengers except for a vessel being operated as a recreational vessel, make the announcement required by §122.506(a) of this subchapter before getting underway; and

(4) If a vessel of more than 15 gross tons, not carry freight for hire.

(c) The endorsement issued under paragraph (a) of this section must indicate the route, maximum number of passengers, and the manning required to operate under the provisions of this section.

§115.120 Certificate of Inspection amendment.

(a) An amended Certificate of Inspection may be issued at any time by any OCMI. The amended Certificate of Inspection replaces the original, but the expiration date remains the same as that of the original. An amended Certificate of Inspection may be issued to authorize and record a change in the dimensions, gross tonnage, owner, managing operator, manning, persons permitted, route permitted, conditions of operations, or equipment of a vessel, from that specified in the current Certificate of Inspection.

(b) A request for an amended Certificate of Inspection must be made to the cognizant OCMI by the owner or managing operator of the vessel at any time there is a change in the character of a vessel or in its route, equipment, ownership, operation, or other similar factors specified in its current Certificate of Inspection.

(c) The OCMI may require an inspection prior to the issuance of an amended Certificate of Inspection.

Subpart B—Special Permits and Certificates

§115.202 Permit to proceed.

(a) When a vessel is not in compliance with its Certificate of Inspection or fails to comply with a regulation of this subchapter, the cognizant OCMI may permit the vessel to proceed to another port for repair if, in the judgment of the OCMI, the trip can be completed safely, even if the Certificate of Inspection of the vessel has expired or is about to expire.

(b) Form CG–948, ''Permit to Proceed to another Port for Repairs,'' may be issued by the cognizant OCMI to the owner, managing operator, or the master of the vessel stating the conditions under which the vessel may proceed to another port. The permit may be issued only upon the written application of the owner, managing operator, or master, and after the vessel's Certificate of Inspection is turned over to the OCMI.

(c) A vessel may not carry passengers when operating in accordance with a permit to proceed, unless the cognizant OCMI determines that it is safe to do so.

§115.204 Permit to carry excursion party.

(a) The cognizant OCMI may permit a vessel to engage in a temporary excursion operation with a greater number of persons or on a more extended route, or both, than permitted by its Certificate of Inspection when, in the opinion of the OCMI, the operation can be undertaken safely.

(b) Upon the written application of the owner or managing operator of the vessel, the cognizant OCMI may issue a Form CG–949, ''Permit to Carry Excursion Party.'' to indicate his or her permission to carry an excursion party. The OCMI will indicate on the permit the conditions under which it is issued, the number of persons the vessel may carry, the crew required, any additional lifesaving or safety equipment required, the route for which the permit is granted, and the dates on which the permit is valid.

(c) The number of passengers normally permitted on an excursion vessel is governed by §115.113 of this part.

(d) The OCMI will not normally waive applicable minimum safety standards when issuing an excursion permit. In particular, a vessel that is being issued an excursion permit will normally be required to meet the minimum stability, survival craft, life jacket, fire safety, and manning standards applicable to a vessel in the service for which the excursion permit is requested

(e) The permit acts as a temporary, limited duration supplement to the vessel's Certificate of Inspection and must be carried with the Certificate of Inspection. A vessel operating under a permit to carry an excursion party must be in full compliance with the terms of its Certificate of Inspection as supplemented by the permit.

(f) The OCMI may require an inspection prior to the issuance of a permit to carry an excursion party.

Subpart C—Posting of Certificates, Permits, and Stability Letters

§ 115.302 Certificates and permits.

The Certificate of Inspection and any SOLAS Certificates must be posted under glass or other suitable transparent material, such that all pages are visible, in a conspicuous place on the vessel where observation by passengers is likely. If posting is impracticable, such as on open boats, the certificates must be kept on board in a weathertight container readily available for use by the crew and for display to passengers and others on request.

§ 115.306 Stability letter.

When, in accordance with §170.120 in subchapter S of this chapter, a vessel must be provided with a stability letter, the stability letter must be posted under glass or other suitable transparent material, such that all pages are visible, at the operating station of the vessel. If posting is impracticable, the stability letter must be kept on board in a weathertight container readily available for use by the crew and for display to passengers and others on request.

§ 115.310 Certification expiration date stickers.

(a) A Certification Expiration Date Sticker indicates the date upon which the vessel's Certificate of Inspection expires and is provided by the cognizant OCMI in the number required, upon issuance or renewal of the Certificate of Inspection.

(b) A vessel that is issued a Certificate of Inspection under the provisions of this subchapter must not be operated without a valid Certification Expiration Date Sticker affixed to the vessel on a place that is:

(1) A glass or other smooth surface from which the sticker may be removed without damage to the vessel;

(2) Readily visible to each passenger prior to boarding the vessel and to patrolling Coast Guard law enforcement personnel; and

(3) Acceptable to the Coast Guard marine inspector.

(c) The Coast Guard marine inspector may require the placement of more than one sticker in order to insure compliance with paragraph (b)(2) of this section.

Subpart D—Inspection for Certification

§ 115.400 General.

(a) An inspection is required before the issuance of a Certificate of Inspection. Such an inspection for certification is not made until after receipt of the application for inspection required by §115.105 of this part.

(b) Upon receipt of a written application for inspection, the cognizant OCMI assigns a marine inspector to inspect the vessel for compliance with this subchapter at a time and place mutually agreed upon by the OCMI and the owner, managing operator, or representative thereof.

(c) The owner, managing operator, or a representative thereof shall be present during the inspection.

§ 115.402 Initial inspection for certification.

(a) Before construction or conversion of a vessel intended for small passenger vessel service, the owner of the vessel

shall submit plans, manuals, and calculations indicating the proposed arrangement, construction, and operations of the vessel, to the Marine Safety Center for approval. The plans, manuals, and calculations required to be submitted and the disposition of these plans are set forth in Part 116, Subpart B of this subchapter.

(b) The initial inspection is conducted to determine that the vessel and its equipment comply with applicable regulations and that the vessel was built or converted in accordance with approved plans, manuals, and calculations. Additionally, during the inspection, the materials, workmanship, and condition of all parts of the vessel and its machinery and equipment may be checked to determine if the vessel is satisfactory in all respects for the service intended.

(c) The owner or managing operator of a vessel shall ensure that the vessel complies with the laws and regulations applicable to the vessel and that the vessel is otherwise satisfactory for the intended service. The initial inspection may include an inspection of the following items:

(1) The arrangement, installation, materials, and scantlings of the structure including the hull and superstructure, yards, masts, spars, rigging, sails, piping, main and auxiliary machinery, pressure vessels, steering apparatus, electrical installations, fire resistant construction materials, lifesaving appliances, fire detecting and extinguishing equipment, pollution prevention equipment, and all other equipment;

(2) Arrangement and means of emergency egress;

(3) Sanitary conditions and fire hazards; and

(4) Certificates and operating manuals, including certificates issued by the Federal Communications Commission.

(d) During an initial inspection for certification the owner or managing operator shall conduct all tests and make the vessel available for all applicable inspections discussed in this paragraph, and in Subpart H of this part, as applicable, to the satisfaction of the cognizant OCMI, including the following:

(1) The installation of each rescue boat, liferaft, inflatable buoyant apparatus, and launching appliance as listed on its Certificate of Approval (Form CGHQ–10030).

(2) The operation of each rescue boat and survival craft launching appliance required by Part 117 of this subchapter.

(3) Machinery, fuel tanks, and pressure vessels required by Part 119 of this subchapter.

(4) A stability test when required by §170.175 in subchapter S of this chapter.

(5) Watertight bulkheads as required by Subchapter S of this chapter.

(6) Firefighting systems as required by part 118 of this subchapter.

(7) The operation of all smoke and fire detecting systems, fire alarms and sensors, and fire confining appliances (such as fire screen doors and fire dampers).

§ 115.404 Subsequent inspections for certification.

(a) An inspection for renewal of a Certificate of Inspection normally includes inspection and testing of the structure, machinery, equipment, and on a sailing vessel, rigging and sails. The owner or managing operator shall conduct all tests as required by the marine inspector, and make the vessel available for all specific inspections and drills required by subpart H of this part. In addition, the OCMI may require the vessel to get underway as part of the inspection for certification. The inspection is conducted to determine if the vessel is in satisfactory condition, fit for the service intended, and complies with the applicable regulations in this subchapter.

(b) You must submit your written application for renewal of a Certificate of Inspection to the OCMI at least 30 days prior to the expiration date of your current COI, as required in §115.105.

[CGD 85–080, 61 FR 892, Jan. 10, 1996, as amended by USCG 1999–4976, 65 FR 6504, Feb. 9, 2000; 65 FR 11904, Mar. 7, 2000]

Subpart E—Reinspection

§ 115.500 When required.

(a) Vessels carrying more than 12 passengers on international voyages

must undergo an inspection for certification each year as specified in §115.404.

(b) All other vessels must undergo an inspection for certification as specified in §115.404 and an annual inspection as specified in paragraph (b)(1) of this section.

(1) *Annual inspection.* Your vessel must undergo an annual inspection within the 3 months before or after each anniversary date.

(i) You must contact the cognizant OCMI to schedule an inspection at a time and place which he or she approves. No written application is required.

(ii) The scope of the annual inspection is the same as the inspection for certification, as specified in §115.404 but in less detail unless the cognizant marine inspector finds deficiencies or determines that a major change has occurred since the last inspection. If deficiencies are found or a major change to the vessel has occurred, the marine inspector will conduct an inspection more detailed in scope to ensure that the vessel is in satisfactory condition and fit for the service for which it is intended. If your vessel passes the annual inspection, the marine inspector will endorse your current Certificate of Inspection.

(iii) If the annual inspection reveals deficiencies in your vessel's maintenance, you must make any or all repairs or improvements within the time period specified by the OCMI.

(iv) Nothing in this subpart limits the marine inspector from conducting such tests or inspections he or she deems necessary to be assured of the vessel's seaworthiness.

(2) [Reserved]

[USCG 1999–4976, 65 FR 6505, Feb. 9, 2000]

§115.502 Certificate of Inspection: Conditions of validity.

To maintain a valid Certificate of Inspection, you must complete your annual inspections within the periods specified in §115.500 and your Certificate of Inspection must be endorsed.

[USCG 1999–4976, 65 FR 6505, Feb. 9, 2000]

Subpart F—Hull and Tailshaft Examinations

§115.600 Drydock and internal structural examination intervals.

(a) The owner or managing operator shall make a vessel available for drydock examinations and internal structural examinations required by this section.

(b) A vessel making an international voyage subject to SOLAS requirements must undergo a drydock examination at least once every 12 months. If the vessel becomes due for a drydock examination or an internal structural examination during the voyage, it may lawfully complete the voyage prior to the examination if it undergoes the required examination upon completion of the voyage to the United States but not later than 30 days after the examination is due. If the vessel is due for an examination within 15 days of sailing on an international voyage from a United States port, it must undergo the required examination before sailing.

(c) Except as provided in paragraph (d) of this section, a vessel not making an international voyage must undergo a drydock examination and an internal structural examination as follows:

(1) A vessel that is exposed to salt water more than three months in any 12 month period since the last examination must undergo a drydock examination and an internal structural examination at least once every two years; and

(2) A vessel that is exposed to salt water not more than three months in any 12 month period since the last examination must undergo a drydock examination and an internal structural examination at least once every five years.

(d) Whenever damage or deterioration to hull plating or structural members that may affect the seaworthiness of a vessel is discovered or suspected, the cognizant OCMI may conduct an internal structural examination in any affected space, including fuel tanks, and may require the vessel to be drydocked or taken out of service to assess the extent of the damage, and to effect permanent repairs. The OCMI

may also decrease the drydock examination intervals to monitor the vessel's structural condition.

[CGD 85–080, 61 FR 892, Jan. 10, 1996, as amended at 62 FR 51348, Sept. 30, 1997]

§ 115.610 Scope of drydock and internal structural examinations.

(a) A drydock examination conducted in compliance with § 115.600 of this part must be conducted while the vessel is hauled out of the water or placed in a drydock or slipway. During the examination all accessible parts of the vessel's underwater body and all through hull fittings, including the hull plating, appendages, propellers, shafts, bearings, rudders, sea chests, sea valves, and sea strainers shall be made available for examination. Sea chests, sea valves, and sea strainers must be opened for examination.

(b) An internal structural examination conducted in compliance with § 115.600 of this part may be conducted while the vessel is afloat or out of the water and consists of a complete examination of the vessel's main strength members, including the major internal framing, the hull plating, voids, and ballast, cargo, and fuel oil tanks. Where the internal framing or plating of the vessel is concealed, sections of the lining, ceiling or insulation may be removed or the parts otherwise probed or exposed so that the inspector may be satisfied as to the condition of the hull structure. Fuel oil tanks need not be cleaned out and internally examined if the marine inspector is able to determine by external examination that the general condition of the tanks is satisfactory.

§ 115.612 Notice and plans required.

(a) The owner or managing operator shall notify the cognizant OCMI as far in advance as possible whenever a vessel is to be hauled out or placed in a drydock or slipway in compliance with § 115.600 of this part or to undergo repairs or alterations affecting the safety of the vessel, together with the nature of any repairs or alterations contemplated. Hull repairs or alterations that affect the safety of the vessel include but are not limited to the replacement, repair, or refastening of planking, plating, or structural members, including the repair of cracks in the hull.

(b) Whenever a vessel is hauled out or placed in a drydock or slipway in excess of the requirements of this subpart for the purpose of maintenance, including, but not limited to, changing a propeller, painting, or cleaning the hull, no report need be made to the cognizant OCMI.

(c) The owner or managing operator of each vessel that holds a Load Line Certificate shall make plans showing the vessel's scantlings available to the Coast Guard marine inspector whenever the vessel undergoes a drydock examination or internal structural examination or whenever repairs or alterations affecting the safety or seaworthiness of the vessel are made to the vessel's hull.

[CGD 85–080, 61 FR 892, Jan. 10, 1996, as amended at 62 FR 51348, Sept. 30, 1997]

§ 115.630 Tailshaft examinations.

(a) The marine inspector may require any part or all of the propeller shafting to be drawn for examination of the shafting and stern bearing of a vessel whenever the condition of the shafting and bearings are in question.

(b) The marine inspector may conduct a visual examination and may require nondestructive testing of the propeller shafting whenever the condition of shafting is in question.

§ 115.670 Extension of examination intervals.

The intervals between drydock examinations and internal structural examinations specified in § 115.600 of this part may be extended by the cognizant OCMI or Commandant.

Subpart G—Repairs and Alterations

§ 115.700 Permission for repairs and alterations.

(a) Repairs or alterations to the hull, machinery, or equipment that affect the safety of the vessel must not be made without the approval of the cognizant OCMI, except during an emergency. When repairs are made during an emergency, the owner, managing operator, or master shall notify the

OCMI as soon as practicable after such repairs or alterations are made. Repairs or alterations that affect the safety of the vessel include, but are not limited to, the: replacement, repair, or refastening of deck or hull planking, plating, and structural members; repair of plate or frame cracks; damage repair or replacement, other than replacement in kind, of electrical wiring, fuel lines, tanks, boilers and other pressure vessels, and steering, propulsion and power supply systems; alterations affecting stability; and repair or alteration of livesaving, fire detecting, or fire extinguishing equipment.

(b) The owner or managing operator shall submit drawings, sketches, or written specifications describing the details of any proposed alterations to the cognizant OCMI. Proposed alterations must be approved by the OCMI before work is started.

(c) Drawings are not required to be submitted for repairs or replacements in kind.

(d) The OCMI may require an inspection and testing whenever a repair or alteration is undertaken.

§ 115.702 Installation tests and inspections.

Whenever a launching appliance, survival craft, rescue boat, fixed gas fire extinguishing system, machinery, fuel tank, or pressure vessel is installed aboard a vessel after completion of the initial inspection for certification of the vessel, as replacement equipment or as a new installation, the owner or managing operator shall conduct the tests and make the vessel ready for the inspections required by §115.402(d) of this part to the satisfaction of the cognizant OCMI.

§ 115.704 Breaking of safety valve seals.

The owner, managing operator, or master shall notify the cognizant OCMI as soon as practicable after the seal on a boiler safety valve on a vessel is broken.

§ 115.710 Inspection and testing prior to hot work.

(a) An inspection for flammable or combustible gases must be conducted by a certified marine chemist or other person authorized by the cognizant OCMI in accordance with the provisions of National Fire Protection Association (NFPA) 306, ''Control of Gas Hazards on Vessels,'' before alterations, repairs, or other operations involving riveting, welding, burning, or other fire producing actions may be made aboard a vessel:

(1) Within or on the boundaries of fuel tanks; or

(2) To pipelines, heating coils, pumps, fittings, or other appurtenances connected to fuel tanks.

(b) An inspection required by paragraph (a) of this section must be conducted as required by this paragraph.

(1) In ports or places in the United States or its territories and possessions, the inspection must be conducted by a marine chemist certificated by the NFPA. However, if the services of a certified marine chemist are not reasonably available, the cognizant OCMI, upon the recommendation of the vessel owner or managing operator, may authorize another person to inspect the vessel. If the inspection indicates that the operations can be undertaken safely, a certificate setting forth this fact in writing must be issued by the certified marine chemist or the authorized person before the work is started. The certificate must include any requirements necessary to reasonably maintain safe conditions in the spaces certified throughout the operation, including any precautions necessary to eliminate or minimize hazards that may be present from protective coatings or residues from cargoes.

(2) When not in a port or place in the United States or its territories and possessions, and when a marine chemist or person authorized by the cognizant OCMI is not reasonably available, the master shall conduct the inspection and enter the results of the inspection in the vessel's logbook.

(c) The owner, managing operator, or master shall obtain a copy of certificates issued by the certified marine chemist or the other person authorized by the cognizant OCMI, and shall ensure that all conditions on the certificates are observed and that the vessel is maintained in a safe condition. The owner, managing operator, or master shall maintain a safe condition on the

vessel by requiring full observance, by persons under his or her control, of all requirements listed in the certificate.

Subpart H—Material Inspections

§ 115.800 Inspection standards.

(a) A vessel is inspected for compliance with the standards required by this subchapter. Machinery, equipment, materials, and arrangements not covered by standards in this subchapter may be inspected in accordance with standards acceptable to the cognizant OCMI as good marine practice.

(b) In the application of inspection standards due consideration must be given to the hazards involved in the operation permitted by a vessel's Certificate of Inspection. Thus, the standards may vary in accordance with the vessel's area of operation or any other operational restrictions or limitations.

(c) The published standards of classification societies and other recognized safety associations may be used as guides in the inspection of vessels when such standards do not conflict with the requirements of this subchapter.

§ 115.801 Notice of inspection deficiencies and requirements.

(a) If during the inspection of a vessel, the vessel or its equipment is found not to conform to the requirements of law or the regulations in this subchapter, the marine inspector will point out deficiencies observed and discuss all requirements with the owner, managing operator, or a representative thereof. Normally, the marine inspector will list all such requirements that have not been completed and present the list to the owner, managing operator, or a representative thereof. However, when a deficiency presents a serious safety hazard to the vessel or it's passengers or crew, and exists through negligence or willful noncompliance, the marine inspector may issue a Report of Violation (ROV) to the owner, managing operator, or a representative thereof.

(b) In any case where further clarification of or reconsideration of any requirement placed against the vessel is desired, the owner, managing operator, or a representative thereof, may discuss the matter with the cognizant OCMI.

§ 115.802 Hull.

(a) At each initial and subsequent inspection for certification of a vessel, the owner or managing operator shall be prepared to conduct tests and have the vessel ready for inspections of the hull structure and its appurtenances, including the following:

(1) Inspection of all accessible parts of the exterior and interior of the hull, the watertight bulkheads, and weather decks;

(2) Inspection and operation of all watertight closures in the hull, decks, and bulkheads including through hull fittings and sea valves;

(3) Inspection of the condition of the superstructure, masts, and similar arrangements constructed on the hull, and on a sailing vessel all spars, standing rigging, running rigging, blocks, fittings, and sails;

(4) Inspection of all railings and bulwarks and their attachment to the hull structure;

(5) Inspection to ensure that guards or rails are provided in dangerous places;

(6) Inspection and operation of all weathertight closures above the weather deck and the provisions for drainage of sea water from the exposed decks; and

(7) Inspection of all interior spaces to ensure that they are adequately ventilated and drained, and that means of escape are adequate and properly maintained.

(b) The vessel must be afloat for at least a portion of the inspection as required by the marine inspector.

(c) When required by the marine inspector, a portion of the inspection must be conducted while the vessel is underway so that the hull and internal structure can be observed.

[CGD 85–080, 61 FR 892, Jan. 10, 1996, as amended at 62 FR 51348, Sept. 30, 1997]

§ 115.804 Machinery.

At each initial and subsequent inspection for certification of a vessel, the owner or managing operator shall be prepared to conduct tests and have

the vessel ready for inspections of machinery, fuel, and piping systems, including the following:

(a) Operation of the main propulsion machinery both ahead and astern;

(b) Operational test and inspection of engine control mechanisms including primary and alternate means of starting machinery;

(c) Inspection of all machinery essential to the routine operation of the vessel including generators and cooling systems;

(d) External inspection of fuel tanks and inspection of tank vents, piping, and pipe fittings;

(e) Inspection of all fuel systems;

(f) Operational test of all valves in fuel lines by operating locally and at remote operating positions;

(g) Operational test of all overboard discharge and intake valves and watertight bulkhead pipe penetration valves;

(h) Operational test of the means provided for pumping bilges; and

(i) Test of machinery alarms including bilge high level alarms.

§ 115.806 Electrical.

At each initial and subsequent inspection for certification of a vessel, the owner or managing operator shall be prepared to conduct tests and have the vessel ready for inspection of electrical equipment and systems, including the following:

(a) Inspection of all cable as far as practicable without undue disturbance of the cable or electrical apparatus;

(b) Test of circuit breakers by manual operation;

(c) Inspection of fuses including ensuring the ratings of fuses are suitable for the service intended;

(d) Inspection of rotating electrical machinery essential to the routine operation of the vessel;

(e) Inspection of all generators, motors, lighting fixtures and circuit interrupting devices located in spaces or areas that may contain flammable vapors;

(f) Inspection of batteries for condition and security of stowage;

(g) Operational test of electrical apparatus, which operates as part of or in conjunction with a fire detection or alarm system installed on board the vessel, by simulating, as closely as practicable, the actual operation in case of fire; and

(h) Operational test of all emergency electrical systems.

§ 115.808 Lifesaving.

(a) At each initial and subsequent inspection for certification of a vessel, the owner or managing operator shall be prepared to conduct tests and have the vessel ready for inspection of lifesaving equipment and systems, including the following:

(1) Tests of each rescue boat and each rescue boat launching appliance and survival craft launching appliance in accordance with §122.520 of this chapter;

(2) Inspection of each life jacket, work vest, and marine buoyant device;

(3) If used, inspection of the passenger safety orientation cards or pamphlets allowed by §122.506(b) of this subchapter;

(4) Inspection of each inflatable liferaft, inflatable buoyant apparatus, and inflatable life jacket to determine that it has been serviced as required by §122.730 of this subchapter; and

(5) Inspection of each hydrostatic release unit to determine that it is in compliance with the servicing and usage requirements of §122.740 of this subchapter.

(b) Each item of lifesaving equipment determined by the marine inspector to not be in serviceable condition must be repaired or replaced.

(c) Each item of lifesaving equipment with an expiration date on it must be replaced if the expiration date has passed.

(d) The owner or managing operator shall destroy, in the presence of the marine inspector, each life jacket, other personal flotation device, and other lifesaving device found to be defective and incapable of repair.

(e) At each initial and subsequent inspection for certification of a vessel, the vessel must be equipped with an adult size life jacket for each person authorized. The vessel must also be equipped with child size life jackets equal to at least:

(1) 10 percent of the maximum number of passengers permitted to be carried unless children are prohibited from being carried aboard the vessel; or

(2) 5 percent of the maximum number of passengers permitted to be carried if all extended size life jackets are provided.

(f) Life jackets, work vests, and marine buoyant devices may be marked with the date and marine inspection zone to indicate that they have been inspected and found to be in serviceable condition by a marine inspector.

(g) At each initial and subsequent inspection for certification, the marine inspector may require that an abandon ship or man overboard drill be held under simulated emergency conditions specified by the inspector.

[CGD 85–080, 61 FR 892, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997; CGD 85–080, 62 FR 51348, Sept. 30, 1997]

§ 115.810 Fire protection.

(a) At each initial and subsequent inspection for certification, the owner or managing operator shall be prepared to conduct tests and have the vessel ready for inspection of its fire protection equipment, including the following:

(1) Inspection of each hand portable fire extinguisher, semiportable fire extinguisher, and fixed gas fire extinguishing system to check for excessive corrosion and general condition;

(2) Inspection of piping, controls, and valves, and the inspection and testing of alarms and ventilation shutdowns, for each fixed gas fire extinguishing system and detecting system to determine that the system is in operating condition;

(3) Operation of the fire main system and checking of the pressure at the most remote and highest outlets;

(4) Testing of each firehose to a test pressure equivalent to its maximum service pressure;

(5) Checking of each cylinder containing compressed gas to ensure it has been tested and marked in accordance with §147.60 in subchapter N of this chapter;

(6) Testing or renewal of flexible connections and discharge hoses on semiportable extinguishers and fixed gas extinguishing systems in accordance with §147.65 in subchapter N of this chapter; and

(7) Inspection and testing of smoke and fire detecting systems (including sensors and alarms) and fire confining appliances (such as fire screen doors and fire dampers).

(b) The owner, managing operator, or a qualified servicing facility as applicable shall conduct the following inspections and tests:

(1) For portable fire extinguishers, the inspections, maintenance procedures and hydrostatic pressure tests required by Chapter 4 of NFPA 10, ''Portable Fire Extinguishers,'' with the frequency specified by NFPA 10. In addition, carbon dioxide and halon portable fire extinguishers must be refilled when the net content weight loss exceeds that specified for fixed systems by Table 115.810(b). The owner or managing operator shall provide satisfactory evidence of the required servicing to the marine inspector. If any of the equipment or records have not been properly maintained, a qualified servicing facility may be required to perform the required inspections, maintenance procedures, and hydrostatic pressure tests. A tag issued by a qualified servicing organization, and attached to each extinguisher, may be accepted as evidence that the necessary maintenance procedures have been conducted.

(2) For semiportable and fixed gas fire extinguishing systems, the inspections and tests required by Table 115.810(b), in addition to the tests required by §§147.60 and 147.65 in subchapter N of this chapter. The owner or managing operator shall provide satisfactory evidence of the required servicing to the marine inspector. If any of the equipment or records have not been properly maintained, a qualified servicing facility may be required to perform the required inspections, maintenance procedures, and hydrostatic pressure tests.

TABLE 115.810(b).—SEMIPORTABLE AND FIXED FIRE EXTINGUISHING SYSTEMS

Type system	Test
Carbon dioxide	Weigh cylinders. Recharge if weight loss exceeds 10% of weight of charge. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses and nozzles to be sure they are clean.
Halon	Weigh cylinders. Recharge if weight loss exceeds 5% of weight of charge. If the system has a pressure gauge, also recharge if pressure loss (adjusted for temperature) exceeds 10%. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses and nozzles to be sure they are clean.
Dry Chemical (cartridge operated).	Examine pressure cartridge and replace if end is punctured or if determined to have leaked or to be in unsuitable condition. Inspect hose and nozzle to see if they are clear. Insert charged cartridge. Ensure dry chemical is free flowing (not caked) and extinguisher contains full charge.
Dry chemical (stored pressure).	See that pressure gauge is in operating range. If not, or if the seal is broken, weigh or otherwise determine that extinguisher is fully charged with dry chemical. Recharge if pressure is low or if dry chemical is needed.
Foam (stored pressure).	See that pressure gauge, if so equipped, is in the operating range. If not, or if the seal is broken, weight or otherwise determine that extinguisher is fully charged with foam. Recharge if pressure is low or if foam is needed. Replace premixed agent every 3 years.
Clean Agents (Halon replacements).	(To be developed).

(c) The owner, managing operator, or master shall destroy, in the presence of the marine inspector, each fire hose found to be defective and incapable of repair.

(d) At each initial and subsequent inspection for certification, the marine inspector may require that a fire drill be held under simulated emergency conditions to be specified by the inspector.

[CGD 85–080, 61 FR 892, Jan. 10, 1996, as amended at 62 FR 51348, Sept. 30, 1997]

§ 115.812 Pressure vessels and boilers.

(a) Pressure vessels must be tested and inspected in accordance with part 61, subpart 61.10, of this chapter.

(b) Periodic inspection and testing requirements for boilers are contained in §61.05 in subchapter F of this chapter.

[CGD 85–080, 61 FR 892, Jan. 10, 1996, as amended at 62 FR 51348, Sept. 30, 1997; USCG 1999–4976, 65 FR 6505, Feb. 9, 2000]

§ 115.814 Steering systems.

At each initial and subsequent inspection for certification the owner or managing operator shall be prepared to test the steering systems of the vessel and make them available for inspection to the extent necessary to determine that they are in suitable condition and fit for the service intended. Servo-type power systems, such as orbitrol systems, must be tested and capable of smooth operation by a single person in the manual mode, with hydraulic pumps secured.

§ 115.816 Miscellaneous systems and equipment.

At each initial and subsequent inspection for certification the owner or managing operator shall be prepared to test and make available for inspection all items in the ship's outfit, such as ground tackle, navigation lights and equipment, markings, and placards, which are required to be carried by the regulations in this subchapter, as necessary to determine that they are fit for the service intended.

§ 115.818 Sanitary inspection.

At each inspection for certification and at every other vessel inspection, quarters, toilet and washing spaces, galleys, serving pantries, lockers, and similar spaces may be examined to determine that they are serviceable and in a sanitary condition.

§ 115.830 Unsafe practices.

(a) At each inspection for certification and at every other vessel inspection all observed unsafe practices, fire hazards, and other hazardous situations must be corrected and all required guards and protective devices must be in satisfactory condition.

(b) At each inspection for certification and at every other vessel inspection the bilges and other spaces may be

examined to see that there is no excessive accumulation of oil, trash, debris, or other matter that might create a fire hazard, clog bilge pumping systems, or block emergency escapes.

§ 115.840 Additional tests and inspections.

The cognizant OCMI may require that a vessel and its equipment undergo any additional test or inspection deemed reasonable and necessary to determine that the vessel and its equipment are suitable for the service in which they are to be employed.

Subpart I—International Convention for Safety of Life at Sea, 1974, as Amended (SOLAS)

§ 115.900 Applicability.

(a) Except as otherwise provided in this subpart, a mechanically propelled vessel of the United States, which carries more than 12 passengers on an international voyage must be in compliance with the applicable requirements of the International Convention for Safety of Life at Sea, 1974, as Amended (SOLAS), to which the United States Government is currently a party.

(b) SOLAS does not apply to a vessel solely navigating the Great Lakes and the St. Lawrence River as far east as a straight line drawn from Cap des Rosiers to West Point, Anticosti Island and, on the north side of Anticosti Island, the 63rd Meridian.

§ 115.910 Passenger Ship Safety Certificate.

(a) A vessel that carries more than 12 passengers on an international voyage must have a valid SOLAS Passenger Ship Safety Certificate. The Commandant issues the original SOLAS Passenger Ship Safety Certificate after receiving notification from the cognizant OCMI that the vessel complies with the applicable SOLAS regulations. Subsequent SOLAS Passenger Ship Safety Certificates are issued by the cognizant OCMI unless any changes to the vessel or its operations have occurred that changes the information on the certificate, in which case the Commandant will reissue the certificate.

(b) The route specified on the Certificate of Inspection and the SOLAS Passenger Ship Safety Certificate must agree.

(c) A SOLAS Passenger Ship Safety Certificate is issued for a period of not more than 12 months.

(d) The SOLAS Passenger Ship Safety Certificate may be withdrawn, revoked, or suspended at any time when the vessel is not in compliance with applicable SOLAS requirements.

§ 115.920 Exemptions.

(a) In accordance with Chapter I (General Provisions) Regulation 4, of SOLAS, the Commandant may exempt a vessel, which is not normally engaged on an international voyage but that in exceptional circumstances is required to undertake a single international voyage, from any of the requirements of SOLAS provided that the vessel complies with safety requirements that are adequate in the Commandant's opinion for the voyage that is to be undertaken.

(b) In accordance with Chapter II–1 (Construction—Subdivision and Stability, Machinery and Electrical Installations) Regulation 1, Chapter II–2 (Construction—Fire Protection, Fire Detection and Fire Extinction) Regulation 1, and Chapter III (Life Saving Appliances and Arrangements) Regulation 2 of SOLAS, the Commandant may exempt a vessel that does not proceed more than 20 miles from the nearest land from any of the specific requirements of Chapters II–1, II–2, and III of SOLAS if the Commandant determines that the sheltered nature and conditions of the voyage are such as to render the application of such requirements unreasonable or unnecessary.

(c) The Commandant may exempt a vessel from requirements of the regulations of SOLAS in accordance with paragraphs (a) and (b) of this section upon a written request from the owner or managing operator submitted to the Commandant via the cognizant OCMI.

(d) When the Commandant grants an exemption to a vessel in accordance with this section, the Commandant will issue the original SOLAS Exemption Certificate describing the exemption. Subsequent SOLAS Exemption Certificates are issued by the cognizant

OCMI unless any changes to the vessel or its operations have occurred that change the information on the SOLAS Exemption or Passenger Ship Safety Certificates, in which case the Commandant shall reissue the certificate. A SOLAS Exemption Certificate is not valid for longer than the period of the SOLAS Passenger Ship Safety Certificate to which it refers.

[CGD 85–080, 61 FR 892, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997]

§ 115.925 Safety Management Certificate.

(a) All vessels that carry more than 12 passengers on an international voyage must have a valid Safety Management Certificate and a copy of their company's valid Document of Compliance certificate on board.

(b) All such vessels must meet the applicable requirements of 33 CFR part 96.

(c) A Safety Management Certificate is issued for a period of not more than 60 months.

[CGD 95–073, 62 FR 67515, Dec. 24, 1997]

§ 115.930 Equivalents.

In accordance with Chapter I (General Provisions) Regulation 5, of SOLAS, the Commandant may accept an equivalent to a particular fitting, material, appliance, apparatus, or any particular provision required by the SOLAS regulations if satisfied that such equivalent is at least as effective as that required by the regulations. An owner or managing operator of a vessel may submit a request for the acceptance of an equivalent following the procedures in §114.540 of this subchapter. The Commandant will indicate the acceptance of an equivalent on the vessel's SOLAS Passenger Ship Safety Certificate.

[CGD 85–080, 61 FR 892, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997]

PART 116—CONSTRUCTION AND ARRANGEMENT

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AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGD 85–080, 61 FR 900, Jan. 10, 1996, unless otherwise noted.

Subpart A—General Provisions

§ 116.100 General requirements.

(a) The construction and arrangement of a vessel must allow the safe operation of the vessel in accordance with the terms of its Certificate of Inspection giving consideration to provisions for a seaworthy hull, protection against fire, means of escape in case of a sudden unexpected casualty, guards and rails in hazardous places, ventilation of enclosed spaces, and necessary facilities for passengers and crew.

(b) Vessels to which this subchapter applies must meet the applicable provisions in subchapter S (Subdivision and Stability) of this chapter, except that the requirements in subpart K of this part may be met in lieu of the requirements of §§171.124 through 171.155 in subchapter S of this chapter.

§ 116.115 Applicability to existing vessels.

(a) Except as otherwise required by paragraph (b) of this section, an existing vessel must comply with the construction and arrangement regulations that were applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulations in this part.

(b) Alterations or modifications made to the structure or arrangements of an existing vessel regulated by this part, that are a major conversion, on or after March 11, 1996, must comply with the regulations of this part. Repairs or maintenance conducted on an existing vessel, resulting in no significant changes to the original structure or arrangement of the vessel, must comply with the regulations applicable to the vessel on March 10, 1996, or, as an alternative, with the regulations in this part. However, when outfit items such as furnishings and mattresses are renewed, they must comply with the regulations in this part.

Subpart B—Plans

§ 116.202 Plans and information required.

(a) Except as provided in §116.210 of this part, the owner of a vessel requesting initial inspection for certification shall, prior to the start of construction, submit for approval to the Commanding Officer, U.S. Coast Guard Marine Safety Center (Marine Safety Center), 400 Seventh Street, SW., Washington, DC 20590–0001, three copies of the following plans:

(1) Outboard profile;

(2) Inboard profile; and

(3) Arrangement of decks.

(b) In addition, the owner shall, prior to receiving a Certificate of Inspection, submit for approval to the Marine Safety Center, three copies of the following plans, manuals, analyses, and calculations that are applicable to the vessel as determined by the Commanding Officer, Marine Safety Center:

(1) Midship section;

(2) Structural fire protection details;

(3) Fire load calculations of accommodations and service spaces, if required in §116.427 of this part;

(4) Emergency evacuation plan required in §116.520, of this part with drawings showing embarkation stations, areas of refuge, and escape routes;

(5) Machinery installation, including but not limited to:

(i) Propulsion and propulsion control, including shaft details;

(ii) Steering and steering control, including rudder details;

(iii) Ventilation diagrams; and

(iv) Engine exhaust diagram;

(6) Electrical installation including, but not limited to:

(i) Elementary one-line diagram of the power system;

(ii) Cable lists;

(iii) Bills of materials;

(iv) Type and size of generators and prime movers;

(v) Type and size of generator cables, bus-tie cables, feeders, and branch circuit cables;

(vi) Power, lighting, and interior communication panelboards with number of circuits and rating of energy consuming devices;

(vii) Type and capacity of storage batteries;

(viii) Rating of circuit breakers and switches, interrupting capacity of circuit breakers, and rating and setting of overcurrent devices;

(ix) Electrical plant load analysis; and

(x) For a vessel of more than 19.8 meters (65 feet) in length with overnight accommodations for more than 49 passengers, an overcurrent protective device coordination analysis if the information required by paragraph (a)(8)(i) through (a)(8)(ix) of this section is not considered adequate by the Commanding Officer, Marine Safety Center to review the electrical system of the vessel;

(7) Lifesaving equipment locations and installation;

(8) Fire protection equipment installation including, but not limited to:

(i) Fire main system plans and calculations;

(ii) Fixed gas fire extinguishing system plans and calculations;

(iii) Fire detecting system and smoke detecting system plans;

(iv) Sprinkler system diagram and calculations; and

(v) Portable fire extinguisher types, sizes and locations;

(9) Fuel tanks;

(10) Piping systems including: bilge, ballast, hydraulic, sanitary, compressed air, combustible and flammable liquids, vents, soundings, and overflows;

(11) Hull penetrations and shell connections;

(12) Marine sanitation device model number, approval number, connecting wiring and piping:

(13) Lines and offsets, curves of form, cross curves of stability, and tank capacities including size and location on vessel; and

(14) On sailing vessels;

(i) Masts, including integration into the ship's structure; and

(ii) Rigging plan showing sail areas and centers of effort as well as the arrangement, dimensions, and connections of the standing rigging.

(c) For a vessel, the construction of which was begun prior to approval of the plans and information required by paragraphs (a) and (b) of this section, the cognizant OCMI may require any additional plans and information, manufacturers' certifications of construction, testing including reasonable destructive testing, and inspections, which the OCMI determines are necessary to verify that the vessel complies with the requirements of this subchapter.

[CGD 85–080, 61 FR 900, Jan. 10, 1996; 61 FR 24464, May 15, 1996]

§ 116.210 Plans for sister vessels.

(a) Plans are not required for a vessel that is a sister vessel, provided:

(1) Approved plans for the original vessel are on file at the Marine Safety Center or in the files of the cognizant OCMI;

(2) The owner of the plans authorizes their use for the new construction of the sister vessel;

(3) The regulations used for the original plan approval have not changed since the original approval; and

(4) There are no major modifications to any of the systems to be used.

(b) If approved plans for original vessel are not on file at the Marine Safety Center (MSC) or with the cognizant OCMI, the vessel owner shall submit

plans as described in §116.202 of this part.

Subpart C—Hull Structure

§116.300 Structural design.

Except as otherwise allowed by this subpart, a vessel must comply with the structural design requirements of one of the standards listed below for the hull material of the vessel.

(a) Steel hull vessels:

(1) Rules and Regulations for the Classification of Yachts and Small Craft, Lloyd's Register of Shipping (Lloyd's); or

(2) Rules for Building and Classing Steel Vessels Under 61 Meters (200 Feet) in Length, American Bureau of Shipping (ABS);

(b) Aluminum hull vessels:

(1) Rules and Regulations for the Classification of Yachts and Small Craft, Lloyd's; or

(i) For a vessel of more than 30.5 meters (100 feet) in length—Rules for Building and Classing Aluminum Vessels, ABS; or

(ii) For a vessel of not more than 30.5 meters (100 feet) in length—Rules for Building and Classing Steel Vessels Under 61 Meters (200 Feet) in Length, ABS, with the appropriate conversions from the ABS Rules for Building and Classing Aluminum Vessels; or

(2) ABS Guide for High Speed Craft.

(c) Steel hull vessels operating in protected waters—Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways, ABS.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51348, Sept. 30, 1997]

§116.330 Sailing vessels.

The design, materials, and construction of masts, posts, yards, booms, bowsprits, and standing rigging on a sailing vessel must be suitable for the intended service. The hull structure must be adequately reinforced to ensure sufficient strength and resistance to plate buckling. The cognizant OCMI may require the owner to submit detailed calculations on the strength of the mast, post, yards, booms, bowsprits, and standing rigging.

[CGD 85–080, 61 FR 900, Jan. 10, 1996; 61 FR 20556, May 7, 1996]

§116.340 Alternate design considerations.

The Commanding Officer, Marine Safety Center, may approve the structure of a vessel of novel design, unusual form, or special materials, which does not meet the requirements of §116.300, if it is shown by systematic analysis based on engineering principles that the vessel structure provides adequate safety and strength. An owner seeking approval of an alternate design shall submit detailed plans, material component specifications, and design criteria, including the expected operating environment, resulting loads on the vessel, and design limitations for such a vessel, to the Marine Safety Center.

Supbart D—Fire Protection

§116.400 Application.

(a) This subpart applies to:

(1) Vessels carrying more than 150 passengers; or

(2) Vessels with overnight accommodations for more than 49 passengers but not more than 150 passengers.

(b) A vessel with overnight accommodations for more than 150 passengers must comply with §72.05 in subchapter H of this chapter.

§116.405 General arrangement and outfitting.

(a) *Fire hazards to be minimized.* The general construction of the vessel must be such as to minimize fire hazards insofar as it is reasonable and practicable.

(b) *Combustible materials to be limited.* Limited amounts of combustible materials such as wiring insulation, pipe hanger linings, nonmetallic (plastic) pipe, and cable ties are permitted in concealed spaces except as otherwise prohibited by this subpart.

(c) *Combustibles insulated from heated surfaces.* Internal combustion engine exhausts, boiler and galley uptakes, and similar sources of ignition must be kept clear of and suitably insulated from combustible material.

(d) *Separation of machinery and fuel tank spaces from accommodation spaces.* Machinery and fuel tank spaces must be separated from accommodation spaces by boundaries that prevent the passage of vapors.

(e) *Paint and flammable liquid lockers.* Paint and flammable liquid lockers must be constructed of steel or equivalent material, or wholly lined with steel or equivalent material.

(f) *Nonmetallic piping in concealed spaces.* The use of nonmetallic (plastic) pipe within a concealed space in a control space, accommodation space, or service space is permitted in nonvital service only if the piping material has a flame spread rating of not more than 20 and a smoke developed rating of not more than 10 when tested in accordance with ASTM E 84 (incorporated by reference, see §114.600) or UL 723 by an independent laboratory.

(g) *Vapor barriers.* Vapor barriers must be provided where insulation of any type is used in spaces where flammable and combustible liquids or vapors are present, such as machinery spaces and paint lockers.

(h) *Interior finishes.* Combustible interior finishes allowed by §116.422(d) of this part must not extend into hidden spaces, such as behind linings, above ceilings, or between bulkheads.

(i) *Waste Receptacles.* Unless other means are provided to ensure that a potential waste receptacle fire would be limited to the receptacle, waste receptacles must be constructed of noncombustible materials with no openings in the sides or bottom.

(j) *Mattresses.* All mattresses must comply with either:

(1) The U.S. Department of Commerce Standard for Mattress Flammability (FF 4–72.16), 16 CFR Part 1632, Subpart A and not contain polyurethane foam; or,

(2) International Maritime Organization Resolution A.688(17) ''Fire Test Procedures For Ignitability of Bedding Components.'' Mattresses that are tested to this standard may contain polyurethane foam.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51348, Sept. 30, 1997; USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

§116.415 Fire control boundaries.

(a) *Type and construction of fire control bulkheads and decks*—(1) *Major hull structure.* The hull, structural bulkheads, columns and stanchions, superstructures, and deckhouses must be composed of steel or equivalent material.

(2) Bulkheads and decks—Bulkheads and decks must be classed as A–60, A–30, A–15, A–0, B–15, B–0, C, or C' based on the following:

(i) A–Class bulkheads or decks must be composed of steel or equivalent material, suitably stiffened and made intact with the main structure of the vessel, such as the shell, structural bulkheads, and decks. They must be so constructed that, if subjected to the standard fire test, they are capable of preventing the passage of smoke and flame for 1 hour. In addition, they must be so insulated with approved structural insulation, bulkhead panels, or deck covering so that, if subjected to the standard fire test for the applicable time period listed below, the average temperature on the unexposed side does not rise more than 139° C (250° F) above the original temperature, nor does the temperature at any one point, including any joint, rise more than 181° C (325° F) above the original temperature:

A–60 Class	60 minutes
A–30 Class	30 minutes
A–15 Class	15 minutes
A–0 Class	0 minutes

(ii) Penetrations in A-Class fire control boundaries for electrical cables, pipes, trunks, ducts, etc. must be constructed to prevent the passage of flame and smoke for one hour. In addition, the penetration must be designed or insulated so that it will withstand the same temperature rise limits as the boundary penetrated.

(iii) B-Class bulkheads and decks must be constructed of noncombustible materials and made intact with the main structure of the vessel, such as shell, structural bulkheads, and decks, except that a B-Class bulkhead need not extend above an approved continuous B-Class ceiling. They must be so constructed that, if subjected to the standard fire test, they are capable of preventing the passage of flame for 30 minutes. In addition, their insulation

value must be such that, if subjected to the standard fire test for the applicable time period listed below, the average temperature of the unexposed side does not rise more than 139° C (250° F) above the original temperature, nor does the temperature at any one point, including any joint, rise more than 225° C (405° F) above the original temperature:

B–15 Class ..... 15 minutes
B–0 Class ..... 0 minutes

(iv) Penetrations in B-Class fire control boundaries for electrical cables, pipes, trunks, ducts, etc. must be constructed to prevent the passage of flame for 30 minutes. In addition, the penetration must be designed or insulated so that it will withstand the same temperature rise limits as the boundary penetrated.

(v) C-Class bulkheads and decks must be composed of noncombustible materials.

(vi) C'-Class bulkheads and decks must be constructed of noncombustible materials and made intact with the main structure of the vessel, such as shell, structural bulkheads, and decks, except that a C'-Class bulkhead need not extend above a continuous B-Class or C'-Class ceiling. C'-Class bulkheads must be constructed to prevent the passage of smoke between adjacent areas. Penetrations in C'-Class boundaries for electrical cables, pipes, trunks, ducts, etc. must be constructed so as to preserve the smoke-tight integrity of the boundary.

(vii) Any sheathing, furring, or holding pieces incidental to the securing of structural insulation must be approved noncombustible material.

(b) *Bulkhead requirements.* Bulkheads between various spaces must meet the requirements of Table 116.415(b).

TABLE 116.415 (b)—BULKHEADS

Spaces	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Control Space (1)	B–0	A–0	A–0	A–0	A–15	A–60	A–60	A–0	A–60	A–60	A–60	A–0	A–0
Stairway (2)		A–0[4]	A–0	A–0	A–0	A–60	A–60	A–0	A–15	A–15	A–15	A–0	A–0
Corridor (3)			C	A–0	B–0	B–0	A–0	B–0	A–0	A–0	A–0	A–0	A–0
Embarkation Station (4)				C	A–0	A–0	A–0	A–0	A–0	A–0	A–0	C'[1]	C
Low Risk Accommodation (5).					B–0	B–15	B–15	B–0[2]	A–15	A–15	A–15	A–0	A–0
High Risk Accommodation (6) (≤50 sq. m.).						B–15	A–30	B–0[2]	A–60	A–60	A–60	A–0	A–0
High Risk Accommodation (7) (>50 sq. m.).							A–60	B–0[2]	A–60	A–60	A–60	A–0	A–0
Low Risk Service Spaces (8).								C	A–0	A–0	A–0	A–0	A–0
High Risk Service Spaces (9).									C[3]	A–0	A–0	A–0	A–0
Machinery Spaces (10)										C	A–0	A–0	A–0
Cargo Spaces (11)											A–0	A–0	A–0
Auxiliary Machinery spaces, voids, fuel and water tanks (12).												C'[1]	C'[1]
Open decks (not safety areas) (13).													C

[1] Boundaries of fuel tanks, auxiliary machinery spaces, and voids that contain a fire load in excess of 2.5kg/m[2] (0.5 pounds per square foot) must be minimum A–0 Class construction.
[2] Toilet space boundaries may be reduced to C'–Class.
[3] C–Class bulkheads may be used between two similar spaces, such as between two storerooms; however, an A–0 Class bulkhead shall be used between two dissimilar spaces, such as a storeroom and a workshop.
[4] Separation is not required within a single stairtower. A–0 construction is required between two distinct stairtowers.

(c) *Deck requirements.* Decks between various spaces must meet the requirements of Table 116.415(c), except that where linings or bulkhead panels are framed away from the shell or structural bulkheads, the deck within the void space so formed need only meet A–0 Class requirements.

TABLE 116.415(c)—DECKS

Space Above	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Space Below:													

TABLE 116.415(c)—DECKS—Continued

Space Above	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Control Space (1)	A–0	A–0	A–15	A–0	A–0	A–15	A–30	A–0	A–0	A–0	A–0	A–0	A–0
Stairway (2)	A–0	C	A–0	A–0	A–0	A–0	A–0	A–0	A–0	A–0	A–0	A–0	A–0
Corridor (3)	A–0	A–0	A–0	A–0	A–0	A–0	A–15	A–0	A–0	A–0	A–0	A–0	A–0
Embarkation Station (4).	A–0	A–0	A–0	C	A–0	A–0	A–0	A–0	A–0	A–0	A–0	C'[1]	C
Low Risk Accommodation (5).	A–15	A–15	A–0	A–0	A–0	A–0	A–15	A–0	A–0	A–0	A–0	A–0	A–0
High Risk Accommodation(6) (≤50 sq. m.).	A–60	A–60	A–30	A–15	A–0	A–30	A–60	A–0	A–0	A–0	A–0	A–0	A–0
High Risk Accommodation (7) (>50 sq. m.).	A–60	A–60	A–60	A–30	A–15	A–60	A–60	A–0	A–0	A–0	A–0	A–0	A–0
Low Risk Service Spaces (8).	A–0	A–0	A–0	A–0	A–0	A–0	A–0	A–0	A–0	A–0	A–0	A–0	A–0
High Risk Service Spaces (9).	A–60	A–30	A–30	A–30	A–15	A–60	A–60	A–0	A–0	A–0	A–0	A–0	A–0
Machinery Spaces (10).	A–60	A–60	A–60	A–30	A–15	A–60	A–60	A–0	A–0	C	A–0	A–0	A–0
Cargo Spaces (11)	A–60	A–30	A–30	A–30	A–15	A–60	A–60	A–0	A–0	A–0	A–0	A–0	A–0
Auxiliary Machinery Spaces, voids, fuel and water tanks (12).	A–0	A–0	A–0	C'[1]	A–0	A–0	A–0	A–0	A–0	A–0	A–0	C'[1]	A–0[1]
Open decks (not safety areas) (13).	A–0	A–0	A–0	C	A–0	A–0	A–0	A–0	A–0	A–0	A–0	A–0[1]	C

[1] Boundaries of fuel tanks, auxiliary machinery spaces, and voids that contain a fire load in excess of 2.5 kg/m^2 (0.5 pounds per square foot) must be minimum A–0 Class construction.

(d) *Main vertical zones.* (1) The hull, superstructure, and deck houses of a vessel, except for a vehicle space on a vehicle ferry, must be subdivided by bulkheads into main vertical zones which:

(i) Are generally not more than 40 meters (131 feet) in mean length on any one deck;

(ii) Must be constructed to:

(A) The greater of A–30 Class or the requirements of paragraph (b) of this section, or;

(B) Minimum A–0 Class where there is a Type 8, 12 or 13 space on either side of the division; and

(iii) May have small horizontal steps, if the steps:

(A) Do not exceed 20% of the mean length of the main vertical zone or 8 meters (26 feet), whichever is smaller; and

(B) Must be constructed to A–60 Class, or minimum A–0 Class where there is a Type 8, 12 or 13 space on either side of the division.

(iv) May be extended to a maximum mean length of 44 meters (144 feet) on each deck by the Commanding Officer, Marine Safety Center provided the maximum distance between the furthermost points of the bulkheads bounding the main vertical zone also does not exceed 44 meters (144 feet).

(2) Vehicle decks on a vehicle ferry must be subdivided. Where main vertical zones are impractical due to the vehicle carrying configuration, main horizontal zones may be provided. The decks bounding such a zone must be of at least A–30 construction or meet the requirements of paragraph (c) of this section, whichever is greater.

(e) *Draft stops.* In concealed spaces above ceilings and between linings and the shell of a vessel, draft stops must be fitted not more than 13.7 meters (45 feet) apart in the horizontal direction and at each deck level in the vertical direction unless otherwise permitted in paragraph (f). Draft stops must be of at least B-Class construction and be fitted in a vertical position.

(f) On vessels with no overnight passenger accommodations, draft stops are not required above/around large public spaces provided all of the following conditions are met:

(1) The space in question is surrounded by A-Class divisions or extends to the outer shell of the vessel.

(2) The space in question is open and unobstructed such that a fire in any part of the space will quickly be discovered.

(3) The area above the ceiling is easily accessible from below for fire fighting purposes.

[CGD 85–080, 61 FR 900, Jan. 10, 1996; 61 FR 20556, May 7, 1996; 61 FR 24464, May 15, 1996, as amended at 62 FR 51348, Sept. 30, 1997; USCG 1998–4442, 63 FR 52191, Sept. 30, 1998]

§ 116.422 Ceilings, linings, trim, interior finish and decorations.

(a) Ceilings, linings, and any furring incidental to their installation in control spaces, passageways, stairways, accommodation spaces and service spaces must be of noncombustible material in accordance with §164.009 in subchapter Q of this chapter, or other standard specified by the Commandant.

(b) Bulkheads, linings and ceilings may be covered by a combustible interior finish provided that such a finish is:

(1) Approved under §164.012 in subchapter Q of this chapter, or other standard specified by the Commandant; or

(2) Listed by Underwriters Laboratories, does not exceed 2 millimeters (.075 inches) in thickness, and has a flame spread rating of not more than 20 and a smoke developed rating of not more than 10 when tested in accordance with ASTM E 84 (incorporated by reference, see §114.600) or UL 723 by an independent laboratory.

(c) Bulkheads, linings, and ceilings in high risk accommodation spaces may have a combustible veneer trim and decorations that do not meet the requirements of paragraph (b) of this section, provided:

(1) The overall thickness of the combustible veneer does not exceed 2 millimeters (.075 inches); and

(2) The total volume of the combustible face trim, moldings, and decorations, including veneers, in any space does not exceed a volume equivalent to a 2.5 millimeter (0.1 inch) veneer on the combined area of the bulkheads and ceiling of the space.

(d) Combustible veneers may not be used in passageways, stairway enclosures or in low risk accommodation spaces. Combustible veneers, trim and decorations may not be used in or extend into hidden spaces such as behind linings or ceilings.

(e) Partial bulkheads or decks used to subdivide a space for artistic treatment and privacy must meet the requirements of Class C bulkheads.

(f) Nothing in this subpart may be construed as prohibiting the covering of any surface, including the surfaces of corridors, stairway enclosures, and hidden spaces, with a reasonable number of coats of paint or with a marine finish meeting the requirements of §164.012 in subchapter Q of this chapter or other standard specified by the Commandant.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51349, Sept. 30, 1997; USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

§ 116.423 Furniture and furnishings.

(a) For the purpose of this subpart, rooms containing ''fire resistant furnishings'' are considered to be those in which:

(1) Furniture such as chairs, sofas, and similar items are tested and meet the requirements in UL 1056 ''Fire Test of Upholstered Furniture,'' or meet the requirements in §72.05–55 in subchapter H of this chapter.

(2) Case furniture such as bookshelves, desks, cabinets, counters, beds, or other freestanding furniture are constructed in accordance with the requirements in §72.05–55 (a)(1) in subchapter H of this chapter.

(3) Draperies, curtains and other similar furnishings and decorations are flame resistant. These materials must be tested in accordance with National Fire Protection Association (NFPA) 701 ''Fire Tests for Flame Resistant Textiles and Films,'' and must comply with either the small or large scale tests.

(4) Rugs and carpet may be used in addition to deck coverings. Rugs and carpets must be constructed of 100 percent wool or equivalent as determined by a flame spread rating not exceeding 75 and a smoke developed rating not exceeding 100 when tested according to ASTM E 84 (incorporated by reference, see §114.600) or have a critical radiant flux not less than 0.8 watts per square centimeter (18 BTU's per hour per square inch) when tested according to

ASTM E 648 (incorporated by reference, see §114.600) ''Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source,'' and with a specific optical density not to exceed 450 in both flaming and nonflaming modes when tested according to ASTM E 662 (incorporated by reference, see §114.600) ''Specific Optical Density of Smoke generated by Solid Materials.'' Also:

(i) Rugs and carpets shall not extend up bulkheads or vertical surfaces more than 10 centimeters (4 inches) above the deck.

(ii) Rugs and carpets are not permitted in machinery spaces, high risk service spaces, or areas where the spillage or leakage of flammable or combustible liquids is possible including areas immediately adjacent to bar service areas.

(b) Passageways and stairway enclosures shall contain only fire resistant furnishings. In addition, all upholstered chairs, sofas, etc., in these areas, shall be tested and meet the requirements in UL 1056 or have padding and upholstery of approved fire resistant materials.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended by USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

§116.425 Deck coverings.

(a) Except as provided in this section, deck coverings used for leveling or finishing purposes in control spaces, stairway enclosures, passageways, accommodation spaces and service spaces must be noncombustible.

(1) Materials approved under §164.006 in subchapter Q of this chapter may be used in thicknesses not to exceed the approved thickness.

(2) Combustible deck leveling and finishing materials which are not approved under §164.006 in subchapter Q of this chapter may be used in a thickness not to exceed 9.5 millimeters (.375 inches).

(b) [Reserved]

§116.427 Fire load of accommodation and service spaces.

(a) Fire load calculations must be submitted by the owner for review to the Marine Safety Center when:

(1) A space is designated as a low risk accommodation space by the owner; or

(2) The cognizant OCMI determines, based on the quantity of combustibles, that the fire load present in a high risk accommodations space may exceed 37.5 kg (7.5 pounds) of combustibles per square meter (square foot) of deck area.

(b) When required under paragraph (a) of this section, fire load calculations must include all combustible construction and outfitting materials in addition to all loose or freestanding combustibles intended for use or stowage in the space. This includes but is not limited to: furniture, furnishings, carpets, rugs, combustible deck coverings, draperies, combustible interior finish, veneers, trim, and decorations, electrical cable insulation, plastic piping, light diffusers, mattresses, bedding, lifesaving equipment, and similar materials. The maximum fire load of a low risk accommodation or low risk service space as determined by fire load calculations must not exceed 15.0 kg (3 pounds) of combustibles per square meter (square foot) of deck area. The maximum fire load of a high risk accommodation space as determined by fire load calculations must not exceed 37.5 kg (7.5 pounds) of combustibles per square meter (square foot) of deck area.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51349, Sept. 30, 1997]

§116.430 Insulation other than for structural fire protection.

(a) Combustible insulation may be used for pipe and machinery covering or lagging within a machinery space, or used in an individual refrigerator box if the refrigerator box was purchased with the insulation already installed.

(b) Except as allowed by paragraph (a) of this section, any insulation installed for purposes other than structural fire protection and all material incidental to its installation must be noncombustible or approved under §164.009 in subchapter Q of this chapter. Surfacing material applied to such insulation must be noncombustible or may meet the requirements of §116.422(c) of this part.

§ 116.433 Windows and air ports in fire control boundaries.

(a) Windows or air ports must be of tempered or laminated glass of at least 6.5 millimeters (0.25 inches) in thickness. The use of other glazing material such as polycarbonate sheets may be approved by the Commandant for specific installations.

(b) Windows or air ports in bulkheads adjacent to passageways must not extend below a point 910 millimeters (36 inches) above the deck unless storm rails, that are structurally independent of the glass, are fitted in the passageway.

(c) Windows or air ports in A-Class bulkheads must be fitted with frames of steel or equivalent material. Glazing beads or angles of steel or equivalent material must be installed to hold glass in place in windows or air ports in a fire control boundary in event of a fire if:

(1) Where a steel frame is used, it is not arranged to retain the glass in place; or

(2) A frame of aluminum or other material with low melting point is used.

(d) A window or air port that is adjacent to an embarkation station, escape route, or survival craft stowage must be:

(1) Of A-Class construction; or

(2) Fitted with shutters, operable from outside the space, of steel or equivalent material.

(e) A window installed in an internal fire control boundary must comply with the requirements of § 72.05–30 in subchapter H of this chapter, except that fire window frames and glazing material listed by Underwriters Laboratories may be used in B-Class bulkheads.

(f) Windows in doors in fire control boundaries must comply with the requirements of paragraphs (a) through (e) of this section.

(g) Windows complying with paragraphs (a) through (d) of this section may be installed in the external boundaries of stairtowers if there are no unprotected openings in the side of the vessel below the windows and if the windows are not exposed to any other parts of the vessel at an angle of less than 180 degrees.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51350, Sept. 30, 1997]

§ 116.435 Doors.

(a) A door, other than a watertight door, must meet the requirements of this section.

(b) A door in a fire control boundary must meet the following requirements:

(1) A door in an accommodation space, stairway, stairtower, or corridor must be oriented vertically;

(2) A door must be capable of operation from either side by one person;

(3) With the exception of staterooms, a door in an accommodation space, stairway, stairtower, passageway, or control space must open in the direction of escape, where practicable;

(4) Combustible veneers may be used on doors subject to the same restrictions as the fire control boundary in which the doors are fitted;

(5) Door frames must be of rigid construction and provide at least a 12.7 millimeter (0.5 inch) overlap at the sides and top, except:

(i) Double doors capable of independent operation and latching may have a clearance between the doors of not more than 3.2 millimeters (0.125 inches). However, if one door must always be closed first, means shall be provided to ensure that the doors close in the proper order; and

(ii) A double swing door, may have a clearance of not more than 3.2 millimeters (0.125 inches) at the top and sides;

(6) The maximum width of an individual door must not exceed 1200 millimeters (48 inches); and

(7) Hose ports, if fitted, must be in the lower corner of the door opposite the hinge so a hose may pass through the doorway when the door is open and still allow the door to close over the hose. The hose port should be approximately 152 millimeters (6 inches) square. A self-closing hinged or pivoted steel or equivalent material cover must be fitted in the opening.

(c) Doors in A-Class fire control boundaries must meet the following additional requirements:

(1) A door in a bulkhead required to be A–60, A–30, or A–15 Class must be of hollow steel or equivalent material

construction, solidly filled with approved structural insulation, and capable of meeting the requirements of an A–15 Class bulkhead;

(2) A door in a bulkhead required to be A–0 Class must be of solid or hollow steel or equivalent material construction, and capable of meeting the requirements of an A–0 Class bulkhead;

(3) A door must have a latch with a minimum throw of 20 millimeters (0.75 inches);

(4) A door must not have vent grilles or louvers;

(5) A door must not be undercut more than 12.7 millimeters (0.5 inches) above the door sill or deck covering. Rugs and carpets must not pass through doorways, but linoleum and similar deck coverings may;

(6) A door in a stairtower, stairway, and main vertical zone bulkhead must meet the following additional requirements:

(i) A door must be of the self-closing type capable of closing against a 3.5 list of the vessel; and

(ii) Holdback hooks are not allowed. If installed, a hold back mechanism for a door must allow the door to be released:

(A) Locally:

(B) Upon a signal from a control space; and

(C) Upon disruption of the power system.

(7) Horizontal doors (doors installed in decks) are allowed only for access to spaces that are accessible only to crew members and are used only by crew members, subject to the following requirements:

(i) The door must be self-closing with a closure time of not less than 5 seconds and not more than 10 seconds, and be capable of closing against a 3.5 list of the vessel;

(ii) Holdback hooks are not allowed. If installed, a holdback mechanism for a door must allow the door to be released:

(A) Locally;

(B) Upon a signal from a control space; and

(C) Upon disruption of the power system.

(iii) The forces required to fully open the door must not exceed 17.8 Newtons (5 pounds) to release the latch, 44.5 Newtons (10 pounds) to set the door in motion, and 17.8 Newtons (5 pounds) to open the door to the width of the stairway; and

(iv) The door latch must be capable of keeping the door closed when a pressure of 0.07 kPa (0.01 psi) is applied to the underside of the door.

(8) Double swing doors must not be used in any bulkhead except between a food preparation space, such as a galley or pantry, and a messroom or dining room; and

(9) A door opening onto weather decks must meet the requirements of paragraphs (c)(1) or (c)(2) of this section or may be composed of hardwood of not less than 45 millimeters (1.75 inches) in thickness. In any case, no restriction as to the area of glass will be made for the doors insofar as this subpart is concerned. Only glass of the wire-inserted type may be fitted in the doors.

(10) Except as noted in paragraph (c)(9) of this section, doors may be fitted with not more than 0.065 square meters (100 square inches) of glass, which must be of the wire-inserted type.

(d) Doors in B-Class fire control boundaries must meet the following requirements in addition to those in paragraph (b) of this section:

(1) A door must be of solid or hollow steel or equivalent material construction, or must be of noncombustible material and be specifically approved by the Commandant;

(2) A door must have a latch with a minimum throw of 9.5 millimeters (0.375 inches); and

(3) A door must not be undercut more than 25 millimeters (1 inch) above the door sill or deck covering. Rugs and carpets must not pass through doorways but linoleum and similar coverings may.

(e) A door in a C-Class bulkhead must be of noncombustible material.

(f) A door used for decorative purposes, and that is not required to comply with paragraphs (b) through (e) of this section, must be constructed of noncombustible material or hardwood, must not interfere with the normal operation of the required doors, and must

open in the same direction as the required doors. Decorative doors must not be used in stairways or stairtowers.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51350, Sept. 30, 1997]

§ 116.438 Stairtowers, stairways, ladders, and elevators.

(a) A vessel carrying more than 600 passengers or with overnight accommodations for more than 49 passengers must meet the requirements for stairways, ladders, and elevators in § 72.05–20 of this chapter.

(b) *Materials.* (1) Stairways, stairtowers, ladders, elevators, and landings must be designed with sufficient strength to sustain a load of 4.8 kPa (100 pounds per square foot) with a safety factor of 4, based on ultimate strength of the material;

(2) All stairways, ladders, elevators, and landings within machinery spaces and cargo holds must be composed of steel; and

(3) All stringers, treads, and all platforms and landings of all stairways shall be composed of steel, and risers must be of approved incombustible material, except that:

(i) Stairways, ladders, elevators, stringers, treads, platforms, and landings protected from potential fire exposure by being in either exterior locations or within protective enclosure bulkheads, decks and doors as described in the requirements of paragraph (j), may be constructed of approved incombustible material; and

(ii) All stairways, ladders, elevators, stringers, treads, platforms, and landings subject to potential fire exposure and not within a protective enclosure must be composed of steel unless their failure will not hinder fire fighter access or debarkation.

(c) A stairway or stairtower must be fitted with handrails on both sides at a vertical height above the tread at its nosing of between 840 and 910 millimeters (33 and 36 inches). A stairway or stairtower of more than 1,680 millimeters (66 inches) in width must also be fitted with a center handrail.

(d) A handrail fitted in a stairtower, stairway, landing, ladder, or elevator must be constructed of noncombustible material.

(e) A stairway or stairtower must be clear of all obstructions other than handrails.

(f) Curved, spiral, or winding stairways are permitted only with the specific approval of the Commandant.

(g) Differences in the depth of tread or height of riser of stairs in different flights of stairs in a stairway or stairtower must be minimized. In an individual flight of stairs in a stairway or stairtower, the depth of the tread and the height of riser shall not have a variance exceeding 5 millimeters (0.375 inches).

(h) In a stairway or stairtower, the sum of the riser height and tread depth must be at least 432 millimeters (17 inches) and not more than 455 millimeters (18 inches). A stairway or stairtower having treads less than 254 millimeters (10 inches) in depth must have a nosing of 12.7 millimeters (0.5 inches) in width.

(i) Landings for stairways and stairtowers must meet the following requirements:

(1) A clear landing having an area at least equal to the square of the tread width must be provided at the top and bottom of each stairway; and

(2) Any interruption or change of direction in a stairway must be accomplished by means of an intermediate landing of a width and length at least equal to the tread width of the stairway.

(j) A stairway or stairtower must not have an angle of inclination from the horizontal of more than 40 degrees. However, stairways accessing spaces visited solely by crew members must not have an angle of inclination from the horizontal of more than 50 degrees. The Commanding Officer, Marine Safety Center may approve higher angles of inclination for spaces with severe space constraints.

(k) Where a continuous vertical deck penetration for a stairway or elevator exceeds one deck, the integrity of all decks must be assured by enclosure bulkheads and decks meeting the requirements of §§ 116.415(b) and 116.415(c) of this part. Doors meeting the requirements of §§ 116.435(b) and 116.435(c) of this part must be fitted in the enclosure at each deck serviced.

(l) Where a vertical deck penetration for a stairway or elevator involves only one deck, the integrity of the deck must be assured as required by paragraph (j) of this section. Alternatively the integrity of the deck may be maintained at one level only by means of bulkheads of the same fire control boundary rating as the deck penetrated. A door meeting the requirements of §§116.435(b) and 116.435(c) of this part must be fitted in the enclosure. In spaces containing a balcony, the integrity of the balcony deck in the way of stairways or elevators need not be assured. However, such stairways must not be considered to be a means of escape.

(m) *Arrangements.* (1) Each main vertical zone with more than two deck levels, each having enclosed or partially enclosed accommodation spaces, other than washroom or toilet spaces and open decks, must be served by at least one stairtower, so that a person may escape from any accommodation space or any other space where persons may be normally quartered or employed, to all other decks having any such spaces within the same main vertical zone, without coming out of the stairtower enclosure. Where a stairtower is accessible from two main vertical zones, it may be considered as the required stairtower for both main vertical zones provided all boundaries of the stairtower meet main vertical zone boundary requirements contained in §116.415 of this part.

(2) Each stairtower must give access to an embarkation station or an area of refuge identified in the emergency escape plan required by §116.520.

(3) Stairtowers must not give direct access to overnight accommodations or spaces of type 9, 10, 11, or 12.

(4) A stairtower is not required to extend below deck to serve spaces in which a fire is likely to originate if one of the means of escape is:

(i) A stairway that leads directly to a weather deck; or

(ii) A stairway leading to a stairtower enclosure that includes self closing fire doors at both the top and bottom; or

(iii) An alternative stairtower arrangement providing an equivalent level of safety is acceptable to the Commanding Officer, Marine Safety Center.

(5) The Commanding Officer, Marine Safety Center may accept other means of escape in combination with a stairtower provided the exits open directly to weather or through a main vertical zone bulkhead.

(6) For vessels in which a stairtower is not required, a stairway must provide a means of escape for each deck of the main vertical zone.

(n) The minimum tread width of a stairway or stairtower must be 8.4 millimeters (0.333 inches) for each person served, but must not be less than 910 millimeters (36 inches). However, in stairways accessing spaces utilized solely by crew members, the minimum tread width must be 8.4 millimeters (0.333 inches) for each person served, but not less than 710 millimeters (28 inches).

(1) The minimum tread width of a stairway or stairtower must be determined for each deck considering only those persons on that deck, except as provided in paragraph (n)(3) of this section. Once a minimum tread width has been established at any deck, it must not be decreased in the direction of escape.

(2) In determining the number of persons served, a space must be considered to contain at least the number of persons as follows:

(i) Passenger overnight accommodation spaces: Designed capacity;

(ii) Accommodation spaces having fixed seating for passengers: Maximum seating capacity;

(iii) Public spaces, including spaces such as casinos, restaurants, club rooms, and cinemas, and public accommodation spaces as defined in §114.400 of this subchapter, except overnight accommodation spaces: One person for each 0.9 square meters (10 square feet) of deck area. In computing such deck area, the following areas must be excluded:

(A) Areas for which the number of persons permitted is determined using the fixed seating criterion;

(B) Obstructions, including stairway and elevator enclosures, elevated stages, bars, and cashier stands, but not including slot machines, tables, or other room furnishings;

(C) Toilets and washrooms;

(D) Interior passageways less than 850 millimeters (34 inches) wide and passageways on open deck less than 710 millimeters (28 inches) wide;

(E) Spaces necessary for handling lifesaving equipment, anchor handling equipment, or line handling gear, or in way of sail booms or running rigging; and

(F) Bow pulpits, swimming platforms, and areas that do not have a solid deck, such as netting on multi hull vessels;

(iv) Crew overnight accommodation spaces: Two-thirds designed capacity; and

(v) Work spaces: Occupancy under normal operating conditions.

(3) If a stairway forms part of a normal embarkation or debarkation route, or egress route to an area of refuge, the number of persons using the stairway for that purpose must be used in determining the minimum tread width. The Commanding Officer, Marine Safety Center, may approve a narrower stairway width if a narrower stairway will not unreasonably impede the flow of persons out of the space requiring egress or from an area of refuge to an embarkation station. Specific consideration can be given by the Marine Safety Center to the arrangement of landing area in excess of that required by paragraph (i) of this section when considering the approval of a narrower stairway width. However, the stairway width must be at least 910 millimeters (36 inches) unless the stairway is utilized solely by crew members, in which case the minimum tread width must be at least 710 millimeters (28 inches).

(4) If more than one stairtower serves a main vertical zone, the number of persons in that main vertical zone may be distributed among the stairtowers.

[CGD 85–080, 61 FR 900, Jan. 10, 1996; 61 FR 20556, May 7, 1996, as amended at 62 FR 51350, Sept. 30, 1997; USCG 1998–4442, 63 FR 52191, Sept. 30, 1998]

§ 116.439 Balconies.

(a) An accommodation space containing a balcony must meet the requirements of this section.

(b) Each level of a space containing a balcony must have two independent means of escape that meet the requirements of § 116.500 of this part.

(c) For the purpose of main vertical zone bulkhead spacing requirements, the length of the space to which the balcony opens is considered to be increased by an amount equal to the gross area of the balcony divided by the average width of the space. If this equivalent main vertical zone length exceeds 40 meters (131 feet), the space must meet the requirements of paragraph (d) of this section. The actual length of the space may not exceed 40 meters (131 feet).

(d) If the equivalent main vertical zone length under paragraph (c) of this section exceeds 40 meters (131 feet), both decks connected by the balcony must be protected with an automatic sprinkler system meeting NFPA 13.

(e) If the unobstructed balcony opening area is less than 93 square meters (1,000 square feet), the opening must be protected in accordance with NFPA 13 or other standard specified by the Commandant. The horizontal projection area of stairs, escalators, statues, or other obstructions must be subtracted from the total balcony opening area for purposes of computation of unobstructed balcony opening area.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51350, Sept. 30, 1997; 62 FR 64305, Dec. 5, 1997]

§ 116.440 Atriums.

(a) The atrium opening area must be a minimum of 93 square meters (1000 square feet) or 20% of the gross deck area of the largest deck within the accommodation space containing the atrium, whichever is smaller.

(1) Each side of an atrium opening must be a minimum of 6.1 meters (20 feet) in length. If the opening is circular or ellipsoid, it must measure at least 6.1 meters (20 feet) across in any direction.

(2) Any deck opening within an atrium must fit wholly within the horizontal projection of any deck opening of an upper deck.

(3) The horizontal projection area of stairs, escalators, statues, etc. within the atrium shall not be included for purposes of computation of atrium opening area.

(b) The entire main vertical zone containing an atrium must be protected throughout with a smoke detection system of an approved type which is installed in accordance with §76.33 in subchapter H of this chapter. However, on vessels with no overnight passenger accommodations, smoke detectors may be omitted from the accommodation space containing the atrium.

(c) The entire main vertical zone containing an atrium must be protected with an automatic sprinkler system meeting NFPA 13.

(d) The atrium must be provided with a smoke extraction system that complies with either:

(1) The smoke extraction system must be capable of exhausting the entire volume of the space within 10 minutes. The smoke extraction system must be capable of being activated by both the smoke detection system and by manual control, and designed with sufficient plenum air openings to prevent excessive negative air pressure in the atrium; or,

(2) The smoke extraction system may be designed in accordance with the principles of NFPA 92B ''Smoke Management Systems in Malls, Atria, and Large Areas.''

(e) Each level within the atrium must have two independent means of escape that comply with §116.500 of this part. At least one of the means of escape must be a stairtower.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51350, Sept. 30, 1997]

Subpart E—Escape and Embarkation Station Requirements

§116.500 Means of escape.

(a) Except as otherwise provided in this section, each space accessible to passengers or used by the crew on a regular basis, must have at least two means of escape, one of which must not be a watertight door.

(b) The two required means of escape must be widely separated and, if possible, at opposite ends or sides of the space to minimize the possibility of one incident blocking both escapes.

(c) Subject to the restrictions of this section, means of escape may include normal exits and emergency exits, passageways, stairways, ladders, deck scuttles, and windows.

(d) The number and dimensions of the means of escape from each space must be sufficient for rapid evacuation in an emergency for the number of persons served as determined using §116.438(n)(2) of this part.

(e) The dimensions of a means of escape must be such as to allow easy movement of persons when wearing life jackets. There must be no protrusions in means of escape that could cause injury, ensnare clothing, or damage life jackets.

(f) The minimum clear opening of a door or passageway used as a means of escape must not be less than 810 millimeters (32 inches) in width, however, doors or passageways used solely by crew members must have a clear opening not less than 710 millimeters (28 inches). The sum of the width of all doors and passageways used as means of escape from a space must not be less than 8.4 millimeters (0.333 inches) multiplied by the number of passengers for which the space is designed.

(g) A dead end passageway, or the equivalent, of more than 6.1 meters (20 feet) in length is prohibited.

(h) The maximum allowable travel distance, measured as actual walking distance from the most remote point in a space to the nearest exit, must not be more than 46 meters (150 feet).

(i) Each door, hatch, or scuttle, used as a means of escape, must be capable of being opened by one person, from either side, in both light and dark conditions. The method of opening a means of escape must be obvious, rapid, and of adequate strength. Handles and securing devices must be permanently installed and not capable of being easily removed. With the exception of individual staterooms, a door, hatch or scuttle must open towards the expected direction of escape from the space served.

(j) A means of escape that is not readily apparent to a person from both inside and outside the space must be adequately marked in accordance with §122.606 of this subchapter.

(k) A ladder leading to a deck scuttle may not be used as a means of escape except:

(1) On a vessel of not more than 19.8 meters (65 feet) in length, a vertical ladder and a deck scuttle may be used as not more than one of the means of escape from a passenger accommodation space; or

(2) As not more than one of the means of escape from any crew accommodation space or work space.

(l) Each ladder used as a means of escape must be mounted at least 180 millimeters (7 inches) from the nearest permanent object in back of the ladder. Rungs must be:

(1) At least 405 millimeters (16 inches) in width; and

(2) Not more than 305 millimeters (12 inches) apart, and uniformly spaced for the length of the ladder with at least 113 millimeters (4.5 inches) clearance above each rung.

(m) When a deck scuttle serves as a means of escape, it must not be less than 455 millimeters (18 inches) in diameter and must be fitted with a quick acting release and a holdback device to hold the scuttle in an open position.

(n) Footholds, handholds, ladders, and similar means provided to aid escape, must be suitable for use in emergency conditions, of rigid construction, and permanently fixed in position, unless they can be folded, yet brought into immediate service in an emergency.

(o) On a vessel of not more than 19.8 meters (65 feet) in length, a window or windshield of sufficient size and proper accessibility may be used as one of the required means of escape from an enclosed space, provided it:

(1) Does not lead directly overboard;

(2) Can be opened or is designed to be kicked or pushed out; and

(3) Is suitably marked.

(p) Only one means of escape is required from a space where:

(1) The space has a deck area less than 30 square meters (322 square feet);

(2) There is no stove, heater, or other source of fire in the space;

(3) The means of escape is located as far as possible from a machinery space or fuel tank; and

(4) If an accommodation space, the single means of escape does not include a deck scuttle or a ladder.

(q) Alternative means of escape from spaces may be provided if acceptable to the Commanding Officer, Marine Safety Center.

[CGD 85–080, 61 FR 900, Jan. 10, 1996; 61 FR 20556, May 7, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997; CGD 85–080, 62 FR 51350, Sept. 30, 1997; 62 FR 64305, Dec. 5, 1997; USCG 1998–4442, 63 FR 52191, Sept. 30, 1998]

§ 116.510 Embarkation stations.

(a) A vessel must have a least two designated embarkation stations on the embarkation deck of each main vertical zone, and at least one on each side of the vessel.

(b) Embarkation stations and approaches thereto must:

(1) Be areas that are easily traversed;

(2) Be provided with handholds; and

(3) Be well illuminated.

(c) Each embarkation station must be arranged to allow the safe boarding of survival craft. They must not be located in areas where rolling of the vessel could cause contact between the propeller(s) and survival craft. Bulwarks, handrails, and lifelines must be fitted with openings that are normally closed but that may be opened while survival craft are being boarded, allowing passengers to pass through rather than climb over.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997]

§ 116.520 Emergency evacuation plan.

The owner or managing operator shall prepare an evacuation plan that must:

(a) Identify possible casualties involving fires or flooding, including a fire in the largest capacity passenger space in each main vertical zone;

(b) Provide procedures for evacuating all affected spaces for each casualty identified as required by paragraph (a) of this section without abandoning the vessel, including—

(1) Identify readily accessible areas of refuge for the maximum number of persons allowed aboard the vessel. The capacity for an area of refuge may not exceed the number of persons specified in §116.438(n)(2) of this part, except that one person may be permitted for each 0.28 square meters (3 square feet) of deck area; and

(2) Identify at least two means of escape complying with §114.400 from the space being evacuated; and

(c) Include procedures to evacuate passengers from the vessel using an abandon ship plan, considering the number of passengers and the vessel's route. The abandon ship plan must identify at least one escape route from each area of refuge to each embarkation station required by §116.510 of this part.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51350, Sept. 30, 1997; USCG 1998–4442, 63 FR 52191, Sept. 30, 1998]

§116.530 Fire control plan.

A fire control plan must be posted on the vessel in a location that is accessible and visible to all passengers. The plan must show escape routes, areas of refuge, embarkation stations, the location of fire protection/emergency equipment, compartment titles and hazard classification of accommodation and service spaces, and structural fire protection boundaries.

Subpart F—Ventilation

§116.600 Ventilation of enclosed and partially enclosed spaces.

(a) An enclosed or partially enclosed space within a vessel must be adequately ventilated in a manner suitable for the purpose of the space.

(b) A power ventilation system must be capable of being shut down from the pilot house.

(c) An enclosed passenger or crew accommodation space and any other space occupied by a crew member on a regular basis must be ventilated by a power ventilation system unless natural ventilation in all ordinary weather conditions is satisfactory to the OCMI.

(d) An exhaust duct over a frying vat or a grill must be at least 11 U.S. Standard Gauge (USSG) steel.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51350, Sept. 30, 1997]

§116.610 Ventilation ducts.

(a) For the purposes of this section, a ventilation duct includes any type of piping, chamber, or conduit used for ventilation.

(b) A ventilation duct, and materials incidental to its installation, must be made of noncombustible material.

(c) Combustibles and other foreign materials are not allowed within ventilation ducts. However, metal piping and electrical wiring installed in a metal protective enclosure may be installed within ventilation ducts, provided that the piping or the wiring does not interfere with the operation of fire dampers. Electrical wiring and piping may not be installed in an exhaust duct over a frying vat or grill.

(d) Suitable means, such as a manual damper, automatic damper, or vent cover, must be provided in an accessible location outside the space served by the ventilation duct for shutting off the passage of air through the ventilation duct in the event of fire.

(e) A ventilation duct must not serve more than one main vertical zone; penetrations of main vertical zones must be minimized.

(f) A ventilation duct penetrating an A-Class or B-Class fire control boundary must meet the following requirements:

(1) A ventilation duct must meet the same requirements relative to the passage of smoke and flame as the fire control boundary penetrated;

(2) A steel duct penetrating an A-Class fire control boundary must be of at least 11 USSG, and a steel duct penetrating a B-Class bulkhead or deck must be of at least 16 USSG;

(3) A duct penetrating a main vertical zone bulkhead must be fitted with an automatic fire damper at the main vertical zone bulkhead;

(4) A duct penetrating an A-Class fire control boundary and opening into a space formed by that boundary must be equipped with a fire damper;

(5) A steel duct that penetrates an A-Class fire control boundary other than a main vertical zone bulkhead, and does not open within the space formed by the boundary need not be fitted with a fire damper provided the duct is at least 11 USSG throughout that space;

(6) A duct penetrating an insulated fire control boundary must be fitted with insulation of the same type and thickness as the boundary penetrated

for a distance of at least 305 millimeters (12 inches) on the insulated side of the boundary. A fire damper blade need not be insulated; and

(7) Ducts serving cargo spaces, machinery spaces, or vehicles spaces must be fitted with automatic fire dampers.

(g) Fire dampers, where required by this section, must comply with the following requirements;

(1) A fire damper and casing must be at least 11 USSG and not more than 3.2 millimeters (0.125 inch) gap between the blade and casing;

(2) A fire damper must close against the draft in the duct and be accessible for periodic inspection by means of a hinged or bolted plate in the duct and surrounding bulkhead or deck, if fitted;

(3) Fire damper springs, blades, and hinges must be of stainless steel construction or of steel suitably coated to prevent corrosion;

(4) Fire dampers must be capable of manual operation from outside the space served, be fitted with an indicator showing whether the damper is open or closed, and be marked with red letters of at least 12.7 millimeters (0.5 inches) in height stating ''VENTILATION FIRE DAMPER''; and

(5) An automatic fire damper must meet the above requirements and must be designed to operate at 74°C (165°F) for normal locations and approximately 100°C (212°F) for locations such as galleys.

(h) A ventilation duct serving a stairtower must not serve another space.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51350, Sept. 30, 1997]

§ 116.620 Ventilation of machinery and fuel tank spaces.

In addition to the requirements of this subpart, ventilation systems for spaces containing machinery or fuel tanks must comply with the requirements of Part 119 of this chapter.

Subpart G—Crew Spaces

§ 116.700 General requirements.

(a) A crew accommodation space and a work space must be of sufficient size, adequate construction, and with suitable equipment to provide for the safe operation of the vessel and the protection and accommodation of the crew in a manner practicable for the size, facilities, service, route, speed, and modes of operation of the vessel.

(b) The deck above a crew accommodation space must be located above the deepest load waterline.

§ 116.710 Overnight accommodations.

Overnight accommodations must be provided for all crew members if the vessel is operated more than 12 hours in a 24 hour period, unless the crew is put ashore and the vessel is provided with a new crew.

§ 116.730 Crew accommodations on vessels of more than 19.8 meters (65 feet) in length with overnight accommodations for more than 49 passengers.

A crew accommodation space on a vessel of more than 19.8 meters (65 feet) in length with overnight accommodations for more than 49 passengers must comply with §§ 72.20–10(a), (b), (d), and (e); 72.20–15; 72.20–20(d); 72.20–25 (a) and (d) 72.20–30; 72.20–35; 72.20–45; 72.20–50; and 72.20–55 in subchapter H of this chapter.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended by USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

Subpart H—Passenger Accommodations

§ 116.800 General requirements.

(a) All passenger accommodations must be arranged and equipped to provide for the safety of the passengers in consideration of the route, modes of operation, and speed of the vessel.

(b) The height of ceilings in a passenger accommodation space, including aisles and passageways, must be at least 1880 millimeters (74 inches), but may be reduced at the sides of a space to allow for camber, wiring, ventilation ducts, and piping.

(c) A passenger accommodation space must be maintained to minimize fire and safety hazards and to preserve sanitary conditions. Aisles must be kept clear of obstructions.

(d) A passenger accommodation space must not contain:

(1) Electrical generation equipment or transformers, high temperature

parts, pipelines, rotating assemblies, or any other item that could injure a passenger, unless such an item is adequately shielded or isolated; or

(2) A control for operating the vessel, unless the control is so protected and located that operation of the vessel by a crew member will not be impeded by a passenger during normal or emergency operations.

(e) The deck above a passenger accommodation space must be located above the deepest load waterline.

(f) A variation from a requirement of this subpart may be authorized by the Commanding Officer, Marine Safety Center for an unusual arrangement or design provided there is no significant reduction of space, accessibility, safety, or sanitation.

§ 116.810 Overnight accommodations.

(a) A berth must be provided for each passenger authorized to be carried in overnight accommodation spaces. Each berth must measure at least 1880 millimeters (74 inches) by 610 millimeters (24 inches) and have at least 610 millimeters (24 inches) of clear space above.

(b) Berths must not be located more than three high and must be constructed of wood, fiber reinforced plastic, or metal. A berth located more than 1,525 millimeters (60 inches) above the deck must be fitted with a suitable aid for access.

(c) The construction and arrangement of berths and other furniture must allow free and unobstructed access to each berth. Each berth must be immediately adjacent to an aisle leading to a means of escape from the accommodation space. As aisle alongside a berth must be at least 610 millimeters (24 inches) wide. An aisle joining two or more aisles in an overnight accommodation space must be at least 1,065 millimeters (42 inches) wide.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51350, Sept. 30, 1997]

§ 116.820 Seating.

(a) A seat must be provided for each passenger permitted in a space for which the fixed seating criterion in § 115.113(b)(3) of this subchapter has been used to determine the number of passengers permitted.

(b) A seat must be constructed to minimize the possibility of injury and avoid trapping occupants.

(c) Installation of seats must provide for ready escape.

(d) Seats, including fixed, temporary, or portable seats, must be arranged as follows:

(1) An aisle of not more than 3.8 meters (15 feet) in overall length must be not less than 610 millimeters (24 inches) in width.

(2) An aisle of more than 3.8 meters (15 feet) in overall length must be not less than 760 millimeters (30 inches) in width.

(3) Where seats are in rows, the distance from seat front to seat front must be not less than 760 millimeters (30 inches) and the seats must be secured to a deck or bulkhead.

(4) Seats used to determined the number of passengers permitted, in accordance with § 115.113(b)(3) of this subchapter, must be secured to the deck, bulkhead, or bulwark.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997]

Subpart I—Rails and Guards

§ 116.900 Deck rails.

(a) Except as otherwise provided in this section, rails or equivalent protection must be installed near the periphery of all decks of a vessel accessible to passengers or crew. Equivalent protection may include lifelines, wire rope, chains, and bulwarks, that provide strength and support equivalent to fixed rails. Deck rails must include a top rail with the minimum height required by this section, and lower courses or equivalent protection as required by this section.

(b) Deck rails must be designed and constructed to withstand a point load of 91 kilograms (200 pounds) applied at any point in any direction, and a uniform load of 74 kilograms per meter (50 pounds per foot) applied to the top rail in any direction. The point and uniform loads do not need to be applied simultaneously.

(c) Where space limitations make deck rails impractical for areas designed for crew use only, such as at

narrow catwalks in way of deckhouse sides, hand grabs may be substituted.

(d) The height of top rails required by paragraph (a) of this section must be as follows:

(1) Rails on passenger decks of a ferry or a vessel engaged in excursion trips, including but not limited to sightseeing trips, dinner and party cruises, and overnight cruises, must be at least 1,000 millimeters (39.5 inches) high.

(2) Rails on a vessel subject to the 1966 International Convention on Load Lines must be at least 1,000 millimeters (39.5 inches) high.

(3) All other rails must be at least 910 millimeters (36 inches) high.

(e) A sailing vessel, an open boat, or any other vessel not specifically covered elsewhere in this section, must have rails of a minimum height or equivalent protection as considered necessary by the cognizant OCMI, based on the vessel's operation, route, and seating arrangement.

(f) Rail courses or an equivalent must be installed between a top rail required by paragraph (a) of this section and the deck so that no open space exists that is more than 305 millimeters (12 inches) high, except:

(1) On passenger decks of a ferry or of a vessel on an excursion trip one of the following must be installed:

(i) Bulwarks;

(ii) Chain link fencing or wire mesh that has openings of not more than 100 millimeters (4 inches) in diameter; or

(iii) Bars, slats, rail courses, or an equivalent spaced at intervals of not more than 100 millimeters (4 inches).

(2) On a vessel subject to the 1966 International Convention on Load Lines, rail courses, or an equivalent, must be installed so that there is not an open space higher than 230 millimeters (9 inches) from the deck to the first rail course or equivalent.

(g) Rails must be permanently installed except that the following rails may be removable:

(1) Rails in way of embarkation stations and boarding locations; and

(2) Rails on a vessel when the service of the vessel is routinely changed, as determined by the cognizant OCMI, and the required top rail height varies depending on the service of the vessel at a particular time.

§ 116.920 Storm rails.

Suitable storm rails or hand grabs must be installed where necessary in passageways, at deckhouse sides, and at ladders and hatches.

§ 116.940 Guards in vehicle spaces.

On a vessel authorized to carry one or more vehicles, suitable chains, cables, or other barriers must be installed at the end of each vehicle runway. In addition, temporary rails or equivalent protection must be installed in way of each vehicle ramp, in compliance with § 116.900 of this part, when the vessel is underway.

§ 116.960 Guards for exposed hazards.

An exposed hazard, such as gears or rotating machinery, must be protected by a cover, guard, or rail.

§ 116.970 Protection against hot piping.

Piping, including valves, pipe fittings and flanges, conveying vapor, gas, or liquid, the temperature of which exceeds 65.5° C (150° F), must be insulated where necessary to prevent injuries.

Subpart J—Window Construction and Visibility

§ 116.1010 Safety glazing materials.

Glass and other glazing material used in windows must be of material that will not break into dangerous fragments if fractured.

§ 116.1020 Strength.

Each window, port hole, and its means of attachment to the hull or deck house, must be capable of withstanding the maximum load from wave and wind conditions expected due to its location on the vessel and the authorized route of the vessel.

§ 116.1030 Operating station visibility.

(a) Windows and other openings at the operating station must be of sufficient size and properly located to provide an adequate view for safe navigation in all operating conditions.

(b) Glass or other glazing material used in windows at the operating station must have a light transmission of not less than 70 percent according to

Test 2 of American National Standards Institute (ANSI) Z 26.1 ''Safety Glazing Materials For Motor Vehicles Operating on Land Highways,'' and must comply with Test 15 of ANSI Z 26.1 for Class I Optical Deviation.

Subpart K—Drainage and Watertight Integrity of Weather Decks

§ 116.1110 Drainage of flush deck vessels.

(a) Except as provided in paragraph (b) of this section, the weather deck on a flush deck vessel must be watertight and have no obstruction to overboard drainage.

(b) Each flush deck vessel may have solid bulwarks in the forward one-third length of the vessel if:

(1) The bulwarks do not form a well enclosed on all sides; and

(2) The foredeck of the vessel has sufficient sheer to ensure drainage aft.

§ 116.1120 Drainage of cockpit vessels, well deck vessels, and open boats.

Drainage of cockpit vessels, well deck vessels, and open boats must meet the applicable requirements of §§ 178.420, 178.430, 178.440, 178.450 in subchapter T of this chapter.

§ 116.1160 Watertight integrity.

(a) A hatch exposed to the weather must be watertight, except that the following hatches may be weathertight:

(1) A hatch on a watertight trunk that extends at least 305 millimeters (12 inches) above the weather deck;

(2) A hatch in a cabin top; and

(3) A hatch on a vessel that operates only on protected waters.

(b) A hatch cover must:

(1) Have securing devices; and

(2) Be attached to the hatch frame or coaming by hinges, captive chains, or other devices of substantial strength to prevent its loss.

(c) A hatch cover that provides access to accommodation spaces must be operable from either side.

(d) A weathertight door must be provided for each opening located in a deck house or companionway. Permanent watertight coamings must be provided as follows:

(1) On a vessel on an exposed or partially protected route, a watertight coaming with a height of at least 150 millimeters (6 inches) must be provided under each weathertight door in a cockpit or a well, or on the main deck of a flush deck vessel.

(2) On a vessel on a protected route, a watertight coaming with a height of at least 75 millimeters (3 inches) must be provided under each weathertight door in a cockpit or a well.

(3) The height of the watertight coaming for a hinged watertight door, need only be sufficient to accommodate the door.

Subpart L—Ballast Systems

§ 116.1200 Ballast.

(a) Any solid fixed ballast used to comply with the requirements of Parts 170 and 171 in subchapter S of this chapter must be:

(1) Stowed in a manner that prevents shifting of the ballast; and

(2) Installed to the satisfaction of the cognizant OCMI.

(b) Solid fixed ballast may not be located forward of the collision bulkhead unless the installation and arrangement of the ballast and the collision bulkhead minimizes the risk of the ballast penetrating the bulkhead in a collision.

(c) Solid fixed ballast may not be removed from a vessel or relocated unless approved by the cognizant OCMI except that ballast may be temporarily moved for a vessel examination or repair if it is replaced to the satisfaction of the OCMI.

(d) Water ballast, either as an active system or permanent, must be approved by the Commanding Officer, Marine Safety Center.

PART 117—LIFESAVING EQUIPMENT AND ARRANGEMENTS

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AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGD 85–080, 61 FR 911, Jan. 10, 1996, unless otherwise noted.

Subpart A—General Provisions

§ 117.10 Applicability to vessels on an international voyage.

A vessel on an international voyage subject to the International Convention for Safety of Life at Sea, 1974, as amended, (SOLAS) must meet the requirements in subchapter W of this chapter for passenger vessels in the same service, instead of the requirements of this part.

[CGD 85–080, 62 FR 51350, Sept. 30, 1997]

§ 117.15 Applicability to existing vessels.

An existing vessel must comply with the requirements of this part except as otherwise specified by this section.

(a) Before March 11, 2001, or 10 years after the vessel's keel was laid or the vessel was at a similar stage of construction, whichever is later, an existing vessel may comply with the requirements in effect for the vessel prior to March 11, 1996, for the number and type of survival craft, stowage arrangements, and launching appliances for survival craft.

(b) On or before March 11, 2001, or 10 years after the vessel's keel was laid or the vessel was at a similar stage of construction, whichever is later, an existing vessel must:

(1) Be equipped with the number of survival craft required for its route under §§ 117.202, 117.204, 117.205, 117.206, 117.207, or 117.208 of this part, as applicable; and

(2) Comply with the stowage and launching appliance requirements for survival craft in §§ 117.130 through 117.150 of this part, inclusive.

(c) Each inflatable liferaft, inflatable buoyant apparatus, life float, and buoyant apparatus on the vessel on March 11, 1996, may be used to meet the requirements of this part as long as the survival craft is in good and serviceable condition.

(d) New installations of lifesaving equipment on an existing vessel, which are completed to the satisfaction of the cognizant Officer in Charge, Marine Inspection, (OCMI) on or after March 11, 1996, must comply with the regulations in this part. Replacement of existing lifesaving equipment installed before March 11, 1996, must meet the requirements of paragraph (a) of this section.

(e) A combination flare and smoke distress signal approved in accordance with § 160.023 in subchapter Q of this chapter, may be used on an existing vessel until the expiration date of the distress signal but no later than March 11, 1999, as one of the distress signals required by § 117.68 of this part.

(f) Until February 1, 1999, a Coast Guard approved 121.5/243 MHz Class A Emergency Position Indicating Radiobeacon (EPIRB) may be used to meet

the requirement for an EPIRB under §117.64 of this part, if the EPIRB:

(1) Is operable;

(2) Is installed to automatically float-free and activate;

(3) Was manufactured on or after October 1, 1988; and

(4) Was installed on the vessel on or before March 11, 1996.

(g) Until February 1, 1999, a Federal Communications Commission (FCC) Type Accepted VHF–FM Class C EPIRB may be used to meet the requirement for an EPIRB on a vessel operating on a Great Lakes route under §117.64 of this part, if the EPIRB;

(1) Is operable; and

(2) Was installed on the vessel on or before March 11, 1996.

(h) Until March 11, 1997 an existing vessel on a limited coastwise route need not comply with §117.64 of this part.

(i) An existing vessel need not comply with §117.78(a)(4) of this part.

(j) An existing vessel must comply with either §117.210 of this part or with the regulations for rescue boats that were in effect for the vessel prior to March 11, 1996.

[CGD 85–080, 61 FR 911, Jan. 10, 1996; 61 FR 24464, May 15, 1996]

§117.25 Additional requirements.

(a) Each item of lifesaving equipment carried on board a vessel but not required under this part, must be of an approved type meeting the specifications for lifesaving equipment in subchapter Q of this chapter, or other standard specified by the Commandant.

(b) The cognizant Officer in Charge, Marine Inspection (OCMI) may require a vessel to carry specialized or additional lifesaving equipment if:

(1) The OCMI determines the conditions of the voyage render the requirements of this part inadequate; or

(2) The vessel is operated in Arctic, Antarctic, or other severe conditions not covered under this part.

Subpart B—Emergency Communications

§117.64 Emergency Position Indicating Radiobeacons (EPIRB).

Each vessel that operates on the high seas, or that operates beyond three miles from the coastline of the Great Lakes, must have on board an FCC Type Accepted Category 1, 406 MHz EPIRB, installed to automatically float free and activate.

[CGD 85–080, 61 FR 911, Jan. 10, 1996; 61 FR 20556, May 7, 1996]

§117.68 Distress flares and smoke signals.

(a) *Oceans, coastwise, limited coastwise, and Great Lakes routes.* A vessel on an oceans, coastwise, limited coastwise, or Great Lakes route must carry—

(1) Six hand red flare distress signals approved in accordance with §160.021 in subchapter Q of this chapter, or other standard specified by the Commandant; and

(2) Six hand orange smoke distress signals approved in accordance with §160.037 in subchapter Q of this chapter, or other standard specified by the Commandant.

(b) *Lakes, bays, and sounds, and rivers routes.* A vessel on a lakes, bays, and sounds, or rivers route must carry:

(1) Three hand red flare distress signals approved in accordance with §160.021 in subchapter Q of this chapter, or other standard specified by the Commandant; and

(2) Three hand orange smoke distress signals approved in accordance with §160.037 in subchapter Q of this chapter, or other standard specified by the Commandant.

(c) *Substitutions.* (1) A rocket parachute flare approved in accordance with §160.036 in subchapter Q of this chapter, or other standard specified by the Commandant, may be substituted for any of the hand red flare distress signals required under paragraph (a) or (b) of this section.

(2) One of the following may be substituted for any of the hand orange smoke distress signals required under paragraph (a) or (b) of this section:

(i) A rocket parachute flare approved in accordance with §160.036 in subchapter Q of this chapter, or other standard specified by the Commandant.

(ii) A hand red flare distress signal approved in accordance with §160.021 in subchapter Q of this chapter, or other standard specified by the Commandant.

(iii) A floating orange smoke distress signal approved in accordance with

§ 160.022 in subchapter Q of this chapter, or other standard specified by the Commandant.

(d) *Exemption for vessels on short runs.* A vessel operating on short runs limited to approximately 30 minutes away from the dock is not required to carry distress flares and smoke signals under this section.

(e) *Stowage.* Each flare carried to meet this section must be stowed in one of the following:

(1) A portable watertight container carried at the operating station, and marked as required by § 122.614 of this subchapter; or

(2) A pyrotechnic locker secured above the freeboard deck, away from heat, in the vicinity of the operating station.

[CGD 85–080, 61 FR 911, Jan. 10, 1996, as amended at 62 FR 51350, Sept. 30, 1997]

Subpart C—Ring Life Buoys and Life Jackets

§ 117.70 Ring life buoys.

(a) A vessel must have one or more ring life buoys as follows:

(1) A vessel of not more than 7.9 meters (26 feet) in length must carry a minimum of one life buoy of not less than 510 millimeters (20 inches) in diameter;

(2) A vessel of more than 7.9 meters (26 feet) in length, but not more than 19.8 meters (65 feet), must carry a minumum of one life buoy of not less than 610 millimeters (24 inches) in diameter; and

(3) A vessel of more than 19.8 meters (65 feet) in length must carry a minimum of three life buoys of not less than 610 millimeters (24 inches) in diameter.

(b) Each ring life buoy on a vessel must:

(1) Be approved in accordance with § 160.050 in subchapter Q of this chapter, or other standard specified by the Commandant;

(2) Be readily accessible;

(3) Be stowed in a way that it can be rapidly cast loose;

(4) Not be permanently secured in any way; and

(5) If on a vessel on an oceans or coastwise route, be orange in color.

(c) At least one ring life buoy must be fitted with a lifeline. If more than one ring life buoy is carried, at least one must not have a lifeline attached. Each lifeline on a ring life buoy must:

(1) Be buoyant;

(2) Be at least 18.3 meters (60 feet) in length;

(3) Be non-kinking;

(4) Have a diameter of at least 7.9 millimeters (5/16-inch);

(5) Have a breaking strength of at least 5 kilonewtons (1,124 pounds); and

(6) Be of a dark color if synthetic, or of a type certified to be resistant to deterioration from ultraviolet light.

(d) At least one ring buoy must be fitted with a floating waterlight, unless the vessel is limited to daytime operation, in that case no floating waterlight is required.

(1) Each floating waterlight must be approved in accordance with § 161.010 in subchapter Q of this chapter, or other standard specified by the Commandant.

(2) Each ring life buoy with a floating waterlight must have a lanyard of at least 910 millimeters (3 feet) in length, but not more than 1,830 millimeters (6 feet), securing the waterlight around the body of the ring life buoy.

(3) Each floating waterlight installed after March 11, 1997, on a vessel carrying only one ring life buoy, must be attached to a lanyard with a corrosion-resistant clip. The clip must have a strength of at least 22.7 kilograms (50 pounds) and allow the waterlight to be quickly disconnected from the ring life buoy.

[CGD 85–080, 61 FR 911, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997; CGD 85–080, 62 FR 51350, Sept. 30, 1997]

§ 117.71 Life jackets.

(a) An adult life jacket must be provided for each person carried on board a vessel.

(b) In addition, a number of child-size life jackets equal to at least 10% of the number of persons permitted on board must be provided, or such greater number as necessary to provide a life jacket for each person being carried that is smaller than the lower size limit of the adult life jackets provided to meet this section, except that:

(1) Child-size life jackets are not required if the vessel's Certificate of Inspection is endorsed for the carriage of adults only, or

(2) When all ''extended size'' life preservers (those with a lower size limit for persons of 1,195 millimeters (47 inches) in height or weighing 20.4 kilograms (45 pounds)) are carried on board, a minimum of only 5% additional child size devices need be carried.

(c) Except as allowed by paragraph (d) of this section, each life jacket must be approved in accordance with either §§ 160.002, 160.005, or 160.055 in subchapter Q of this chapter, or other standard specified by the Commandant.

(d) Cork and balsa wood life jackets previously approved in accordance with §§ 106.003, or 160.004 in subchapter Q of this chapter, on board an existing vessel prior to March 11, 1996, may continue to be used to meet the requirements of this section until March 11, 1999, provided the life jackets are maintained in good and serviceable condition.

(e) Each life jacket carried on board the vessel must be marked in accordance with §122.604 of this chapter.

[CGD 85–080, 61 FR 911, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997; CGD 85–080, 62 FR 51350, Sept. 30, 1997]

§ 117.72 Personal flotation devices carried in addition to life jackets.

(a) Equipment carried under this section is not acceptable in lieu of any portion of the required number of approved life jackets and must not be substituted for the approved life jackets required to be worn during drills and emergencies.

(b) Wearable marine buoyant devices that include ''ski vests,'' ''boating vests,'' and ''fishing vests,'' approved in accordance with § 160.064 in subchapter Q of this chapter, or other standard specified by the Commandant, may be carried as additional equipment.

(c) Buoyant work vests approved in accordance with § 160.053 in subchapter Q of this chapter, or other standard specified by the Commandant, may be carried as additional equipment for use of persons working near or over the water.

(d) Commercial hybrid personal flotation devices (PFD) approved in accordance with § 160.077 in subchapter Q of this chapter, or other standard specified by the Commandant, may be carried as additional equipment for use of persons working near or over the water. Each commercial hybrid PFD must be:

(1) Used, stowed, and maintained in accordance with the procedures set out in the manual required for these devices under § 160.077–29 in subchapter Q of this chapter and any limitation(s) marked on them; and

(2) Of the same or smaller design and have the same method of operation as each other hybrid PFD carried on board.

§ 117.75 Life jacket lights.

(a) Each life jacket carried on a vessel on an oceans, coastwise, or Great Lakes route, must have a life jacket light approved in accordance with Subpart 161.012 of this chapter. Each life jacket light must be securely attached to the front shoulder area of the life jacket.

(b) Notwithstanding the requirements of paragraph (a) of this section, life jacket lights are not required for life jackets on:

(1) Ferries; and

(2) Vessels with Certificates of Inspection endorsed only for routes that do not extend more than 20 miles from a harbor of safe refuge.

§ 117.78 Stowage of life jackets.

(a) *General.* Unless otherwise stated in this section, life jackets must be stored in convenient places distributed throughout accommodation spaces.

(1) Each stowage container for life jackets must not be capable of being locked. If practicable, the container must be designed to allow the life jackets to float free.

(2) Each life jacket kept in a stowage container must be readily available.

(3) Each life jacket stowed overhead must be supported in a manner that allows quick release for distribution.

(4) If life jackets are stowed more than 2,130 millimeters (7 feet) above the deck, a means for quick release must be provided and must be capable

of operation by a person standing on the deck.

(5) Each child size life jacket must be stowed in a location that is appropriately marked and separated from adult life jackets so the child size life jackets are not mistaken for adult life jackets.

(b) *Additional personal flotation devices.* The stowage locations of the personal flotation devices carried in addition to life jackets under §117.72 must be separate from the life jackets, and such as not to be easily confused with that of the life jackets.

Subpart D—Survival Craft Arrangements and Equipment

§117.130 Stowage of survival craft.

(a) Each survival craft must be:

(1) Secured to the vessel by a painter with a float-free link permanently attached to the vessel except that a float-free link is not required if the vessel operates only on waters not as deep as the length of the painter;

(2) Stowed so that when the vessel sinks the survival craft floats free and, if inflatable, inflates automatically;

(3) Stowed in a position that is readily accessible to crew members for launching, or else provided with a remotely operated device that releases the survival craft into launching position or into the water;

(4) Stowed in a way that permits manual release from its securing arrangements;

(5) Ready for immediate use so that crew members can carry out preparations for embarkation and launching in less than 5 minutes;

(6) Provided with means to prevent shifting;

(7) Stowed in a way that neither the survival craft nor its stowage arrangements will interfere with the embarkation and operation of any other survival craft at any other launching station;

(8) Stowed in a way that any protective covers will not interfere with launching and embarkation;

(9) Fully equipped as required under this part; and

(10) Stowed, as far as practicable, in a position sheltered from breaking seas and protected from damage by fire.

(b) A hydrostatic release unit when used in a float-free arrangement must be approved under approval series 160.062 or 160.162 or a standard specified by the Commandant.

(c) A mechanical, manually operated device to assist in launching a survival craft must be provided if:

(1) The survival craft weighs more than 90.7 kilograms (200 pounds); and

(2) The survival craft requires lifting more than 300 vertical millimeters (one vertical foot) to be launched.

[CGD 85–080, 61 FR 911, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997; CGD 85–080, 62 FR 51350, Sept. 30, 1997; 62 FR 64305, Dec. 5, 1997]

§117.137 Stowage of life floats and buoyant apparatus.

(a) In addition to meeting §117.130, each life float and buoyant apparatus must be stowed as required under this section.

(b) The float-free link required by §117.130(a)(1) must be:

(1) Certified to meet §160.073 in subchapter Q of this chapter, or other standard specified by the Commandant:

(2) Of proper strength for the size of the life float or buoyant apparatus as indicated on its identification tag; and

(3) Secured to the painter at one end and to the vessel on the other end.

(c) The means used to attach the float-free link to the vessel must:

(1) Have a breaking strength of at least the breaking strength of the painter;

(2) If synthetic, be of a dark color or of a type certified to be resistant to deterioration from ultraviolent light; and

(3) If metal, be corrosion resistant.

(d) If the life float or buoyant apparatus does not have a painter attachment fitting, a means for attaching the painter must be provided by a wire or line which:

(1) Encircles the body of the device;

(2) Will not slip off;

(3) Has a breaking strength that is at least the strength of the painter; and

(4) If synthetic, is of a dark color or is of a type certified to be resistant to deterioration from ultraviolet light.

(e) If the vessel carries more than the one life float or buoyant apparatus in a group with each group secured by a single painter:

(1) The combined weight of each group of life floats and buoyant apparatus must not exceed 181 kilograms (400 pounds);

(2) Each group of life floats and buoyant apparatus is considered a single survival craft for the purposes of §117.130(c) of this part;

(3) Each life float and buoyant apparatus must be individually attached to the painter by a line meeting §117.175(e)(3)(ii), (iii), and (iv) of this part and long enough that each life float or buoyant apparatus can float without contacting any other life float or buoyant apparatus in the group; and

(4) The strength of the float-free link under paragraph (b)(2) of this section and the strength of the painter under §117.175(e)(3)(ii) of this part must be determined by the combined capacity of the group of life floats and buoyant apparatus.

(f) Life floats and buoyant apparatus must not be stowed in tiers more than 1,220 millimeters (4 feet) high. When stowed in tiers, the separate units must be kept apart by spacers.

§117.150 Survival craft embarkation arrangements.

(a) A launching appliance approved under approval series 160.163 or a marine evacuation system approved under approval series 160.175 must be provided for each inflatable liferaft and inflatable buoyant apparatus when either—

(1) The embarkation station for the survival craft is on a deck more than 4.5 meters (15 feet) above the waterline; or

(2) The inflatable liferaft or inflatable buoyant apparatus will be boarded prior to being placed in the water.

(b) An embarkation ladder, approved in accordance with §160.017 in subchapter Q of this chapter, or other standard specified by the Commandant, must be at each embarkation station if the distance from the embarkation deck to the vessel's lightest operating waterline is more than 3,050 millimeters (10 feet).

[CGD 85–080, 61 FR 911, Jan. 10, 1996, as amended at 62 FR 51350, Sept. 30, 1997; 62 FR 64305, Dec. 5, 1997]

§117.175 Survival craft equipment.

(a) *General.* Each item of survival craft equipment must be of good quality, and efficient for the purpose it is intended to serve. Unless otherwise stated in this section, each item of equipment carried, whether required under this section or not, must be secured by lashings, stored in lockers, compartments, brackets, or have equivalent mounting or storage arrangements that do not:

(1) Reduce survival craft capacity;

(2) Reduce space available to the occupants;

(3) Interfere with launching, recovery, or rescue operations; or

(4) Adversely affect seaworthiness of the survival craft.

(b) *Inflatable liferafts.* Each inflatable liferaft must have one of the following equipment packs as shown by the markings on its container:

(1) Safety of Life at Sea (SOLAS) B Pack; or

(2) SOLAS A Pack.

(c) *Inflatable buoyant apparatus.* Each inflatable buoyant apparatus must be equipped in accordance with the manufacturer's approved servicing manual.

(d) *Life floats.* Each life float must be fitted with a lifeline, pendants, two paddles, a painter, and a light.

(e) *Buoyant apparatus.* Each buoyant apparatus must be fitted with a lifeline, pendants, a painter, and a light.

(f) *Equipment specifications for life floats and buoyant apparatus.* The equipment required for lifefloats and buoyant apparatus must meet the following specifications:

(1) *Lifeline and pendants.* The lifeline and pendants must be as furnished by the manufacturer with the approved life float or buoyant apparatus. Replacement lifelines and pendants must meet the requirements in §160.010 in subchapter Q of this chapter, or other standard specified by the Commandant.

(2) *Paddle.* Each paddle must be of at least 1,220 millimeters (4 feet) in length, lashed to the life float to which they belong, and buoyant.

(3) *Painter.* The painter must:

(i) Be of at least 30.5 meters (100 feet) in length, but not less than three times the distance between the deck where the life float or buoyant apparatus it

serves is stowed and the lightship waterline of the vessel;

(ii) Have a breaking strength of at least 680 kilograms (1,500 pounds), except that if the capacity of the life float or buoyant apparatus is 50 persons or more, the breaking strength must be at least 1,360 kilograms (3,000 pounds);

(iii) Be of a dark color if synthetic, or of a type certified to be resistant to deterioration from ultraviolet light; and

(iv) Be stowed in such a way that it runs out freely when the life float or buoyant apparatus floats away from a sinking vessel.

(4) *Light.* The light must be a floating waterlight approved under approval series 161.010 or a standard specified by the Commandant. The floating waterlight must be attached around the body of the life float or buoyant apparatus by a 10 mm (3/8 inch) lanyard, resistant to deterioration from ultraviolet light, and at least 5.5 meters (18 feet) in length.

(g) *Other survival craft.* If survival craft other than inflatable liferafts, life floats, inflatable buoyant apparatus, and buoyant apparatus are carried on the vessel, such as lifeboats or rigid liferafts, they must be installed, arranged, and equipped as required in subchapter H (Passenger Vessels) of this chapter for passenger vessels on the same route.

[CGD 85–080, 61 FR 911, Jan. 10, 1996, as amended at 62 FR 51351, Sept. 30, 1997; 62 FR 64305, Dec. 5, 1997]

Subpart E—Number and Type of Survival Craft

§ 117.200 Survival craft—general.

(a) Each survival craft required on a vessel by this part must meet one of the following:

(1) For an inflatable liferaft—Approved under approval series 160.151 or other standard specified by the Commandant, with the applicable equipment pack, as determined by the cognizant OCMI. Each inflatable liferaft required on a vessel by this part must have a capacity of 6 persons or more. Inflatable liferafts may be substituted for inflatable buoyant apparatus or life floats required under this section.

(2) For a life float—Approved under approval series 160.027 or other standard specified by the Commandant. Buoyant apparatus may be used to meet requirements for life floats if the buoyant apparatus was installed on board the vessel on or before March 11, 1996, and if the buoyant apparatus remains in good and serviceable condition.

(3) For an inflatable buoyant apparatus—Approved under approval series 160.010 or other standard specified by the Commandant. Inflatable buoyant apparatus may be substituted for life floats required under this section.

(4) For a buoyant apparatus—Approved under approval series 160.010 or other standard specified by the Commandant. An existing buoyant apparatus may not be used to satisfy the requirements for life floats on existing vessels wishing to upgrade the total number of passengers carried on an oceans route.

(b) If the vessel carries a small boat or boats, the capacity of these boats may be counted toward the life float capacity required by this subpart. Such boats must meet the requirements for safe loading and flotation in 33 CFR Part 183, and must meet the stowage, launching and equipment requirements in this part for the survival craft they replace.

(c) A summary of survival craft requirements is provided in Table 117.200(c).

TABLE 117.200(c)

Route	Survival Craft Required
Oceans	(a) cold water[1]—100% ILR[2]—§ 117.202(a)
	(b) warm water[3]
	(i) w/overnight accommodations—100% IBA[5]—§ 117.204(c)
	(ii) w/o overnight accommodations—67% IBA[4]—§ 117.202(e)
Coastwise	(a) w/overnight accommodations—100% IBA[5]—§ 117.204(a)
	(b) w/o overnight accommodations
	(i) cold water—67% IBA—§ 117.204(c)(1)
	(ii) warm water—100% LF—§ 117.204(c)(2)

TABLE 117.200(c)—Continued

Route	Survival Craft Required
	(iii) within three miles of shore w/float free 406 MHz EPIRB 50% LF—§ 117.204(d)
Limited coastwise (Not more than 20 miles from a harbor of safe refuge).	(a) w/overnight accommodations—100% IBA [5]—§ 117.205(a)
	(b) w/o overnight accommodations
	(i) cold water—67% IBA [6]—§ 117.205(a)
	(ii) warm water—50% LF—§ 117.205(c)
	(iii) within three miles of shore w/float free 406 MHz EPIRB
	(A) cold water—50% LF—§ 117.205(a)
	(B) warm water—NONE—§ 117.205(d)
Great Lakes	(a) same as limited coastwise (a) & (b)—§ 117.206(a)
	(b) within one mile of shore—NONE [7]—§ 117.206(b)
Lakes, bays, and sounds [8,9].	(a) w/overnight accommodations—67% IBA [5]—§ 117.207(a)
	(b) w/o overnight accommodations
	(i) cold water—100% LF—§ 117.207(b)(1) & (c)(1)
	(ii) warm water—50% LF—§ 117.207(b)(2) & (c)(2)
	(iii) within one mile of shore—NONE—§ 117.207(d)
Rivers [9,10]	(a) cold water
	(i) 50% LF—§ 117.208(a)
	(ii) within one mile of shore—NONE—§ 117.208(c)
	(b) Warm water—NONE—§ 117.208(b)

Abbreviations used:
ILR = Inflatable liferaft
IBA = Inflatable Buoyant apparatus
LF = Life Float. As allowed by § 117.15(c), any buoyant apparatus in use on an existing vessel on March 11, 1996, may be used to meet the requirements for LF as long as the buoyant apparatus is in good and serviceable condition.
Footnotes:
[1] Cold water means the cognizant OCMI has determined the monthly mean low temperature of the water is ≤ 15° C (59° F)
[2] Vessels operating less than 50 miles from shore may carry 100% IBA in lieu of ILR—§ 117.202(b)
[3] Warm water means the cognizant OCMI has determined the monthly mean low temperature of the water is > 15° C (59° F)
[4] Vessels operating in warm water may substitute 100% LF in lieu of 67% IBA—§ 117.202(c)
[5] IBA for total number of overnight passengers allowed. Additional primary lifesaving may be required—§ 117.204(b), § 117.205(a), § 117.206(a), and § 117.207(b)
[6] Certain vessel operations may substitute 100% LF in lieu of IBA—§ 117.205(b)
[7] OCMI may reduce primary lifesaving for seasonal or ferry type operations on the Great Lakes—§ 117.206(b)
[8] Shallow water exception—§ 117.207(e).
[9] OCMI may reduce survival craft requirements based upon the route, communications schedule, and participation in VTS—§ 117.207(f) and § 117.208(e).
[10] Shallow water exception—§ 117.208(d)

[CGD 85–080, 61 FR 911, Jan. 10, 1996, as amended at 62 FR 51351, Sept. 30, 1997; 62 FR 64305, Dec. 5, 1997]

§ 117.202 Survival craft—vessels operating on oceans routes.

(a) Except as allowed by paragraph (b) of this section, each vessel certificated to operate on an oceans route in cold water must be provided with inflatable liferafts of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board.

(b) Each vessel certificated to operate on an oceans route not more than 50 nautical miles offshore in cold water must be provided with inflatable buoyant apparatus of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board.

(c) Each vessel with overnight accommodations certificated to operate on an oceans route in warm water must be provided with inflatable buoyant apparatus of an aggregate capacity that will accommodate at least 100% of the total number of overnight persons permitted on board.

(d) Where the total number of persons allowed on the COI exceeds the total number of overnight persons allowed, the survival craft requirements contained in paragraph (e) of this section apply when not engaged in an overnight voyage.

(e) Each vessel certificated to operate on an oceans route in warm water must be provided with either:

(i) Inflatable buoyant apparatus of an aggregate capacity that will accommodate at least 67% of the total number of persons permitted on board; or

(ii) Life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board.

§ 117.204 Survival craft—vessels operating on coastwise routes.

(a) Each vessel with overnight accommodations certificated to operate on a coastwise route must be provided with inflatable buoyant apparatus of an aggregate capacity that will accommodate at least 100% of the total number of overnight persons permitted on board.

(b) Where the total number of persons allowed on the COI exceeds the total number of overnight persons allowed, the following survival craft requirements apply when not engaged in an overnight voyage:

(1) Except as allowed by paragraph (d) of this section, if operated in cold water, be provided with inflatable buoyant apparatus of an aggregate capacity that will accommodate at least 67% of the total number of persons permitted on board; or

(2) Except as allowed by paragraph (d) of this section, if operated in warm water, be provided with life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board.

(c) Each vessel without overnight accommodations certificated to operate on a coastwise route, must:

(1) Except as allowed by paragraph (d) of this section, if operated in cold water, be provided with inflatable buoyant apparatus of an aggregate capacity that will accommodate at least 67% of the total number of persons permitted on board; or

(2) Except as allowed by paragraph (d) of this section, if operated in warm water, be provided with life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board.

(d) Each vessel certificated to operate on a coastwise route within three miles of land, and equipped with an FCC type accepted Category 1 406 MHz EPIRB installed to float free and automatically activate, may be provided with life floats of an aggregate capacity that will accommodate at least 50% of the total number of persons permitted on board.

§ 117.205 Survival craft—vessels operating on limited coastwise routes.

(a) Except as allowed by paragraphs (b), (c) and (d) of this section, each vessel certificated to operate on a limited coastwise route shall be provided with the survival craft required by §§ 117.204 (a) through (d) of this part, as applicable.

(b) Each vessel without overnight accommodations operating in cold water, between two points, with a set schedule on a specific route that maintains a 15 minute radio communications schedule with an operation base, may be provided with life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board.

(c) Each vessel operating in warm water may be provided with life floats of an aggregate capacity that will accommodate at least 50% of the total number of persons permitted on board.

(d) Each vessel certificated to operate on a limited coastwise route within three miles of land in warm water, and is equipped with an FCC type accepted Category 1 406 MHz EPIRB installed to float free and automatically activate, is not required to carry survival craft.

§ 117.206 Survival craft—vessels operating on Great Lakes routes.

(a) Except as allowed by paragraph (b) of this section, each vessel certificated to operate on a Great Lakes route must be provided with the survival craft required by §§ 117.205 (a) through (d) of this part as applicable.

(b) Each vessel certificated to operate on a Great Lakes route within one mile of land is not required to carry survival craft if the OCMI determines that it is safe not to do so, taking into consideration the vessel's scope of operation, hazards of the route, and availability of assistance.

§ 117.207 Survival craft—vessels operating on lakes, bays, and sounds routes.

(a) Each vessel with overnight accommodations certificated to operate on a lakes, bays, and sounds route

must be provided with inflatable buoyant apparatus of an aggregate capacity that will accommodate at least 67% of the total number of overnight persons permitted on board.

(b) Where the total number of persons allowed on the COI exceeds the total number of overnight persons allowed, the following survival craft requirements apply when not engaged in an overnight voyage:

(1) If operated in cold water, be provided with life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board; or

(2) If operated in warm water, be provided with life floats of an aggregate capacity that will accommodate at least 50% of the total number of persons permitted on board.

(c) Except as allowed by paragraphs (d), (e), and (f) of this section, each vessel without overnight accommodations certificated to operate on a lakes, bays, and sounds route must:

(1) If operated in cold water, be provided with life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board; or

(2) If operated in warm water, be provided with life floats of an aggregate capacity that will accommodate at least 50% of the total number of persons permitted on board.

(d) Each vessel certificated to operate on a lakes, bays, and sounds route within one mile of land is not required to carry survival craft.

(e) For a vessel certificated to operate on a lakes, bays, and sounds route in shallow water where the vessel can not sink deep enough to submerge the topmost passenger deck or where survivors can wade ashore, the cognizant OCMI may waive a requirement for survival craft, if the OCMI determines that it is safe to do so, taking into consideration the vessel's scope of operation, hazards of the route, and availability of assistance.

(f) Each vessel operating with a set schedule on a specific route that does not take it more than 20 nautical miles from a harbor of safe refuge, and that maintains a 15 minute radio communications schedule with an operations base, or participates in a Vessel Traffic Service (VTS), may be granted a reduction in the survival craft requirements of this section if the cognizant OCMI is satisfied that a sufficient level of safety exists.

§ 117.208 Survival craft—vessels operating on rivers routes.

(a) Except as allowed by paragraph (c), (d), or (e) of this section, each vessel certificated to operate on a rivers route in cold water must be provided with life floats of an aggregate capacity that will accommodate at least 50% of the total number of persons permitted on board.

(b) Each vessel certificated to operate on a rivers route in warm water is not required to carry survival craft.

(c) Each vessel certificated to operate on a rivers route within one mile of land is not required to carry survival craft.

(d) For a vessel certificated to operate on a rivers route in shallow water where the vessel can not sink deep enough to submerge the topmost passenger deck or where survivors can wade ashore, the cognizant OCMI may waive a requirement for life floats, if the OCMI determines that it is safe to do so, taking into consideration the vessel's scope of operation, hazards of the route, and availability of assistance.

(e) Each vessel operating with a set schedule on a specific route that maintains a 15 minute radio communications schedule with an operations base, or participates in a Vessel Traffic Service (VTS), may be granted a reduction in the survival craft requirements of this section if the cognizant OCMI is satisfied that a sufficient level of safety exists.

§ 117.210 Rescue boats.

(a) Each vessel must carry at least one rescue boat unless the cognizant OCMI determines that:

(1) The vessel is sufficiently maneuverable, arranged, and equipped to allow the crew to recover a helpless person from the water;

(2) Recovery of a helpless person can be observed from the operating station; and

(3) The vessel does not regularly engage in operations that restrict its maneuverability.

(b) In general, a rescue boat must be a small, light-weight boat with built-in buoyancy and be capable of being readily launched and easily maneuvered. In addition, it must be of adequate proportion to permit taking an unconscious person on board without capsizing.

(c) On a vessel of more than 19.8 meters (65 feet) in length operating on protected waters, a rescue boat approved under approval series 160.056 is acceptable in meeting the intent of this section. On a vessel of more than 19.8 meters operating on exposed or partially protected waters, a rescue boat approved under approval series 160.156 is acceptable in meeting the intent of this section. On a vessel of not more than 19.8 meters (65 feet) in length, a required rescue boat must be acceptable to the cognizant OCMI.

[CGD 85–080, 61 FR 911, Jan. 10, 1996, as amended at 62 FR 51351, Sept. 30, 1997; 62 FR 64305, Dec. 5, 1997]

PART 118—FIRE PROTECTION EQUIPMENT

Subpart A—General Provisions

Sec.

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118.600 Fire axe.

AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGD 85–080, 61 FR 917, Jan. 10, 1996, unless otherwise noted.

Subpart A—General Provisions

§ 118.115 Applicability to existing vessels.

(a) Except as otherwise required by paragraphs (b) and (c) of this section, an existing vessel must comply with the fire protection equipment regulations applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulation in this part.

(b) An existing vessel with a hull, or a machinery space boundary bulkhead or deck, composed of wood or fiber reinforced plastic, or sheathed on the interior in fiber reinforced plastic, must comply with the requirements of § 118.400 of this part on or before March 11, 1999.

(c) New installations of fire protection equipment on an existing vessel, which are completed to the satisfaction of the cognizant Officer in Charge, Marine Inspection (OCMI) on or after March 11, 1996, must comply with the regulations of this part. Replacement of existing equipment installed on the vessel prior to March 11, 1996, need not comply with the regulations in this part.

§ 118.120 Equipment installed but not required.

Fire extinguishing and detecting equipment installed on a vessel in excess of the requirements of §§ 118.400 and 118.500 of this part must be designed, constructed, installed and maintained in a manner acceptable to the Commandant.

Subpart B [Reserved]

Subpart C—Fire Main System

§ 118.300 Fire pumps.

(a) A self priming, power driven fire pump must be installed on each vessel.

(b) On a vessel without overnight accommodations, or with overnight accommodations for not more than 49 passengers, the fire pump must be capable of delivering a single hose stream from the highest hydrant, through the hose and nozzle required by §118.320 of this part, at a pitot tube pressure of 345 kPa (50 psi).

(c) On a vessel carrying more than 600 passengers or with overnight accommodations for more than 49 passengers, the fire pump must meet §76.10–5 of this chapter.

(d) A fire pump may be driven by a propulsion engine. A fire pump must be permanently connected to the fire main and may be connected to the bilge system to meet the requirements of §119.520 of this subchapter.

(e) A fire pump must be capable of both remote operation from the operating station and local operation at the pump.

[CGD 85–080, 61 FR 917, Jan. 10, 1996; 61 FR 20556, May 7, 1996, as amended at 62 FR 51351, Sept. 30, 1997]

§118.310 Fire main and hydrants.

(a) Except as required by paragraph (d) of this section, a vessel must have a sufficient number of fire hydrants to reach any part of the vessel using a single length of fire hose.

(b) Piping, valves, and fittings in a fire main system must comply with part 119, subpart G of this subchapter.

(c) Each fire hydrant must have a valve installed to allow the fire hose to be removed while the fire main is under pressure.

(d) On a vessel carrying more than 600 passengers or with overnight accommodations for more than 49 passengers, the fire main and hydrants must meet §76.10–10 of this chapter.

[CGD 85–080, 61 FR 917, Jan. 10, 1996, as amended at 62 FR 51351, Sept. 30, 1997]

§118.320 Fire hoses and nozzles.

(a) A fire hose with a nozzle must be attached to each fire hydrant at all times. For fire hydrants located on open decks or cargo decks, where no protection is provided, hoses may be temporarily removed during heavy weather or cargo handling operations, respectively. Hoses so removed must be stored in nearby accessible locations.

(b) Each hose must:

(1) Be lined commercial fire hose that conforms to Underwriters Laboratory (UL) 19 ''Lined Fire Hose and Hose Assemblies,'' or hose that is listed and labeled by an independent laboratory recognized by the Commandant as being equivalent in performance;

(2) Be 15.25 meters (50 feet) in length and 40 millimeters (1.5 inches) in diameter; and

(3) Have fittings of brass or other suitable corrosion-resistant material that comply with National Fire Protection Association (NFPA) 1963 ''Fire Hose Connections,'' or other standard specified by the Commandant.

(c) Each nozzle must either:

(1) Be of a type approved in accordance with approval series 162.027; or

(2) Be of type recognized by the Commandant as being equivalent in performance.

[CGD 85–080, 61 FR 917, Jan. 10, 1996; 61 FR 24464, May 15, 1996, as amended at 62 FR 51351, Sept. 30, 1997; 62 FR 64305, Dec. 5, 1997]

Subpart D—Fixed Fire Extinguishing and Detecting Systems

§118.400 Where required.

(a) The following spaces must be equipped with a fixed gas fire extinguishing system, in compliance with §118.410 of this part, or other fixed fire extinguishing system specifically approved by the Commandant, except as otherwise allowed by paragraph (b) of this section:

(1) A space containing propulsion machinery;

(2) A space containing an internal combustion engine of more than 50 hp;

(3) A space containing an oil fired boiler;

(4) A space containing combustible cargo or ship's stores inaccessible during the voyage (a carbon dioxide system must be installed in such a space, and Halon systems are not allowed);

(5) A paint locker; and

(6) A storeroom containing flammable liquids (including liquors of 80 proof or higher where liquor is packaged in individual containers of 9.5 liters (2.5 gallons) capacity or greater).

(b) Alternative system types and exceptions to the requirements of paragraph (a) of this section are:

(1) A fixed gas fire extinguishing system, which is capable of automatic discharge upon heat detection, may only be installed in a normally unoccupied space with a gross volume of not more than 170 cubic meters (6,000 cubic feet);

(2) A pre-engineered fixed gas extinguishing system must be in compliance with §118.420 of this part and may only be installed in a normally unoccupied machinery space, a paint locker, or a storeroom containing flammable liquids (including liquors of 80 proof or higher where liquor is packaged in individual containers of 9.5 liters (2.5 gallons) capacity or greater), with a gross volume of not more than 57 cubic meters (2,000 cubic feet);

(3) A B–II portable fire extinguisher installed outside the space may be substituted for a fixed gas fire extinguishing system in a storeroom containing flammable liquids (including liquors of 80 proof or higher where liquor is packaged in individual containers of 9.5 liters (2.5 gallons) capacity or greater) or a paint locker, with a volume of not more that 5.7 cubic meters (200 cubic feet);

(4) A space that is so open to the atmosphere that a fixed gas fire extinguishing system would be ineffective, as determined by the cognizant OCMI, is not required to have a fixed gas fire extinguishing system; and

(5) Where the amount of carbon dioxide gas required in a fixed fire extinguishing system can be supplied by one portable extinguisher or a semi-portable extinguisher, such an extinguisher may be used subject to the following:

(i) Cylinders shall be installed in a fixed position outside the space protected;

(ii) The applicator shall be installed in a fixed position so as to discharge into the space protected; and

(iii) Controls shall be installed in an accessible location outside the space protected.

(c) The following spaces must be equipped with a fire detecting system of an approved type that is installed in accordance with §76.27 in subchapter H of this chapter, except when a fixed gas fire extinguishing system that is capable of automatic discharge upon heat detection is installed or when the space is manned:

(1) A space containing propulsion machinery;

(2) A space containing an internal combustion engine of more than 37.3 kW (50 hp); and

(3) A space containing an oil fired boiler.

(d) All griddles, broilers, and deep fat fryers must be fitted with a grease extraction hood that complies with §118.425 of this part.

(e) Except for continuously manned operating stations as allowed by paragraph (f), each accommodation space, control space, and service space must be fitted with the following systems:

(1) A smoke actuated fire detecting system of a type approved by the Commandant that is installed in accordance with §76.27 in subchapter H of this chapter; and

(2) A manual alarm system that meets the requirements in §76.35 in subchapter H of this chapter.

(f) On vessels with no overnight accommodation; public spaces that may be assumed to be occupied by a large number of persons when passengers are on board need only be served by a manual alarm system that meets the requirements in §76.35 in subchapter H of this chapter. The alarm boxes must be located in the vicinity of each required exit, and easily seen in case of need.

(g) An enclosed vehicle space must be fitted with an automatic sprinkler system that meets the requirements of §76.25 in subchapter H of this chapter; and

(1) A fire detecting system of a type approved by the Commandant that is installed in accordance with §76.27 in subchapter H of this chapter; or

(2) A smoke detecting system of a type approved by the Commandant that is installed in accordance with §76.33 in subchapter H of this chapter.

(h) A partially enclosed vehicle space must be fitted with a manual sprinkler system that meets the requirements of §76.23 in subchapter H of this chapter.

[CGD 85–080, 61 FR 917, Jan. 10, 1996, as amended at 62 FR 51351, Sept. 30, 1997; USCG–1999–6216, 64 FR 53227, Oct. 1, 1999]

§ 118.410 Fixed gas fire extinguishing systems.

(a) *General.* (1) A fixed gas fire extinguishing system aboard a vessel must be approved by the Commandant, and be custom engineered to meet the requirements of this section unless the system meets the requirements of § 118.420 of this part.

(2) System components must be listed and labeled by an independent laboratory. A component from a different system, even if from the same manufacturer, must not be used unless included in the approval of the installed system.

(3) System design and installation must be in accordance with the Marine Design, Installation, Operation, and Maintenance Manual approved for the system by the Commandant.

(4) A fixed gas fire extinguishing system may protect more than one space. The quantity of extinguishing agent must be at least sufficient for the space requiring the greatest quantity as determined by the requirements of paragraphs (f)(4) or (g)(2) of this section.

(b) *Controls.* (1) Controls and valves for operation of a fixed gas fire extinguishing system must be:

(i) Located outside the space protected by the system; and

(ii) Not located in a space that might be inaccessible in the event of fire in the space protected by the system.

(2) Except for a normally unoccupied space of less than 170 cubic meters (6000 cubic feet), release of an extinguishing agent into a space must require two distinct operations.

(3) A system must have local manual controls at the storage cylinders capable of releasing the extinguishing agent. In addition, a normally manned space must have remote controls for releasing the extinguishing agent immediately outside the primary exit from the space.

(4) Remote controls must be located in a breakglass enclosure to preclude accidental discharge.

(5) Valves and controls must be of a type approved by the Commandant and protected from damage or accidental activation. A pull cable used to activate the system controls must be enclosed in conduit.

(6) A system protecting more than one space must have a manifold with a normally closed stop valve for each space protected.

(7) A gas actuated valve or device must be capable of manual override at the valve or device.

(8) A system, which has more than one storage cylinder for the extinguishing agent and that relies on pilot cylinders to activate the primary storage cylinders, must have at least two pilot cylinders. Local manual controls in compliance with paragraph (b)(3) of this section must be provided to operate the pilot cylinders but are not required for the primary storage cylinders.

(9) A system protecting a manned space must be fitted with a time delay and alarm of a type approved by the Commandant, arranged to require the alarm to sound for at least 20 seconds or the time necessary to escape from the space, whichever is greater, before the agent is released into the space. Alarms must be conspicuously and centrally located. The alarm must be powered by the extinguishing agent.

(10) A device must be provided to automatically shut down power ventilation serving the protected space and engines that draw intake air from the protected space prior to release of the extinguishing agent into the space.

(11) Controls and storage cylinders must not be in a locked space unless the key is in a breakglass type box conspicuously located adjacent to the space.

(c) *Storage space.* (1) Except as provided in paragraph (c)(2) of this section, a storage cylinder for a fixed gas extinguishing system must be:

(i) Located outside the space protected by the system; and

(ii) Not located in a space that might be inaccessible in the event of a fire in the space protected by the system.

(2) A normally unoccupied space of less than 170 cubic meters (6,000 cubic feet) may have the storage cylinders located within the space protected. When the storage cylinders are located in the space:

(i) The system must be capable of automatic operation by a heat actuator within the space; and

(ii) Have manual controls in compliance with paragraph (b) of this section except for paragraph (b)(3) of this section.

(3) A space containing a storage cylinder must be maintained at a temperature within the range from −30° C (−20° F) to 55° C (130° F) or at another temperature as listed by the independent laboratory and stated in the manufacturer's approval manual.

(4) A storage cylinder must be securely fastened, supported, and protected against damage.

(5) A storage cylinder must be accessible and capable of easy removal for recharging and inspection. Provisions must be available for weighing each storage cylinder in place.

(6) Where subject to moisture, a storage cylinder must be installed to provide a space of at least 51 millimeters (2 inches) between the deck and the bottom of the storage cylinder.

(7) A Halon 1301 storage cylinder must be stowed in an upright position unless otherwise listed by the independent laboratory. A carbon dioxide cylinder may be inclined not more than 30° from the vertical, unless fitted with flexible or bent siphon tubes, in which case they may be inclined not more than 80° from the vertical.

(8) Where a check valve is not fitted on an independent storage cylinder discharge outlet, a plug or cap must be provided for closing the outlet resulting from storage cylinder removal.

(9) Each storage cylinder must meet the requirements of §147.60 in subchapter N of this chapter, or other standard specified by the Commandant.

(10) A storage cylinder space must have doors that open outwards or be fitted with kickout panels installed in each door.

(d) *Piping.* (1) A pipe, valve, or fitting of ferrous material must be protected inside and outside against corrosion unless otherwise approved by the Commandant. Aluminum or other low melting material must not be used for a component of a fixed gas fire extinguishing system except as specifically approved by the Commandant.

(2) A distribution line must extend at least 51 millimeters (2 inches) beyond the last orifice and be closed with a cap or plug.

(3) Piping, valves, and fittings must be securely supported, and where necessary, protected against damage.

(4) Drains and dirt traps must be fitted where necessary to prevent the accumulation of dirt or moisture and located in accessible locations.

(5) Piping must be used for no other purpose except that it may be incorporated with the fire detecting system.

(6) Piping passing through accommodation spaces must not be fitted with drains or other openings within such spaces.

(7) The distribution piping of a carbon dioxide fixed gas extinguishing system must be tested as required by this paragraph, upon completion of the piping installation, using only carbon dioxide, compressed air, or nitrogen gas.

(i) Piping between a storage cylinder and a stop valve in the manifold must be subjected to a pressure of 6,894 kPa (1,000 psi), except as permitted in paragraph (d)(7)(iii) of this section. Without additional gas being introduced to the system, the pressure drop must not exceed 2,068 kPa (300 psi) after two minutes.

(ii) A distribution line to a space protected by the system must be subjected to a test similar to that described in paragraph (d)(7)(i) of this section, except that the pressure used must be 4,136 kPa (600 psi). For the purpose of this test, the distribution piping must be capped within the space protected at the first joint between the nozzles and the storage cylinders.

(iii) A small independent system protecting a space such as a paint locker may be tested by blowing out the piping with air at a pressure of not less than 689 kPa (100 psi).

(8) The distribution piping of a Halon 1301 fixed gas extinguishing system must be tested, as required by this paragraph, upon completion of the piping installation, using only carbon dioxide, compressed air, or nitrogen.

(i) When pressurizing the piping, pressure must be increased in small increments. Each joint must be subjected to a soap bubble leak test, and all joints must be leak free.

(ii) Piping between the storage cylinders and the manifold stop valve must be subjected to a leak test conducted as a pressure of 4,136 kPa (600

psi). Without additional gas being added to the system, there must be no loss of pressure over a two minute period after thermal equilibrium is reached.

(iii) Distribution piping between the manifold stop valve and the first nozzle in the system must be capped and pneumatically tested for a period of 10 minutes at 1,034 kPa (150 psi). At the end of 10 minutes, the pressure drop must not exceed 10% of the test pressure.

(e) *Pressure relief.* When required by the cognizant OCMI, spaces that are protected by a fixed gas fire extinguishing system and that are relatively airtight, such as refrigeration spaces, paint lockers, etc., must be provided with suitable means for relieving excessive pressure within the space when the agent is released.

(f) *Specific requirements for carbon dioxide systems.* A custom engineered fixed gas fire extinguishing system, which uses carbon dioxide as the extinguishing agent, must meet the requirements of this paragraph.

(1) Piping, valves, and fittings must have a bursting pressure of not less than 41,360 kPa (6,000 psi). Piping, in nominal sizes of not more than 19 millimeters (0.75 inches), must be at least Schedule 40 (standard weight), and in nominal sizes of over 19 millimeter (0.75 inches), must be at least Schedule 80 (extra heavy).

(2) A pressure relief valve or equivalent set to relieve at between 16,550 and 19,300 kPa (2,400 and 2,800 psi) must be installed in the distribution manifold to protect the piping from overpressurization.

(3) Nozzles must be approved by the Commandant.

(4) When installed in a machinery space, paint locker, a space containing flammable liquid stores, or a space with a fuel tank, a fixed carbon dioxide system must meet the following requirements.

(i) The quantity of carbon dioxide in kilograms (pounds) that the system must be capable of providing to a space must not be less than the gross volume of the space divided by the appropriate factor given in Table 118.410(f)(4)(i). If fuel can drain from a space being protected to an adjacent space or if the spaces are not entirely separate, the volume of both spaces must be used to determine the quantity of carbon dioxide required. The carbon dioxide must be arranged to discharge into both such spaces simultaneously.

TABLE 118.410(f)(4)(i)

Factor	Gross volume of space in cubic meters (feet)	
	over	Not Over
0.94 (15)	.....	14 (500)
1.0 (16)	14 (500)	45 (1,600)
1.1 (18)	45 (1,600)	125 (4,500)
1.2 (20)	125 (4,500)	1,400 (50,000)
1.4 (22)	1,400 (50,000)	.....

(ii) The minimum size of a branch line to a space must be as noted in Table 118.410(f)(4)(ii).

TABLE 118.410(f)(4)(ii)

Maximum quantity of carbon dioxide required kg (lbs)	Minimum nominal pipe size mm (inches)	Maximum quantity of carbon dioxide required kg (lbs)	Minimum nominal pipe size mm (inches)
45.4 (100)	12.7 (0.5)	1,134 (2,500)	65 (2.5)
102 (225)	19 (0.75)	2,018 (4,450)	75 (3.0)
136 (300)	25 (1.0)	3,220 (7,100)	90 (3.5)
272 (600)	30 (1.25)	4,739 (10,450)	100 (4.0)
454 (1,000)	40 (1.5)	6,802 (15,000)	113 (4.5)
1,111 (2,450)	50 (2.0)	.....	

(iii) Distribution piping within a space must be proportioned from the distribution line to give proper supply to the outlets without throttling.

(iv) The number, type, and location of discharge outlets must provide uniform distribution of carbon dioxide throughout a space.

(v) The total area of all discharge outlets must not exceed 85 percent nor be less than 35 percent of the nominal cylinder outlet area or the area of the supply pipe, whichever is smaller. The

nominal cylinder outlet area in square millimeters (inches) is determined by multiplying the factor 0.015 (0.0022 if using square inches) by the total capacity in kilograms (pounds) of all carbon dioxide cylinders in the system, except in no case must the outlet area be of less than 71 square millimeters (0.110 square inches).

(vi) The discharge of at least 85 percent of the required amount of carbon dioxide must be completed within two minutes.

(5) When installed in an enclosed ventilation system for rotating electrical propulsion equipment a fixed carbon dioxide system must meet the following requirements.

(i) The quantity of carbon dioxide in kilograms (pounds) must be sufficient for initial and delayed discharges as required by this paragraph. The initial discharge must be equal to the gross volume of the system divided by 160 (10 if using pounds) for ventilation systems having a volume of less than 57 cubic meters (2,000 cubic feet), or divided by 192 (12 if using pounds) for ventilation systems having a volume of at least 57 cubic meters (2,000 cubic feet). In addition, there must be sufficient carbon dioxide available to permit delayed discharges to maintain at least a 25 percent concentration until the equipment can be stopped. If the initial discharge achieves this concentration, a delayed discharge is not required.

(ii) The piping sizes for the initial discharge must be in accordance with Table 118.410(f)(4)(ii) and the discharge of the required amount must be completed within two minutes.

(iii) Piping for the delayed discharge must not be less than 12.7 millimeters (0.5 inches) nominal pipe size, and need not meet specific requirement for discharge rate.

(iv) Piping for the delayed discharge may be incorporated with the initial discharge piping.

(6) When installed in a cargo space a fixed carbon dioxide system must meet the following requirements.

(i) The number of kilograms (pounds) of carbon dioxide required for each space in cubic meters (feet) must be equal to the gross volume of the space in cubic meters (feet) divided by 480 (30 if using pounds).

(ii) System piping must be of at least 19 millimeters (0.75 inches).

(iii) No specific discharge rate is required.

(g) *Specific requirements for Halon 1301 systems.* (1) A custom engineered fixed gas fire extinguishing system that uses Halon 1301, must comply with the applicable sections of UL 1058 ''Halogenated Agent Extinguishing System Units,'' and the requirements of this paragraph.

(2) The Halon 1301 quantity and discharge requirements of UL 1058 apply, with the exception that the Halon 1301 design concentration must be 6 percent at the lowest ambient temperature expected in the space. If the lowest temperature is not known, a temperature of −18° C (0° F) must be assumed.

(3) Each storage cylinder in a system must have the same pressure and volume.

(4) Computer programs used in designing systems must be approved by an independent laboratory recognized by the Commandant.

NOTE TO §118.410(g): As of Jan. 1, 1994, the United States banned the production of Halon. The Environmental Protection Agency placed significant restrictions on the servicing and maintenance of systems containing Halon. Vessels operating on an international voyage, subject to SOLAS requirements, are prohibited from installing fixed gas fire extinguishing systems containing Halon.

[CGD 85–080, 61 FR 917, Jan. 10, 1996; 61 FR 20556, May 7, 1996, as amended at 62 FR 51351, Sept. 30, 1997; USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

§ 118.420 Pre-engineered fixed gas fire extinguishing systems.

(a) A pre-engineered fixed gas fire extinguishing system must:

(1) Be approved by the Commandant;

(2) Be capable of manual actuation from outside the space in addition to automatic actuation by a heat detector;

(3) Automatically shut down all power ventilation systems and all engines that draw intake air from within the protection space; and

(4) Be installed in accordance with manufacturer's instructions.

(b) A vessel on which a pre-engineered fixed gas fire extinguishing system is installed must have the following equipment at the operating station:

(1) A light to indicate discharge;

(2) An audible alarm that sounds upon discharge; and

(3) A means to reset devices used to automatically shut down ventilation systems and engines as required by paragraph (a)(3) of this section.

(c) Only one pre-engineered fixed gas fire extinguishing system is allowed to be installed in each space protected by such a system.

§ 118.425 Galley hood fire extinguishing systems.

(a) A grease extraction hood required by § 118.400 of this part must meet UL 710 ''Exhaust Hoods for Commercial Cooking Equipment,'' or other standard specified by the Commandant.

(b) A grease extraction hood must be equipped with a dry or wet chemical fire extinguishing system meeting the applicable sections of NFPA 17 ''Dry Chemical Extinguishing Systems,'' 17A ''Wet Chemical Extinguishing Systems,'' or other standard specified by the Commandant, and must be listed by an independent laboratory recognized by the Commandant.

Subpart E—Portable Fire Extinguishers

§ 118.500 Required number, type, and location.

(a) Each portable fire extinguisher on a vessel must be of a type approved by the Commandant. The minimum number of portable fire extinguishers required on a vessel must be acceptable to the cognizant OCMI, but must be not less than the minimum number required by Table 118.500(a) and other provisions of this section.

TABLE 118.500(a)

Space protected	Minimum number required	Type extinguisher permitted		
		CG class	Medium	Min. size
Operating station	1	B–I, C–I	Halon	1.1 kg (2.5 lb)
			CO_2	1.8 kg (4 lb)
			Dry chemical	0.9 kg (2 lb)
Machinery space	1	B–II, C–II located just outside exit.	Halon	4.5 kg (10 lb)
			CO_2	6.8 kg (15 lb)
			Dry chemical	4.5 kg (10 lb)
Open vehicle deck	1 for every 10 vehicles	B–II	Foam	9.5 L (2.5 gal)
			Halon	4.5 kg (10 lb)
			CO_2	6.8 kg (15 lb)
			Dry chemical	4.5 kg (10 lb)
Accommodation space.	1 for each 232.3 square meters (2,500 square feet) or fraction thereof.	A–II	Foam	9.5 L (2.5 gal)
			Dry chemical	4.5 kg (10 lb)
			.....	.....
Galley, pantry, concession stand.	1	A–II	Foam	9.5 L (2.5 gal)
		B–II	Dry chemical	4.5 kg (10 lb)

(b) A vehicle deck without a fixed sprinkler system and exposed to weather must have one B–II portable fire extinguisher for every five vehicles, located near an entrance to the space.

(c) The cognizant OCMI may permit the use of a larger portable fire extinguisher, or a semiportable fire extinguisher, in lieu of those required by this section.

(d) The frame or support of each B–V fire extinguisher permitted by paragraph (c) of this section must be welded or otherwise permanently attached to a bulkhead or deck.

[CGD 85–080, 61 FR 917, Jan. 10, 1996, as amended at 62 FR 51351, Sept. 30, 1997]

§ 118.520 Installation and location.

Portable fire extinguishers must be located so that they are clearly visible and readily accessible from the space being protected. The installation and

location must be to the satisfaction of the cognizant OCMI.

Subpart F—Additional Equipment

§ 118.600 Fire axe.

A vessel of more than 19.8 meters (65 feet) in length must have at least one fire axe located in or adjacent to the primary operating station.

PART 119—MACHINERY INSTALLATION

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AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGD 85–080, 61 FR 922, Jan. 10, 1996z, unless otherwise noted.

Subpart A—General Provisions

§ 119.100 Intent.

This part contains requirements for the design, construction, installation, and operation of propulsion and auxiliary machinery, piping and pressure systems steering apparatus, and associated safety systems. Machinery and equipment installed on each vessel must be suitable for the vessel and its operation and for the purpose intended. All machinery and equipment must be installed and maintained in such a manner as to afford adequate protection from causing fire, explosion, machinery failure, and personnel injury.

§ 119.115 Applicability to existing vessels.

(a) Except as otherwise required by paragraphs (b) and (c) of this section, an existing vessel must comply with the regulations on machinery, bilge and ballast system equipment, steering apparatus, and piping systems or components that were applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulations in this part.

(b) New installations of machinery, bilge and ballast system equipment, steering equipment, and piping systems or components on an existing vessel, which are completed to the satisfaction of the cognizant Office in Charge, Marine Inspection (OCMI) on or after March 11, 1996, must comply with the regulations of this part. Replacement of existing equipment installed on the vessel prior to March 11, 1996, need not comply with the regulations in this part.

(c) On or before March 11, 1999, an existing vessel must comply with the

bilge high level alarm requirements in §119.530 of this section.

[CGD 85–080, 61 FR 922, Jan. 10, 1996; 61 FR 20556, May 7, 1996]

Subpart B—Propulsion Machinery

§119.200 General.

(a) Propulsion machinery must be suitable in type and design for propulsion requirements of the hull in which it is installed and capable of operating at constant marine load under such requirements without exceeding its designed limitations.

(b) All engines must have at least two means for stopping the engine(s) under any operating conditions. The fuel oil shutoff required at the engine by §119.455(b)(3) of this part will satisfy one means of stopping the engine.

§119.220 Installations.

(a) The installation requirements for machinery and boilers for steam and electrically propelled vessels are contained in applicable regulations in subchapter F (Marine Engineering) and subchapter J (Electrical Engineering) of this chapter.

(b) Installation of propulsion machinery of an unusual type for small passenger vessels must be given separate consideration and must be subject to such requirements as determined necessary by the cognizant OCMI. Unusual types of propulsion machinery include:

(1) Gas turbine machinery installations;

(2) Air screws;

(3) Hydraulic jets; and

(4) Machinery installations using lift devices.

Subpart C—Auxiliary Machinery

§119.310 Installations.

(a) Auxiliary machinery of the internal combustion piston type must comply with the provisions of this part.

(b) Auxiliary machinery of the steam or gas turbine type will be given separate consideration and must meet the applicable requirements of subchapter F (Marine Engineering) of this chapter as determined necessary by the cognizant OCMI.

(c) Auxiliary boilers and heating boilers and their associated piping and fittings will be given separate consideration and must meet the applicable requirements of subchapter F (Marine Engineering) of this chapter as determined necessary by the cognizant OCMI, except that heating boilers must be tested or examined every three years.

§119.320 Water heaters.

(a) A water heater must meet the requirements of Parts 53 and 63 in subchapter F of this chapter if rated at not more than 689 kPa (100 psig) and 121° C (250° F), except that an electric water heater is also acceptable if it:

(1) Has a capacity of not more than 454 liters (120 gallons):

(2) Has a heat input of not more than 58.6 kilowatts (200,000 Btu per hour);

(3) Is listed by Underwriters Laboratories (UL) under UL 174, ''Household Electric Storage Tank Water Heaters,'' UL 1453, ''Electric Booster and Commercial Storage Tank Water Heaters,'' or other standard specified by the Commandant; and

(4) Is protected by a pressure-temperature relief device.

(b) A water heater must meet the requirements of Parts 52 and 63 in subchapter F of this chapter if rated at more than 689 kPa (100 psig) or 121° C (250° F).

(c) A water heater must be installed and secured from rolling by straps or other devices to the satisfaction of the cognizant OCMI.

[CGD 85–080, 61 FR 922, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997

§119.330 Pressure vessels.

All unfired pressure vessels must be installed to the satisfaction of the cognizant OCMI. The design, construction, and original testing of such unfired pressure vessels must meet the applicable requirements of subchapter F (Marine Engineering) of this chapter.

Subpart D—Specific Machinery Requirements

§ 119.400 Applicability.

(a) This subpart applies to all propulsion and auxiliary machinery installations of the internal combustion piston type.

(b) Where no specific fuel designation exists, the requirements of this subpart are applicable to all types of fuels and machinery.

§ 119.405 Fuel restrictions.

The use of a fuel, other than diesel fuel, as an alternative fuel for an internal combustion engine, except gasoline when used as a fuel for outboard motors as allowed by § 119.458 of this part, will be reviewed on a case-by-case basis by the Commandant.

[CGD 85–080, 61 FR 922, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997]

§ 119.410 General requirements.

(a) Each starting motor, generator, and spark producing device must be mounted as high above the bilges as practicable.

(b) Gauges to indicate engine revolutions per minute (RPM), jacket water discharge temperature, and lubricating oil pressure must be provided for all propulsion engines installed in the vessel. The gauges must be readily visible at the operating station.

(c) In systems and applications where flexible hoses are permitted to be clamped:

(1) Double hose clamping is required on each end of the hose, where practicable, except that one hose clamp can be used if the pipe ends are expanded or beaded to provide a positive stop against hose slippage;

(2) The clamps must be of a corrosion resistant metallic material; and

(3) The clamps must not depend on spring tension for their holding power.

§ 119.420 Engine cooling.

(a) Except as otherwise provided in paragraph (b) of this section, all engines must be water cooled and meet the requirements of this paragraph.

(1) The engine head, block, and exhaust manifold must be water jacketed and cooled by water from a pump that operates whenever the engine is operating.

(2) A suitable hull strainer must be installed in the circulating raw water intake line of an engine cooling water system.

(3) A closed fresh water system may be used to cool the engine.

(b) A propulsion or auxiliary diesel engine may be air cooled or employ an air cooled jacket water radiator when:

(1) Installed on an open deck and sufficient ventilation for machinery cooling is available; or

(2) Installed in an enclosed or partially enclosed space for which ventilation for machinery cooling that complies with the requirement of § 119.465(b) of this part is provided, and other necessary safeguards are taken so as not to endanger the vessel.

§ 119.422 Integral and non-integral keel cooler installations.

(a) A keel cooler installation used for engine cooling must be designed to prevent flooding.

(b) Except as provided in paragraph (e), a shutoff valve must be located where the cooler piping penetrates the shell, as near the shell as practicable, except where the penetration is forward of the collision bulkhead.

(c) The thickness of the inlet and discharge connections, outboard of the shutoff values required by paragraph (b) of this section, must be at least Schedule 80.

(d) Short lengths of approved nonmetallic flexible hose, fixed by two hose clamps at each end of the hose, may be used at machinery connections for a keel cooler installation.

(e) Shutoff valves are not required for integral keel coolers. A keel cooler is considered integral to the hull if the following conditions are satisfied:

(1) The cooler structure is fabricated from material of the same thickness and quality as the hull;

(2) The flexible connections are located well above the deepest subdivision draft;

(3) The end of the structure is faired to the hull with a slope no greater than 4 to 1; and

(4) Full penetration welds are employed in the fabrication of the structure and its attachment to the hull.

[CGD 85–080, 61 FR 922, Jan. 10, 1996, as amended by USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

§ 119.425 Engine exhaust cooling.

(a) Except as otherwise provided in this paragraph, all engine exhaust pipes must be water cooled.

(1) Vertical dry exhaust pipes are permissible if installed in compliance with §§ 116.405(c) and 116.970 of this chapter.

(2) Horizontal dry exhaust pipes are permitted only if:

(i) They do not pass through living or berthing spaces;

(ii) They terminate above the deepest load waterline;

(iii) They are so arranged as to prevent entry of cold water from rough or boarding seas;

(iv) They are constructed of corrosion resisting material at the hull penetration; and

(v) They are installed in compliance with §§ 116.405(c) and 116.970 of this chapter.

(b) The exhaust pipe cooling water system must comply with the requirements of this paragraph.

(1) Water for cooling the exhaust pipe must be obtained from the engine cooling water system or a separate engine driven pump.

(2) Water for cooling an exhaust pipe, other than a vertical exhaust, must be injected into the exhaust system as near to the engine manifold as practicable. The water must pass through the entire length of the exhaust pipe.

(3) The part of the exhaust system between the point of cooling water injection and the engine manifold must be water-jacketed or effectively insulated and protected in compliance with §§ 116.400(b) and 116.970 of this chapter.

(4) Each vertical exhaust pipe must be water-jacketed or suitably insulated between the engine manifold and the spark arrester required by § 119.430(g) of this part.

(5) When the exhaust cooling water system is separate from the engine cooling water system, a suitable warning device, visual or audible, must be installed at the operating station to indicate any reduction in normal water flow in the exhaust cooling system.

(6) A suitable hull strainer must be installed in the circulating raw water intake line for the exhaust cooling system.

(c) Engine exhaust cooling systems built in accordance with the requirements of American Boat and Yacht Council (ABCY) P–1, ''Installation of Exhaust Systems for Propulsion and Auxiliary Engines,'' will be considered as meeting the requirements of this section.

§ 119.430 Engine exhaust pipe installation.

(a) The design of all exhaust systems must ensure minimum risk of injury to personnel. Protection must be provided in compliance with § 116.970 of this chapter at such locations where persons or equipment might come in contact with an exhaust pipe.

(b) Exhaust gas must not leak from the piping or any connections. The piping must be properly supported by noncombustible hangers or blocks.

(c) The exhaust piping must be so arranged as to prevent backflow of water from reaching engine exhaust ports under normal conditions.

(d) Pipes used for wet exhaust lines must be at least Schedule 80 or corrosion resistant material and adequately protected from mechanical damage.

(e) Where flexibility is necessary, a section of flexible metallic hose may be used. Nonmetallic hose may be used for wet exhaust systems provided it is especially adapted to resist the action of oil, acid, and heat, and has a wall thickness sufficient to prevent collapsing or panting, and is double clamped where practicable.

(f) Where an exhaust pipe passes through a watertight bulkhead, the watertight integrity of the bulkhead must be maintained. Noncombustible packing must be used in bulkhead penetration glands for dry exhaust systems. A wet exhaust pipe may be welded to a steel or equivalent bulkhead in way of a penetration if suitable arrangements are provided to relieve the stresses resulting from the expansion of the exhaust piping.

(g) A dry exhaust pipe must:

(1) If it passes through a combustible bulkhead or partition, be kept clear of, and suitably insulated or shielded from, combustible material.

(2) Be provided with noncombustible hangers and blocks for support.

(h) An exhaust pipe discharge terminating in a transom must be located as far outboard as practicable so that exhaust gases cannot reenter the vessel.

(i) Arrangements must be made to provide access to allow complete inspection of the exhaust piping throughout its length.

(j) An exhaust installation subject to pressures in excess of 105 kPa (15 psig) or having exhaust pipes passing through living or working spaces must meet the material requirements of part 56 of subchapter F (Marine Engineering) of this chapter.

(k) Engine exhaust installations built in accordance with the requirements of ABYC P–1 will be considered as meeting the requirements of this section.

[CGD 85–080, 61 FR 922, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§ 119.435 Integral fuel tanks.

(a) Diesel fuel tanks may not be built integral with the hull of a vessel unless the hull is made of steel or aluminum.

(b) During the initial inspection for certification of a vessel, integral fuel tanks must withstand a hydrostatic pressure test of 35 kPa (5 psig), or the maximum pressure head to which they may be subjected in service, whichever is greater. A standpipe of 3.5 meters (11.5 feet) in height attached to the tank may be filled with water to accomplish the 35 kPa (5 psig) test.

§ 119.440 Independent fuel tanks.

(a) *Materials and construction.* Independent fuel tanks must be designed and constructed of materials in compliance with the requirements of this paragraph.

(1) The material used and the minimum thickness allowed must be as indicated in Table 119.440(a)(1), except that other materials which provide equivalent safety may be approved for use under paragraph (a)(3) of this section. Tanks having a capacity of more than 570 liters (150 gallons) must be designed to withstand the maximum head to which they may be subjected in service, but in no case may the thickness be less than that specified in Table 119.440(a)(1).

TABLE 119.440(a)(1)

Material	ASTM Specification (latest edition) [see also § 114.600 of this chapter]	Thickness in millimeters (inches) & [gage number][1] vs. tank capacities for:		
		4 to 300 liter (1 to 80 gal) tanks	More than 300 liter (80 gal) and not more than 570 liter (150 gal) tanks	Over 570 liter (150 gal)[2] tanks
Nickel-copper.	B127, hot rolled sheet or plate.	0.94 (0.037) [USSG 20][3]	1.27 (0.050) [USSG 18]	2.72 (0.107) [USSG 12]
Copper-nickel[4].	B122, UNS alloy C71500.	1.14 (0.045) [AWG 17]	1.45 (0.057) [AWG 15]	3.25 (0.128) [AWG 8]
Copper[4]	B152, UNS alloy C11000.	1.45 (0.057) [AWG 15]	2.06 (0.081) [AWG 12]	4.62 (0.182) [AWG 5]
Copper-silicon[4].	B 96, alloys C65100 and C65500.	1.29 (0.051) [AWG 16]	1.63 (0.064) [AWG 14]	3.66 (0.144) [AWG 7]
Steel or iron[5,6].	.....	1.90 (0.0747) [MSG 14]	2.66 (0.1046) [MSG 12]	4.55 (0.1793) [MSG 7]
Aluminum[7]	B209, alloy 5052, 5083, 5086.	6.35 (0.250) [USSG 3]	6.35 (0.250) [USSG 3]	6.35 (0.250) [USSG 3]
Fiber reinforced plastic.	.....	as required[8]	as required[8]	as required[8]

[1] The gage numbers used in this table may be found in many standard engineering reference books. The letters "USSG" stand for "U.S. Standard Gage," which was established by the act of March 3, 1892 (15 U.S.C. 206), for sheet and plate iron and steel. The letters "AWG" stand for "American Wire Gage" (or Brown and Sharpe Gage) for nonferrous sheet thicknesses. The letters "MSG" stand for "Manufacturers' Standard Gage" for sheet steel thickness.

[2] Tanks over 1514 liters (400 gallons) shall be designed with a factor of safety of four on the ultimate strength of the material used with a design held of not less than 1220 millimeters (4 feet) of liquid above the top of the tank.

[3] Nickel-copper not less than 0.79 millimeter (0.031 inch) [USSG 22] may be used for tanks up to 114- liter (30-gallon) capacity.

[4] Acceptable only for gasoline service.

[5] Gasoline fuel tanks constructed of iron or steel, which are less than 5 millimeter (0.1875 inch) thick, shall be galvanized inside and outside by the hot dip process. Tanks intended for use with diesel oil shall not be internally galvanized.

[6] Stainless steel tanks are not included in this category.
[7] Anodic to most common metals. Avoid dissimilar metal contact with tank body.
[8] The requirements of § 119.440(a)(2) apply.

(2) Fiber reinforced plastic may be used for diesel fuel tanks under the following provisions:

(i) The materials must be fire retardant. Flammability of the material must be determined by the standard test methods in American Society for Testing and Materials (ASTM) D635, ''Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position,'' and ASTM D2863, ''Measuring the Minimum Oxygen Concentration to Support Candle-like Combustion of Plastics (Oxygen Index),'' or other standard specified by the Commandant. The results of these tests must show that the average extent of burning is less than 10 millimeters (0.394 inches), the average time of burning is less than 50 seconds, and the limiting oxygen index is greater than 21.

(ii) Tanks must meet UL 1102, ''Non-integral Marine Fuel Tanks,'' or other standard specified by the Commandant. Testing may be accomplished by an independent laboratory or by the fabricator to the satisfaction of the cognizant OCMI.

(iii) Tanks must be designed to withstand the maximum head to which they may be subjected to in service.

(iv) Installation of nozzles, flanges or other fittings for pipe connections to the tanks must be acceptable to the cognizant OCMI.

(v) Baffle plates, if installed, must be of the same material and not less than the minimum thickness of the tank walls. Limber holes at the bottom and air holes at the top of all baffles must be provided. Baffle plates must be installed at the time the tests required by UL 1102, or other standard specified by the Commandant, are conducted.

(3) Materials other than those listed in Table 119.440(a)(1) must be approved by the Commandant. An independent tank using material approved by the Commandant under this paragraph must meet the testing requirements of UL 1102, or other standard specified by the Commandant. Testing may be accomplished by an independent laboratory or by the fabricator to the satisfaction of the OCMI.

(4) Tanks with flanged-up top edges that may trap and hold moisture are prohibited.

(5) Openings for fill pipes, vent pipes, and machinery fuel supply pipes, and openings for fuel level gauges, where used, must be on the topmost surfaces of tanks. Tanks may not have any openings in bottoms, sides, or ends, except for:

(i) An opening fitted with a threaded plug or cap installed for tank cleaning purposes; and

(ii) In a diesel fuel tank, openings for supply piping and tubular gauge glasses.

(6) All tank joints must be welded or brazed. Lap joints may not be used.

(7) Nozzles, flanges, or other fittings for pipe connections to a metal tank must be welded or brazed to the tank. Tank openings in way of pipe connections must be properly reinforced where necessary. Where fuel level gauges are used on a metal tank, the flanges to which gauge fittings are attached must be welded or brazed to the tank. Tubular gauge glasses, if fitted to diesel fuel tanks, must be of heat resistant materials, adequately protected from mechanical damage, and provided at the tank connections with devices that will automatically close in the event of rupture of the gauge or gauge lines.

(8) A metal tank exceeding 760 millimeters (30 inches) in any horizontal dimension must:

(i) Be fitted with vertical baffle plates, which meet paragraph (a)(9) of this section, at intervals not exceeding 760 millimeters (30 inches) to provide strength and to control the excessive surge of fuel; or

(ii) The owner shall submit calculations to the Commanding Officer, Marine Safety Center demonstrating the structural adequacy of the tank in a fully loaded static condition and in a worst case dynamic (sloshing) condition.

(9) Baffle plates, where required in metal tanks, must be of the same material and not less than the minimum thickness required in the tank walls and must be connected to the tank walls by welding or brazing. Limber holes at the bottom and air holes at the top of all baffles must be provided.

(10) Iron or steel diesel fuel tanks must not be galvanized on the interior. Galvanizing, paint, or other suitable coating must be used to protect the outside of iron and steel diesel fuel tanks.

(b) *Location and installation.* Independent fuel tanks must be located and installed in compliance with the requirements of this paragraph.

(1) Fuel tanks must be located in, or as close as practicable to, machinery spaces.

(2) Fuel tanks and fittings must be so installed as to permit examination, testing, or removal for cleaning with minimum disturbance to the hull structure.

(3) Fuel tanks must be adequately supported and braced to prevent movement. The supports and braces must be insulated from contact with the tank surfaces with a nonabrasive and nonabsorbent material.

(4) All fuel tanks must be electrically bonded to a common ground.

(c) *Tests.* Independent fuel tanks must be tested in compliance with the requirements of this part prior to being used to carry fuel.

(1) Prior to installation, tanks vented to the atmosphere must be hydrostatically tested to, and must withstand, a pressure of 35 kPa (5 psig) or 1.5 times the maximum pressure head to which they may be subjected in service, whichever is greater. A standpipe of 3.5 meters (11.5 feet) in height attached to the tank may be filled with water to accomplish the 35 kPa (5 psig) test. Permanent deformation of the tank will not be cause for rejection unless accompanied by leakage.

(2) After installation of the fuel tank on a vessel, the complete installation must be tested in the presence of a marine inspector, or an individual specified by the cognizant OCMI, to a head not less than that to which the tank may be subjected in service. Fuel may be used as the testing medium.

(3) All tanks not vented to the atmosphere must be constructed and tested in accordance with §119.330 of this part.

[CGD 85–080, 61 FR 922, Jan. 10, 1996, as amended by USCG 1999–5151, 64 FR 67183, Dec. 1, 1999]

§119.445 Fill and sounding pipes for fuel tanks.

(a) Fill pipes for fuel tanks must be not less than 40 millimeters (1.5 inches) nominal pipe size.

(b) There must be a means of accurately determining the amount of fuel in each fuel tank either by sounding, through a separate sounding pipe or a fill pipe, or by an installed marine type fuel gauge.

(c) Where sounding pipes are used, each opening must be at least as high as the opening of the fill pipe and they must be kept closed at all times except during sounding.

(d) Fill pipes and sounding pipes must be so arranged that overflow of liquid or vapor cannot escape to the inside of the vessel.

(e) Fill pipes and sounding pipes must run as directly as possible, preferably in a straight line, from the deck connection to the top of the tank. Such pipes must terminate on the weather deck and must be fitted with shutoff valves, watertight deck plates, or screw caps, suitably marked for identification. Diesel fill pipes and sounding pipes may terminate at the top of the tank.

(f) Where a flexible fill pipe section is necessary, suitable flexible tubing or hose having high resistance to salt water, petroleum oils, heat and vibration, may be used. Such hose must overlap metallic pipe ends at least 1.5 times the pipe diameter and must be secured at each end by clamps. The flexible section must be accessible and as near the upper end of the fill pipe as practicable. When the flexible section is a nonconductor of electricity, the metallic sections of the fill pipe separated thereby must be joined by a conductor for protection against generation of a static charge when filling with fuel.

[CGD 85–080, 61 FR 922, Jan. 10, 1996; 61 FR 20556, May 7, 1996]

§ 119.450 Vent pipes for fuel tanks.

(a) Each unpressurized fuel tank must be fitted with a pipe connected to the highest point of the tank.

(b) The minimum net cross sectional area of the vent pipe for diesel fuel tanks must be as follows:

(1) Not less than the cross sectional area of 16 millimeters (0.625 inches) outer diameter (O.D.) tubing (0.9 millimeter (0.035 inch) wall thickness, 20 gauge), if the fill pipe terminates at the top of the tank;

(2) Not less than the cross sectional area of 19 millimeters (0.75 inches) O.D. tubing (9.8 millimeter (0.035) inch) wall thickness, 20 gauge), if the fill pipe extends into the tank; and

(3) Not less than the cross sectional area of the fill pipe if the tank is filled under pressure.

(c) The discharge ends of fuel tank vent pipes must terminate on the hull exterior as high above the waterline as practicable and remote from any hull openings, or they must terminate in U-bends as high above the weather deck as practicable and as far as practicable from opening into any enclosed spaces. Vent pipes terminating on the hull exterior must be installed or equipped to prevent the accidental contamination of the fuel by water under normal operating conditions.

(d) The discharge ends of fuel tank vent pipes must be fitted with removable flame screens or flame arresters. The flame screens must consist of a single screen of corrosion resistant wire of at least 30x30 mesh. The flame screens or flame arresters must be of such size and design as to prevent reduction in the net cross sectional area of the vent pipe and permit cleaning or renewal of the flame screens or arrester elements.

(e) Where a flexible vent pipe section is necessary, suitable flexible tubing or hose having high resistance to salt water, petroleum oils, heat and vibration, may be used. Such hose must overlap metallic pipe ends at least 1.5 times the pipe diameter and must be secured at each end by clamps. The flexible section must be accessible and as near the upper end of the vent pipe as practicable.

(f) Fuel tank vent pipes shall be installed to gradient upward to prevent fuel from being trapped in the line.

§ 119.455 Fuel piping.

(a) *Materials and workmanship.* The materials and construction of fuel lines, including pipe, tube, and hose, must comply with the requirements of this paragraph.

(1) Fuel lines must be annealed tubing of copper, nickel-copper, or copper-nickel having a minimum wall thickness of 0.9 millimeters (0.35 inches) except that:

(i) Diesel fuel piping of other materials, such as seamless steel pipe or tubing, which provide equivalent safety may be used;

(ii) Diesel fuel piping of aluminum is acceptable on aluminum hull vessels provided it is at least Schedule 80; and

(iii) When used, flexible hose must meet the requirements of §56.60–25 in subchapter F of this chapter.

(2) Tubing connections and fittings must be of nonferrous drawn or forged metal of the flared type except that flareless fittings of the nonbite type may be used when the tubing system is of nickel-copper or copper-nickel. When making tube connections, the tubing must be cut square and flared by suitable tools. Tube ends must be annealed before flaring.

(3) Cocks are prohibited except for the solid bottom type with tapered plugs and union bonnets.

(b) *Installation.* The installation of fuel lines, including pipe, tube, and hose, must comply with the requirements of this paragraph.

(1) Diesel fuel lines may be connected to the fuel tank at or near the bottom of the tank.

(2) Fuel lines must be accessible, protected from mechanical injury, and effectively secured against excessive movement and vibration by the use of soft nonferrous metal straps that have no sharp edges and are insulated to protect against corrosion. Where passing through bulkheads, fuel lines must be protected by close fitting ferrules or stuffing boxes. All fuel lines and fittings must be accessible for inspection.

(3) Shutoff valves, installed so as to close against the fuel flow, must be fitted in the fuel supply lines, one at

the tank connection and one at the engine end of the fuel line to stop fuel flow when servicing accessories. The shutoff valve at the tank must be manually operable from outside the compartment in which the valve is located, preferably from an accessible position on the weather deck. If the handle to the shutoff valve at the tank is located inside the tank compartment, it must be located so that the operator does not have to reach more than 300 millimeters (12 inches) into the compartment and the valve handle must be shielded from flames by the same material the hull is constructed of, or some noncombustible material. Electric solenoid valves must not be used, unless used in addition to the manual valve.

(4) A loop of copper tubing or a short length of flexible hose must be installed in the fuel supply line at or near the engines. The flexible hose must meet the requirements of §56.60–25 in subchapter F of this chapter.

(5) A suitable metal marine type strainer, meeting the requirements of the engine manufacturer, must be fitted in the fuel supply line in the engine compartment. Strainers must be leak free. Strainers must be of the type opening on top for cleaning screens. Fuel filter and strainer bowls must be highly resistant to shattering due to mechanical impact and resistant to failure due to thermal shock. Fuel filters fitted with bowls of other than steel construction must be approved by the Commandant and be protected from mechanical damage. Approval of bowls of other than steel construction will specify if a flame shield is required.

(6) All accessories installed in the fuel line must be independently supported.

(7) Valves for removing water or impurities from diesel fuel in water traps or strainers are permitted. These valves must be provided with caps or plugs to prevent fuel leakage.

[CGD 85–080, 61 FR 922, Jan. 10, 1996; 61 FR 20556, May 7, 1996]

§119.458 Portable fuel systems.

(a) Portable fuel systems, including portable tanks and related fuel lines and accessories, are prohibited except where used for portable dewatering pumps or outboard motor installations.

(b) The design, construction and stowage of portable tanks and related fuel lines and accessories must meet the requirements of ABYC H–25, ''Portable Gasoline Fuel Systems for Flammable Liquids,'' or other standard specified by the Commandant.

[CGD 85–080, 61 FR 922, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§119.465 Ventilation of spaces containing diesel machinery.

(a) A space containing diesel machinery must be fitted with adequate means, such as dripproof ventilators, ducts, or louvers, to provide sufficient air for proper operation of main engines and auxiliary engines.

(b) Air-cooled propulsion and auxiliary diesel engines installed below deck, as permitted by §119.420 of this part, must be fitted with air supply ducts or piping from the weather deck. The ducts or piping must be so arranged and supported to be capable of safely sustaining stresses induced by weight and engine vibration and to minimize transfer of vibration to the supporting structure. Prior to installation of ventilation system for such engines, plans or sketches showing machinery arrangement including air supplies, exhaust stack, method of attachment of ventilation ducts to the engine, location of spark arresting mufflers and capacity of ventilation blowers must be submitted to the cognizant OCMI for approval.

(c) A space containing diesel machinery must be fitted with at least two ducts to furnish natural or powered supply and exhaust ventilation. The total inlet area and the total outlet area of each ventilation duct may not be less than one square inch for each foot of beam of the vessel. These minimum areas must be increased as necessary when the ducts are considered as part of the air supply to the engines.

(d) A duct must be of rigid permanent construction, which does not allow any appreciable vapor flow except through normal openings, and made of the same material as the hull or of noncombustible material. The duct must lead as directly as possible from its intake

opening to its terminus and be securely fastened and supported.

(e) A supply duct must be provided with a cowl or scoop having a free area not less than twice the required duct area. When the cowl or scoop is screened, the mouth area must be increased to compensate for the area of the screen wire. A cowl or scoop must be kept open at all times except when the weather is such as to endanger the vessel if the openings are not temporarily closed.

(f) Except as required by §116.610(f) of this chapter, dampers may not be fitted in a supply duct.

(g) A duct opening may not be located where the natural flow of air is unduly obstructed, adjacent to possible sources of vapor ignition, or where exhaust air may be taken into a supply duct.

(h) Provision must be made for closing all supply duct cowls or scoops and exhaust duct discharge openings for a space protected by a fixed gas extinguishing system. All closure devices must be readily available and mounted in the vicinity of the vent.

[CGD 85–080, 61 FR 922, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§119.470 Ventilation of spaces containing diesel fuel tanks.

(a) Unless provided with ventilation that complies with §119.465 of this part, a space containing a diesel fuel tank and no machinery must meet one of the following requirements:

(1) A space of 14 cubic meters (500 cubic feet) or more in volume must have a gooseneck vent of not less than 65 millimeters (2.5 inches) in diameter; or

(2) A space of less than 14 cubic meters (500 cubic feet) in volume must have a gooseneck vent of not less than 40 millimeters (1.5 inches) in diameter.

(b) Vent openings may not be located adjacent to possible sources of vapor ignition.

Subpart E—Bilge and Ballast Systems

§119.500 General.

(a) A vessel must be provided with a satisfactory arrangement for draining any watertight compartment, other than small buoyancy compartments, under all practicable conditions. Sluice valves are not permitted in watertight bulkheads.

(b) Special consideration may be given to vessels, such as high speed craft, which have a high degree of subdivision and utilize numerous small buoyancy compartments. Where the probability of flooding of the space is limited to external hull damage, compartment drainage may be omitted provided it can be shown by stability calculations, submitted to the cognizant OCMI, that the safety of the vessel will not be impaired.

§119.510 Bilge piping system.

A vessel must be provided with a piping system that meets §56.50–50 in subchapter F of this chapter, with the following exceptions:

(a) The space forward of the collision bulkhead need not be fitted with a bilge suction line when the arrangement of the vessel is such that ordinary leakage may be removed from this compartment by the use of a hand portable bilge pump or other equipment, and such equipment is provided; and

(b) The vessel need not comply with §56.50–50(f) in subchapter F of this chapter.

[CGD 85–080, 61 FR 922, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997]

§119.520 Bilge pumps.

(a) Each vessel must be provided with bilge pumps in accordance with §56.50–55 in subchapter F of this chapter, with the following exceptions:

(1) Note 1 in Table 56.50–55(a) is not applicable and should be disregarded; and

(2) A non-self-propelled vessel must comply with §56.50–55(a) in subchapter F of this chapter instead of §56.50–55(b).

(b) In addition to the requirements of paragraph (a) of this section, a vessel of not more than 19.8 meters (65 feet) in length must have a portable hand bilge pump that must be:

(1) Capable of pumping water, but not necessarily simultaneously, from all watertight compartments; and

(2) Provided with suitable suction and discharge hoses capable of reaching the bilges of each watertight compartment, and discharging overboard.

(c) A second power pump is an acceptable alternative to a hand pump if it is supplied by a source independent of the first power bilge pump.

§ 119.530 Bilge high level alarms.

(a) Each vessel must be provided with a visual and audible alarm at the operating station to indicate a high water level in each of the following normally unmanned spaces:

(1) A space with a through-hull fitting below the deepest load waterline, such as a lazerette;

(2) A machinery space bilge, bilge well, shaft alley bilge, or other spaces subject to flooding from sea water piping within the space; and

(3) A space with a non-watertight closure , such as a space with a non-watertight hatch on the main deck.

(b) A visual indicator must be provided at the operating station to indicate when any automatic bilge pump is operating.

[CGD 85–080, 61 FR 922, Jan. 10, 1996; 61 FR 20556, May 7, 1996]

§ 119.540 Ballast systems.

Solid and water ballast must comply with the requirements of subpart L of part 116 of this subchapter.

Subpart F—Steering Systems

§ 119.600 General.

A self-propelled vessel must meet the applicable requirements for main and auxiliary steering apparatus in subchapters F (Marine Engineering) and J (Electrical Engineering) of this chapter.

Subpart G—Piping Systems

§ 119.700 General.

Materials used in piping systems must meet the requirements of this subpart and be otherwise acceptable to the cognizant OCMI.

§ 119.710 Piping for vital systems.

(a) Vital systems are those systems that are vital to a vessel's survivability and safety. For the purpose of this part the following are vital systems:

(1) Fuel systems;

(2) Fire main;

(3) CO_2 and Halon systems;

(4) Bilge system;

(5) Steering system;

(6) Propulsion system and its necessary auxiliaries and controls;

(7) Ship's service and emergency electrical generation system and its necessary auxiliaries; and

(8) A marine engineering system identified by the cognizant OCMI as being crucial to the survival of the vessel or to the protection of the personnel on board.

(b) For the purpose of this part, a system not identified in paragraph (a) of this section is a non-vital system.

(c) Piping used in a vital system must meet §56.60 in subchapter F of this chapter, except that §119.730 of this part replaces §56.60–20 in subchapter F of this chapter.

§ 119.715 Piping subject to more than 1,034 kPa (150 psig) in non-vital systems.

Piping subject to more than 1034 kPa (150 psig) in a non-vital system must be designed, fabricated, and inspected in accordance with the principles of American National Standards Institute (ANSI) B 31.1 ''American National Standard Code for Pressure Piping, Power Piping,'' or other standard specified by the Commandant.

§ 119.720 Nonmetallic piping materials.

Nonmetallic piping materials, including nonmetallic flexible hose assemblies, must meet the requirements of §56.60–25 in subchapter F of this chapter.

§ 119.730 Nonferrous metallic piping materials.

(a) Nonferrous metallic piping materials are acceptable for use in the following:

(1) Non-vital systems;

(2) Aluminum fuel piping on an aluminum hulled vessel, if at least Schedule 80;

(3) Aluminum bilge, ballast, and firemain piping on an aluminum hulled vessel;

(4) If acceptable to the cognizant OCMI, nonferrous metallic piping with a melting temperature above 927° C (1,700° F) may be used in vital systems that are deemed to be galvanically compatible; and

(5) Other uses specifically accepted by the cognizant OCMI.

(b) Where nonferrous metallic material is permitted for use in piping systems by this subpart, the restrictions in this paragraph apply:

(1) Provisions must be made to protect piping systems using aluminum alloys in high risk fire areas due to the low melting point of aluminum alloys;

(2) Provisions must be made to prevent or mitigate the effect of galvanic corrosion due to the relative solution potentials of copper, aluminum, and alloys of copper and aluminum, which are used in conjunction with each other, steel, or other metals and their alloys;

(3) A suitable thread compound must be used in making up threaded joints in aluminum pipe to prevent seizing. Pipe in the annealed temper must not be threaded;

(4) The use of aluminum alloys with a copper content exceeding 0.6 percent is prohibited; and

(5) The use of cast aluminum alloys in hydraulic fluid power systems must be in accordance with the requirements of §58.30–15(f) in subchapter F of this chapter.

PART 120—ELECTRICAL INSTALLATION

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AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGD 85–080, 61 FR 928, Jan. 10, 1996, unless otherwise noted.

Subpart A—General Provisions

§120.100 Intent.

This part contains requirements for the design, construction, installation, and operation of electrical equipment and systems including power sources, lighting, motors, miscellaneous equipment, and safety systems.

§120.115 Applicability to existing vessels.

(a) Except as otherwise required by paragraphs (b) and (c) of this section, an existing vessel must comply with the regulations on electrical installations, equipment, and material that were applicable to the vessel on March

10, 1996, or, as an alternative, the vessel may comply with the regulations in this part.

(b) An existing vessel must comply with the requirements of §§120.420 and 120.430 of this part.

(c) New installations of electrical equipment and material, and the repair or replacement of wire and cable, on an existing vessel, which are completed to the satisfaction of the cognizant Officer in Charge, Marine Inspection (OCMI) on or after March 11, 1996, must comply with this part. Replacement of existing equipment, not including wire or cable, installed on the vessel prior to March 11, 1996, need not comply with the regulations in this part.

Subpart B—General Requirements

§ 120.200 General design, installation, and maintenance requirements.

Electrical equipment on a vessel must be installed and maintained to:

(a) Provide services necessary for safety under normal and emergency conditions;

(b) Protect passengers, crew, other persons, and the vessel from electrical hazards, including fire, caused by or originating in electrical equipment, and electrical shock;

(c) Minimize accidental personnel contact with energized parts; and

(d) Prevent electrical ignition of flammable vapors.

§ 120.210 Protection from wet and corrosive environments.

(a) Electrical equipment used in the following locations must be dripproof:

(1) A machinery space;

(2) A location normally exposed to splashing, water washdown, or other wet conditions within a galley, a laundry, or a public washroom or toilet room that has a bath or shower; or

(3) Another space with a similar moisture level.

(b) Electrical equipment exposed to the weather must be watertight.

(c) Electrical equipment exposed to corrosive environments must be of suitable construction and corrosion-resistant.

§ 120.220 General safety provisions.

(a) Electrical equipment and installations must be suitable for the roll, pitch, and vibration of the vessel underway.

(b) All equipment, including switches, fuses, lampholders, etc., must be suitable for the voltage and current utilized.

(c) Receptacle outlets of the type providing a grounded pole or a specific direct current polarity must be of a configuration that will not permit improper connection.

(d) All electrical equipment and circuits must be clearly marked and identified.

(e) Any cabinet, panel, box, or other enclosure containing more than one source of power must be fitted with a sign warning persons of this condition and identifying the circuits to be disconnected.

Subpart C—Power Sources and Distribution Systems

§ 120.310 Power sources.

(a)(1) Each vessel that relies on electricity to power the following loads must be arranged so that the loads can be energized from two sources of electricity:

(i) The vital systems listed in §119.710 of this chapter;

(ii) Interior lighting except for decorative lights;

(iii) Communication systems including a public address system required under §121.610 of this chapter; and

(iv) Navigation equipment and lights.

(2) Except as provided in §120.312 of this part, a vessel with batteries of adequate capacity to supply the loads specified in paragraph (a)(1) of this section for three hours, and a generator or alternator driven by a propulsion engine, complies with the requirement in paragraph (a)(1) of this section.

(b) Where a ship service generator driven by a propulsion engine is used as a source of electrical power, a vessel speed change, throttle movement or change in direction of the propeller shaft rotation must not interrupt power to any of the loads specified in paragraph (a)(1) of this section.

§ 120.312 Power sources on vessels of more than 19.8 meters (65 feet) in length carrying more than 600 passengers or with overnight accommodations for more than 49 passengers.

A vessel of more than 19.8 meters (65 feet) in length carrying more than 600 passengers or with overnight accommodations for more than 49 passengers must have:

(a) Two generator sets;

(b) An electrical power system that complies with the requirements of §§ 111.10–4, 111.10–5, 111.10–9, 111.10–11 in subchapter J of this chapter;

(c) A final emergency power source, as defined by § 112.01–20 in subchapter J of this chapter, with sufficient capacity to power the loads listed in § 112.15–5 in subchapter J of this chapter for three hours; and

(d) The final emergency power source located outside the machinery space.

[CGD 85–080, 61 FR 928, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§ 120.320 Generators and motors.

(a) Each generator and motor must be:

(1) In a location that is accessible, adequately ventilated, and as dry as practicable; and

(2) Mounted above the bilges to avoid damage by splash and to avoid contact with low lying vapors.

(b) Each generator and motor must be designed for an ambient temperature of 50° C (122° F) except that:

(1) If the ambient temperature in the space where a generator or motor will be located will not exceed 40° C (104° F) under normal operating conditions, the generator or motor may be designed for an ambient temperature of 40° C (104° F); and

(2) A generator or motor designed for 40° C (104° F) may be used in 50° C (122° F) ambient locations provided the generator or motor is derated to 80 percent of the full load rating, and the rating or setting of the overcurrent devices is reduced accordingly.

(c) A voltmeter and an ammeter, which can be used for measuring voltage and current of a generator that is in operation, must be provided for a generator rated at 50 volts or more. For each alternating current generator, a means for measuring frequency must also be provided.

(d) Each generator must have a nameplate attached to it containing the information required by Article 445 of the National Electrical Code (NEC) (National Fire Protection Association (NFPA) 70), and for a generator derated in accordance with paragraph (b)(2) of this section, the derated capacity.

(e) Each motor must have a nameplate attached to it containing the information required by Article 430 of the NEC (NFPA 70), and for a motor derated in accordance with paragraph (b)(2) of this section, the derated capacity.

(f) Each generator must be protected by an overcurrent device set at a value not exceeding 115 percent of the generator full load rating.

[CGD 85–080, 61 FR 928, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§ 120.322 Multiple generators.

When a vessel is equipped with two or more generators to supply ship's service power, the following requirements must be met:

(a) Each generator must have an independent prime mover; and

(b) The generator circuit breakers must be interlocked to prevent the generators from being simultaneously connected to the switchboard, except for the circuit breakers of a generator operated in parallel with another generator when the installation meets §§ 111.12–11(f), and 111.30–25(d) in subchapter J of this chapter.

§ 120.324 Dual voltage generators.

(a) A dual voltage generator installed on a vessel shall be of the grounded type, where:

(1) The neutral of a dual voltage system must be solidly connected at the switchboard's neutral bus; and

(2) The neutral bus shall be connected to ground.

(b) The neutral of a dual voltage system must be accessible for checking the insulation resistance of the generator to ground before the generator is connected to the bus.

(c) Ground detection must be provided that:

(1) For an alternating current system, meets §111.05–27 in subchapter J of this chapter; and

(2) For a direct current system, meets §111.05–29 in subchapter J of this chapter.

§120.330 Distribution panels and switchboards.

(a) Each distribution panel and switchboard must be in as dry a location as practicable, adequately ventilated, and protected from falling debris and dripping or splashing water.

(b) Each distribution panel or switchboard must be totally enclosed and of the dead front type.

(c) Each switchboard must have nonconductive handrails.

(d) Each switchboard must be fitted with a dripshield.

(e) Distribution panels and switchboards that are accessible from the rear must be constructed to prevent a person from accidentally contacting energized parts.

(f) Working space must be provided around all main distribution panels and switchboards of at least 610 millimeters (24 inches) in front of the switchboard, and at least 455 millimeters (18 inches) behind the switchboard. Rear access is prohibited when the working space behind the switchboard is less than 455 millimeters (18 inches).

(g) Nonconducting mats or grating must be provided on the deck in front of each switchboard and, if accessible from the rear, on the deck in the rear of the switchboard.

(h) All uninsulated current carrying parts must be mounted on noncombustible, nonabsorbent, high dielectric insulating material.

(i) Equipment mounted on a hinged door of an enclosure must be constructed or shielded so that a person will not accidentally contact energized parts of the door mounted equipment when the door is open and the circuit energized.

(j) In the design of control, interlock, or indicator circuit, the disconnect device and its connections, including each terminal block for terminating the vessel's wiring, must not have electrically unshielded or uninsulated surfaces.

(k) Switchboards and distribution panels must be sized in accordance with §111.30–19 in subchapter J of this chapter.

[CGD 85–080, 61 FR 928, Jan. 10, 1996; 61 FR 20556, May 7, 1996]

§120.340 Cable and wiring requirements.

(a) If individual wires, rather than cables, are used in systems greater than 50 volts, the wire must be in conduit.

(b) All cable and wire must:

(1) Have stranded copper conductors with sufficient current carrying capacity for the circuit in which they are used;

(2) Be installed in a manner to avoid or reduce interference with radio reception and compass indication;

(3) Be protected from the weather;

(4) Be installed with metal supports spaced not more than 610 millimeters (24 inches) apart, and in such a manner as to avoid chafing and other damage. The use of plastic tie wraps must be limited to bundling or retention of multiple cable installations, and not used as a means of support;

(5) Not be installed with sharp bends;

(6) Be protected by metal coverings or other suitable means if in areas subject to mechanical abuse. Horizontal pipes used for protection shall have 6 millimeter (.25 inch) holes for drainage every 1,520 millimeters (5 feet);

(7) Be suitable for low temperature and high humidity if installed in refrigerated compartments;

(8) Not be located in a tank unless the cable provides power to equipment in the tank; and

(9) Have sheathing or wire insulation compatible with the fluid in a tank when installed as allowed by paragraph (b)(8) of this section.

(c) Conductors in power and lighting circuits must be No. 14 American Wire Gauge (AWG) or larger. Conductors in control and indicator circuits must be No. 22 AWG or larger.

(d) Cable and wire for power and lighting circuits must:

(1) Meet Section 310–13 of the NEC (NFPA 70) except that asbestos insulated cable and dry location cables can not be used;

(2) Be listed by Underwriters Laboratories (UL), as UL Boat or UL Marine cable; or

(3) Meet §111.60–1 in subchapter J of this chapter for cable and §111.60–11 in subchapter J of this chapter for wire.

(e) Cable or wire serving vital systems listed in §119.710 of this subchapter or emergency loads must be routed as far as practicable from high risk fire areas, such as galleys, laundries, and machinery spaces.

(f) Cable or wire serving duplicated equipment must be separated so that a casualty that affects one cable does not affect the other.

(g) Each connection to a conductor or terminal part of a conductor must be made within an enclosure and have either:

(1) A pressure type connector on each conductor;

(2) A solder lug on each conductor;

(3) A splice made with a pressure type connector to a flexible lead or conductor; or

(4) A splice that is soldered, brazed, or welded to a flexible lead or conductor.

(h) A connector or lug of the set screw type must not be used with a stranded conductor smaller than No. 14 AWG except if there is a nonrotating follower that travels with the set screw and makes pressure contact with the conductor.

(i) Each pressure type wire connector and lug must meet UL 486A, ''Wire Connectors and Soldering Lugs for Use With Copper Conductors,'' or other standard specified by the Commandant. The use of twist-on type wire nuts is permitted under the following conditions:

(1) The connections must be made within an enclosure and the insulated cap of the connector must be secured to prevent loosening due to vibration.

(2) Twist-on type connectors may not be used for making joints in cables, facilitating a conductor splice, or extending the length of a circuit.

(j) Each terminal block must have 6–32 terminal screws or larger.

(k) Wire connectors utilized in conjunction with screw type terminal blocks must be of the captive type such as the ring or the flanged spade type.

(l) A cable must not be spliced in a hazardous location.

(m) A cable may be spliced in a location, other than a hazardous location, under the following conditions:

(1) A cable installed in a subassembly may be spliced to a cable installed in another subassembly;

(2) For a vessel receiving alterations, a cable may be spliced to extend a circuit;

(3) A cable having a large size or exceptional length may be spliced to facilitate its installation; and

(4) A cable may be spliced to replace a damaged section of the cable if, before replacing the damaged section, the insulation resistance of the remainder of the cable is measured, and it is determined that the condition of the insulation is unimpaired.

(n) All material in a cable splice must be chemically compatible with all other material in the splice and with the materials in the cable.

(o) Ampacities of wires must meet Section 310–15 of the NEC (NFPA 70), or other standard specified by the Commandant. Ampacities of cables must meet table A6 of Institute of Electrical and Electronic Engineers (IEEE) Standard 45, ''Recommended Practice for Electrical Installations on Shipboard,'' or other standard specified by the Commandant. Ampacities for Navy cable must meet NAVSEA Design Data Sheet (DDS) 304–2 ''Electrical Cable, Ratings and Characteristics'' as appropriate.

(p) Conductors must be sized so that the voltage drop at the load terminals does not exceed 10 percent. Table 120.3340(p) indicates the size of conductor required for corresponding lengths and steady state (stable) values to obtain not more than this voltage drop at the load terminals of a two conductor circuit.

TABLE 120.340(p)—CONDUCTOR SIZES FOR AMPERES—LENGTHS

Total current on circuit, amperes	Length of conductor in meters (feet) from source of current to most distant fixture										
	3.1 (10)	4.5 (15)	6.1 (20)	7.6 (25)	9.2 (30)	10.7 (35)	12.2 (40)	13.7 (45)	15.2 (50)	16.8 (55)	18.3 (60)
12 volts, 2-wire—10 percent drop wire sizes (A.W.G.)											
5	14	14	14	14	14	14	14	14	12	12	12
14	14	14	14	12	12	12	10	10	10	10	8
15	14	14	12	10	10	10	8	8	8	8	8
20	12	12	10	10	8	8	8	8	6	6	6
25	10	10	10	8	8	8	6	6	6	6	4

Other values can be computed by means of the following formula:

$$cm = \frac{K \times I \times L (\times 2 \text{ for two-wire circuit})}{E}$$

Where:

cm = Circular-mil area of conductor.
K = 3.28 ohms/mil-meter (metric)
K = 10.75 ohms/mil-foot (english)
(a constant representing the resistance of cooper).
I = Load current, in amperes.
L = length of conductor from center of distribution, in meters (feet).
E = Voltage drop at load, in volts.

(q) If used, each armored cable metallic covering must:

(1) Be electrically continuous; and

(2) Be grounded at each end of the run to:

(i) The metallic hull; or

(ii) The common ground plate on nonmetallic vessels; and

(3) Have final sub-circuits grounded at the supply end only.

(r) A portable or temporary electric cord or cable must be constructed and used in compliance with the requirements of §111.60–13 in subchapter J of this chapter for a flexible electric cord or cable.

[CGD 85–080, 61 FR 928, Jan. 10, 1996; 61 FR 20556, May 7, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§ 120.350 Batteries—general.

(a) Where provisions are made for charging batteries, there must be natural or induced ventilation sufficient to dissipate the gases generated.

(b) Each battery must be located as high above the bilge as practicable, secured to protect against shifting with the roll and pitch of the vessel, and free from exposure to water splash or spray.

(c) Batteries must be accessible for maintenance and removal.

(d) Connections must be made to battery terminals with permanent type connectors. Spring clips or other temporary type clamps are prohibited.

(e) Batteries must be mounted in trays lined with, or constructed of, a material that is resistant to damage by the electrolyte.

(f) Battery chargers must have an ammeter connected in the charging circuit.

(g) If the batteries are not adjacent to a distribution panel or switchboard that distributes power to the lighting, motor, and appliance circuits, the battery lead must have a fuse in series, located as close as practicable to the battery.

(h) Batteries used for engine starting are to be located as close as possible to the engine or engines served.

§ 120.352 Battery categories.

This section applies to batteries installed to meet the requirements of §120.310 of this part for secondary sources of power to vital loads, or sources of power to final emergency loads.

(a) *Large.* A large battery installation is one connected to a battery charger having an output of more than 2 kilowatts (kw), computed from the highest possible charging current and the rated voltage of the battery installation.

(b) *Small.* A small battery installation is one connected to a battery charger having an output of 2 kw or less, computed as above.

§ 120.354 Battery installations.

(a) *Large batteries.* Each large battery installation must be located in a locker, room or enclosed box solely dedicated to the storage of batteries. Ventilation must be provided in accordance with §111.15–10 in subchapter J of this chapter. Electrical equipment located within the battery enclosure must be approved by an independent laboratory for Class I, Division 1, Group B hazardous locations and meet §111.105 in subchapter J of this chapter.

(b) *Small batteries.* Each small battery installation must be located in a well ventilated space and protected from falling objects. A small battery installation must not be in a closet, storeroom, or similar space.

§ 120.360 Semiconductor rectifier systems.

(a) Each semiconductor rectifier system must have an adequate heat removal system that prevents overheating.

(b) Where a semiconductor rectifier system is used in a propulsion system or in other vital systems it must:

(1) Have a current limiting circuit;

(2) Have external overcurrent protection; and

(3) Meet Sections 35.84.2 and 35.84.4 of the American Bureau of Shipping (ABS), ''Rules for Building and Classing Steel Vessels,'' or other standard specified by the Commandant.

§ 120.370 General grounding requirements.

(a) A vessel's hull must not carry current as a conductor except for the following systems:

(1) Impressed current cathodic protection systems; or

(2) Battery systems for engine starting.

(b) Receptacle outlets and attachment plugs for portable lamps, tools, and similar apparatus operating at 100 volts or more, must have a grounding pole and a grounding conductor in the portable cord.

(c) Each nonmetallic mast and top mast must have a lightning ground conductor.

§ 120.372 Equipment and conductor grounding.

(a) All metallic enclosures and frames of electrical equipment must be permanently grounded to the hull on a metallic vessel. On a nonmetallic vessel, the enclosures and frames of electrical equipment must be bonded together to a common ground by a normally non-current carrying conductor. Metallic cases of instruments and secondary windings of instrument transformers must be grounded.

(b) On a nonmetallic vessel, where a ground plate is provided for radio equipment, it must be connected to the common ground.

(c) Equipment grounding conductors must be sized in accordance with Section 250–95 of the NEC (NFPA 70), or other standard specified by the Commandant.

(d) Each insulated grounding conductor of a cable must be identified by one of the following means.

(1) A green braid or green insulation;

(2) Stripping the insulation from the entire exposed length of the grounding conductor; or

(3) Marking the exposed insulation of the grounding conductor with green tape or green adhesive labels.

(e) Cable armor must not be used to ground electrical equipment of systems.

§ 120.376 Grounded distribution systems (Neutral grounded).

(a) If a grounded distribution system is provided, there must be only one connection to ground, regardless of the number of power sources. This ground connection must be at the switchboard or at the common ground plate, which must be accessible.

(b) Each propulsion, power, lighting, or distribution system having a neutral bus or conductor must have the neutral grounded.

(c) The neutral or each grounded generation and distribution system must be grounded at the generator switchboard and have the ground connection accessible for checking insulation resistance of the generator to ground before the generator is connected to the bus, except the neutral of an emergency power generation system must be grounded with:

(1) No direct ground connection at the emergency switchboard;

(2) The neutral bus permanently connected to the neutral bus on the main switchboard; and

(3) No switch, circuit breaker, or fuse in the neutral conductor of the bus-tie feeder connecting the emergency switchboard to the main switchboard.

(d) On a metallic vessel, a grounded alternating current system must be grounded to the hull. On a nonmetallic vessel, the neutral must be connected to the common ground, except that aluminum grounding conductors must not be used.

§ 120.378 Ungrounded systems.

Each ungrounded system must be provided with a suitably sensitive ground detection system, located at the respective switchboard, that provides continuous indication of circuit status to ground with a provision to momentarily remove the indicating device from the reference ground.

[CGD 85–080, 62 FR 51352, Sept. 30, 1997]

§ 120.380 Overcurrent protection.

(a) Overcurrent protection must be provided for each ungrounded conductor for the purpose of opening the electric circuit if the current reaches a value that causes an excessive or dangerous temperature in the conductor or conductor insulation.

(b) The grounded conductor of a circuit must not be disconnected by a switch or circuit breaker, unless the ungrounded conductors are simultaneously disconnected.

(c) A conductor of a control, interlock, or indicator circuit, such as a conductor for an instrument, pilot light, ground detector light, or potential transformer, must be protected by an overcurrent device.

(d) Conductors must be protected in accordance with their current carrying capacities. If the allowable current carrying capacity does not correspond to a standard device size, the next larger overcurrent device may be used provided it does not exceed 150 per cent of the conductor current carrying capacity.

(e) Steering gear control system circuits must be protected against short circuit.

(f) Each steering gear feeder circuit must be protected by a circuit breaker that meets the requirements of paragraphs (a) and (b) of §111.93–11 in subchapter J of this chapter.

(g) Each lighting branch circuit must be protected against overcurrent either by fuses or circuit breakers rated at not more than 30 amperes.

(h) Overcurrent devices capable of carrying the starting current of the motor must be installed to protect motors, motor conductors, and control apparatus against:

(1) Overcurrent due to short circuits or ground faults; and

(2) Overload due to motor running overcurrent, in accordance with §111.70–1 in subchapter J of this chapter. A protective device integral with the motor, which is responsive to both motor current and temperature, may be used.

(i) An emergency switch must be provided in the normally ungrounded main supply conductor from a battery. The switch must be accessible and located as close to the battery as practicable.

(j) Disconnect means must be provided on the supply side of and adjacent to all fuses for the purpose of deenergizing the fuses for inspection and maintenance purposes.

(k) If the disconnect means is not within sight of the equipment that the circuit supplies, means must be provided for locking the disconnect device in the open position.

(l) Fuses must be of the cartridge type only and be listed by Underwriters Laboratories or another independent laboratory recognized by the Commandant.

(m) Each circuit breaker must meet UL 489, ''Molded-Case Circuit Breakers and Circuit Breaker Enclosures,'' or other standard specified by the Commandant, and be of the manually reset type designed for:

(1) Inverse time delay;

(2) Instantaneous short circuit protection; and

(3) Switching duty if the breaker is used as a switch.

(n) Each circuit breaker must indicate whether it is in the open or closed position.

[CGD 85–080, 61 FR 928, Jan. 10, 1996; 61 FR 20556, May 7, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§ 120.390 Shore power.

A vessel with an electrical system operating at more than 50 volts, which is provided with a means to connect to shore power, must meet the following:

(a) A shore power connection box or receptacle must be permanently installed at a convenient location:

(b) A cable connecting the shore power connection box or receptacle to the switchboard or main distribution panel must be permanently installed;

(c) A circuit breaker must be provided at the switchboard or main distribution panel for the shore power connection; and

(d) The circuit breaker, required by paragraph (c) of this section, must be interlocked with the vessel's power sources so that shore power and the vessel's power sources may not be operated simultaneously.

§ 120.392 Radiotelephone installations.

A separate circuit, with overcurrent protection at the main distribution panel, must be provided for each radiotelephone installation.

Subpart D—Lighting Systems

§ 120.410 Lighting fixtures.

(a) Each lighting fixture globe, lens, or diffuser must have a guard or be made of high strength material, except in an accommodation space, radio room, galley, or similar space where it is not subject to damage.

(b) A lighting fixture may not be used as a connection box for a circuit other than the branch circuit supplying the fixture.

(c) A lighting fixture must be installed as follows:

(1) Each fixture must comply with § 120.200.

(2) Each lighting fixture and lampholder must be fixed. A fixture must not be supported by the screw shell of a lampholder.

(3) Each pendant type lighting fixture must be suspended by and supplied through a threaded, rigid conduit stem.

(4) Each table lamp, desk lamp, floor lamp, or similar equipment must be secured in place so that it cannot be displaced by the roll or pitch of the vessel.

(d) An exterior lighting fixture in an electrical system operating at more than 50 volts must comply with the requirements of UL 595, ''Marine Type Electric Lighting Fixtures,'' or other standard specified by the Commandant. A lighting fixture in an accommodation space, radio room, galley or similar interior space may comply with, UL 1570, ''Fluorescent Lighting Fixtures,'' UL 1571, ''Incandescent Lighting Fixtures,'' UL 1572, ''High Intensity Discharge Lighting Fixtures,'' UL 1573, ''Stage and Studio Lighting Units,'' or UL 1574, ''Track Lighting Systems,'' as long as the general marine requirements of UL 595 are satisfied.

§ 120.420 Navigation lights.

All vessels must have navigation lights that are in compliance with the applicable sections of the International and Inland Navigation Rules, except that a vessel of more than 19.8 meters (65 feet) in length must also have navigation lights that meet UL 1104, ''Marine Navigation Lights,'' or other standard specified by the Commandant.

§ 120.430 Portable lights.

Each vessel must be equipped with at least two operable portable battery lights. One of these lights must be located at the operating station and the other at the access to the propulsion machinery space.

§ 120.432 Emergency lighting.

(a) Each vessel must have adequate emergency lighting fitted along the line of escape to the main deck from all passenger and crew accommodation spaces located below the main deck.

(b) The emergency lighting required by paragraph (a) of this section must automatically actuate upon failure of the main lighting system. If a vessel is not equipped with a single source of power for emergency lighting, it must have individual battery powered lights which:

(1) Are automatically actuated upon loss of normal power;

(2) Are not readily portable;

(3) Are connected to an automatic battery charger; and

(4) Have sufficient capacity for a minimum of 2 hours of continuous operation.

(c) A vessel of more than 19.8 meters (65 feet) in length carrying more than 600 passengers or with overnight accommodations for more than 49 passengers must have an emergency lighting system that complies with Part 112 in subchapter J of this chapter.

[CGD 85–080, 61 FR 928, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§ 120.434 Lifeboat and liferaft floodlights on vessels of more than 19.8 meters (65 feet) in length with overnight accommodations for more than 49 passengers.

Each vessel of more than 19.8 meters (65 feet) in length carrying more than 600 passengers or with overnight accommodations for more than 49 passengers must have floodlights for illuminating the stowage position and embarkation station of lifeboats, liferafts, rescue boats, and rescue platforms, where installed. These floodlights must meet the requirements of §111.75–16 in subchapter J of this chapter.

[CGD 85–080, 61 FR 928, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

Subpart E—Miscellaneous Systems and Requirements

§ 120.520 Lifeboat winches.

Each electric power operated lifeboat winch must meet §111.95 in subchapter J and §160.015 in subchapter Q of this chapter, or other standard specified by the Commandant.

§ 120.530 Hazardous areas.

(a) Electrical equipment in lockers used to store paint, oil, turpentine, or other flammable liquids must be explosion-proof or be part of an intrinsically safe system.

(b) Explosion-proof equipment and intrinsically safe systems must meet the requirements of §111.105 in subchapter J of this chapter.

§ 120.540 Elevators.

Each elevator on a vessel must meet the requirements of American National Standards Institute (ANSI) A17.1. ''Safety Code for Elevators, and Escalators,'' or other standard specified by the Commandant.

§ 120.550 General alarm systems.

(a) All vessels with overnight accommodations must be equipped with a general alarm system.

(b) A vessel of more than 19.8 meters (65 feet) in length with overnight accommodations for more than 49 passengers must have a general alarm that meets the requirements of §113.25 in subchapter J of this chapter.

(c) The public address system required by §121.610 of this chapter may be used to sound the general alarm signal.

PART 121—VESSEL CONTROL AND MISCELLANEOUS SYSTEMS AND EQUIPMENT

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AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGD 85–080, 61 FR 933, Jan. 10, 1996, unless otherwise noted.

Subpart A—General Provisions

§ 121.100 General requirement.

(a) Vessel control systems and other miscellaneous systems and equipment required by this part must be suitable for the purposes intended.

(b) The cognizant Officer in Charge, Marine Inspection (OCMI) may require navigation, control, or communications equipment, in excess of the equipment specifically required by this part, on a vessel that is of a novel design, operates at high speeds in restricted or high traffic areas, operates in a dynamically supported mode, or operates on extended routes or in remote locations.

§ 121.115 Applicability to existing vessels.

(a) An existing vessel need not comply with §§ 121.402(c), 121.404, 121.410, and 121.602 of this part unless the cognizant OCMI specifically requires compliance due to the route or service of the vessel.

(b) An existing vessel need not comply with the requirements of § 121.610 of this part until March 11, 2001, or 10 years after its keel was laid or the vessel was at a similar stage of construction, whichever is later.

(c) An existing vessel need not comply with the requirements of § 121.710 of this part until March 11, 1997.

Subpart B—Cooking and Heating

§ 121.200 General.

Cooking and heating equipment must be suitable for marine use. Equipment designed and installed in accordance with American Boat and Yacht Council (ABYC) A–3, ''Recommended Practices and Standards Covering Galley Stoves,'' and A–7, ''Recommended Practices and Standards Covering Boat Heating Systems,'' or with National Fire Protection Association (NFPA) 302, ''Pleasure and Commercial Motor Craft,'' complies with this requirement, except as restricted by § 121.202 of this part.

§ 121.202 Restrictions.

(a) The use of gasoline for cooking, heating, or lighting is prohibited on all vessels.

(b) Fireplaces or other space heating equipment with open flames are prohibited on all vessels.

(c) Vessels permitted to use liquefied and non-liquefied gases as cooking fuels by 46 Code of Federal Regulations (CFR) part 147 must meet the requirements of § 121.240. The use of these fuels for cooking, heating, and lighting on ferry vessels is prohibited by part 147 in subchapter N of this chapter.

§ 121.210 Heating equipment.

(a) Each heater must be so constructed and installed as to prevent contact with combustible materials such as towels and clothing.

(b) Each electric space heater must be provided with a thermal cutout to prevent overheating.

(c) Each heater element of an electric space heater must be of an enclosed type, and the element case or jacket must be made of a corrosion resistant material.

§ 121.220 Cooking equipment.

(a) Doors on a cooking appliance must be provided with hinges and locking devices to prevent accidental opening in heavy seas.

(b) A cooking appliance must be installed to prevent movement in heavy seas.

(c) For a grill or similar type of cooking appliance, means must be provided to collect grease or fat and to prevent its spillage on wiring or the deck.

(d) Grab rails must be installed on a cooking appliance when determined by

the cognizant OCMI to be necessary for safety.

(e) Sea rails, with suitable barriers to prevent accidental movement of cooking pots, must be installed on a cooking range.

(f) Electric connections for a cooking appliance must be dripproof.

[CGD 85–080, 61 FR 933, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§ 121.240 Gas systems.

Cooking systems using liquefied petroleum gas (LPG) and compressed natural gas (CNG) must meet the following requirements:

(a) The design, installation and testing of each LPG system must meet ABYC A–1, ''Marine Liquefied Petroleum Gas (LPG) Systems,'' Chapter 6 of NFPA 302, or other standard specified by the Commandant.

(b) The design, installation and testing of each CNG system must meet ABYC A–22, ''Marine Compressed Natural Gas (CNG) Systems,'' Chapter 6 of NFPA 302, or other standard specified by the Commandant.

(c) Cooking systems using Chapter 6 of NFPA 302 as the standard must meet the following additional requirements.

(1) The storage or use of CNG containers within the accommodation area, machinery spaces, bilges, or other enclosed spaces is prohibited;

(2) LPG or CNG must be odorized in accordance with ABYC A–1, appendix 4, or A–22, appendix 4, respectively;

(3) The marking and mounting of LPG cylinders must be in accordance with ABYC A–1, appendix 7; and

(4) LPG cylinders must be of the vapor withdrawal type as specified in ABYC A–1, section 1.7.

(d) Continuous pilot lights or automatic glow plugs are prohibited for an LPG or CNG installation using ABYC A–1 or A–22 as the standard.

(e) CNG installation using ABYC A–22 as the standard must meet the following additional requirements:

(1) The storage or use of CNG containers within the accomodation area, machinery spaces, bilges, or other enclosed spaces is prohibited:

(2) CNG cylinders, regulating equipment, and safety equipment must meet the installation, stowage, and testing requirements of paragraph 6–5.12 of NFPA 302; and

(3) The use or stowage of stoves with attached CNG cylinders is prohibited as specified in paragraph 6–5.1 of NFPA 302.

(f) If the fuel supply line of an LPG or CNG system enters an enclosed space on the vessel, a remote shut off valve must be installed that can be operated from a position adjacent to the appliance. The valve must be located between the fuel tank and the point where the fuel supply line enters the enclosed portion of the vessel. A power operated valve installed to meet this requirement must be of a type that will fail closed.

(g) The following variances from ABYC A–1 section 1.12 are allowed for CNG:

(1) The storage locker or housing access opening need not be in the top; and

(2) The locker or housing need not be above the waterline.

(h) The following variances from NFPA 302 are allowed.

(1) The storage locker or housing for CNG tank installations need not be above the waterline as required by paragraph 6–5.12.1.1(a); and

(2) Ignition protection need not be provided as required by paragraph 6–5.4.

NOTE TO § 121.240: The ABYC and NFPA standards referenced in this section require the posting if placards containing safety precautions for gas cooking systems.

[CGD 85–080, 61 FR 933, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997; USCG–2000–7790, 65 FR 58463, Sept. 29, 2000]

Subpart C—Mooring and Towing Equipment

§ 121.300 Ground tackle and mooring lines.

A vessel must be fitted with ground tackle and mooring lines necessary for the vessel to be safely anchored or moored. The ground tackle and mooring lines provided must be satisfactory for the size of the vessel, the waters on which the vessel operates, subject to the approval of the cognizant OCMI.

Subpart D—Navigation Equipment

§ 121.402 Compasses.

(a) Except as otherwise provided in this section every vessel must be fitted with a suitable magnetic compass designed for marine use, to be mounted at the primary operating station.

(b) The following vessels need not be fitted with a compass:

(1) A vessel on a rivers route;

(2) A non-self-propelled vessel; and

(3) A vessel operating on short restricted routes on lakes, bays, and sounds.

(c) Except on a vessel limited to daytime operations, the compass must be illuminated.

§ 121.404 Radars.

(a) Except as allowed by paragraph (b) of this section, all self-propelled vessels must be fitted with a Federal Communications Commission (FCC) type accepted general marine radar system for surface navigation with a radar screen mounted at the primary operating station.

(b) The following vessels are not required to carry a radar:

(1) A ferry that operates on a rivers route within one mile of land; and

(2) A vessel operated on a short restricted route, when the cognizant OCMI has determined that a radar is not necessary due to the vessel's route and local weather conditions.

(c) The radar and its installation must be suitable for the intended speed and route of the vessel.

§ 121.410 Electronic position fixing devices.

A vessel on an oceans route must be equipped with an electronic position fixing device, capable of providing accurate fixes for the area in which the vessel operates, to the satisfaction of the cognizant OCMI.

§ 121.420 Charts and nautical publications.

(a) As appropriate for the intended voyage, a vessel must carry adequate and up-to-date:

(1) Charts of large enough scale to make safe navigation possible;

(2) U.S. Coast Pilot or similar publication;

(3) Coast Guard Light List;

(4) Tide tables; and

(5) Current tables, or a river current publication issued by the U.S. Army Corps of Engineers or a river authority.

(b) Extracts from the publications listed above for the areas to be transited may be provided instead of the complete publication.

Subpart E—Radio

§ 121.502 Requirements of the Federal Communications Commission.

A vessel must comply with the applicable requirements for any radio and Electronic Position Indicating Radiobeacon (EPIRB) installations, including the requirements for a station license and installation certificates to be issued by the FCC, as set forth in 47 CFR part 80.

§ 121.506 Emergency broadcast placard.

A durable placard must be posted next to all radiotelephone installations with the emergency broadcast instructions and information, specific to the individual vessel.

§ 121.510 Recommended emergency broadcast instructions.

The following emergency broadcast instructions, when placed on a placard, will satisfy the requirement contained in § 121.506 for an emergency broadcast placard:

(a) Emergency Broadcast Instructions.

(1) Make sure your radiotelephone is on.

(2) Select 156.8 MHz (channel 16 VHF) or 2182 kHz. (Channel 16 VHF and 2182 kHz on SSB are for emergency and calling purposes only.)

(3) Press microphone button and, speaking slowly—clearly—calmly, say:

(i) ''MAYDAY—MAYDAY—MAYDAY'' for situations involving Immediate Danger to Life and Property; or

(ii) ''PAN—PAN—PAN'' for urgent situations where there is No Immediate Danger to Life or Property.

(4) Say: ''THIS IS (INSERT VESSEL'S NAME), (INSERT VESSEL'S NAME), (INSERT VESSEL'S NAME), (INSERT VESSEL'S CALL SIGN), OVER.''

(5) Release the microphone button briefly and listen for acknowledgment. If no one answers, repeat steps 3 & 4.

(6) If there is no acknowledgment, or if the Coast Guard or another vessel responds, say: ''MAYDAY'' or ''PAN'', (INSERT VESSEL'S NAME).''

(7) DESCRIBE YOUR POSITION using latitude and longitude coordinates, LORAN coordinates, or range and bearing from a known point.

(8) STATE THE NATURE OF THE DISTRESS.

(9) GIVE NUMBER OF PERSONS ABOARD AND THE NATURE OF ANY INJURIES.

(10) ESTIMATE THE PRESENT SEAWORTHINESS OF YOUR VESSEL.

(11) BRIEFLY DESCRIBE YOUR VESSEL: (INSERT LENGTH, COLOR, HULL TYPE, TRIM, MASTS, POWER, ANY ADDITIONAL DISTINGUISHING FEATURES).

(12) Say: ''I WILL BE LISTENING ON CHANNEL 16/2182.''

(13) End message by saying: ''THIS IS (INSERT VESSEL'S NAME & CALL SIGN).''

(14) If your situation permits, stand by the radio to await further communications with the Coast Guard or another vessel. If no answer, repeat, then try another channel.

(b) [Reserved]

Subpart F—Control and Internal Communications Systems

§ 121.602 Internal communications systems.

(a) A vessel equipped with pilothouse control must have a fixed means of two-way communications from the operating station to the location where the means of controlling the propulsion machinery, required by § 121.620(a), is located. Twin screw vessels with pilothouse control for both engines are not required to have a fixed communications system.

(b) A vessel equipped with auxiliary means of steering, required by § 119.600 of this chapter, must have a fixed means of two-way communications from the operating station to the location where the auxiliary means of steering is controlled.

(c) When the propulsion machinery of a vessel cannot be controlled from the operating station, an efficient communications system must be provided between the operating station and the propulsion machinery space.

(d) When the locations addressed in paragraphs (a), (b), and (c) of this section are sufficiently close together, direct voice communications satisfactory to the cognizant OCMI is acceptable instead of the required fixed means of communications.

(e) The OCMI may accept hand held portable radios as satisfying the communications system requirement of this section.

§ 121.610 Public address systems.

(a) Except as noted in paragraph (d) below, each vessel must be equipped with a public address system.

(b) On a vessel of more than 19.8 meters (65 feet) in length, the public address system must be a fixed installation and be audible during normal operating conditions throughout the accommodation spaces and all other spaces normally manned by crew members.

(c) A vessel with more than one passenger deck and a vessel with overnight accommodations must have the public address system operable from the operating station.

(d) On a vessel of not more than 19.8 meters (65 feet) in length, a battery powered bullhorn may serve as the public address system if audible throughout the accommodation spaces of the vessel during normal operating conditions. The bullhorn's batteries are to be continually maintained at a fully charged level by use of a battery charger or other means acceptable to the cognizant OCMI.

§ 121.620 Propulsion engine control systems.

(a) A vessel must have two independent means of controlling each propulsion engine. Control must be provided for the engine speed, direction of shaft rotation, and engine shutdown.

(1) One of the means may be the ability to readily disconnect the remote engine control linkage to permit local operation.

(2) A multiple engine vessel with independent remote propulsion control

for each engine need not have a second means of controlling each engine.

(b) In addition to the requirements of paragraph (a) of this section, a vessel must have a reliable means for shutting down a propulsion engine, at the main pilot house control station, which is independent of the engine's speed control.

(c) A propulsion engine control system, including pilothouse control, must be designed so that a loss of power to the control system does not result in an increase in shaft speed or propeller pitch.

(d) All microprocessor or computer based systems must meet the requirements of part 62 in subchapter F of this chapter.

Subpart G—Miscellaneous

§ 121.702 Pollution prevention equipment and procedures.

A vessel must comply with the applicable design, equipment, personnel, procedures, and record requirements of 33 CFR parts 151, 155, and 156.

§ 121.704 Marine sanitation devices.

A vessel with installed toilet facilities must have a marine sanitation device that complies with 33 CFR part 159.

[CGD 85–080, 61 FR 933, Jan. 10, 1996; 61 FR 20556, May 7, 1996]

§ 121.710 First-aid kits.

A vessel must carry either a first-aid kit approved under approval series 160.041 or a kit with equivalent contents and instructions. For equivalent kits, the contents must be stowed in a suitable, watertight container that is marked ''First-Aid Kit''. A first-aid kit must be easily visible and readily available to the crew.

[CGD 85–080, 62 FR 51352, Sept. 30, 1997, as amended at 62 FR 64306, Dec. 5, 1997]

PART 122—OPERATIONS

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AUTHORITY: 46 U.S.C. 2103, 3306, 6101; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGD 85–080, 61 FR 935, Jan. 10, 1996, unless otherwise noted.

Subpart A—General Provisions

§ 122.100 General requirement.

A vessel must be operated in accordance with applicable laws and regulations and in such a manner as to afford adequate precaution against hazards that might endanger the vessel and the persons being transported.

§ 122.115 Applicability to existing vessels.

(a) An existing vessel need not comply with the hull marking requirements in § 122.602(c) until completion of a vessel's first drydock required by § 115.600 of this chapter that occurs after March 11, 1996.

(b) An existing vessel need not comply with the marking requirements in §§ 122.604 and 122.610, where the size and contents of the markings required by §§ 122.604 and 122.610 vary from the size and contents of required markings on lifesaving equipment, watertight doors, and watertight hatches on the vessel prior to March 11, 1996, until the existing markings are no longer legible, as determined by the cognizant Officer in Charge, Marine Inspection (OCMI).

(c) An existing vessel need not comply with the requirements of §§ 122.514, 122.515, 122.516, and 124.604(j) until completion of the first inspection for certification that occurs after March 11, 1996.

[CGD 85–080, 61 FR 935, Jan. 10, 1996; 61 FR 24464, May 15, 1996]

Subpart B—Marine Casualties and Voyage Records

§ 122.202 Notice of marine casualty.

(a) Immediately after addressing resultant safety concerns, the owner, agent, master, or person in charge of a vessel involved in a marine casualty shall notify the nearest Marine Safety Office, Marine Inspection Office, or Coast Guard Group Office whenever a vessel is involved in a marine casualty consisting of:

(1) An unintended grounding, or an unintended strike of (allision with) a bridge:

(2) An intended grounding, or an intended strike of a bridge, that creates a hazard to navigation, the environment, or the safety of a vessel, or that meets any criterion of paragraphs (a)(3) through (a)(7) of this section;

(3) Loss of main propulsion or primary steering, or any associated component or control system, that reduces the maneuverability of the vessel;

(4) An occurrence materially and adversely affecting the vessel's seaworthiness or fitness for service or route, including but not limited to fire, flooding, failure of or damage to fixed fire extinguishing systems, lifesaving equipment, auxiliary power generating equipment, or bilge pumping systems;

(5) Loss of life;

(6) Injury that requires professional medical treatment (treatment beyond first aid) and, if the person is engaged or employed on board a vessel in commercial service, which renders the individual unfit to perform his or her routine duties; or

(7) An occurrence not meeting any of the above criteria but causing property damage in excess of $25,000. This damage includes the cost of labor and material to restore the property to its condition before the occurrence, but does not include the cost of salvage, cleaning, gas freeing, drydocking, or demurrage.

(b) A vessel is excluded from the requirements of paragraphs (a)(5) and (a)(6) of this section with respect to the death or injury of shipyard or harbor workers when such accidents are not the result of either a vessel casualty (e.g., collision) or a vessel equipment casualty (e.g., cargo boom failure) and are subject to the reporting requirements of the Occupational Safety and Health Administration (OSHA) in 29 Code of Federal Regulations (CFR) part 1904.

(c) Notice given as required by §122.203 satisfies the requirement of this section if the marine casualty involves a hazardous condition.

§122.203 Notice of hazardous conditions.

Whenever there is a hazardous condition, as defined by §114.400 of this chapter, on board the vessel, the owner, master, agent, or person in charge shall immediately notify the Captain of the Port of the port or place of destination and the Captain of the Port of the port or place in which the vessel is located of the hazardous condition.

§122.206 Written report of marine casualty.

(a) The owner, master, agent, or person in charge shall, within five days, file a written report of any marine casualty. This written report is in addition to the immediate notice required by §122.202. This written report must be delivered to a Coast Guard Marine Safety Office, or Marine Inspection Office. It must be provided on Form CG–2692 (Report of Marine Accident, Injury, or Death), Supplemented as necessary by appended Forms CG–2692A (Barge Addendum) and CG–2692B (Report of Required Chemical Drug and Alcohol Testing Following a Serious Marine Incident).

(b) If filed without delay after the occurrence of the marine casualty, the notice required by paragraph (a) of this section suffices as the notice required by §122.202.

§122.208 Accidents to machinery.

The owner, managing operator, or master shall report damage to a boiler, unfired pressure vessel, or machinery that renders further use of the item unsafe until repairs are made, to the OCMI at the port in which the casualty occurred or nearest the port of first arrival, as soon as practicable after the damage occurs.

§122.210 Alcohol or drug use by individuals directly involved in casualties.

(a) For each marine casualty required to be reported by §122.202, the owner, agent, master, or person in charge of the vessel shall determine whether there is any evidence of alcohol or drug use by individuals directly involved in the casualty.

(b) The owner, agent, master, or person in charge of the vessel shall include in the written report (Form CG–2692), submitted for the casualty information which:

(1) Identifies those individuals for whom evidence of drug or alcohol use, or evidence of intoxication, has been obtained; and

(2) Specifies the method used to obtain such evidence, such as personal observation of the individual, or by chemical testing of the individual.

(c) An entry must be made in the Official Logbook, if carried, pertaining to those individuals for whom evidence of intoxication is obtained. The individual must be informed of this entry and the entry must be witnessed by a second person.

(d) If an individual directly involved in a casualty refuses to submit to, or cooperate in, the administration of a timely chemical test, when directed by a Coast Guard commissioned, warrant, or petty officer, or any other law enforcement officer authorized to obtain a chemical test under Federal, State, or local law, or by the owner, agent, master, or person in charge, this fact must be noted in the official Logbook, if carried, and in the written report (Form CG 2692), and will be admissible

as evidence in any administrative proceeding.

§ 122.212 Mandatory chemical testing following serious marine incidents.

A marine employer whose vessel is involved in a casualty or incident that is, or is likely to become, a serious marine incident as defined in §4.03–2 in subchapter A of this chapter shall comply with the requirements of §4.06 in subchapter A of this chapter.

§ 122.220 Records of a voyage resulting in a marine casualty.

The owner, agent, master, or person in charge of any vessel involved in a marine casualty for which a report is required under §122.202 shall retain all voyage records maintained by the vessel, including rough and smooth deck and engine room logs, bell books, navigation charts, navigation work books, compass deviation cards, gyrocompass records, stowage plans, records of draft, aids to mariners, night order books, radiograms sent and received, radio logs, crew and passenger lists and counts, articles of shipment, official logs, and other material that might be of assistance in investigating and determining the cause of the casualty. The owner, agent, master, other officer, or person responsible for the custody thereof, shall make these records available upon request, to a duly authorized investigating officer, administrative law judge, officer or employee of the Coast Guard.

§ 122.230 Report of accident to aid to navigation.

Whenever a vessel collides with a buoy, or other aid to navigation under the jurisdiction of the Coast Guard, or is connected with any such collision, the person in charge of such vessel shall report the accident to the nearest OCMI. No report on Form CG 2692 is required unless otherwise required under §122.202 of this part.

§ 122.260 Reports of potential vessel casualty.

(a) An owner, charterer, managing operator, or agent of a vessel shall immediately notify either of the following Coast Guard offices if there is reason to believe the vessel is lost or imperiled:

(1) The Coast Guard district rescue coordination center (RCC) cognizant over the area in which the vessel was last operating; or

(2) The Coast Guard search and rescue authority nearest to where the vessel was last operating.

(b) Reasons for belief that a vessel is in distress include, but are not limited to, lack of communication with or nonappearance of the vessel.

(c) The owner, charterer, managing operator, or agent notifying the Coast Guard under paragraph (a) of this section, shall provide the name and identification number of the vessel, a description of the vessel, the names or number of individuals on board, and other information that may be requested by the Coast Guard.

§ 122.280 Official logbook for foreign voyages.

(a) Every vessel on a voyage from a port in the United States to a foreign port except to a port in Canada, or vice versa, must have an Official Logbook.

(b) The master shall make or have made in the Official Logbook the following entries:

(1) Each legal conviction of a seaman of the vessel and the punishment inflicted;

(2) Each offense committed by a seaman of the vessel for which it is intended to prosecute or to enforce under a forfeiture, together with statements about reading the entry and the reply made to the charge as required by 46 U.S.C. 11502;

(3) A statement of the conduct, character, and qualifications of each seaman of the vessel or a statement that the master declines to give an opinion about that conduct, character, and qualifications;

(4) Each illness of or injury to a seaman of the vessel, the nature of the illness or injury, and the medical treatment;

(5) Each death on board, with the cause of death, and if a seaman, the following information required by 46 U.S.C. 10702:

(i) The wages due to a seaman who dies during the voyage and the gross

amount of all deductions to be made from the wages; and

(ii) The sale of the property of a seaman who dies during the voyage, including a statement of each article sold and the amount received for the property.

(6) Each birth on board, with the sex of the infant and name of the parents;

(7) Each marriage on board, with the names and ages of the parties;

(8) The name of each seaman who ceases to be a crew member (except by death), with the place, time, manner, and the cause why the seaman ceased to be a crew member; and

(9) When a marine casualty occurs, a statement about the casualty and the circumstances under which it occurred, made immediately after the casualty when practicable to do so.

§ 122.282 Logbook for vessels of more than 19.8 meters (65 feet) in length with overnight accommodations for more than 49 passengers.

Except for a vessel required to have an Official Logbook by §122.280, the owner, managing operator, or master of a vessel of more than 19.8 meters (65 feet) in length with overnight accommodations for more than 49 passengers shall maintain logs or records in any form, which will be considered to take the place of the Official Logbook and may be used for the purpose of making entries therein as required by law or regulations in this subchapter. Such logs or records shall be kept available for review by a marine inspector for a period of one year after the date to which the records refer.

Subpart C—Miscellaneous Operating Requirements

§ 122.304 Navigation underway.

(a) The movement of a vessel shall be under the direction and control of the master or a licensed mate at all times. The master shall operate the vessel keeping the safety of the passengers and crew foremost in mind by directing the vessel in order to prevent a casualty. Special attention should be paid to:

(1) The current(s) velocity and direction of the transmitting area;

(2) Tidal state;

(3) Prevailing visability and weather conditions;

(4) Density of marine traffic;

(5) Potential damage caused by own wake;

(6) The danger of each closing visual or radar contact;

(7) Vessels's handling characteristics; and

(8) Magnetic variation and deviation errors of the compass.

(b) [Reserved]

[CGD 85–080, 61 FR 935, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§ 122.306 Passengers excluded from operating station.

When practicable the master shall exclude passengers from the operating station of a vessel when the passengers could distract the navigating crew from their responsibilities, or when otherwise directed by the cognizant OCMI.

§ 122.315 Verification of vessel compliance with applicable stability requirements.

After loading and prior to departure, and at all other times necessary to assure the safety of the vessel, the master shall determine that the vessel complies with all applicable stability requirements in the vessel's trim and stability book, stability letter, Certificate of Inspection, and Load Line Certificate, as the case may be. The vessel may not depart until it is in compliance with these requirements.

§ 122.320 Steering gear, controls, and communication system tests.

The master of a vessel shall have examined and tested the steering gear, signaling whistle, propulsion controls, and communication systems of the vessel prior to getting underway for a voyage, except that such examination and testing need not be conducted more than once in any 24 hour period.

§ 122.330 Hatches and other openings.

(a) Except when operating on lakes, bays, and sounds, or river routes in calm weather, all hatches and openings in the hull, except loading doors, of a vessel must be kept tightly closed except when being used.

(b) All watertight doors in subdivision bulkheads must be kept tightly closed during the navigation of the vessel except when being used for transit between compartments.

§ 122.335 Loading doors.

(a) Except as allowed by paragraph (b) of this section, the master of a vessel fitted with loading doors shall assure that all loading doors are closed and secured during the entire voyage.

(b) Loading doors, other than bow visors, may be opened when operating in protected or partially protected waters, provided the master of the vessel determines that the safety of the vessel is not impaired.

(c) For the purpose of this section, ''loading doors'' include all weathertight ramps, bow visors, and openings used to load personnel, equipment, and stores, in the collision bulkhead, the side shell, and the boundaries of enclosed superstructures that are continuous with the shell of the vessel.

[CGD 85–080, 61 FR 935, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§ 122.340 Vessels carrying vehicles.

(a) Automobiles or other vehicles must be stowed in such a manner as to permit both passengers and crew to get out and away from the vehicles freely in the event of fire or other disaster. The decks, where necessary, must be distinctly marked with painted lines to indicate the vehicle runways and the aisle spaces.

(b) The master shall take any necessary precautions to see that automobiles or other vehicles have their motors turned off and their emergency brakes set when the vessel is underway, and that the motors are not started until the vessel is secured to the landing. In addition, a vehicle at each end of a line of vehicles or next to a loading ramp must have its wheels securely blocked, while the vessel is being navigated.

(c) The master shall have appropriate ''NO SMOKING'' signs posted and shall take all necessary precautions to prevent smoking or carrying of lighted or smoldering pipes, cigars, cigarettes, or similar items in the deck area assigned to automobiles or other vehicles.

(d) The master shall, prior to getting underway, ensure that vehicles are properly distributed consistent with the guidance in the vessel's stability letter and Certificate of Inspection, if applicable.

§ 122.356 Carriage of hazardous materials.

A vessel that transports a hazardous material, listed in 49 CFR 172.101, in commerce shall ensure the material is handled and transported in accordance with 49 CFR Parts 171 through 176.

[CGD 85–080, 61 FR 935, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§ 122.360 Use of auto pilot.

Whenever an automatic pilot is used the master shall ensure that:

(a) It is possible to immediately establish manual control of the vessel's steering;

(b) A competent person is ready at all times to take over steering control; and

(c) The changeover from automatic to manual steering and vice versa is made by, or under the supervision of, the master or the mate on watch.

Subpart D—Crew Requirements

§ 122.402 Licenses.

Each licensed individual employed upon any vessel subject to the provisions of this subchapter shall have his or her license on board and available for examination at all times when the vessel is operating.

§ 122.410 Watchmen.

The owner, charterer, master, or managing operator of a vessel carrying overnight passengers shall have a suitable number of watchmen patrol throughout the vessel during the nighttime, whether or not the vessel is underway, to guard against, and give alarm in case of, a fire, a man overboard, or other dangerous situation.

[CGD 85–080, 61 FR 935, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§ 122.420 Crew training.

(a) The owner, charterer, master, or managing operator shall instruct each

crew member, upon first being employed and prior to getting underway for the first time on a particular vessel and at least once every three months, as to the duties that the crew member is expected to perform in an emergency including, but not limited to, the emergency instructions listed on the emergency instruction placard required by §122.510, when applicable, the duties listed in the station bill required by §122.514.

(b) Training conducted on a sister vessel may be considered equivalent to the initial and quarterly training requirements contained in paragraph (a) of this section.

(c) Crew training shall be logged or otherwise documented for review by the Coast Guard upon request. The training entry shall include the following information:

(1) Date of the training; and

(2) General description of the training topics.

[CGD 85–080, 61 FR 935, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

Subpart E—Preparations for Emergencies

§122.502 Crew and passenger list.

(a) The owner, charterer, managing operator, or master of the following vessels must keep a correct list of the names of all persons that embark on and disembark from the vessel:

(1) A vessel making a coastwise or oceans voyage where:

(i) Passengers embark or disembark from the vessel to another vessel or port other than at the port of origin; or

(ii) Passengers are carried overnight;

(2) A vessel making a voyage of more than 300 miles on the Great Lakes, except from a Canadian to a United States port; and

(3) A vessel arriving from a foreign port, except at a United States Great Lakes port from a Canadian Great Lakes port.

(b) The master of a vessel required to prepare a crew and passenger list by paragraph (a) of this section shall see that the list is prepared prior to departing on a voyage. The list must be communicated verbally or in writing ashore at the vessel's normal berthing location or with a representative of the owner or managing operator of the vessel. The crew and passenger list shall be available to the Coast Guard upon request.

§122.503 Voyage plan.

(a) The master of the following vessels shall prepare a voyage plan:

(1) A vessel making an oceans or coastwise voyage;

(2) A vessel making a voyage of more than 300 miles on the Great Lakes, except from a Canadian to a United States port;

(3) A vessel, with overnight accommodations for passengers, making an overnight voyage; and

(4) A vessel arriving from a foreign port, except at a United States Great Lakes port from a Canadian Great Lakes port.

(b) The voyage plan required by paragraph (a) of this section must be prepared prior to departing on a voyage and communicated verbally or in writing, ashore at the vessel's normal berthing location or with a representative of the owner or managing operator of the vessel. The voyage plan shall be available to the Coast Guard upon request.

§122.504 Passenger count.

The master of a vessel, except a vessel listed in §122.502(a), shall keep a correct, written count of all passengers that embark on and disembark from the vessel. Prior to departing on a voyage, the passenger count must be communicated verbally or in writing, and available ashore at the vessel's normal berthing location or with a representative of the owner or managing operator of the vessel. The passenger count shall be available to the Coast Guard upon request.

§122.506 Passenger safety orientation.

(a) Except as allowed by paragraphs (b) and (c) of this section, before getting underway on a voyage or as soon as practicable thereafter, the master of a vessel shall ensure that suitable public announcements are made informing all passengers of—

(1) The location of emergency exits, survival craft embarkation areas, and ring life buoys;

(2) The stowage location(s) of life jackets;

(3) Either:

(i) The proper method of donning and adjusting life jackets of the type(s) carried on the vessel including a demonstration of the proper donning of a lifejacket, or

(ii) That passengers may contact a crew member for a demonstration, as appropriate, prior to beginning an oceans or coastwise voyage;

(4) The location of the instruction placards for life jackets and other lifesaving devices;

(5) That all passengers will be required to don life jackets when possible hazardous conditions exist, as directed by the master; and

(6) If the vessel is operating with reduced manning or equipment requirements in §115.114 of this chapter.

(b) As an alternative to an announcement that complies with paragraph (a) of this section, the master or other designated person may—

(1) Prior to getting underway, deliver to each passenger, or on a vessel that does not carry vehicles and that has seats for each passenger, place near each seat, a card or pamphlet that has the information listed in paragraphs (a)(1) through (a)(6) of this section; and

(2) Make an abbreviated announcement consisting of:

(i) A statement that passengers should follow the instructions of the crew in an emergency;

(ii) The location of life jackets; and

(iii) That further information concerning emergency procedures including the donning of life jackets, location of other emergency equipment, and emergency evacuation procedures are located on the card or pamphlet that was given to each passenger or is located near each seat.

(c) Ferries operating on short runs of less than 15 minutes may substitute bulkhead placards or signs for the announcement required in paragraphs (a) and (b) of this section if the OCMI determines that the announcements are not practical due to the vessel's unique operation.

(d) The master of a vessel shall ensure that a passenger, who boards the vessel on a voyage after the initial public announcement has been made as required by paragraphs (a) or (b) of this section, is also informed of the required safety information.

(e) On a vessel on a voyage of more than 24 hours duration, passengers shall be requested to don life jackets and go to the appropriate embarkation station during the safety orientation. If only a small number of passengers embark at a port after the original muster has been held, these passengers must be given the passenger safety orientation required by paragraphs (a) or (b) of this section if another muster is not held.

[CGD 85–080, 61 FR 935, Jan. 10, 1996, as amended at 62 FR 51352, Sept. 30, 1997]

§ 122.508 Wearing of life jackets.

(a) The master of a vessel shall require passengers to don life jackets when possible hazardous conditions exist, including, but not limited to:

(1) When transiting hazardous bars and inlets;

(2) During severe weather;

(3) In event of flooding, fire, or other events that may possibly call for evacuation; and

(4) When the vessel is being towed, except a non-self-propelled vessel under normal operating conditions.

(b) The master or crew shall assist passengers in obtaining a life jacket and donning it, as necessary.

§ 122.510 Emergency instructions.

(a) The master and crew of a vessel will be familiar with the content of and have mounted at the operating station, emergency instructions containing the actions to be taken in the event of fire, flooding, heavy weather, or man overboard conditions.

(b) Except when in the judgment of the cognizant OCMI the operation of a vessel does not present one of the hazards listed, the emergency instruction placard should contain at least the applicable portions of the ''Emergency Instructions'' listed in §122.512. The emergency instructions must be designed to address the particular equipment, arrangement, and operation of each individual vessel.

(c) If the cognizant OCMI determines that there is no suitable mounting surface aboard the vessel, the emergency instructions need not be posted but

must be carried aboard the vessel and be available to the crew for familiarization.

§ 122.512 Recommended emergency instructions format.

An Emergency instruction placard containing the following information will satisfy the requirements of § 122.510 of this part.

(a) *Emergency instructions*—(1) *Rough weather at sea, crossing hazardous bars, or flooding.* (i) Close all watertight and weathertight doors, hatches, and airports to prevent taking water aboard or further flooding in the vessel.

(ii) Keep bilges dry to prevent loss of stability due to water in bilges. Use power driven bilge pump, hand pump, and buckets to dewater.

(iii) Align fire pumps to use as bilge pump if possible.

(iv) Check all intake and discharge lines, which penetrate the hull, for leakage.

(v) Passengers must remain seated and evenly distributed.

(vi) Passengers must don life jackets if the going becomes very rough, vessel is about to cross a hazardous bar, or when otherwise instructed by the master.

(vii) Never abandon the vessel unless actually forced to do so.

(viii) If assistance is needed follow the procedures on the emergency broadcast placard posted by the radiotelephone.

(ix) Prepare survival craft (life floats, (inflatable) rafts, (inflatable) buoyant apparatus, boats) for launching.

(2) *Man overboard.* (i) Throw a ring buoy overboard as close to the person as possible.

(ii) Post a lookout to keep the person overboard in sight.

(iii) Launch rescue boat and maneuver to pick up person in the water, or maneuver the vessel to pick up the person in the water.

(iv) Have crew member put on life jacket, attach a safety line to him or her, and have him or her stand by to jump into the water to assist the person if necessary.

(v) If person is not immediately located, notify Coast Guard and other vessels in vicinity by radiotelephone.

(vi) Continue search until released by Coast Guard.

(3) *Fire.* (i) Cut off air supply to fire—close openings such as hatches, ports, doors, ventilators, and louvers, and shut off ventilation system.

(ii) Cut off electrical system supplying affected compartment if possible.

(iii) If safe, immediately use portable fire extinguishers at base of flames for flammable liquid or grease fires or water for fires in ordinary combustible materials. Do not use water on electrical fires.

(iv) If fire is in machinery spaces, shut off fuel supply and ventilation and activate fixed extinguishing system if installed.

(v) Maneuver vessel to minimize effect of wind on fire.

(vi) If unable to control fire, immediately notify the Coast Guard and other craft in the vicinity by radiotelephone.

(vii) Move passengers away from fire, have them put on life jackets, and if necessary, prepare to abandon the vessel.

(b) [Reserved]

§ 122.514 Station bill.

(a) A station bill must be posted by the master on a vessel of more than 19.8 meters (65 feet) in length having:

(1) Overnight accommodations for more than 49 passengers; or

(2) A Certificate of Inspection requiring more than four crew members at any one time, including the master.

(b) A vessel of more than 19.8 meters (65 feet) in length with overnight accommodations for more than 49 passengers must comply with the requirements of § 78.13 in subchapter H of this chapter in regards to the content of a station bill, the duties of the crew, emergency signals, an emergency squad, and instructions.

(c) Except when paragraph (b) of this section is applicable, the station bill of a vessel of more than 19.8 meters (65 feet) in length required to have more than four crew members, must set forth the special duties and duty station of each crew member for various emergencies. The duties must, as far as possible, be comparable with the regular work of the individual. The duties

must include at least the following and any other duties necessary for the proper handling of a particular emergency.

(1) The closing of hatches, airports, watertight doors, vents, scuppers, and valves for intake and discharge lines that penetrate the hull, the stopping of fans and ventilating systems, and the operating of all safety equipment;

(2) The preparing and launching of survival craft and rescue boats;

(3) The extinguishing of fire; and

(4) The mustering of passengers including the following:

(i) Warning the passengers;

(ii) Assembling the passengers and directing them to their appointed stations; and

(iii) Keeping order in the passageways and stairways and generally controlling the movement of the passengers.

(d) The station bill must be posted at the operating station and a conspicuous location in each crew accommodation space.

§ 122.515 Passenger safety bill.

(a) A passenger safety bill must be posted by the master in each passenger cabin or stateroom on a vessel of more than 19.8 meters (65 feet) in length with overnight accommodations for more than 49 passengers.

(b) Each passenger safety bill required by this section must list:

(1) The embarkation station and the number and location of the survival craft to which each occupant of the space is assigned;

(2) The fire and emergency signal and the abandon ship signal;

(3) Essential action that must be taken in an emergency; and

(4) If immersion suits are provided for passengers, the location of the suits and illustrated instructions on the method of donning the suits.

§ 122.516 Life jacket placards.

(a) Placards containing instructions for the donning and use of the life jackets aboard the vessel must be posted in conspicuous places that are regularly accessible and visible to the crew and passengers.

(b) Life jacket placards must be posted in each passenger cabin or stateroom on a vessel of more than 19.8 meters (65 feet) in length with overnight accommodations for more than 49 passengers.

(c) If the cognizant OCMI determines that there is no suitable mounting surface aboard the vessel, the life jacket placards need not be posted but must be carried aboard the vessel and be available to the crew and passengers for familiarization.

§ 122.518 Inflatable survival craft placards.

(a) Every vessel equipped with an inflatable survival craft must have approved placards or other cards containing instructions for launching and inflating inflatable survival craft for the information of persons on board posted in conspicuous places by each inflatable survival craft.

(b) Under the requirement in § 160.051–6(c)(1) in subchapter Q of this chapter, the manufacturer of approved inflatable liferafts is required to provide approved placards containing such instructions with each liferaft. Similar placards must be used for other inflatable survival craft.

[CGD 85–080, 61 FR 935, Jan. 10, 1996, as amended at 62 FR 51353, Sept. 30, 1997]

§ 122.520 Abandon ship and man overboard drills and training.

(a) The master shall conduct sufficient drills and give sufficient instructions to make sure that all crew members are familiar with their duties during emergencies that necessitate abandoning ship or the recovery of persons who have fallen overboard.

(b) An abandon ship drill must be conducted as follows:

(1) Each member of the crew shall participate in at least one abandon ship drill each month; and

(2) If more than 25% of the crew have not participated in an abandon ship drill on board that particular vessel or sister vessel in the previous month, a drill must be conducted before the vessel gets underway with passengers aboard.

(c) Each abandon ship drill must include:

(1) Summoning the crew to report to assigned stations and prepare for assigned duties;

(2) Summoning passengers on a vessel on an overnight voyage to areas of refuge or embarkation stations and ensuring that they are made aware of how the order to abandon ship will be given;

(3) Checking that life jackets are correctly donned;

(4) Operation of any davits used for launching liferafts; and

(5) Instruction on the automatic and manual deployment of survival craft.

(d) Each abandon ship drill must, as far as practicable, be conducted as if there were an actual emergency.

(e) Each rescue boat required in accordance with §117.210 of this subchapter must be launched with its assigned crew aboard and maneuvered in the water as if during the actual man overboard situation;

(1) Once each month, if reasonable and practicable; but

(2) At least once within a 3 month period before the vessel gets underway with passengers.

(f) Onboard training in the use of davit launched liferafts must take place at intervals of not more than 3 months on a vessel with a davit launched liferaft.

(g) Abandon ship and man overboard drills and training shall be logged or otherwise documented for review by the Coast Guard upon request. The drill entry shall include the following information:

(1) Date of the drill and training; and

(2) General discription of the drill scenario and training topics.

[CGD 85–080, 61 FR 935, Jan. 10, 1996, as amended at 62 FR 51353, Sept. 30, 1997]

§ 122.524 Fire fighting drills and training.

(a) The master shall conduct sufficient fire drills to make sure that each crew member is familiar with his or her duties in case of a fire.

(b) A fire drill must be conducted at least once each month.

(c) Each fire drill must include:

(1) Summoning passengers on a vessel on an overnight voyage to areas of refuge or embarkation stations;

(2) Summoning the crew to report to assigned stations and to prepare for and demonstrate assigned duties; and

(3) Instructions in the use and location of fire alarms, extinguishers, and any other fire fighting equipment on board.

(d) Each fire drill must, as far as practicable, be conducted as if there were an actual emergency.

(e) Fire fighting drills and training shall be logged or otherwise documented for review by the Coast Guard upon request. The drill entry shall include the following information:

(1) Date of the drill and training; and

(2) General discription of the drill scenario and training topics.

[CGD 85–080, 61 FR 935, Jan. 10, 1996, as amended at 62 FR 51353, Sept. 30, 1997]

§ 122.530 Responsibilities of licensed individuals.

Nothing in the emergency instructions or a station bill required by this subpart exempts any licensed individual from the exercise of good judgment in an emergency situation.

Subpart F—Markings Required

§ 122.602 Hull markings.

(a) Each vessel must be marked as required by part 67, subpart I, of this chapter.

(b) Paragraphs (c) through (g) of this section apply to each vessel that fits into any one of the following categories:

(1) A vessel of more than 19.8 meters (65 feet) in length.

(2) A vessel authorized to carry more than 12 passengers on an international voyage.

(3) A vessel with more than one deck above the bulkhead deck exclusive of a pilot house.

(c) Each vessel that complies with the stability requirements of §§170.170, 170.173, 171.050, 171.055, and 171.057 of this chapter or with §178.310 of this chapter must—

(1) Have permanent draft marks at each end of the vessel; or

(2) Have permanent loading marks placed on each side of the vessel forward and aft to indicate the maximum allowable trim and amidships to indicate the maximum allowable draft.

(d) A loading mark required by paragraph (c)(2) of this section must be a horizontal line of at least 205 millimeters (8 inches) in length and 25 millimeters (1 inch) in height, with its upper

edge passing through the point of maximum draft. The loading mark must be painted in a contrasting color to the sideshell paint.

(e) On a vessel that has a load line, the amidships marks required by paragraph (c)(2) of this section must be those required by the International Convention on Load Lines, 1966.

(f) In cases where draft marks are obscured due to operational constraints or by protrusions, the vessel must be fitted with a reliable draft indicating system from which the bow and stern drafts can be determined.

(g) On a vessel on which the number of passengers permitted on upper decks is limited by stability criteria, as indicated by the vessel's stability letter, the maximum number of passengers allowed on an upper deck must be indicated by a durable marking of at least 25 millimeters (1 inch) numbers and letters at the entranceway to that deck.

[CGD 85–080, 62 FR 51353, Sept. 30, 1997]

§ 122.604 Lifesaving equipment markings.

(a) The name of a vessel must be marked or painted in clearly legible letters and numbers:

(1) On each side of the bow of each rescue boat; and

(2) On each life float and buoyant apparatus.

(b) Each life jacket, immersion suit, and ring life buoy must be marked in clearly legible block capital letters with the vessel's name. The marking is not required on a life jacket carried to meet a temporary need for additional life jackets, if the life jacket has the name of another vessel or company marked on it. For an immersion suit, the name of the person to whom the immersion suit is assigned is an acceptable alternative to the name of the vessel.

(c) The name of the vessel must be marked or painted in clearly legible letters on each Emergency Position Indicating Radiobeacon (EPIRB), except on an EPIRB in an inflatable liferaft.

(d) The number of persons capacity must be marked or painted in clearly legible letters and numbers on each side of the bow of each rescue boat.

(e) The number of persons capacity must be marked or painted in clearly legible letters and numbers on each life float and buoyant apparatus. This number must:

(1) Be the number of persons the device is equipped for; and

(2) Not be greater than the number of persons the device is approved for as shown on the nameplate.

(f) The number and identification of the items stowed inside, and their sizes, must be marked in clearly legible letters and numbers on each container for life jackets and immersion suits. Identification of the items may be in words, or the appropriate symbols in International Maritime Organization (IMO) Resolution A.760(18), ''Symbols Related to Life-Saving Appliances and Arrangements.'' Letters and numbers must be at least 50 millimeters (2 inches) high. Symbols must be at least 100 millimeters (4 inches) square.

(g) The name of the vessel must be marked or painted in clearly legible letters on each life float paddle.

(h) Each life jacket must be marked with Type I retroreflective material approved in accordance with § 164.018 in subchapter Q of this chapter, or other standard specified by the Commandant. The arrangement of the retroreflective material applied after March 11, 1996 must be as specified by IMO Resolution A.658(16), ''Use and Fitting of Retro-Reflective Materials on Life-Saving Appliances.''

(i) Each rescue boat and ring life buoy must be marked with Type II retroreflective material approved in accordance with § 164.018 in subchapter Q of this chapter, or other standard specified by the Commandant. The arrangement of the retroreflective material applied after March 11, 1996, must be as specified by IMO Resolution A.658(16).

[CGD 85–080, 61 FR 935, Jan. 10, 1996; 61 FR 20556, May 7, 1996, as amended at 62 FR 51353, Sept. 30, 1997; 62 FR 64306, Dec. 5, 1997]

§ 122.606 Escape hatches and emergency exits.

All escape hatches and other emergency exits used as means of escape must be marked on both sides in clearly legible letters at least 50 millimeters (2 inches) high: ''EMERGENCY

EXIT, KEEP CLEAR'', unless such markings are deemed unnecessary by the cognizant OCMI.

§ 122.608 Fuel shutoff valves.

Remote fuel shutoff stations must be marked in clearly legible letters at least 25 millimeters (1 inch) high indicating purpose of the valve and direction of operations.

§ 122.610 Watertight doors and watertight hatches.

Watertight doors and watertight hatches must be marked on both sides in clearly legible letters at least 25 millimeters (1 inch) high: ''WATERTIGHT DOOR—KEEP CLOSED'' or ''WATERTIGHT HATCH—KEEP CLOSED'', unless such markings are deemed unnecessary by the cognizant OCMI.

[CGD 85–080, 61 FR 935, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997]

§ 122.612 Fire protection equipment.

(a) Complete but simple instructions for the operation of a fixed gas fire extinguishing system must be located in a conspicuous place at or near each pull box and stop valve control and in the space where the extinguishing agent cylinders are stored. If the storage cylinders are separate from the protected space, the instructions must also include a schematic diagram of the system and instructions detailing alternate methods of releasing the extinguishing agent should the local manual release or stop valve controls fail to operate. Each control valve to a distribution line must be marked to indicate the space served.

(b) An alarm for a fixed gas fire extinguishing system must be clearly and conspicuously marked ''WHEN ALARM SOUNDS–VACATE AT ONCE. CARBON DIOXIDE BEING RELEASED.'' Where a different extinguishing agent is installed, that agent shall be marked in place of ''carbon dioxide.''

(c) Each distribution line valve of a fixed gas fire extinguishing system and the fire main, must be plainly, conspicuously, and permanently marked indicating the space served.

(d) A manual fire alarm box must be conspicuously marked in clearly legible letters ''IN CASE OF FIRE BREAK GLASS''.

(e) An alarm for an automatic fire detecting system or a manual alarm system must be conspicuously marked in clearly legible letters ''FIRE ALARM''.

(f) An alarm for an automatic sprinkler system must be conspicously marked in clearly legible letters ''SPRINKLER ALARM''.

(g) An alarm bell for a smoke detecting system must be conspicuously marked in clearly legible letters ''SMOKE DETECTION ALARM''.

(h) A control cabinet or space containing valves, manifolds, or controls for any fixed gas fire extinguishing system must be conspicuously marked in clearly legible letters ''CARBON DIOXIDE FIRE EXTINGUISHING APPARATUS'', or as otherwise required by the cognizant OCMI. Where a different extinguishing agent is installed, that agent shall be marked in place of ''carbon dioxide.''

[CGD 85–080, 61 FR 935, Jan. 10, 1996, as amended at 62 FR 51353, Sept. 30, 1997]

§ 122.614 Portable watertight containers for distress flares and smoke signals.

Portable watertight containers for distress flares and smoke signals shall be of a bright color, and containers shall be clearly marked in legible contrasting letters at least 12.7 millimeters (0.5 inches) high: ''DISTRESS SIGNALS''.

Subpart G—Operational Readiness, Maintenance, and Inspection of Lifesaving Equipment

§ 122.700 Operational readiness.

(a) Each launching appliance and each survival craft and rescue boat on a vessel must be in good working order and ready for immediately use before the vessel leaves port and at all times when the vessel is underway.

(b) Each deck where survival craft or rescue boats are stowed or boarded must be kept clear of obstructions that would interfere with the boarding and launching of the survival craft or rescue boat.

§ 122.702 Maintenance.

(a) The manufacturer's instructions for onboard maintenance of survival craft, rescue boats, and launching appliances, manufactured on or after March 11, 1996, must be onboard a vessel of more than 19.8 meters (65 feet) in length and readily available for a vessel of not more than 19.8 meters (65 feet) in length. The instructions must also be readily available at each inspection for certification and reinspection.

(b) The owner or managing operator shall ensure that maintenance is carried out in accordance with the instructions required under paragraph (a) of this section.

(c) The cognizant OCMI may accept, instead of the instructions required under paragraph (a) of this section, a shipboard planned maintenance program that includes the items listed in that paragraph.

(d) The inspection and maintenance of the equipment listed in paragraph (a) of this section shall be logged or otherwise documented for review by the Coast Guard upon request.

[CGD 85–080, 61 FR 935, Jan. 10, 1996; 61 FR 20556, May 7, 1996]

§ 122.704 Maintenance of falls.

(a) Each fall used in a launching appliance on a vessel must be turned end for end at intervals of not more than 30 months.

(b) Each fall must be renewed when necessary due to deterioration or at internals of not more than 5 years, whichever is earlier.

(c) Each fall must have a corrosion resistant tag with the following permanently marked on it in clearly legible letters:

(1) The date the new fall was installed; and

(2) If the fall has been turned end for end, the date it was turned.

[CGD 85–080, 61 FR 935, Jan. 10, 1996; 61 FR 20556, May 7, 1996]

§ 122.720 Weekly maintenance and inspections.

The following tests and inspections must be carried out weekly on a vessel:

(a) Each survival craft, rescue boat, and launching appliance must be visually inspected to ensure its readiness for use;

(b) Each rescue boat engine must be run ahead and astern for not less than 3 minutes, unless the ambient temperature is below the minimum temperature required for starting the engine; and

(c) Each battery for rescue boat engine starting must be brought up to full charge at least once each week if:

(1) The battery is of a type that requires recharging; and

(2) The battery is not connected to a device that keeps it continuously charged.

§ 122.722 Monthly inspections.

Each survival craft, rescue boat, and launching appliance on a vessel must be inspected monthly, using the manufacturer's instructions, to make sure it is complete and in good order.

§ 122.724 Quarterly inspections.

(a) Each winch control apparatus of a launching appliance on a vessel, including motor controllers, emergency switches, master switches, and limit switches, must be examined once in each 3 months.

(b) The examination required by paragraph (a) of this section must include the removal of drain plugs and the opening of drain valves to make sure that enclosures are free of water.

§ 122.726 Annual inspections.

(a) Each rescue boat must be stripped, cleaned, thoroughly inspected, and any necessary repairs made, at least once each year, including emptying and cleaning of each fuel tank, and refilling it with fresh fuel.

(b) Each davit, winch, fall and other launching appliance must be thoroughly inspected, and any necessary repairs made, once each year.

(c) Each item of lifesaving equipment with an expiration date must be replacing during the annual inspection and repair if the expiration date has passed.

(d) Each battery used in an item of lifesaving equipment, except inflatable survival craft equipment, must be replaced during the annual inspection if the expiration date of the battery has passed. The expiration date of the battery may be marked on the battery in

clearly legible letters or the owner or managing operator may have a record of the expiration date from the manufacturer of a battery marked with a serial number.

(e) Except for a storage battery used in a rescue boat, each battery without an expiration date indicated on it or for which the owner or managing operator does not have a record of the expiration date, used in an item of lifesaving equipment, must be replaced during the annual inspection.

§ 122.728 Testing and servicing of Emergency Position Indicating Radiobeacons (EPIRB)

The master of the vessel shall ensure that:

(a) Each EPIRB, other than an EPIRB in an inflable liferaft, must be tested monthly, using the integrated test circuit and output indicator, to determine that it is operative;

(b) The EPIRB's battery is replaced after it is used, or before the date required by FCC regulations in 47 CFR Part 80, whichever comes sooner; and

(c) The EPIRB test required by paragraph (a) shall be logged or otherwise documented, as applicable.

§ 122.730 Servicing of inflatable liferafts, inflatable buoyant apparatus, inflatable life jackets, and inflated rescue boats.

(a) Each inflatable liferaft, inflatable buoyant apparatus, inflatable life jacket, and hybrid inflatable life jacket or work vest must be serviced:

(1) Within 12 months of its initial packing; and

(2) Within 12 months of each subsequent servicing, except when servicing is delayed until the next scheduled inspection of the vessel, provided that the delay does not exceed 5 months.

(b) Each inflatable liferaft and inflatable buoyant apparatus must be serviced:

(1) Whenever the container of the raft is damaged, or the straps or seal are broken; and

(2) At a servicing facility approved by the Commandant to service that particular brand.

(c) Each inflatable life jacket must be serviced in accordance with the servicing procedure under §160.176 in subchapter Q of this chapter, or other standard specified by the Commandant.

(d) Each hybrid inflatable life jacket or work vest must be serviced in accordance with the servicing procedure under § 160.077 in subchapter Q of this chapter, or other standard specified by the Commandant.

(e) Repair and maintenance of inflated rescue boats must be in accordance with the manufacturer's instructions. All repairs must be made at a servicing facility approved by the Commandant, except for emergency repairs carried out on board the vessel.

[CGD 85–080, 61 FR 935, Jan. 10, 1996, as amended at 62 FR 51353, Sept. 30, 1997]

§ 122.740 Periodic servicing of hydrostatic release units.

(a) Each hydrostatic release unit, other than a disposable unit, must be serviced:

(1) Within 12 months of its manufacture and within 12 months of each subsequent servicing, except when servicing is delayed until the next scheduled inspection of the vessel, provided that the delay does not exceed 5 months; and

(2) In accordance with the repair and testing procedure under §160.062 in subchapter Q of this chapter, or other standard specified by the Commandant.

(b) Each disposable hydrostatic release unit must be marked in clearly legible letters with an expiration date of two years after the date on which the unit is installed.

Subpart H—Penalties

§ 122.900 Penalty for violations.

Violation of the provisions of this subchapter will subject the violator to the applicable penalty provisions of Subtitle II of Title 46, United States Code.

[CGD 85–080, 61 FR 935, Jan. 10, 1996; 61 FR 20556, May 7, 1996]

§ 122.910 Suspension and revocation.

An individual holding a license, certificate or registry, or merchant mariner's document who commits an act of misconduct, negligence, or incompetence, or who violates or fails to comply with this subchapter or any

other law or regulation intending to promote marine safety, is subject to proceedings under the provisions of 46 U.S.C. 7703 and part 5 in subchapter A of this chapter with respect to suspension or revocation of a license, certificate, or document.

[CGD 85–080, 61 FR 935, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997]

PARTS 123–124 [RESERVED]

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SUBCHAPTER L—OFFSHORE SUPPLY VESSELS

PART 125—GENERAL

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AUTHORITY: 46 U.S.C. 2103, 3306, 3307; 49 U.S.C. App. 1804; 49 CFR 1.46.

SOURCE: CGD 82–004 and CGD 86–074, 62 FR 49321, Sept. 19, 1997, unless otherwise noted.

§ 125.100 Applicability.

(a) Except as provided by paragraph (c) of this section, this subchapter applies to each offshore supply vessel (OSV) of United States flag contracted for, or the keel of which was laid, on or after March 15, 1996.

(b) Each OSV contracted for, or the keel of which was laid, before March 15, 1996, must be constructed and inspected to comply with—

(1) The regulations in effect until March 15, 1996 (46

CFR subchapter I or subchapter T, as appropriate), as they existed at the time of construction; or

(2) The regulations in this subchapter.

(c) Each OSV permitted grandfathering under paragraph (b)(1) of this section must complete construction and have a Certificate of Inspection by March 16, 1998.

(d) Certain regulations in this subchapter apply only to limited categories of OSVs. Specific statements of applicability appear at the beginnings of those regulations.

(e) As used in this subchapter, the term ''vessels contracted for'' refers not only to the contracting for the construction of a vessel, but also to the contracting for a major alteration to a vessel, the contracting for the conversion of a vessel to an offshore supply vessel or liftboat, and the changing of service or route of a vessel if such changing increases or modifies the general requirements for the vessel or increases the hazards to which it might be subjected.

NOTE: Navigation and Vessel Inspection Circular 8–91, ''Initial and Subsequent Inspection of Uncertificated Existing Offshore Supply Vessels, Including Liftboats'', contains guidance on how to apply the regulations in 46 CFR subchapters I and T to OSVs.

§ 125.110 Carriage of flammable or combustible liquid cargoes in bulk.

(a) Except as provided by this section, no OSV may carry flammable or combustible liquid cargoes in bulk without the approval of the Commandant (G–MSE).

(b) An OSV may carry the following in integral tanks:

(1) Grade-D combustible liquids listed by §30.25–1 of this chapter, in quantities not to exceed 20 percent of the vessel's deadweight, except that the vessel may carry drilling fluids and excess fuel oil, Grade-E as well as Grade-D, without limit.

(2) Grade-E combustible liquids listed by §30.25–1 of this chapter, in quantities not to exceed 20 percent of the vessel's deadweight, except that the vessel may carry drilling fluids and excess fuel oil, Grade-D as well as Grade-E, without limit.

(c) An OSV may carry the following in fixed independent tanks on deck: Grade-B and lower-grade flammable and combustible liquids listed by §30.25–1 of this chapter, in quantities not to exceed 20 percent of the vessel's deadweight.

(d) An OSV may carry hazardous materials in portable tanks, in compliance with part 64 and subpart 98.30 of this chapter. A portable tank may be filled or discharged aboard the vessel if authorized by an endorsement on the vessel's Certificate of Inspection.

§ 125.120 Carriage of noxious liquid substances in bulk.

(a) Except as provided by this section, no OSV may carry a noxious liquid substance (NLS) in bulk without

the approval of the Commandant (G–MSO).

(b) An OSV may carry in integral and fixed independent tanks NLSs listed by §153.2 of this chapter, in quantities not to exceed 20 percent of the vessel's deadweight.

(c) Each OSV carrying NLSs in bulk in integral tanks or fixed independent tanks must—

(1) Meet the definition of oceangoing in 33 CFR 151.05;

(2) Have a Certificate of Inspection or NLS Certificate (issued by the Coast Guard) endorsed with the name of the NLS cargo; and

(3) Have the Cargo Record Book prescribed in §153.490(a)(1) of this chapter.

(d) An OSV that does not meet the equipment requirements in §§153.470 through 153.491 of this chapter may not discharge NLS residues to the sea. The vessel's Certificate of Inspection or NLS Certificate will contain this restriction.

(e) Each OSV that discharges NLS residues to the sea must meet—

(1) The equipment requirements in §§153.470 through 153.491 of this chapter; and

(2) The operating requirements in §§153.901, 153.903, 153.909, and 153.1100 of this chapter.

§125.130 Carriage of packaged hazardous materials.

An OSV may carry packaged hazardous materials, or hazardous materials in portable tanks, if the materials are prepared, loaded, and stowed in compliance with 49 CFR parts 171 through 179, as applicable.

§125.140 Loadlines.

For an OSV assigned a loadline, see subchapter E (Load Lines) of this chapter, for special requirements on strength, loadline markings, closure of openings, and the like.

§125.150 Lifesaving systems.

Lifesaving appliances and arrangements must comply with part 133 of this subchapter.

§125.160 Definitions.

Each term defined elsewhere in this chapter for a particular class of vessel applies to this subchapter unless a different definition is given in this section. As used by this subchapter—

Accommodations includes spaces such as at least the following:

(1) A space used as a messroom.

(2) A lounge.

(3) A sitting area.

(4) A recreation room.

(5) Quarters.

(6) A toilet space.

(7) A shower room.

Anniversary date means the day and the month of each year, which corresponds to the date of expiration of the Certificate of Inspection.

Anti-exposure suit means a protective suit designed for use by rescue boat crews and marine evacuation system parties.

Approval series means the first six digits of a number assigned by the Coast Guard to approved equipment. Where approval is based on a subpart of subchapter Q of this chapter, the approval series corresponds to the number of the subpart. A listing of approved equipment, including all of the approval series, is published periodically by the Coast Guard in Equipment Lists (COMDTINST M16714.3 series), available from the Superintendent of Documents.

Approved means approved by the Commandant, unless otherwise defined.

Bulkhead deck means the uppermost deck to which transverse watertight bulkheads and the watertight shell extend.

Coast Guard District Commander or *District Commander* means an officer of the Coast Guard designated by the Commandant to command activities of the Coast Guard within a Coast Guard district described by 33 CFR part 3, whose duties include the inspection, enforcement, and administration of laws for the safety and navigation of vessels. Coastwise refers to a route not more than 20 nautical miles offshore on any of the following waters:

(1) Any ocean.

(2) The Gulf of Mexico.

(3) The Caribbean Sea.

(4) The Gulf of Alaska.

(5) The Bering Sea.

(6) Such other, similar waters as may be designated by the District Commander.

Combustible liquid means the same as in subpart 30.10 of this chapter.

Commandant means the Commandant of the Coast Guard or an authorized staff officer at Coast Guard headquarters designated by §1.01–05 of this chapter.

Commanding Officer, Marine Safety Center, means an officer of the Coast Guard designated by the Commandant to command activities of the Coast Guard within the Marine Safety Center, whose duties include review of plans for commercial vessels to ensure compliance with applicable laws and standards.

Crane means a revolving, gantry-mounted, or other type of fixed lifting device used for lifting or moving equipment or supplies. It does not include material handling equipment used for general ship's service, such as lifeboat davits, chain falls, come-alongs, or the like.

Crew means all persons carried on board the OSV to provide navigation and maintenance of the OSV, its machinery, systems, and arrangements essential for propulsion and safe navigation or to provide services for other persons on board.

Deadweight means, when measured in water of specific gravity 1.025, the difference in long tons between—

(1) The displacement of the vessel on even trim at ''lightweight'' as defined by subpart F of part 170 of this chapter; and

(2) The displacement of the vessel on even trim at the deepest load waterline.

Embarkation ladder means the ladder provided at survival craft embarkation stations to permit safe access to survival craft after launching.

Embarkation station means the place where a survival craft is boarded.

Existing offshore supply vessel is one contracted for, or the keel of which was laid, before March 15, 1996.

Flammable liquid means the same as in §30.10–22 of this chapter.

Float-free launching means that method of launching a survival craft or lifesaving appliance whereby the craft or appliance is automatically released from a sinking vessel and is ready for use.

Gas-free means free from dangerous concentrations of flammable or toxic gases.

Hazardous material means the same as in §153.2 of this chapter.

Immersion suit means a protective suit that reduces loss of body heat of a person wearing it in cold water.

Inflatable appliance means an appliance that depends upon nonrigid, gas-filled chambers for buoyancy and that is normally kept uninflated until ready for use.

Inflated appliance means an appliance that depends upon nonrigid, gas-filled chambers for buoyancy and that is kept inflated and ready for use at all times.

International voyage means a voyage between a country to which the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS 74/83) applies and a port outside that country.

Jacking system means any type of mechanical (including hydraulic) or electrical system used for elevating a liftboat.

Launching appliance or *launching arrangement* means the method or devices for transferring a survival craft or rescue boat from its stowed position to the water. For a launching arrangement using a davit, the term includes the davit, winch, and falls.

Length, relative to a vessel, means the length listed on the vessel's certificate of documentation or the ''registered length'' as defined by §69.53 of this chapter.

Lifejacket means a flotation device approved as a life preserver or lifejacket.

Liftboat means an OSV with movable legs capable of raising its hull above the surface of the sea.

Major conversion means a conversion of a vessel that, as determined by the Commandant—

(1) Substantially changes the dimensions or carrying capacity of the vessel;

(2) Changes the type of vessel;

(3) Substantially prolongs the life of the vessel; or

(4) Otherwise so changes the vessel that it is essentially a new vessel.

Marine evacuation system means an appliance designed to rapidly transfer

large numbers of persons from an embarkation station by means of a passage to a floating platform for subsequent embarkation into associated survival craft, or directly into associated survival craft.

Marine inspector means any person authorized by the Officer in Charge, Marine Inspection (OCMI), to perform duties concerning the inspection, enforcement, and administration of laws for the safety and navigation of vessels.

Muster station means the place where the crew and offshore workers assemble before boarding a survival craft.

New offshore supply vessel is one—

(1) Contracted for, or the keel of which was laid, on or after March 15, 1996; or

(2) Which underwent a major conversion that was initiated on or after March 15, 1996.

Novel lifesaving appliance or arrangement means one that has new features not fully covered by the provisions of this part but that provides an equal or higher standard of safety.

Noxious liquid substance or *NLS* means the same as in §153.2 of this chapter.

Ocean refers to a route more than 20 nautical miles offshore on any of the following waters:

(1) Any ocean.

(2) The Gulf of Mexico.

(3) The Caribbean Sea.

(4) The Gulf of Alaska.

(5) The Bering Sea.

(6) Such other, similar waters as may be designated by the District Commander.

OCMI means the same as Officer in Charge, Marine Inspection.

Officer in Charge, Marine Inspection means any person of the Coast Guard so designated by the Commandant, to be in charge of an inspection zone for the performance of duties concerning the inspection, enforcement, and administration of laws for the safety and navigation of vessels.

Offshore supply vessel means a vessel that—

(1) Is propelled by machinery other than steam;

(2) Does not meet the definition of a passenger-carrying vessel in 46 U.S.C. 2101(22) or 46 U.S.C. 2101(35);

(3) Is more than 15 but less than 500 gross tons (as measured under the Standard, Dual, or Simplified Measurement System under part 69, subpart C, D, or E, of this chapter) or is less than 6,000 gross tons (as measured under the Convention Measurement System under part 69, subpart B, of this chapter); and

(4) Regularly carries goods, supplies, individuals in addition to the crew, or equipment in support of exploration, exploitation, or production of offshore mineral or energy resources.

Offshore worker means an individual carried aboard an OSV and employed in a phase of exploration, exploitation, or production of offshore mineral or energy resources served by the vessel; but it does not include the master or a member of the crew engaged in the business of the vessel, who has contributed no consideration for carriage aboard and is paid for services aboard.

OSV means the same as *offshore supply vessel.*

Quarters means any space where sleeping accommodations are provided.

Rescue boat means a boat designed to rescue persons in distress and to marshal survival craft.

Restricted service means service in areas within 12 hours of a harbor of safe refuge or in areas where a liftboat may be jacked up to meet the 100-knot-wind severe-storm criteria of §174.255(c) of this chapter.

Seagoing condition means the operating condition of the OSV with the personnel, equipment, fluids, and ballast necessary for safe operation on the waters where the OSV operates.

Survival craft means a craft capable of sustaining the lives of persons in distress from the time of abandoning the OSV on which the persons were originally carried. The term includes lifeboats, liferafts, buoyant apparatus, and lifefloats, but does not include rescue boats.

[CGD 82–004 and CGD 86–074, 62 FR 49321, Sept. 19, 1997, as amended by USCG 1999–4976, 65 FR 6505, Feb. 9, 2000]

§125.170 Equivalents.

A substitution for fittings, materials, equipment, arrangements, calculations, information, or tests required by this subchapter may be accepted by the

cognizant OCMI; by the Commanding Officer, Marine Safety Center; by the District Commander; or by the Commandant, if the substitution provides an equivalent level of safety.

§ 125.180 Incorporation by reference.

(a) Certain materials are incorporated by reference into this subchapter with the approval of the Director of the Federal Register in compliance with 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than the one listed in paragraph (b) of this section, the Coast Guard must publish notice of change in the FEDERAL REGISTER and the material must be available to the public. All approved materials are on file for inspection at the Office of the Federal Register, 800 North Capitol Street NW., suite 700, Washington, DC, and at the U.S. Coast Guard, Office of Operating and Environmental Standards, 2100 Second Street SW., Washington, DC 20593–0001, and are available from the sources indicated in paragraph (b) of this section.

(b) The materials approved for incorporation by reference in this subchapter, and the sections affected, are as follows:

American Bureau of Shipping (ABS):	
ABS Plaza, 16855 Northchase Drive, Houston, TX 77060	
Rules for Building and Classing Steel Vessels Under 61 Meters (200 Ft) in Length (1983).	127.210
Rules for Building and Classing Steel Vessels (1995)	127.210; 129.360
Rules for Building and Classing Aluminum Vessels (1975)	127.210
Rules for Building and Classing Mobile Offshore Drilling Units (1994).	133.140; 133.150
American National Standards Institute (ANSI):	
11 West 42nd St., New York, NY 10036	
B 31.1–1986, Code for Pressure Piping, Power Piping	128.240
Z 26.1–1977 (including 1980 Supplement), Safety Code for Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways.	127.430
American Society of Mechanical Engineers (ASME) International:	
Three Park Avenue, New York, NY 10016–5990	
Boiler and Pressure Vessel Code Section I, Power Boilers, July 1989 with 1989 addenda.	128.240
American Society for Testing and Materials (ASTM):	
100 Barr Harbor Drive, West Conshohocken, PA 19428–2959	
ASTM D 93–97, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester.	128.310
American Yacht and Boat Council, Inc. (AYBC):	
3069 Solomon's Island Rd., Edgewater, MD 21037–1416	
A–3–1993, Galley Stoves	129.550
A–7–1970, Recommended Practices and Standards Covering Boat Heating Systems.	129.550
E–1–1972, Bonding of Direct-Current Systems	129.120
E–8–1994, Alternating-Current (AC) Electrical Systems on Boats.	129.120
E–9–1990, Direct-Current (DC) Electrical Systems on Boats	129.120
Institute of Electrical and Electronics Engineers (IEEE):	
IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08855	
No. 45–1977, Recommended Practice for Electric Installations on Shipboard.	129.340
International Maritime Organization (IMO):	
Publications Section, 4 Albert Embankment, London SE1 7SR, United Kingdom	
Resolution A.520(13), Code of Practice for the Evaluation, Testing and Acceptance of Prototype Novel Life-saving Appliances and Arrangements, dated 17 November 1983.	133.40
Resolution A.658(16), ''Use and Fitting of Retro-Reflective Materials on Life-saving Appliances'', dated 20 November 1989.	131.855; 131.875; 133.70
Resolution A.760(18), ''Symbols Related to Life-Saving Appliances and Arrangements'', dated 17 November 1993.	131.875; 133.70; 133.90

International Convention for the Safety of Life at Sea (SOLAS), Consolidated Edition, 1992.	126.170
National Fire Protection Association (NFPA):	
1 Batterymarch Park, Quincy, MA 02269–9101	
NFPA 70, National Electrical Code, 1993 Edition	129.320; 129.340; 129.370
NFPA 306, Control of Gas Hazards on Vessels, 1993 Edition	126.160
NFPA 1963, Fire Hose Connections, 1993 Edition	132.130
NFPA 10, Standard for Portable Fire Extinguishers, 1994 Edition.	132.350
NFPA 302—Fire Protection Standard for Pleasure and Commercial Motor Craft, 1994 Edition.	129.550
Underwriters Laboratories, Inc. (UL):	
12 Laboratory Drive, Research Triangle Park, NC 27709–3995	
UL 19–1992, Lined Fire Hose and Hose Assemblies	132.130
UL 486A–1992, Wire Connectors and Soldering Lugs for Use with Copper Conductors.	129.340
UL 489–1995, Molded-Case Circuit Breakers and Circuit-Breaker Enclosures.	129.380
UL 57–1976, Electric Lighting Fixtures	129.410
UL 595–1991, Marine-Type Electric Lighting Fixtures	129.410
UL 1570–1995, Fluorescent Lighting Fixtures	129.410
UL 1571–1995, Incandescent Lighting Fixtures	129.410
UL 1572–1995, High Intensity Discharge Lighting Fixtures	129.410
UL 1573–1995, Stage and Studio Lighting Units	129.410
UL 1574–1995, Track Lighting Systems	129.410

[CGD 82–004 and CGD 86–074, 62 FR 49321, Sept. 19, 1997, as amended by CGD 97–057, 62 FR 51047, Sept. 30, 1997; 64 FR 53227, Oct. 1, 1999; USCG 1999–5151, 64 FR 67183, Dec. 1, 1999; USCG–2000–7790, 65 FR 58463, Sept. 29, 2000]

§ 125.190 Right of appeal.

Any person directly affected by a decision or action taken under this part, by or on behalf of the Coast Guard, may appeal from the decision or action in compliance with subpart 1.03 of this chapter.

PART 126—INSPECTION AND CERTIFICATION

Subpart A—General

Sec.

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126.520 Certificate of Inspection: Conditions of validity.
126.530 Alternative annual inspection for offshore supply vessels less than 400 gross tons in foreign ports.

AUTHORITY: 46 U.S.C. 3205, 3306, 3307; 33 U.S.C. 1321(j); E.O. 11735, 38 FR 21243, 3 CFR 1971–1975 Comp., p. 793; 49 CFR 1.46.

SOURCE: CGD 82–004 and CGD 86–074, 62 FR 49324, Sept. 19, 1997, unless otherwise noted.

Subpart A—General

§ 126.100 Inspector not limited.

Nothing in this part shall be construed as limiting the inspector from making such tests or inspections as he deems necessary to be assured of the safety and seaworthiness of the vessel.

§ 126.110 Inspection after accident.

(a) The owner or operator of an OSV shall make the vessel available for inspection by a marine inspector—

(1) Each time an accident occurs, or a defect is discovered that affects—

(i) The safety of the vessel; or

(ii) The effectiveness or completeness of its lifesaving, fire-fighting, or other equipment; or

(2) Whenever any important repairs or renewals are made.

(b) The inspection is to ensure that—

(1) The necessary repairs or renewals have been effectively made;

(2) The material and workmanship used to accomplish the repairs or renewals are satisfactory; and

(3) The OSV complies with the regulations in this subchapter.

§ 126.120 Permit to proceed to another port for repairs.

(a) The cognizant OCMI may issue a permit to proceed to another port for repair if in the judgment of this OCMI the vessel can complete the trip safely even though the Certificate of Inspection has expired or is about to expire.

(b) A ''Permit to Proceed to another Port for Repairs'', Form CG–948, will be issued by the cognizant OCMI to the owner, operator, or master of the OSV and states the conditions under which the vessel may proceed to another port. The Permit will be issued only upon the written application of the owner, operator, or master, and only after the surrender of the vessel's Certificate of Inspection to the cognizant OCMI.

(c) The Permit will state on its face the conditions under which it is issued and whether the OSV may carry cargo, goods, supplies, equipment, or offshore workers.

(d) The Permit must be readily available aboard the OSV.

§ 126.130 Cranes.

(a) Except as provided by paragraph (b) of this section, cranes, if installed, must comply with §§ 107.258 through 107.260, 108.601, 109.437, 109.439, 109.521, 109.525, and 109.527 of this chapter.

(b) The manufacturer of a crane may have tests and inspections conducted in compliance with § 107.259 of this chapter, if the surveyor conducting them for the American Bureau of Shipping or the International Cargo Gear Bureau certifies their conduct as required by § 107.259(c) of this chapter.

§ 126.140 Drydocking.

(a) Unless one or more extensions are authorized by the Commandant (G–MOC), each OSV must be placed in drydock or hauled out for examination twice each 5 years with no interval between examinations exceeding 3 years.

(b) The owner or operator shall notify the cognizant OCMI whenever the OSV is drydocked for any reason. This OCMI, upon notification, will determine whether to assign a marine inspector to examine the underwater hull of the vessel.

(c) The internal structural members of an OSV must be examined at the same intervals required for drydocking by paragraph (a) of this section.

(d) At each drydocking required by paragraph (a) of this section, for an OSV of 100 or more gross tons, a tailshaft survey must be conducted as required by § 61.20–15 of this chapter.

(e) At each drydocking required by paragraph (a) of this section, for an OSV of less than 100 gross tons, the propeller or tailshaft must be drawn for examination if the cognizant OCMI deems drawing it necessary.

§ 126.150 Repairs and alterations.

(a) Except in an emergency, no repairs or alterations to the hull or machinery, or to equipment that affects the safety of the OSV, may be made without notice to the cognizant OCMI in the inspection zone where the repairs or alterations are to be made. When the repairs or alterations have

been made, notice must be given to this OCMI as soon as practicable.

(b) When emergency repairs or alterations have been made as permitted under paragraph (a) of this section, the master, owner, or operator must notify this OCMI as soon as practicable after the emergency.

(c) Except as provided by paragraphs (b) and (e) of this section, drawings of repairs or alterations must be approved, before work starts, by the cognizant OCMI or, when necessary, by the Commanding Officer, Marine Safety Center (CO, MSC). Drawings will not be needed if deemed unnecessary by this OCMI or by the CO, MSC.

(d) When the cognizant OCMI deems inspection necessary, the repairs or alterations must be inspected by a marine inspector.

(e) Submission of drawings is not required for repairs in kind, but the applicable drawings approved under subpart A of part 127 of this subchapter must be made available to the marine inspector upon request.

§ 126.160 Tests and inspections during repairs or alterations, or during riveting, welding, burning, or other hot work.

(a) NFPA 306 must be used as a guide in conducting the examinations and issuances of certificates required by this section.

(b) Until an examination has determined that work can proceed safely, no riveting, welding, burning, or other hot work may commence.

(c) Each examination must be conducted as follows:

(1) At any port or site inside the United States or its territories and possessions, a marine chemist certified by the NFPA must make the examination. If the services of such a chemist are not reasonably available, the cognizant OCMI, upon the recommendation of the contractor and the owner or operator of the OSV, may authorize another person to make the examination. If this indicates that a repair or alteration, or hot work, can be undertaken safely, the person performing the examination shall issue a certificate, setting forth the spaces covered and any necessary conditions to be met, before the work starts. These conditions must include any requirements necessary to maintain safe conditions in the spaces covered and must include any necessary further examinations and certificates. In particular the conditions must include precautions necessary to eliminate or minimize hazards caused by protective coatings or by cargo residues.

(2) At any port or site outside the United States or its territories and possessions, where the services of a certified marine chemist or other person authorized by the cognizant OCMI are not reasonably available, the master, owner, or operator of the vessel shall make the examination and a proper entry in the OSV's logbook.

(d) The master shall obtain a copy of each certificate issued by the person making the examination described in paragraph (c)(1) of this section. The master, through and for the persons under his control, shall maintain safe conditions aboard the OSV by full observance of each condition to be met, listed in the certificate issued under paragraph (c)(1) of this section.

§ 126.170 Carriage of offshore workers.

(a) Offshore workers may be carried aboard an OSV in compliance with this subchapter. The maximum number of offshore workers authorized for carriage will be endorsed on the vessel's Certificate of Inspection; but in no case will the number of offshore workers authorized for carriage exceed 36.

(b) No more than 12 offshore workers may be carried aboard an OSV certificated under this subchapter when on an international voyage, unless the vessel holds a valid passenger-ship-safety certificate (Form CG–968) issued in compliance with the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS 74/83).

§ 126.180 Carriage of passengers.

No passengers as defined by 46 U.S.C. 2101(21)(B) may be carried aboard an OSV except in an emergency.

Subpart B—Certificate of Inspection

§ 126.210 When required.

Except as provided by §§ 126.120 and 126.260, no OSV may be operated without a valid Certificate of Inspection.

§ 126.220 Description.

The Certificate of Inspection issued to an OSV specifies the vessel, the route it may travel, the minimum manning it requires, the minimum fire-extinguishing and lifesaving equipment it must carry, the maximum number of offshore workers and of total persons it may carry, the name of its owner and operator, and such other conditions as the cognizant OCMI may determine.

§ 126.230 How to obtain or renew.

(a) A builder, owner, master, or operator may begin to obtain or to renew a Certificate of Inspection by submitting an ''Application for Inspection of U.S. Vessel,'' Form CG–3752, to the OCMI of the marine inspection zone in which the inspection is to be made. Form CG–3752 is available from any Marine Safety or Marine Inspection Office of the U.S. Coast Guard.

(b) The application for initial inspection of an OSV being newly constructed or undergoing a major conversion must be submitted before the start of construction or conversion.

(c) The construction, arrangement, and equipment of each OSV must be acceptable to the cognizant OCMI for the issuance of the initial Certificate of Inspection. Acceptance depends on the information, specifications, drawings, and calculations available to this OCMI, and on the successful completion of the initial inspection for certification.

(d) A Certificate of Inspection is renewed by the issuance of a new Certificate of Inspection.

(e) The condition of the OSV and its equipment must be acceptable to the cognizant OCMI for the renewal of the Certificate of Inspection. Acceptance depends on the condition of the vessel as found at the periodic inspection for certification.

§ 126.240 Posting.

The Certificate of Inspection must be framed under glass or other suitable transparent material and posted in a conspicuous place aboard the OSV so that each page is visible.

§ 126.250 Period of validity for a Certificate of Inspection.

(a) A Certificate of Inspection is valid for 5 years.

(b) A Certificate of Inspection may be suspended and withdrawn or revoked by the cognizant OCMI at any time for noncompliance with the requirements of this subchapter or other applicable laws.

[CGD 82–004 and CGD 86–074, 62 FR 49324, Sept. 19, 1997, as amended by USCG 1999–4976, 65 FR 6505, Feb. 9, 2000]

§ 126.260 Temporary Certificate.

If necessary to prevent delay of the OSV, a ''Temporary Certificate of Inspection,'' Form CG–854, containing information listed by § 126.220 may be issued pending the issuance and delivery of the regular Certificate of Inspection. A Temporary Certificate must be carried in the same manner as the regular Certificate.

§ 126.270 Amendment.

(a) An amended Certificate of Inspection may be issued at any time by any OCMI. The amended Certificate of Inspection replaces the original, but the expiration date remains the same as that of the original. An amended Certificate of Inspection may be issued to authorize and record a change in the dimensions, gross tonnage, owner, operator, manning, offshore workers permitted, route permitted, conditions of operations, equipment, or the like from that specified in the current Certificate of Inspection.

(b) A request for an amended Certificate of Inspection must be made to the cognizant OCMI by the owner or operator of the vessel at any time there is a change in the character of a vessel or in its route, equipment, ownership, operation, or similar factors specified in its current Certificate of Inspection.

(c) The cognizant OCMI may require an inspection before issuing an amended Certificate of Inspection.

Subpart C—Initial Inspection

§ 126.310 Prerequisite to Certificate of Inspection.

The initial inspection is a prerequisite to the issuance of the original Certificate of Inspection.

§ 126.320 When made.

(a) No initial inspection occurs until after receipt of the written application of the owner or builder of the vessel to the OCMI in whose zone the vessel is located. The application must be on Form CG–3752, ''Application for Inspection of U.S. Vessel.''

(b) The initial inspection occurs at a time and place agreed to by the party requesting the inspection and by the cognizant OCMI. The owner or the builder, or a representative of either, must be present during the inspection.

§ 126.330 Plans.

Before construction starts, the owner, operator, or builder shall develop plans indicating the proposed arrangement and construction of the vessel. (The list of plans to be developed and the required disposition of these plans appears in part 127 of this subchapter.)

§ 126.340 Scope.

The initial inspection normally consists of a series of inspections conducted during the construction of the vessel. This inspection determines whether the vessel was built to comply with developed plans and in compliance with applicable law. Items normally included in this inspection are all the items listed in §126.430 and in addition the marine inspector verifies that the arrangement of the vessel conforms to the approved plans, that acceptable material is used in the construction of the vessel, and that the workmanship meets required standards for marine construction. The owner or builder shall make the vessel available for inspection at each stage of construction specified by the cognizant OCMI.

§ 126.350 Specific tests and inspections.

(a) The applicable tests and inspections set forth in subpart D of this part must be made during the initial inspection.

(b) The following specific tests and inspections must also be conducted in the presence of the marine inspector:

(1) Installation of piping for gaseous fixed fire-extinguishing (see §95.15–15 of this chapter).

(2) Hydraulic steering-systems. If fitted with manual operation, these systems must be tested in the manual mode, with the hydraulic pumps secured, for smooth, efficient operation by one person.

Subpart D—Inspection for Certification

§ 126.410 Prerequisite to reissuance of Certificate of Inspection.

An inspection for certification is a prerequisite to the reissuance of a Certificate of Inspection.

§ 126.420 Application for Certificate of Inspection.

You must submit a written application for an inspection for certification to the cognizant OCMI. To renew a Certificate of Inspection, you must submit an application at least 30 days before the expiration of the tank vessel's current certificate. You must use Form CG–3752, Application for Inspection of U.S. Vessel, and submit it to the OCMI at, or nearest to, the port where the vessel is located. When renewing a Certificate of Inspection, you must schedule an inspection for certification within the 3 months before the expiration date of the current Certificate of Inspection.

[USCG 1999–4976, 65 FR 6505, Feb. 9, 2000]

§ 126.430 Scope.

The inspection for certification is made by a marine inspector to determine whether the vessel is in a safe and seaworthy condition. The owner or builder shall make the vessel and its equipment available for inspection, including the following items:

(a) Structure.

(b) Watertight integrity.

(c) Pressure vessels and their appurtenances.

(d) Piping.

(e) Main and auxiliary machinery.

(f) Steering apparatus.
(g) Electrical installations.
(h) Lifesaving equipment.
(i) Work vests.
(j) Fire-detecting and fire-extinguishing equipment.
(k) Pollution-prevention equipment.
(l) Sanitary condition.
(m) Fire hazards.
(n) Verification of validity of certificates required and issued by the Federal Communications Commission.
(o) Lights and signals as required by the applicable navigational rules.
(p) Tests and inspections of cranes in compliance with §126.130.

§126.440 Lifesaving equipment.

At each inspection for certification, the tests and inspections specified by §91.25–15 of this chapter must occur in the presence of a marine inspector, or as otherwise directed by the cognizant OCMI.

§126.450 Fire-extinguishing equipment.

At each inspection for certification, the marine inspector determines whether the tests and inspections required by §132.350 of this subchapter have been performed.

§126.460 Tanks for dry bulk cargo.

The owner shall ensure that tanks for dry bulk cargo that are pressure vessels are inspected for compliance with §61.10–5(b) of this chapter.

§126.470 Marine-engineering systems.

The inspection procedures for marine-engineering systems contained in subchapter F of this chapter apply.

§126.480 Safety Management Certificate.

(a) All offshore supply vessels of 500 gross tons or over to which 33 CFR part 96 applies, on an international voyage must have a valid Safety Management Certificate and a copy of their company's valid Document of Compliance certificate on board.

(b) A Safety Management Certificate is issued for a period of not more than 60 months.

[CGD 95–073, 62 FR 67515, Dec. 24, 1997]

Subpart E—Annual, Periodic, and Alternative Annual Inspections

SOURCE: USCG 1999–4976, 65 FR 6505, Feb. 9, 2000, unless otherwise noted.

§126.510 Annual and periodic inspections.

(a) *Annual inspection.* Your vessel must undergo an annual inspection within 3 months before or after each anniversary date, except as required in paragraph (b) of this section.

(1) You must contact the cognizant OCMI to schedule an inspection at a time and place which he or she approves. No written application is required.

(2) The scope of the annual inspection is the same as the inspection for certification as specified in §126.430, but in less detail unless the cognizant marine inspector finds deficiencies or determines that a major change has occurred since the last inspection. If deficiencies are found or a major change to the vessel has occurred, the marine inspector will conduct an inspection more detailed in scope to ensure that the vessel is in satisfactory condition and fit for the service for which it is intended. If your vessel passes the annual inspection, the marine inspector will endorse your current Certificate of Inspection.

(3) If the annual inspection reveals deficiencies in your vessel's maintenance, you must make any or all repairs or improvements within the time period specified by the OCMI.

(4) Nothing in this subpart limits the marine inspector from making such tests or inspections he or she deems necessary to be assured of the vessel's seaworthiness.

(b) *Periodic inspection.* Your vessel must undergo a periodic inspection within 3 months before or after the second or third anniversary of the date of your vessel's Certificate of Inspection. This periodic inspection will take the place of an annual inspection.

(1) You must contact the cognizant OCMI to schedule an inspection at a time and place which he or she approves. No written application is required.

(2) The scope of the periodic inspection is the same as that for the inspection for certification, as specified in §126.430. The OCMI will insure that the

vessel is in satisfactory condition and fit for the service for which it is intended. If your vessel passes the periodic inspection, the marine inspector will endorse your current Certificate of Inspection.

(3) If the periodic inspection reveals deficiencies in your vessel's maintenance, you must make any or all repairs or improvements within the time period specified by the OCMI.

(4) Nothing in this subpart limits the marine inspector from conducting such tests or inspections he or she deems necessary to be assured of the vessel's seaworthiness.

§ 126.520 Certificate of Inspection: Conditions of validity.

To maintain a valid Certificate of Inspection, you must complete your annual and periodic inspections within the periods specified in § 126.510 (a) and (b) and your Certificate of Inspection must be endorsed.

§ 126.530 Alternative annual inspection for offshore supply vessels less than 400 gross tons in foreign ports.

(a) The owner, master or operator of an OSV of less than 400 gross tons may request authorization to conduct an alternative annual inspection in place of the annual inspection described in § 126.510(a) of this subpart. The request must go to the cognizant OCMI assigned responsibility for inspections in the country in which the vessel is operating and will be examined. To qualify for the alternative annual examination, the vessel must meet the following requirements:

(1) The request must be in writing and be received by the OCMI not later than the anniversary date.

(2) The vessel is likely to be continuously employed outside of the United States during the 3 months before and after each anniversary date.

(b) In determining whether to authorize the alternative annual inspection, the OCMI considers the following:

(1) Information contained in previous examination reports on inspection and drydock, including the recommendation of the then cognizant OCMI for participation in the alternative midperiod program and alternative annual examination.

(2) The nature, number, and severity of marine casualties or accidents, as defined in § 4.03–1 of this chapter, involving the vessel in the 3 years preceding the request.

(3) The nature, number, and gravity of any outstanding inspection requirements for the vessel.

(4) The owner's or operator's history of compliance and cooperation in such alternative midperiod examinations and annual inspections, including:

(i) The prompt correction of deficiencies.

(ii) The reliability of previously submitted reports on such alternative midperiod examinations and annual inspections.

(iii) The reliability of representations that the vessel would be, and was, employed outside of the United States during the 3 months before and after each anniversary date.

(c) This OCMI provides the applicant with written authorization, if any, to proceed with the alternative annual inspection, including, when appropriate, special instructions.

(d) The following conditions must be met for the alternative annual inspection to be accepted instead of the annual inspection required by § 126.510 of this subpart:

(1) The alternative annual inspection must occur within the 3 months before or after each anniversary date.

(2) The alternative annual inspection must be of the scope detailed by § 126.510(a) of this subchapter and must be conducted by the master, owner or operator of the vessel, or by a designated representative of the owner or operator.

(3) Upon completion of the alternative annual inspection, the person or persons making the examination must prepare a comprehensive report describing the conditions found. This report must contain sufficient detail to let the OCMI determine whether the vessel is fit for the service and route specified on the Certificate of Inspection. This report must include all reports and receipts documenting the servicing of lifesaving equipment and any photographs or sketches necessary to clarify unusual circumstances. Each person preparing this report must sign

it and certify that the information contained therein is complete and accurate.

(4) Unless the master of the vessel participated in the alternative annual inspection and the preparation of the comprehensive report, the master will review the report for completeness and accuracy. The master must sign the report to indicate his or her review and validation and must forward it to the owner or operator of the vessel.

(5) The owner or operator of a vessel examined under this section must review and submit the comprehensive report, required by paragraph (d)(3) of this section, to the OCMI. The report must reach the OCMI before the first day of the fifth month following the anniversary date. The forwarding letter or endorsement must be certified to be true and must contain the following information:

(i) That the person or persons who made the alternative annual inspection acted on behalf of the vessel's owner or operator.

(ii) That the report was reviewed by the owner or operator.

(iii) That the discrepancies noted during the reinspection have been corrected, or will be within a stated time.

(iv) That the owner or operator has sufficient personal knowledge of conditions aboard the vessel at the time of the reinspection, or has conducted inquires necessary to justify forming a belief that the report is complete and accurate.

(e) The form of certification required under this section, for the alternative annual inspection, is as follows:

I certify that to the best of my knowledge and belief the information contained in the report is complete and accurate.

(f) Deficiencies and hazards discovered during the alternative annual inspection conducted pursuant to this section must be corrected or eliminated, if practical, before the examination report is submitted to the OCMI in accordance with paragraph (d)(5) of this section. Deficiencies and hazards that are not corrected or eliminated by the time the examination report is submitted must be listed in the report as ''outstanding.'' Upon receipt of an examination report indicating outstanding deficiencies or hazards, the OCMI must inform the owner or operator in writing of the time period within which to correct or eliminate the deficiencies or hazards and the method for establishing that the corrections have been accomplished. Where a deficiency or hazard remains uncorrected or uneliminated after the expiration of the time specified for correction or elimination, the Officer in Charge, Marine Inspection must initiate appropriate enforcement measures.

(g) Upon receipt of the report, the OCMI will evaluate it and determine the following:

(1) Whether the cognizant OCMI accepts the alternative annual inspection instead of the annual inspection required by §126.510(a) of this subpart.

(2) Whether the vessel is in satisfactory condition.

(3) Whether the vessel continues to be reasonably fit for its intended service and route.

(h) The OCMI may require further information necessary for the determinations required by this section. The OCMI will inform the owner or operator in writing of these determinations.

(i) If the OCMI, in compliance with paragraph (g) of this section, does not accept the alternative annual inspection instead of the annual inspection required by §126.510(a) of this subpart, he or she will require reinspection of the vessel as soon as practicable. He or she will inform the vessel owner or operator in writing that the alternative examination is not acceptable and that a reinspection is necessary. The owner, master, or operator must make the vessel available for the reinspection at a time and place agreeable to this OCMI.

(j) If the OCMI determines, in accordance with paragraph (g) of this section, that the alternative annual inspection is accepted in lieu of the annual inspection required by §126.510(a) of this subpart, the master must complete the applicable COI endorsement.

PART 127—CONSTRUCTION AND ARRANGEMENTS

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AUTHORITY: 46 U.S.C. 3306; 49 CFR 1.46.

SOURCE: CGD 82–004 and CGD 86–074, 62 FR 49328, Sept. 19, 1997, unless otherwise noted.

Subpart A—Plan Approval

§ 127.100 General.

Plans listed by §127.110 of this subpart must be submitted for approval after the owner or builder applies for inspection in compliance with §126.320 of this subchapter.

§ 127.110 Plans and specifications required for new construction.

Each applicant for approval of plans and for an original Certificate of Inspection shall submit three copies of the following:

(a) *General.* (1) Specifications (information only).

(2) General Arrangement Plans.

(3) Safety Plan (Fire-Control Plan), for OCMI review and approval.

(b) *Hull structure.* (1) Midship Section.

(2) Booklet of Scantling Plans.

(c) *Subdivision and stability.* [For plans required for subdivision and stability, see subchapter S of this chapter.]

(d) *Marine engineering.* (1) Piping diagrams of each Class I systems.

(2) Piping diagrams of the following Class II systems (the builder's certification of Class II non-vital piping systems must accompany the piping diagrams in compliance with §128.220(c) of this subchapter):

(i) Systems for fill, transfer, and service of fuel oil.

(ii) Fire-main and fixed gaseous fire-extinguishing systems.

(iii) Bilge systems.

(iv) Ballast systems.

(v) Fluid-driven power and control systems.

(vi) Through-hull penetrations and shell connections.

(vii) Sanitary systems.

(viii) Vents, sounding tubes, and overflows.

(ix) Compressed-air systems.

(3) Steering and steering-control systems.

(4) Propulsion and propulsion-control systems.

(5) Piping diagrams of each system containing any flammable, combustible, or hazardous liquid including—

(i) Cargo-oil systems;

(ii) Systems for combustible drilling-fluid (such as oil-based liquid mud); and

(iii) Cargo-transfer systems for fixed independent or portable tanks.

(e) *Electrical engineering.* (1) For each vessel of less than 100 gross tons, the following plans must be submitted:

(i) Arrangement of electrical equipment (plan and profile) with equipment identified as necessary to show compliance with this subchapter.

(ii) Electrical one-line diagram that includes wire types and sizes, overcurrent-device rating and setting, and type of electrical-equipment enclosure (drip-proof, watertight, or the like).

(iii) Switchboard plans required by paragraphs (e) and (f) of §110.25–1 of this chapter.

(2) For each vessel of 100 or more gross tons, the plans required by §110.25 of this chapter must be submitted.

(f) *Automation.* For each vessel of 100 or more gross tons, where automated systems are provided to replace specific personnel in the control and observation of the propulsion systems and machinery spaces, or to reduce the level of crew associated with the engine department, the following plans must be submitted:

(1) Plans necessary to demonstrate compliance with subpart D of part 130 of this subchapter.

(2) Automation-test procedure.

(3) Operations manual.

§ 127.120 Procedure for submittal of plans.

If a vessel is to be constructed, altered, or repaired, the plans, information, and calculations required by this part must be submitted to—

(a) The OCMI in the zone where the vessel is to be constructed, altered, or repaired; or

(b) The Commanding Officer, Marine Safety Center, 400 Seventh Street SW., Washington, DC 20590–0001.

Subpart B—Particular Construction and Arrangements

§ 127.210 Structural standards.

(a) Except as provided by paragraphs (b) and (c) of this section, compliance with the construction and structural rules established by the American Bureau of Shipping and incorporated by reference in §125.180 is acceptable for the design and construction of an OSV.

(b) The current standards of other recognized classification societies, or any other established current standard, may also be used upon approval by the Commandant (G–MSE).

(c) If no established current standard for design is used, detailed design calculations must be submitted with the plans required by §127.110 of this part.

(d) The plans required by §127.110 of this part should specify their standard for design.

§ 127.220 General fire protection.

(a) Each vessel must be designed and constructed to minimize fire hazards, as far as reasonable and practicable.

(b) Exhausts of internal-combustion engines, galley uptakes, and similar sources of ignition must be kept clear of and insulated from woodwork and other combustible matter.

(c) Paint lockers and similar compartments must be constructed of steel or be wholly lined with steel.

(d) Except as provided by paragraph (e) of this section, when a compartment containing the emergency source of electric power, or vital components of that source, adjoins a space containing either the ship's service generators or machinery necessary for the operation of the ship's service generators, each common bulkhead and deck must be of ''A–60'' Class construction as defined by §72.05–10 of this chapter.

(e) The ''A–60'' Class construction required by paragraph (d) of this section is unnecessary if the emergency source of electric power is in a ventilated battery locker that—

(1) Is located above the main deck;

(2) Is located in the open; and

(3) Has no boundaries contiguous with other decks or bulkheads.

§ 127.230 Subdivision and stability.

Each vessel must meet the applicable requirements in subchapter S of this chapter.

§ 127.240 Means of escape.

(a) Except as provided by paragraphs (l) and (m) of this section, there must be at least two means of escape, exclusive of windows and portholes, from each of the following spaces:

(1) Each space accessible to offshore workers.

(2) Crew accommodations and each space where the crew may normally be employed.

(b) At least one of the two means of escape must—

(1) Be independent of watertight doors in bulkheads required by part 174 of this chapter to be watertight; and

(2) Lead as directly to the open deck as practicable.

(c) The two means of escape required by paragraph (a) of this section must be widely separated and, if possible, at opposite ends or sides of the space, to minimize the possibility that one incident will block both escapes.

(d) Except as provided by paragraph (e) of this section, a vertical ladder

ending at a deck scuttle may not be either of the means of escape required by paragraph (a) of this section.

(e) A vertical ladder ending at a deck scuttle may be the second means of escape if the—

(1) Primary means of escape is a stairway or passageway;

(2) Installation of another stairway or passageway is impracticable;

(3) Scuttle is located where stowed deck cargo could not interfere;

(4) Scuttle is fitted with a quick-acting release, and with a hold-back device to hold it open; and

(5) Scuttle meets the requirements for location, strength, and height of coaming in subchapter E of this chapter.

(f) Each vertical ladder must—

(1) Have rungs that are—

(i) At least 410 millimeters (16 inches) long;

(ii) At most 300 millimeters (12 inches) apart, uniform for the length of the ladder; and

(iii) At least 180 millimeters (7 inches) from the nearest permanent object in back of the ladder;

(2) Have at least 115 millimeters (4½ inches) of clearance above each rung;

(3) Be made of incombustible materials; and

(4) Have an angle of inclination with the horizontal, greater than 70 degrees but not more than 90 degrees.

(g) No means may be provided for locking any interior door giving access to either of the two required means of escape, except that a crash door or locking-device, capable of being easily forced in an emergency, may be employed if a permanent and conspicuous notice to this effect is attached to both sides of the door. A means may be provided for locking an exterior door to a deckhouse if the door is—

(1) Locked only by a key under the control of one of the OSV's officers; and

(2) Always operable from the inside.

(h) Each passageway or stairway must be wide enough to provide an effective means of escape for the number of persons having access to it even if each person is wearing a lifejacket. There must be no protrusions in the means of escape that could cause injury, ensnare clothing, or damage lifejackets.

(i) No interior stairway, other than within the machinery spaces or cargo holds, may be less than 710 millimeters (28 inches) wide. The angle of inclination of each stairway with the horizontal must not exceed 50 degrees.

(j) No dead-end passageway, or equivalent, may be more than 13.1 meters (40 feet) in length.

(k) Vertical access must be provided between the various weather decks by means of vertical or permanently inclined ladders. The angles of inclination of the inclined ladders with the horizontal must not exceed 70 degrees, except that vertical ladders may be used for access to pilot-house tops and other house tops used only for weather protection.

(l) Only one means of escape need be provided from each of the spaces stipulated in paragraph (a) of this section, provided the maximum area of each space is less than 28 square meters (300 square feet) and the maximum dimension (length, breadth, or depth) of each space is less than 6 meters (20 feet).

(m) Alternative means of escape from spaces may be provided if acceptable to the cognizant OCMI.

§ 127.250 Ventilation for enclosed spaces.

(a) Each enclosed space within the vessel must be properly vented or ventilated. Means must be provided for closing each vent and ventilator.

(b) Means must be provided for stopping each fan in a ventilation system serving machinery and cargo spaces and for closing, in case of fire, each doorway, ventilator, and annular space around funnels and other openings into such spaces.

§ 127.260 Ventilation for accommodations.

(a) Each accommodation space must be adequately ventilated in a manner suitable for the purpose of the space.

(b) Each vessel of 100 or more gross tons must be provided with a mechanical ventilation system unless the cognizant OCMI is satisfied that a natural system, such as opening windows, portholes, or doors, will accomplish adequate ventilation in ordinary weather.

§ 127.270 Location of accommodations and pilothouse.

(a) Neither quarters for crew members or offshore workers nor the pilothouse may be located forward of the collision bulkhead required by § 174.190 of this chapter.

(b) Except as provided in paragraph (c) of this section, no part of any deck with accommodations for crew members or offshore workers may be below the deepest load waterline.

(c) Any deck with accommodations for crew members or offshore workers may be below the deepest load waterline if—

(1) The vessel complies with the damage-stability requirements in § 174.205 of this chapter; and

(2) The deck head of the space is not below the deepest load waterline.

(d) No hawse pipe or chain pipe may pass through accommodations for crew members or offshore workers.

(e) There must be no direct access, except through solid, close-fitted doors or hatches, between accommodations and chain lockers, cargo spaces, or machinery spaces.

(f) No sounding tubes, or vents from fuel-oil or cargo-oil tanks may open into accommodations for crew members or offshore workers, except that sounding tubes may open into passageways.

(g) No access openings from fuel-oil or cargo-oil tanks may open into quarters for crew members or offshore workers.

(h) Quarters for crew members must be separate from and independent of those for offshore workers unless the cognizant OCMI approves an alternative arrangement.

§ 127.280 Construction and arrangement of quarters for crew members and accommodations for offshore workers.

(a) The following requirements apply to quarters for crew members on each vessel of 100 or more gross tons:

(1) Quarters for crew members must be divided into staterooms none of which berths more than four members.

(2) Each stateroom for use by crew members must—

(i) Have clear headroom of at least 1.9 meters (6 feet, 3 inches); and

(ii) Contain at least 2.8 square meters (30 square feet) of deck and at least 6 cubic meters (210 cubic feet) of space for each member accommodated. The presence in a stateroom of equipment for use by the occupants does not diminish the area or volume of the room.

(3) There must be at least one toilet, one washbasin, and one shower or bathtub for every eight or fewer crew members who do not occupy a stateroom to which a private or a semiprivate facility is attached.

(b) The following requirements apply to accommodations for offshore workers on each vessel of 100 or more gross tons:

(1) Each offshore worker aboard must be provided with adequate fixed seating. The width of each seat should be at least 460 millimeters (18 inches). The spacing of fixed seating must be sufficient to allow ready escape in case of fire or other emergency. The following are minimal requirements:

(i) Aisles 4.6 meters (15 feet) in length or less must not be less than 610 millimeters (24 inches) wide.

(ii) Aisles more than 4.6 meters (15 feet) in length must not be less than 760 millimeters (30 inches) wide.

(iii) Where the seating is in rows, the distance from seat front to seat front must not be less than 760 millimeters (30 inches).

(2) If the intended operation of a vessel is to carry offshore workers aboard for more than 24 hours, quarters for them must be provided. Each stateroom for use by them must—

(i) Berth no more than six workers;

(ii) Have clear headroom of at least 1.9 meters (6 feet, 3 inches); and

(iii) Contain at least 1.9 square meters (20 square feet) of deck and at least 4 cubic meters (140 cubic feet) of space for each worker accommodated. The presence in a stateroom of equipment for use by the occupants does not diminish the area or volume of the room.

(3) Toilets and washbasins for use by offshore workers must meet the requirements of paragraph (a)(3) of this section.

(c) Each crew member and offshore worker aboard a vessel of less than 100 gross tons must be provided with accommodations of adequate size and

construction, and with equipment for his or her protection and convenience suitable to the size, facilities, and service of the vessel.

(d) For each vessel of 100 or more gross tons, the bulkheads and decks separating accommodations for crew members and offshore workers from machinery spaces must be of ''A'' Class construction as defined by §92.07–5 of this chapter.

(e) After reviewing the arrangement drawings required by §127.110 of this part, the cognizant OCMI will determine, and record on the vessel's Certificate of Inspection, the number of offshore workers that the vessel may carry.

Subpart C—Rails and Guards

§127.310 Where rails required.

(a) Each vessel must have permanently installed efficient guard rails or bulwarks on decks and bridges. Each rail or bulwark must stand at least 1 meter (39½ inches) from the deck except that, where this height would interfere with the normal operation of the vessel, the cognizant OCMI may approve a lesser height.

(b) At exposed peripheries of the freeboard and superstructure decks, each rail must consist of at least three courses, including the top. The opening below the lowest course must be no more than 230 millimeters (9 inches) with courses no more than 380 millimeters (15 inches) apart. On other decks and bridges each rail must consist of at least two courses, including the top, approximately evenly spaced.

(c) If satisfied that the installation of any rail of the required height would be impracticable, the cognizant OCMI may accept hand grabs or a rail of a lesser height in its place.

§127.320 Storm rails.

Suitable storm rails must be installed in each passageway and at the deckhouse sides, including in way of inclined ladders, where persons aboard have normal access. They must be installed on both sides of passageways which are more than 1.8 meters (6 feet) wide.

§127.330 Guards in dangerous places.

Suitable hand covers, guards, or rails must be installed on each exposed and dangerous place, such as gears of rotating machinery, and hot surfaces.

Subpart D—Construction of Windows, Visibility, and Operability of Coverings

§127.410 Safety-glazing materials.

Glass and other glazing material used in windows must be material that will not break into dangerous fragments if fractured.

§127.420 Strength.

Each window or porthole, and its means of attachment to the hull or the deckhouse, must be capable of withstanding the maximum expected load from wind and waves, due to its location on the vessel's and the authorized route of the vessel.

§127.430 Visibility from pilothouse.

(a) Windows and other openings at the pilothouse must be of sufficient size and properly located to provide adequate view for safe operation in any condition.

(b) Glass or other glazing material used in windows at the pilothouse must have a light transmission of at least 70 percent according to Test 2 of ANSI Z26.1, ''Code for Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways,'' and must comply with Test 15 of ANSI Z26.1 for Class I Optical Deviation.

§127.440 Operability of window coverings.

Any covering or protection placed over a window or porthole that could be used as a means of escape must be able to be readily removed or opened. It must be possible to open or remove the covering or protection without anyone's having to go onto a weather deck. It may be necessary to break the glass of a window or porthole before removing or opening the covering or protection.

PART 128—MARINE ENGINEERING: EQUIPMENT AND SYSTEMS

Subpart A—General

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128.450 Liquid-mud systems.

AUTHORITY: 46 U.S.C. 3306; 49 CFR 1.46.

SOURCE: CGD 82–004 and CGD 86–074, 62 FR 49331, Sept. 19, 1997, unless otherwise noted.

Subpart A—General

§ 128.110 Equipment and systems.

(a) Except as provided by this part, the design, installation, testing, and inspection of materials, machinery, pressure vessels, and piping must comply with subchapter F of this chapter.

(b) This part contains requirements for equipment and systems commonly found on an OSV. If additional or unique systems, such as for low-temperature cargoes, are to be installed, they too must comply with subchapter F of this chapter.

§ 128.120 Plan approval.

The plans required by subchapter F of this chapter need not be submitted if the plans required by § 127.110(d) of this subchapter have been.

§ 128.130 Vital systems.

(a) Vital systems are those systems that are vital to a vessel's survivability and safety. For the purpose of this subchapter, the following are vital systems:

(1) Systems for fill, transfer, and service of fuel oil.

(2) Fire-main systems.

(3) Fixed gaseous fire-extinguishing systems.

(4) Bilge systems.

(5) Ballast systems.

(6) Steering systems and steering-control systems.

(7) Propulsion systems and their necessary auxiliaries and control systems.

(8) Systems for transfer and control of cargo, for integral tanks or fixed independent tanks, in compliance with § 125.110 of this subchapter.

(9) Ship's service and emergency electrical-generation systems and their auxiliaries vital to the vessel's survivability and safety.

(10) Any other marine-engineering system identified by the cognizant OCMI as crucial to the survival of the vessel or to the protection of the personnel aboard.

(b) For the purpose of this subchapter, a system not identified by paragraph (a) of this section is a non-vital system.

Subpart B—Materials and Pressure Design

§ 128.210 Class II vital systems—materials.

Except as provided by §§ 128.230 and 128.240 of this subpart, instead of complying with part 56 of this chapter, materials used in Class II vital piping-systems may be accepted by the cognizant OCMI or the Commanding Officer, Marine Safety Center, if shown to provide a level of safety equivalent to materials in subpart 56.60 of this chapter.

§ 128.220 Class II non-vital systems—materials and pressure design.

(a) Except as provided by §§ 128.230, 128.240, and 128.320 of this subpart, a Class II non-vital piping-system need not meet the requirements for materials and pressure design of subchapter F of this chapter.

(b) Piping for salt-water service must be of a corrosion-resistant material and, if ferrous, be hot-dip galvanized or be at least of extra-heavy schedule in wall thickness.

(c) Each Class II non-vital piping-system must be certified by the builder as suitable for its intended service. A written certificate to this effect must be submitted with the plans required by §127.110(d) of this subchapter.

(d) The cognizant OCMI will review the particular installation of each system for the safety hazards identified in paragraphs (a), (b)(1), and (c) through (k) of §56.50–1 of this chapter, and will add requirements as appropriate.

§128.230 Penetrations of hulls and watertight bulkheads—materials and pressure design.

(a) Each piping penetration, in each bulkhead required by this subchapter to be watertight, must meet the requirements for materials and pressure design of subchapter F of this chapter.

(b) Each overboard discharge and shell connection, up to and including required shut-off valves, must meet the requirements for materials and pressure design of subchapter F of this chapter.

§128.240 Hydraulic or pneumatic power and control—materials and pressure design.

(a) Each standard piping component (such as pipe runs, fittings, flanges, and standard valves) for hydraulic or pneumatic power and control systems must meet the requirements for materials and pressure design of §128.110, 128.210, or 128.220 of this part, as appropriate.

(b) Any non-standard hydraulic or pneumatic component (such as control valves, check valves, relief valves, and regulators) may be accepted by the cognizant OCMI or the Commanding Officer, Marine Safety Center, if the component is certified by the manufacturer as suitable for marine service and if—

(1) The component meets each of the requirements for materials and pressure design of subparts 56.60 and 58.30 of this chapter and if its service is limited to the manufacturer's rated pressure; or

(2) The service of the component is limited to ½ the manufacturer's recommended maximum allowable working pressure (MAWP) or ⅒ the component's burst pressure. Burst-pressure testing is described in ANSI B 31.1, Paragraph 104.7.A, and must be conducted to comply with Paragraph A–22, Section I, ASME Boiler and Pressure Vessel Code. Written certification of results of burst-pressure testing must be submitted with the plans required by §127.110(d) of this subchapter.

Subpart C—Main and Auxiliary Machinery

§128.310 Fuel.

(a) Except as provided by paragraph (b) of this section, each internal-combustion engine installed on an OSV, whether for main propulsion or for auxiliaries, must be driven by a fuel having a flashpoint of not lower than 43 °C (110 °F) as determined by ASTM D 93 (incorporated by reference, see §125.180).

(b) The use of a fuel with a flashpoint of lower than 43 °C (110 °F) must be specifically approved by the Commandant (G–MSE), except in an engine for a gasoline-powered rescue boat.

[CGD 82–004 and CGD 86–074, 62 FR 49331, Sept. 19, 1997, as amended by USCG–2000–7790, 65 FR 58463, Sept. 29, 2000]

§128.320 Exhaust systems.

No diesel-engine exhaust system need meet the material requirements in §58.10–5(d)(1)(i) of this chapter if the installation is certified as required by §128.220(c) of this part.

Subpart D—Design Requirements for Specific Systems

§128.410 Ship's service refrigeration systems.

No self-contained unit either for air-conditioning or for refrigerated spaces for ship's stores need comply with §58.20–5, 58.20–10, 58.20–15, 58.20–20(a), or 58.20–20(b) of this chapter if—

(a) The unit uses a fluorocarbon refrigerant allowed by part 147 of this chapter;

(b) The manufacturer certifies that the unit is suitable for its intended purpose; and

(c) Electrical wiring meets the applicable requirements in subchapter J of this chapter.

§ 128.420 Keel cooler installations.

(a) Except as provided by this section, each keel cooler installation must comply with § 56.50–96 of this chapter.

(b) Approved metallic flexible connections may be located below the deepest-load waterline if the system is a closed loop below the waterline and if its vent is located above the waterline.

(c) Fillet welds may be used in the attachment of channels and half-round pipe sections to the bottom of the vessel.

(d) Short lengths of approved non-metallic flexible hose fixed by metallic or non-metallic hose-clamps may be used at machinery connections if—

(1) The clamps are of a corrosion-resistant material;

(2) The clamps do not depend on spring tension for their holding power; and

(3) Two of the clamps are used on each end of the hose, except that one clamp may be used on an end expanded or beaded to provide a positive stop against hose slippage.

(4) The clamps are resistant to vibration, high temperature, and brittleness.

[CGD 82–004 and CGD 86–074, 62 FR 49331, Sept. 19, 1997, as amended by USCG–2000–7790, 65 FR 58463, Sept. 29, 2000]

§ 128.430 Non-integral keel cooler installations.

(a) Each hull penetration for a non-integral keel cooler installation must be made through a cofferdam or at a seachest and must be provided with isolation valves fitted as close to the sea inlet as possible.

(b) Each non-integral keel cooler must be protected against damage from debris and grounding by protective guards or by recessing the cooler into the hull.

[CGD 82–004 and CGD 86–074, 62 FR 49331, Sept. 19, 1997, as amended by USCG–2000–7790, 65 FR 58463, Sept. 29, 2000]

§ 128.440 Bilge systems.

(a) Except as provided by this section, each bilge system must comply with §§ 56.50–50 and 56.50–55 of this chapter.

(b) If the steering room, engine room, centerline passageway, forward machinery space, and compartment containing the dry-mud tanks are the only below-deck spaces that must be fitted with bilge suctions, the vessel may be equipped to the standards of §§ 56.50–50 and 56.50–57 of this chapter applicable to a dry-cargo vessel of less than 55 meters (180 feet) in length.

§ 128.450 Liquid-mud systems.

(a) Liquid-mud piping systems may use resiliently seated valves of Category A to comply with §§ 56.20–15 and 56.50–60 of this chapter.

(b) Tanks for oil-based liquid mud must be fitted with tank vents equipped with flame screens. Vents must not discharge to the interior of the vessel.

PART 129—ELECTRICAL INSTALLATIONS

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SOURCE: CGD 82–004 and CGD 86–074, 62 FR 49332, Sept. 19, 1997, unless otherwise noted.

Subpart A—General Provisions

§ 129.100 General.

This part contains requirements for the design, construction, and installation of electrical equipment and systems including power sources, lighting, motors, miscellaneous equipment, and safety systems.

§ 129.110 Applicability.

Except as specifically provided in this part, electrical installations on OSVs must comply with subchapter J of this chapter.

§ 129.120 Alternative standards.

(a) An OSV of 19.8 meters (65 feet) in length or less may meet the following requirements of the American Yacht and Boat Council Projects, where applicable, instead of §129.340 of this part:

(1) E–1, Bonding of Direct Current Systems.

(2) E–8, AC Electrical Systems on Boats.

(3) E–9, DC Electrical Systems on Boats.

(b) An OSV with an electrical installation operating at a potential of less than 50 volts may comply with 33 CFR 183.430 instead of §129.340 of this part.

Subpart B—General Requirements

§ 129.200 Design, installation, and maintenance.

Electrical equipment on a vessel must be designed, installed, and maintained to—

(a) Provide services necessary for safety under normal and emergency conditions;

(b) Protect crew members, offshore workers, and the vessel from electrical hazards, including fire, caused by or originating in electrical equipment and electrical shock;

(c) Minimize accidental personal contact with energized parts; and

(d) Prevent electrical ignition of flammable vapors.

§ 129.210 Protection from wet and corrosive environments.

(a) Electrical equipment used in the following spaces must be drip-proof:

(1) A machinery space.

(2) A space normally exposed to splashing, water wash-down, or other wet conditions within a galley, a laundry, or a public washroom or toilet room that has a bath or shower.

(3) Every other space with similar wet conditions.

(b) Electrical equipment exposed to the weather must be watertight.

(c) Electrical equipment exposed to corrosive environments must be of suitable construction and must be resistant to corrosion.

§ 129.220 Basic safety.

(a) Electrical equipment and installations must be suitable for the roll, pitch, and vibration of the vessel under way.

(b) All equipment, including switches, fuses, and lampholders, must be suitable for the voltage and current used.

(c) Receptacle outlets of the type providing a grounded pole or a specific direct-current polarity must be of a configuration that does not permit improper connection.

(d) Electrical equipment and circuits must be clearly marked and identified.

(e) Any cabinet, panel, box, or other enclosure containing more than one source of power must be fitted with a sign warning persons of this condition

and identifying the circuits to be disconnected.

Subpart C—Power Sources and Distribution Systems

§ 129.310 Power sources.

(a)(1) Each vessel that relies on electricity to power the following loads must be arranged so that the loads can be energized from at least two sources of electricity:

(i) Any system identified as a vital system in §128.130(a) of this subchapter.

(ii) Interior lights.

(iii) Communication systems.

(iv) Navigational equipment and lights.

(v) Fire-protection equipment.

(2) A vessel with batteries of enough capacity for 3 hours of continuous operation to supply the loads specified in paragraph (a)(1) of this section, and with a generator or alternator driven by a propulsion engine, complies with paragraph (a)(1) of this section.

(b) Where a generator driven by a propulsion engine is used as a source of electrical power, no speed change, throttle movement, or change in direction of the propeller shaft of the vessel may interrupt power to any of the loads specified in paragraph (a)(1) of this section.

§ 129.315 Power sources for OSVs of 100 or more gross tons.

(a) The requirements of this section apply instead of those in subpart 111.10 of this chapter.

(b) If a generator provides electrical power for any system identified as a vital system by §128.130(a) of this subchapter, at least two power-generating sets must be provided. At least one set must be independent of the main propulsion plant. A generator not independent of the main propulsion plant must comply with §111.10–4(d) of this chapter. With any one generating set stopped, the remaining set or sets must provide the power necessary for the loads required by this section.

§ 129.320 Generators and motors.

(a) Each generator and motor, except a submersible-pump motor, must be—

(1) In an accessible space, adequately ventilated and as dry as practicable; and

(2) Mounted above the bilges to avoid damage by splash and to avoid contact with low-lying vapors.

(b) Each generator and motor must be designed for an ambient temperature of 50 °C (122 °F), except that—

(1) If the ambient temperature, in the space where a generator or motor is, does not exceed 40 °C (104 °F) under normal operating conditions, the generator or motor may be designed for an ambient temperature of 40 °C (104 °F); and

(2) A generator or motor designed for an ambient temperature of 40 °C (104 °F) may be used in a location where the ambient temperature is 50 °C (122 °F), if the generator or motor is derated to 80 percent of the full-load rating and if the rating or setting of the overcurrent devices of the generator or motor is reduced accordingly.

(c) For each generator rated at 50 volts or more, a voltmeter and an ammeter used for measuring voltage and current while the generator is in operation must be provided. For each alternating-current generator, a means for measuring frequency must also be provided. To ensure satisfactory operation of each generator, additional control equipment and measuring instruments, if needed, must also be provided.

(d) Each generator must have a nameplate attached to it indicating—

(1) Name of manufacturer, type of generator, and designation of frame;

(2) Output in kilowatts, or horsepower rating;

(3) Kind of rating (continuous, overload, or other);

(4) Amperes at rated load, voltage, and frequency;

(5) Number of phases, if applicable;

(6) Type of windings, if DC;

(7) When intended for connection in a normally grounded configuration, the grounding polarity; and

(8) For a generator derated to comply with paragraph (b)(2) of this section, the derated capacity.

(e) Each motor must have attached to it a nameplate containing the information required by Article 430 of NFPA 70.

§ 129.323 Multiple generators.

If an OSV uses two or more generators to supply electricity for the ship's service loads, to comply with § 129.310(a) of this subpart, the following requirements must be met:

(a) Each generator must have an independent prime mover.

(b) The circuit breaker of a generator to be operated in parallel with another generator must comply with §§ 111.12–11(f), 111.30–19(a), and 111.30–25(d) of this chapter.

(c) The circuit breaker of a generator not to be operated in parallel with another generator must be interlocked to prevent that generator from being connected to the switchboard simultaneously with another.

§ 129.326 Dual-voltage generators.

If a dual-voltage generator is installed on an OSV—

(a) The neutral of the dual-voltage system must be solidly grounded at the switchboard's neutral bus and be accessible for checking the insulation resistance of the generator; and

(b) Ground detection must be provided that—

(1) For an alternating-current system, complies with § 111.05–27 of this chapter; and

(2) For a direct-current system, complies with § 111.05–29 of this chapter.

§ 129.330 Distribution panels and switchboards.

(a) Each distribution panel or switchboard must be in a location as dry as practicable, accessible, adequately ventilated, and protected from falling debris and dripping or splashing water.

(b) Each distribution panel or switchboard must be totally enclosed and of the dead-front type.

(c) Each switchboard must have nonconductive handrails.

(d) Each switchboard or main distribution panel must be fitted with a dripshield, unless the switchboard or distribution panel is of a type mounted deck-to-overhead and is not subject to falling objects or liquids from above.

(e) Each distribution panel and switchboard accessible from the rear must be constructed to prevent a person's accidental contact with energized parts.

(f) Working space must be provided around each main distribution panel and switchboard of at least 610 millimeters (24 inches) in front of the switchboard and, of at least 460 millimeters (18 inches) from the nearest bulkhead, stiffener, or frame behind the switchboard. Rear access is prohibited when the working space behind the switchboard is less than 460 millimeters (18 inches).

(g) Nonconductive mats or grating must be provided on the deck in front of each switchboard and, if the switchboard is accessible from the rear, on the deck behind the switchboard.

(h) Each uninsulated current-carrying part must be mounted on noncombustible, nonabsorbent, high-dielectric insulating material.

(i) Equipment mounted on a hinged door of an enclosure must be constructed or shielded so that no person will come into accidental contact with energized parts of the door-mounted equipment when the door is open and the circuit energized.

(j) Bus capacity of switchboards and main distribution panels must be sized in accordance with § 111.30–19(a) of this chapter. Panelboards must have current rating of not less than the feeder-circuit capacity.

§ 129.340 Cable and wiring.

(a) If individual wires, rather than cables, are used in systems operating at a potential of greater than 50 volts, the wire and associated conduit must be run in a protected enclosure. The protected enclosure must have drain holes to prevent the buildup of condensation.

(b) Each cable and wire must—

(1) Have stranded copper conductors with sufficient current-carrying capacity for the circuit in which it is used;

(2) Be installed so as to avoid or reduce interference with radio reception and compass indication;

(3) Be protected from the weather;

(4) Be supported so as to avoid chafing or other damage;

(5) Be installed without sharp bends;

(6) Be protected by metal coverings or other suitable means, if in areas subject to mechanical abuse;

(7) Be suitable for low temperature and high humidity, if installed in refrigerated compartments;

(8) Be located outside a tank, unless it supplies power to equipment in the tank; and

(9) Have sheathing or wire insulation compatible with the fluid in a tank, when installed to comply with paragraph (b)(8) of this section.

(c) Cable and wire in power and lighting circuits must be #14 AWG or larger. Cable and wire in control and indicator circuits must be #22 AWG or larger, or be ribbon cable or similar, smaller, conductor-size cable recommended by the equipment manufacturer for use in circuits for low-power instrumentation, monitoring, or control.

(d) Cable and wire for power and lighting circuits must—

(1) Comply with Section 310–13 of the NEC (NFPA 70), except that no asbestos-insulated cable or dry-location cable may be used;

(2) Be listed by Underwriters Laboratories, Inc. as UL Boat or UL Marine Shipboard cable; or

(3) Comply with §111.60–1 of this chapter for cable, and §111.60–11 of this chapter for wire.

(e) Cable and wire serving vital systems listed in §128.130(a) of this subchapter or serving emergency loads must be routed as far as practicable from areas at high risk for fire, such as galleys, laundries, and machinery spaces.

(f) Cable or wire serving duplicated equipment must be separated so that a casualty that affects one cable does not affect the other.

(g) Each connection to a conductor or a terminal part of a conductor must be made within an enclosure and—

(1) Have a pressure-type connector on each conductor;

(2) Have a solder lug on each conductor;

(3) Have a splice made with a pressure-type connector to a flexible lead or conductor; or

(4) Be splice-soldered, brazed, or welded to a flexible lead or conductor.

(h) A connector or lug of the set-screw type must not be used with a stranded conductor smaller than No. 14 AWG, unless there is a nonrotating follower that travels with the set screw and makes pressure contact with the conductor.

(i) Each pressure-type wire connector and lug must comply with UL 486A. No wire nuts may be used.

(j) Each terminal block must have terminal screws 6–32 or larger.

(k) Each wire connector used in conjunction with screw-type terminal blocks must be of the captive type such as the ring or the flanged-spade type.

(l) No cable may be spliced in—

(1) A hazardous location; or

(2) Another location, except—

(i) A cable installed in a subassembly may be spliced to a cable installed in another subassembly;

(ii) For a vessel receiving alterations, a cable may be spliced to extend a circuit;

(iii) A cable of large diameter or exceptional length may be spliced to facilitate its installation.

(iv) A cable may be spliced to replace a damaged section of itself if, before replacement of the damaged section, the insulation resistance of the remainder of the cable is measured, and the condition of the insulation is unimpaired.

(m) All material in a cable splice must be chemically compatible with other material in the splice and with the materials in the cable.

(n) Ampacities for conductors must comply with Section 310–15 of the NEC (NFPA 70), or with IEEE Standard 45, as appropriate.

(o) Each conductor must be sized so that the voltage drop at the load terminals does not exceed 10 percent.

(p) Each metallic covering of armored cable must—

(1) Be electrically continuous; and

(2) Be grounded at each end of the run to the—

(i) Hull (on a metallic vessel); or

(ii) Common ground plate (on a nonmetallic vessel); and

(3) Have final sub-circuits grounded at the supply end only.

(q) Each portable or temporary electric cord or cable must be constructed and used in compliance with the requirements of §111.60–13 of this chapter for flexible electric cord or cable.

§ 129.350 Batteries—general.

(a) Wherever a battery is charged, there must be natural or induced ventilation to dissipate the gases generated.

(b) Each battery must be located as high above the bilge as practicable within the space the battery is located in and be secured to protect against shifting due to roll, pitch, and heave motions or vibration of the vessel, and free from exposure to splash or spray of water.

(c) Each battery must be accessible for maintenance and removal.

(d) Each connection to a battery terminal must be made with a permanent connector, rather than with spring clips or other temporary clamps.

(e) Each battery must be mounted in a tray lined with, or constructed of, lead or other material resistant to damage by the electrolyte.

(f) Each battery charger must have an ammeter connected in the charging circuit.

(g) Unless the battery is adjacent to its distribution panel or switchboard that distributes power to the lighting, motor, and appliance circuits, the battery leads must have fuses in series with and as close as practicable to the battery.

(h) Each battery used for starting an engine must be located as close as possible to the engine or engines served.

§ 129.353 Battery categories.

This section applies to batteries installed to meet the requirements of § 129.310(a) for secondary sources of power to vital loads.

(a) *Large.* A large battery-installation is one connected to a battery charger having an output of more than 2 kW, computed from the highest possible charging current and rated voltage of the battery installed.

(b) *Small.* A small battery-installation is one connected to a battery charger having an output of 2 kW or less, computed from the highest possible charging current and rated voltage of the battery installed.

§ 129.356 Battery installations.

(a) *Large.* Each large battery-installation must be located in a locker, room, or enclosed box dedicated solely to the storage of batteries. Ventilation must be provided in accordance with § 111.15–10 of this chapter. Electrical equipment located within the battery enclosure must be approved by an independent laboratory for hazardous locations of Class I, Division 1, Group B, and must meet subpart 111.105 of this chapter.

(b) *Small.* Each small battery-installation must be located in a well-ventilated space and protected from falling objects. No small battery-installation may be in a closet, storeroom, or similar space.

§ 129.360 Semiconductor-rectifier systems.

(a) Each semiconductor-rectifier system must have an adequate heat-removal system to prevent overheating.

(b) If a semiconductor-rectifier system is used in a propulsion system or in another vital system, it must—

(1) Have a current-limiting circuit;

(2) Have external overcurrent protection; and

(3) Comply with Sections 4/5.84.2 and 4/5.84.4 of the ''Rules for Building and Classing Steel Vessels'' of the American Bureau of Shipping.

§ 129.370 Equipment grounding.

(a) On a metallic vessel each metallic enclosure and frame of electrical equipment must be permanently grounded to the hull. On a nonmetallic vessel each enclosure and frame of electrical equipment must be bonded to each other and to a common ground by a conductor not normally carrying current.

(b) Each metallic case of instruments must be grounded. So must each secondary winding of instrument transformers.

(c) Each equipment grounding conductor must be sized to comply with section 250–95 of NEC (NFPA 70).

(d) Each nonmetallic mast and topmast must have a lightning-ground conductor.

§ 129.375 System grounding.

(a) If a grounded distribution system is provided, there must be only one connection to ground, regardless of the number of power sources. This connection must be at the main switchboard.

(b) On each metallic vessel, a grounded distribution system must be grounded to the hull. On each nonmetallic vessel, the neutral of a grounded system must be connected to a common ground plate, except that no aluminum grounding conductors may be used.

(c) On each nonmetallic vessel with a grounded distribution system, the common ground plate must have—

(1) Only one connection to the main switchboard; and

(2) The connection to itself readily accessible for checking.

(d) On each nonmetallic vessel with a ground plate provided for radio equipment, the plate must be connected to the common ground plate.

(e) Each insulated grounding-conductor of a cable must be identified by one of the following means:

(1) Wrapping of the cable with green braid or green insulation.

(2) Stripping of the insulation from the entire exposed length of the grounding-conductor.

(3) Marking of the exposed insulation of the grounding-conductor with green tape or green adhesive labels.

(f) No vessel's hull may carry current as a conductor except for—

(1) An impressed-current cathodic-protection system; or

(2) A battery system to start an engine.

(g) No cable armor may be used to ground electrical equipment or systems.

(h) Each receptacle outlet and attachment plug, for a portable lamp, tool, or similar apparatus operating at 100 or more volts, must have a grounding-pole and a grounding-conductor in the portable cord.

§ 129.380 Overcurrent protection.

(a) Overcurrent protection must be provided for each ungrounded conductor, to open the electric circuit if the current reaches a value that causes an excessive or dangerous temperature in the conductor or its insulation.

(b) Each conductor of a control, interlock, or indicator circuit, such as a conductor for an instrument, pilot light, ground-detector light, or potential transformer, must be protected by an overcurrent device.

(c) Each generator must be protected by an overcurrent device set at a value not exceeding 115 percent of the generator's full-load rating.

(d) Circuits of control systems for steering gear must be protected against short circuit.

(e) Each feeder circuit for steering gear must be protected by a circuit breaker that complies with §§ 58.25–55(a) and (b) of this chapter.

(f) Each branch circuit for lighting must be protected against overcurrent by either fuses or circuit breakers. Neither the fuses nor the circuit breakers may be rated at more than 30 amperes.

(g) Each conductor must be protected in accordance with its current-carrying capacity. If the allowable current-carrying capacity does not correspond to a standard size of device, the next larger overcurrent device may be used, provided it is less than 150 percent of the conductor's current-carrying capacity.

(h) An overcurrent device must be installed to protect each motor conductor and control apparatus against overcurrent due to short circuit or ground fault. Each overcurrent device must be capable of carrying the starting current of the motor.

(i) An emergency switch must be provided in each normally ungrounded main supply conductor from a battery. The switch must be accessible from the battery and located as close as practicable to it.

(j) No grounded conductor of a circuit may be disconnected by a switch or circuit breaker unless the ungrounded conductors are all simultaneously disconnected.

(k) A means of disconnect must be provided on the supply side of and adjacent to each fuse, to de-energize the fuse for inspection and maintenance.

(l) A way for locking the means of disconnect open must be provided unless the means of disconnect for a fused circuit is within sight of the equipment that the circuit supplies.

(m) Each fuse must be of the cartridge type and be listed by Underwriters Laboratories (UL) or another independent laboratory recognized by the Commandant.

(n) Each circuit breaker must meet UL 489 and be of the manually-reset type designed for—

(1) Inverse delay;
(2) Instantaneous short-circuit protection; and
(3) Switching duty if the breaker is used as a switch.
(o) Each circuit breaker must indicate whether it is open or closed.

§ 129.390 Shore power.

Each vessel that has an electrical system operating at more than 50 volts and has provisions for receiving shore power must meet the requirements of this section:
(a) A shore-power-connection box or receptacle must be permanently installed at a convenient location.
(b) A cable connecting the shore-power-connection box or receptacle to the switchboard or main distribution panel must be permanently installed.
(c) A circuit breaker must be provided at the switchboard or main distribution panel for the shore-power connection.
(d) The circuit breaker, required by paragraph (c) of this section, must be interlocked with the feeder circuit breakers for the vessel's power sources to preclude the vessel's power sources and shore power from energizing the vessel's switchboard simultaneously, except in cases where system devices permit safe momentary paralleling of OSV power with shore power.

§ 129.395 Radio installations.

A separate circuit, with overcurrent protection at the switchboard, must be provided for at least one radio installation. Additional radios, if installed, may be powered from a local lighting power source, such as the pilothouse lighting panel, provided each radio power source has a separate overcurrent protection device.

Subpart D—Lighting Systems

§ 129.410 Lighting fixtures.

(a) Each globe, lens, or diffuser of a lighting fixture must have a high-strength guard or be made of high-strength material, except in accommodations, the pilothouse, the galley, or similar locations where the fixture is not subject to damage.
(b) No lighting fixture may be used as a connection box for a circuit other than the branch circuit supplying the fixture.
(c) Each lighting fixture must be installed as follows:
(1) Each lighting fixture and lampholder must be fixed. No fixture may be supported by the screw shell of a lampholder.
(2) Each pendant-type lighting fixture must be suspended by and supplied through a threaded rigid-conduit stem.
(3) Each tablelamp, desklamp, floorlamp, or similar equipment must be so secured in place that it cannot be displaced by the roll, pitch, or heave or by the vibration of the vessel.
(d) Each lighting fixture in an electrical system operating at more than 50 volts must comply with UL 595, ''Marine Type Electric Lighting Fixtures.'' A lighting fixture in an accommodation space, radio room, galley, or similar interior space may comply with UL 57, ''Electric Lighting Fixtures,'' UL 1570, ''Fluorescent Lighting Fixtures,'' UL 1571, ''Incandescent Lighting Fixtures,'' UL 1572, ''High Intensity Discharge Lighting Fixtures,'' UL 1573, ''Stage and Studio Lighting Units,'' or UL 1574, ''Track Lighting Systems,'' as long as the general marine requirements of UL 595 are satisfied.

§ 129.420 Branch circuits for lighting on OSVs of 100 or more gross tons.

On each vessel of 100 or more gross tons, each branch circuit for lighting must comply with §111.75–5 of this chapter, except that—
(a) Appliance loads, electric-heater loads, and isolated small-motor loads may be connected to a lighting-distribution panelboard; and
(b) Branch circuits, other than for lighting, connected to the lighting-distribution panelboard permitted by paragraph (a) of this section may have fuses or circuit breakers rated at more than 30 amperes.

§ 129.430 Navigational lighting.

(a) Each vessel of less than 100 gross tons and less than 19.8 meters (65 feet) in length must have navigational lighting in compliance with the applicable navigation rules.
(b) Each vessel of 100 or more gross tons, or 19.8 meters (65 feet) or more in

length, must have navigational lighting in compliance with the applicable navigation rules and with §111.75–17(d) of this chapter.

§ 129.440 Emergency lighting.

(a) A vessel of less than 100 gross tons must have adequate emergency lighting fitted along the line of escape to the main deck from accommodations and working (machinery) spaces below the main deck.

(b) The emergency lighting required by paragraph (a) of this section must automatically actuate upon failure of the main lighting. Unless a vessel is equipped with a single source of power for emergency lighting, it must have individual battery-powered lighting that is—

(1) Automatically actuated upon loss of normal power;

(2) Not readily portable;

(3) Connected to an automatic battery-charger; and

(4) Of enough capacity for 6 hours of continuous operation.

§ 129.450 Portable lighting.

Each vessel must be equipped with at least two operable, portable, battery-powered lights. One of these lights must be located in the pilothouse, another at the access to the engine room.

Subpart E—Miscellaneous Electrical Systems

§ 129.510 Lifeboat winches.

Each lifeboat winch operated by electric power must comply with subparts 111.95 and be approved under approval series in subparts 160.015 or 160.115 of this chapter.

§ 129.520 Hazardous areas.

(a) No OSV that carries flammable or combustible liquid with a flashpoint of below 140 °F (60 °C), or carries hazardous cargoes on deck or in integral tanks, or is involved in servicing wells, may have electrical equipment installed in pump rooms, in hose-storage spaces, or within 3 meters (10 feet) of a source of vapor on a weather deck unless the equipment is explosion-proof or intrinsically safe under §111.105–9 or 111.105–11 of this chapter.

(b) No electrical equipment may be installed in any locker used to store paint, oil, turpentine, or other flammable liquid unless the equipment is explosion-proof or intrinsically safe under §111.105–9 or §111.105–11 of this chapter.

(c) Equipment that is explosion-proof and intrinsically safe must comply with subpart 111.105 of this chapter.

§ 129.530 General alarm.

Each vessel must be fitted with a general alarm that complies with subpart 113.25 of this chapter.

§ 129.540 Remote stopping-systems on OSVs of 100 or more gross tons.

(a) Except as provided by paragraph (b) of this section, each vessel must be fitted with remote stopping-systems that comply with subpart 111.103 of this chapter.

(b) The following remote stopping-systems may substitute for remote stopping-systems that must comply with subpart 111.103 of this chapter:

(1) For each propulsion unit, in the pilothouse.

(2) For each discharge pump for bilge slop or dirty oil, at the deck discharge.

(3) For each powered ventilation system, outside the space ventilated.

(4) For each fuel-oil pump, outside the space containing the pump.

(5) For each cargo-transfer pump for combustible and flammable liquid, at each transfer-control station.

(c) Remote stopping-systems required by this section may be combined.

§ 129.550 Power for cooking and heating.

(a) Equipment for cooking and heating must be suitable for marine use. Equipment designed and installed to comply with ABYC Standards A–3 and A–7 or Chapter 6 of NFPA 302 meets this requirement.

(b) The use of gasoline for cooking, heating, or lighting is prohibited.

(c) The use of liquefied petroleum gas for cooking, heating, or other purposes must comply with subpart 58.16 of this chapter.

(d) Each electric space-heater must be provided with a thermal cut-out to prevent overheating.

(e) Each element of an electric space-heater must be enclosed, and the case or jacket of the element made of a corrosion-resistant material.

(f) Each electrical connection for a cooking appliance must be drip-proof.

§ 129.560 Engine-order telegraphs.

No OSV need carry an engine-order telegraph, provided the vessel meets the requirements of § 113.35–3(d) of this chapter.

PART 130—VESSEL CONTROL, AND MISCELLANEOUS EQUIPMENT AND SYSTEMS

Subpart A—Vessel Control

Sec.

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Subpart A—Vessel Control

§ 130.110 Internal communications on OSVs of less than 100 gross tons.

Each vessel of less than 100 gross tons equipped with an independent auxiliary means of steering, as required by § 130.130(b) of this subpart, must have a fixed means of communication between the pilothouse and the place where the auxiliary means of steering is controlled.

§ 130.120 Propulsion control.

(a) Each vessel must have—

(1) A propulsion-control system operable from the pilothouse; and

(2) A means at each propulsion engine of readily disabling the propulsion-control system to permit local operation.

(b) Each propulsion-control system operable from the pilothouse must enable—

(1) Control of the speed of each propulsion engine;

(2) Control of the direction of propeller-shaft rotation;

(3) Control of propeller pitch, if a controllable-pitch propeller is fitted; and

(4) Shutdown of each propulsion engine.

(c) The propulsion-control system operable from the pilothouse may constitute the remote stopping-system required by § 129.540 of this subchapter.

(d) Each propulsion-control system, including one operable from the pilothouse, must be designed so that no one complete or partial failure of an easily replaceable component of the system allows the propulsion engine to overspeed or the pitch of the propeller to increase.

§ 130.130 Steering on OSVs of less than 100 gross tons.

(a) Each OSV of less than 100 gross tons must have a steering system that complies with—

(1) Section 130.140 of this subpart; or

(2) This section.

(b) Except as provided by paragraph (i) of this section, each vessel must have a main and an independent auxiliary means of steering.

(c) The main means of steering (main steering gear) must be—

(1) Of adequate strength for, and capable of, steering the OSV at each service speed;

(2) Designed to operate at maximum astern speed without being damaged; and

(3) Capable of moving the rudder from 35 degrees on one side to 30 degrees on the other side in no more than 28 seconds with the vessel moving ahead at maximum service speed.

(d) Control of the main steering gear must be available from the pilothouse, including control of any necessary ancillary device (motor, pump, valve, or the like). If a power-driven main steering gear is used, a pilot light must be installed in the pilothouse to indicate operation of the power units.

(e) The auxiliary means of steering (auxiliary steering gear) must be—

(1) Of adequate strength for steering the OSV at navigable speed;

(2) Capable of steering the vessel at navigable speed; and

(3) Controlled from a place that—

(i) Can communicate with the pilothouse; or

(ii) Enables the master to safely maneuver the vessel.

(f) The steering gear must be designed so that transfer from the main steering gear or its control to the auxiliary steering gear or its control can be achieved rapidly. Any tools or equipment necessary for transfer must be readily available. Instructions for transfer must be posted.

(g) Each vessel must have instantaneous protection against short circuit for electrical-power circuits and control circuits, the protection sized and located to comply with §§ 58.25–55 (d) and (e) of this chapter.

(h) A rudder-angle indicator independent of the control of the main steering gear must be installed at the steering-control station in the pilothouse.

(i) No auxiliary steering gear need be installed if—

(1) The main steering gear, including power systems, is installed in duplicate; or

(2) Multiple-screw propulsion—with independent control of propulsion from the pilothouse for each screw and with a means to restrain and center the rudder—is installed, and if that control is capable of steering the OSV.

(j) Each vessel with duplicate (parallel but cross-connected) power systems for the main steering gear by way of compliance with paragraph (i)(1) of this section may use one of the systems for other purposes if—

(1) Control of the subordinate parallel system is located at the steering-control station in the pilothouse;

(2) Full power is available to the main steering gear when the subordinate parallel system is not in operation;

(3) The subordinate parallel system can be isolated from the means of steering, and instructions on procedures for isolating it are posted; and

(4) The subordinate parallel system is materially equivalent to the steering system.

§ 130.140 Steering on OSVs of 100 or more gross tons.

(a) Each OSV of 100 or more gross tons must have a means of steering that meets the—

(1) Applicable requirements of subchapters F and J of this chapter; or

(2) Requirements for a hydraulic-helm steering-system in paragraph (b) of this section.

(b) Each hydraulic-helm steering-system must have the following:

(1) A main steering gear of adequate strength for, and capable of, steering the vessel at every service speed without being damaged at maximum astern speed.

(2) A hydraulic system with a maximum allowable working pressure of not more than 12,411 kPa (1,800 psi), dedicated to steering.

(3) Piping materials that comply with subchapter F of this chapter, and piping thickness of at least schedule 80.

(4) Each fore-and-aft run of piping located as far inboard as practicable.

(5) Rudder stops.

(6) Either—

(i) Two steering pumps in accordance with § 130.130(c)(3) of this part; or

(ii) A single hydraulic sump of the ''cascading overflow'' type with a centerline bulkhead open only at the top, if each half has enough capacity to operate the system.

(7) Control of the main steering gear from the pilothouse, including—

(i) Control from the helm;

(ii) Control of any necessary ancillary device (motor, pump, valve, or the like); and

(iii) Adequate visibility when going astern.

(8) Multiple-screw propulsion with independent control of propulsion from the pilothouse, complying with §130.120 of this part and being capable of steering the vessel.

(9) Dual hydraulic cylinders arranged so that either cylinder can be readily isolated, permitting the other cylinder to remain in service and move each rudder.

(10) The steering alarms and indicators required by §58.25–25 of this chapter, located in the pilothouse.

(11) Instantaneous protection against short circuit for electrical power, and control circuits sized and located as required by §§58.25–55 (d) and (e) of this chapter.

(12) A rudder-angle indicator, at the steering-control station in the pilothouse, that is independent of the control of the main steering gear.

(13) Means to locally start and stop the steering pumps.

(14) Means to isolate any auxiliary means of steering so as not to impair the reliability and availability of the control required by paragraph (b)(7) of this section.

(15) Manual capability to center and steady the rudder if the vessel loses normal steering power.

(c) For compliance with paragraph (b) of this section, a common piping system for pumps, helm, and cylinders is acceptable.

Subpart B—Miscellaneous Equipment and Systems

§130.210 Radiotelegraph and radiotelephone.

Each vessel must comply with 47 CFR part 80 as applicable.

§130.220 Design of equipment for cooking and heating.

(a) Doors on each cooking appliance must be provided with heavy-duty hinges and locking-devices to prevent accidental opening in heavy weather.

(b) Each cooking appliance must be installed so as to prevent its movement in heavy weather.

(c) Each grill or similar cooking appliance must have means to collect grease or fat and to prevent its spillage onto wiring or the deck.

(d) On each cooking appliance, grab rails must be installed when determined by the cognizant OCMI to be necessary for safety.

(e) On each cooking appliance, sea rails, with suitable barriers to prevent accidental movement of cooking pots, must be installed.

(f) Each heater must be constructed and installed so as to prevent the hanging from it of items such as towels and clothing.

§130.230 Protection from refrigerants.

(a) For each refrigeration system that exceeds 0.6 cubic meters (20 cubic feet) of storage capacity if using ammonia or other hazardous gas, or exceeds 28.3 cubic meters (1,000 cubic feet) of storage capacity if using a fluorocarbon, as a refrigerant, there must be available one pressure-demand, open-circuit, self-contained breathing apparatus, approved by the National Institute for Occupational Safety and Health (NIOSH) and having at a minimum a 30-minute air supply, and a full facepiece.

(b) Each self-contained breathing apparatus must be stowed convenient to, but outside, the space containing the refrigeration equipment.

(c) A complete recharge in the form of a spare charge must be carried for each self-contained breathing apparatus. The spare charge must be stowed with the equipment it is to reactivate.

(d) The self-contained breathing apparatus in a fireman's outfit, if fitted, complies with this section.

§130.240 Anchors and chains for OSVs of 100 or more gross tons.

(a) Each OSV of 100 or more gross tons must be fitted with anchors and chains meeting the applicable standards set by the ABS for classed vessels, including equipment, except as permitted by paragraphs (b) and (c) of this section.

(b) As well as the standards incorporated by paragraph (a) of this section, each vessel of under 61 meters (200 feet) in length and with an equipment number from the ABS of less than 150 may be equipped with either—

(1) One anchor of the tabular weight and one-half the tabulated length of anchor chain listed in the applicable standard; or

(2) Two anchors of one-half the tabular weight with the total length of anchor chain listed in the applicable standard, if both anchors are ready for use at any time and if the windlass is capable of heaving in either anchor.

(c) Standards of classification societies other than the ABS may be used, upon approval of the Commandant.

§ 130.250 Mooring and towing equipment for OSVs of less than 100 gross tons.

Each OSV of less than 100 gross tons must be fitted with mooring and towing equipment meeting the applicable requirements for small passenger vessels in §184.300 of this chapter.

Subpart C—Navigational Equipment

§ 130.310 Radar.

Each vessel of 100 or more gross tons must be fitted with a general marine radar in the pilothouse.

§ 130.320 Electronic position-fixing device.

Each vessel must be equipped with an electronic position-fixing device satisfactory for the area in which the vessel operates.

§ 130.330 Charts and nautical publications.

(a) Except as provided by paragraph (b) or (c) of this section, as appropriate for the intended voyage, each vessel must carry adequate and up-to-date—

(1) Charts of large enough scale to make safe navigation possible;

(2) U.S. Coast Pilot or similar publication;

(3) Coast Guard Light List;

(4) Tide Tables published by the National Ocean Service;

(5) Local Notice or Notices to Mariners; and

(6) Current Tables published by the National Ocean Service, or a river-current publication issued by the U.S. Army Corps of Engineers or by a river authority, or both.

(b) Any vessel may carry, instead of the complete publications listed in paragraph (a) of this section, extracts from them for areas it will transit.

(c) When operating in foreign waters, a vessel may carry an appropriate foreign equivalent of any item required by paragraph (a) of this section.

§ 130.340 Compass.

Each vessel must be fitted with a compass suitable for the intended service of the vessel. Except aboard a vessel limited to daytime operation, the compass must be illuminated.

Subpart D—Automation of Unattended Machinery Spaces

§ 130.400 Applicability.

This subpart applies to each vessel of 100 or more gross tons where automated systems either replace specific personnel in the control and observation of the propulsion system and machinery spaces or reduce the level of crew associated with the vessel's engine department.

§ 130.410 General.

(a) Arrangements must be such that under any operating condition, including maneuvering, the safety of the vessel is equivalent to that of the same vessel with the machinery spaces fully tended and under direct manual supervision.

(b) Acceptance by the Coast Guard of automated systems to replace specific crew members or to reduce overall requirements for crew members depends upon the—

(1) Capabilities of the automated system;

(2) Combination of crew members, equipment, and systems necessary to ensure the safety of the vessel, personnel, and environment in each operating condition, including maneuvering; and

(3) Ability of the crew members to perform each operational evolution, including to cope with emergencies such

as fire and failure of control or monitoring systems.

§ 130.420 Controls.

Each piece of machinery under automatic control must have an alternative manual means of control.

§ 130.430 Pilothouse control.

Each OSV must have, at the pilothouse, controls to start a fire pump, charge the fire main, and monitor the pressure in the fire main.

§ 130.440 Communications system.

(a) Each OSV must have a communications system to immediately summon a crew member to the machinery space wherever one of the alarms required by §130.460 of this subpart is activated.

(b) The communications system must be either—

(1) An alarm that—

(i) Is dedicated for this purpose;

(ii) Sounds in the crew accommodations and the normally manned spaces; and

(iii) Is operable from the pilothouse; or

(2) A telephone operated from the pilothouse that reaches the master's stateroom, engineer's stateroom, engine room, and crew accommodations that either—

(i) Is a sound-powered telephone; or

(ii) Gets its power from the emergency switchboard or from an independent battery continuously charged by its own charger.

§ 130.450 Machinery alarms.

(a) Each alarm required by §130.460 of this subpart must be of the self-monitoring type that will both show visibly and sound audibly upon an opening or break in the sensing circuit.

(b) The visible alarm must show until it is manually acknowledged and the condition is corrected.

(c) The audible alarm must sound until it is manually silenced.

(d) No silenced alarm may prevent any other audible alarm from sounding.

(e) Each OSV must be provided with means for testing each visible and audible alarm.

(f) Each OSV must provide battery power for the alarm required by §130.460(a)(8) of this subpart.

§ 130.460 Placement of machinery alarms.

(a) Visible and audible alarms must be installed at the pilothouse to indicate the following:

(1) Loss of power for propulsion control.

(2) Loss of power to the steering motor or for control of the main steering gear.

(3) Engine-room fire.

(4) High bilge-level.

(5) Low lube-oil pressure for each main propulsion engine and each prime mover of a generator.

(6) For each main propulsion engine and each prime mover of a generator—

(i) High lube-oil temperature; and

(ii) High jacket-water temperature.

(7) For each reduction gear and each turbocharger with a pressurized oil system—

(i) Low lube-oil pressure; and

(ii) High lube-oil temperature.

(8) Loss of normal power for the alarms listed in paragraphs (a)(1) through (a)(7) of this section.

(b) Sensors for the high-bilge-level alarm required by paragraph (a)(4) of this section must be installed in—

(1) Each space below the deepest load waterline that contains pumps, motors, or electrical equipment; and

(2) The compartment that contains the rudder post.

(c) Centralized displays must be installed in the machinery spaces to allow rapid evaluation of each problem detected by the alarms required by paragraph (a) of this section. Equipment-mounted gauges or meters are acceptable for this purpose, if they are grouped at a central site.

§ 130.470 Fire alarms.

(a) Each fire detector and control unit must be of a type specifically approved by the Commandant (G–MSE).

(b) No fire-alarm circuit for the engine room may contain a fire detector for any other space.

(c) The number and placement of fire detectors must be approved by the cognizant OCMI.

§ 130.480 Test procedure and operations manual.

(a) A procedure for tests to be conducted on automated equipment by the operator and the Coast Guard must be submitted to comply with §127.110 of this subchapter.

(b) The procedure for tests must—

(1) Be in a sequential-checkoff format;

(2) Include the required alarms, controls, and communications; and

(3) Set forth details of the tests.

(c) Details of the tests must specify status of equipment, functions necessary to complete the tests, and expected results.

(d) No tests may simulate conditions by misadjustments, artificial signals, or improper wiring.

(e) A detailed operations manual that describes the operation and indicates the location of each system installed to comply with this part must be submitted to comply with §127.110 of this subchapter.

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SOURCE: CGD 82–004 and CGD 86–074, 62 FR 49340, Sept. 19, 1997, unless otherwise noted.

Subpart A—Notice of Casualty and Records of Voyage

§ 131.110 Notice and records.

Each vessel must meet the requirements of part 4 of this chapter for reporting marine casualties and retaining voyage records.

Subpart B—Markings on Vessels

§ 131.210 Hulls.

The hull of each vessel must be marked as required by parts 67 and 69 of this chapter.

§ 131.220 Drafts.

(a) Each vessel must have the drafts of the vessel plainly and legibly marked upon the stem and upon the sternpost or rudderpost, or at any place at the stern of the vessel that may be necessary for easy observance. The bottom of each mark must indicate the draft.

(b) Each draft must be taken from the bottom of the keel to the surface of the water at the location of the marks.

(c) When, because of raked stem or cutaway skeg, the keel does not extend forward or aft to the draft markings, the datum line from which the draft is taken must be the line of the bottom of the keel projected forward or aft, as the case may be, to where the line meets that of the draft markings projected downward.

(d) When a skeg or other appendage extends below the line of the keel, the draft at the end of the vessel adjacent to that appendage must be measured to a line tangent to the lowest part of the appendage and parallel to the line of the bottom of the keel.

(e) Drafts must be separated so that the projections of the marks onto a vertical plane are of uniform height, equal to the vertical spacing between consecutive marks.

(f) Marks must be painted in a color contrasting with that of the hull.

(g) Where marks are obscured because of operational constraints or by protrusions, the vessel must be fitted with a reliable draft-indicating system from which the drafts at bow and stern can be determined.

§ 131.230 Loadlines and decklines.

Each vessel assigned a loadline must have loadline markings and deck-line markings permanently scribed or embossed as required by subchapter E of this chapter.

Subpart C—Preparations for Emergencies

§ 131.310 List of crew members and offshore workers.

(a) The master of each vessel shall keep a correct list containing the name of each person that embarks upon and disembarks from the vessel.

(b) The list required by paragraph (a) of this section must be prepared before the vessel's departure on a voyage, and deposited ashore—

(1) At the facility from which the crew members and offshore workers embarked;

(2) In a well-marked place at the vessel's normal berth; or

(3) With a representative of the owner or managing operator of the vessel.

§ 131.320 Safety orientation for offshore workers.

(a) Before a vessel gets under way on a voyage, the master shall ensure that suitable public announcements are made informing each offshore worker of—

(1) In general terms, emergency and evacuation procedures;

(2) Locations of emergency exits and of embarkation areas for survival craft;

(3) Locations of stowage of lifejackets and immersion suits;

(4) With demonstration, proper method or methods of donning and adjusting lifejackets and immersion suits of the type or types carried on the vessel;

(5) Locations of the instruction placards for lifejackets and other lifesaving devices;

(6) Explanation that each offshore worker shall don an immersion suit and a lifejacket when the master determines that hazardous conditions do or might exist but that offshore workers may don lifejackets whenever they feel it necessary;

(7) Which hazardous conditions might require the donning of lifejackets and immersion suits;

(8) Types and locations of any other lifesaving device carried on the vessel;

(9) Locations and contents of the ''Emergency Instructions'' required by § 131.330;

(10) Survival craft to which assigned;

(11) Any hazardous materials on the vessel; and

(12) Any conditions or circumstances that constitute a risk to safety.

(b) The master of each vessel shall ensure that each offshore worker boarding the vessel on a voyage after the initial public announcement has been made, as required by paragraph (a) of this section, also hears the information in paragraph (a) of this section.

§ 131.330 Emergency instructions.

(a) Except as otherwise provided by this section, the master of each vessel shall prepare and post durable emergency-instruction placards in conspicuous locations accessible to the crew members and offshore workers.

(b) The instruction placards must contain the recommended ''Emergency Instructions'' listed in § 131.340 that, in the judgment of the cognizant OCMI, apply. The placards must be further designed to address the equipment, arrangement, and operation peculiar to each vessel.

§ 131.340 Recommended placard for emergency instructions.

The following are the recommended format and content of the placard for emergency instructions:

EMERGENCY INSTRUCTIONS

(a) *Rough weather at sea, crossing of hazardous bars, or flooding.*

(1) Close each watertight and weathertight door, hatch, and air-port to prevent taking water aboard or further flooding in the vessel.

(2) Keep bilges dry to prevent loss of stability from water in bilges. Use power-driven bilge pump, hand pump, and buckets to dewater.

(3) Align fire pumps to serve as bilge pumps if possible.

(4) Check, for leakage, each intake and discharge line that penetrates the hull.

(5) Offshore workers remain seated and evenly distributed.

(6) Offshore workers don immersion suits (if required aboard) or lifejackets if the going becomes very rough, if the vessel is about to cross a hazardous bar, if flooding begins, or when ordered to by the master.

(7) Never abandon the vessel unless actually forced to, or ordered to by the master.

(8) Prepare survival craft—life floats, (inflatable) rafts, (inflatable) buoyant apparatus, and boats—for launching.

(b) *''Man overboard''.*

(1) Throw a ring buoy into the water as close to the person overboard as possible.

(2) Post a lookout to keep the person overboard in sight.

(3) Launch the rescue boat and maneuver it to pick up the person overboard, or maneuver the vessel to pick up the person.

(4) Have a crew member put on an immersion suit or lifejacket, have a safety line made fast to the crew member, and have the crew member stand by to jump into the water to assist the person overboard if necessary.

(5) If the person overboard is not immediately located—

(i) Notify other vessels in the vicinity, and the Coast Guard; and

(ii) Continue searching until released by the Coast Guard.

(c) *Fire.*

(1) Cut off air to the fire: close hatches, ports, doors, manual ventilators, and the like and shut off the ventilation system.

(2) De-energize electrical systems supplying the affected compartment.

(3) Immediately use a portable fire extinguisher aimed at the base of the flames. Never use water on electrical fires.

(4) If the fire is in machinery spaces, shut off the fuel supply and ventilation system and activate any fixed extinguishing-system.

(5) Maneuver the vessel to minimize the effect of wind on the fire.

(6) If unable to control the fire, notify other vessels in the vicinity, and the Coast Guard.

(7) Move offshore workers away from fire; have them don lifejackets and, if necessary, prepare to abandon the vessel.

§ 131.350 Station bill.

(a) The master of each vessel shall post a station bill if the vessel's Certificate of Inspection requires more than four crew members, including the master.

(b) The station bill must be posted in the pilothouse and in conspicuous places in crew members' and offshore workers' accommodations.

(c) The station bill must set forth the special duties and duty stations of each crew member for various emergencies. The duties must, as far as possible, be comparable to and compatible with the regular work of the member. The duties must include at least the following and should comprise any other duties necessary for the proper handling of a particular emergency:

(1) The closing of hatches, air-ports, watertight doors, vents, and scuppers, and of intake valves and discharge lines that penetrate the hull; the stopping of fans and ventilating systems; and the operating of safety equipment.

(2) The preparing and launching of survival craft and rescue boats.

(3) The extinguishing of fire.

(4) The mustering of offshore workers, which includes—

(i) Assembling them and seeing that they are properly dressed and have donned their immersion suits and lifejackets; and

(ii) Directing them to their appointed stations.

§ 131.360 Responsibilities of licensed or certificated individuals.

Nothing in the emergency instructions or in any station bill required by this subpart exempts any licensed or certificated individual from the exercise of good judgment in an emergency.

Subpart D—Sufficiency and Supervision of Crew of Survival Craft

§ 131.410 Certificate of proficiency.

A merchant mariner's document with an endorsement of lifeboatman or another inclusive rating under part 12 of this title is evidence of training in survival craft and serves as a certificate of proficiency. For this subpart, a ''certificated'' person is a person holding a merchant mariner's document with such an endorsement.

§ 131.420 Manning and supervision.

(a) There must be enough trained persons aboard each survival craft to muster and assist untrained persons.

(b) Except as permitted by paragraph (c)(2) of this section, there must be enough deck officers, able seamen, or other certificated persons aboard each survival craft to manage the launching and handling of the survival craft.

(c) One person must be placed in charge of each survival craft to be used.

(1) Except as permitted by paragraph (c)(2) of this section, the person in command must be a deck officer, able seaman, or other certificated person.

(2) Considering the nature of the voyage, the number of persons permitted aboard, and the characteristics of the vessel, including gross tonnage, the cognizant OCMI may permit persons practiced in the handling of liferafts to be placed in charge of liferafts instead of persons required under paragraph (c)(1) of this section.

(3) A deck officer, able seaman, or other certificated person shall serve as

second-in-command for each lifeboat either—

(i) Carried on a vessel in ocean service; or

(ii) Permitted to carry more than 40 persons.

(d) The person in charge and the second-in-command of each survival craft shall have a list of crew members and offshore workers assigned to the craft and shall see that the crew members are acquainted with their duties.

(e) Each motorized survival craft must have assigned a person capable of operating the engine and carrying out minor adjustments.

(f) The master shall ensure that the persons required under paragraphs (a), (b), and (c) of this section are equitably distributed among the vessel's survival crafts.

Subpart E—Tests, Drills, and Inspections

§ 131.505 Steering gear, whistle, and means of communication.

(a) On each vessel expected to be away from shore for more than 48 hours, the master shall examine and test the steering gear, the whistle, and the means of communication between the pilothouse and the engine room 12 or fewer hours before departure. On every other vessel, the master shall do the same at least once a week.

(b) The date of each test and examination and the condition of the equipment must be noted in the vessel's logbook.

§ 131.510 Draft and loadline markings.

(a) The master of each vessel on an ocean or coastwise voyage shall enter in the vessel's logbook the drafts of the vessel, forward and aft, when leaving port.

(b) The master of each vessel subject to the requirements of subchapter E of this chapter shall, upon departure from port on an ocean or coastwise voyage, enter in the vessel's logbook a statement of the position of the loadline markings, port and starboard, relative to the surface of the water in which the vessel is then floating.

(c) If the master, when recording drafts, compensates for the density of the water in which the vessel is floating, he or she shall note this density in the vessel's logbook.

§ 131.513 Verification of compliance with applicable stability requirements.

(a) After loading but before departure, and at other times necessary to assure the safety of the vessel, the master shall verify that the vessel complies with requirements in its trim-and-stability book, stability letter, Certificate of Inspection, and Loadline Certificate, whichever apply, and then enter a statement of the verification in the log book. The vessel may not leave port until it is in compliance with these requirements.

(b) When determining compliance with applicable stability requirements, the master shall ascertain the vessel's draft, trim, and stability as necessary; and any stability calculations made in support of the determination must remain aboard the vessel for the duration of the voyage.

§ 131.515 Periodic sanitary inspections.

(a) The master shall make periodic inspections of the quarters, toilet and washing spaces, serving pantries, galleys, and the like, to ensure that those spaces are maintained in a sanitary condition.

(b) The master shall enter in the vessel's logbook the results of these inspections.

§ 131.520 Hatches and other openings.

Before any vessel leaves protected waters, the master shall ensure that the vessel's exposed cargo hatches and other openings in the hull are closed; made properly watertight by the use of tarpaulins, gaskets, or similar devices; and properly secured for sea.

§ 131.525 Emergency lighting and power.

(a) The master of each vessel shall ensure that the emergency lighting and power systems are tested at least once each week that the vessel is operated, to verify that they work.

(b) The master shall ensure that emergency generators driven by internal-combustion engines run under load

for at least 2 hours at least once each month that the vessel is operated.

(c) The master shall ensure that storage batteries driving fitted systems for emergency lighting and power are tested at least once each 6 months that the vessel is operated, to demonstrate the ability of the batteries to supply the emergency loads for the period specified by Table 112.05–5(a) of this chapter for cargo vessels.

(d) The date of each test and the condition and performance of the apparatus must be noted in the vessel's logbook.

§ 131.530 Abandon-ship training and drills.

(a) Material for abandon-ship training must be aboard each vessel. The material must consist of a manual of one or more volumes, or audiovisual training aids, or both.

(1) The material must contain instructions and information about the lifesaving appliances aboard the vessel and about the best methods of survival. Any manual must be written in easily understood terms, illustrated wherever possible.

(2) If a manual is used, there must be a copy in each messroom and recreation room for crew members or in each stateroom for them. If audiovisual aids are used, they must be incorporated in the training sessions aboard under paragraph (d) of this section.

(3) The material must explain the—

(i) Method of donning immersion suits and lifejackets carried aboard;

(ii) Mustering at assigned stations;

(iii) Proper boarding, launching, and clearing of survival craft and rescue boats;

(iv) Method of launching survival craft by people within them;

(v) Method of releasing survival craft from launching-appliances;

(vi) Use of devices for protecting survival craft in launching-areas, where appropriate;

(vii) Illumination of launching-areas;

(viii) Use of each item of survival equipment;

(ix) Instructions for emergency repair of lifesaving appliances;

(x) Use of radio lifesaving-appliances, with illustrations;

(xi) Use of sea anchors;

(xii) Use of engine and accessories, where appropriate;

(xiii) Recovery of survival craft and rescue boats, including stowage and securing;

(xiv) Hazards of exposure and need for warm clothing;

(xv) Best use of survival craft for survival; and

(xvi) Methods of retrieving personnel, including use of helicopter-mounted rescue gear (slings, baskets, stretchers) and vessel's line-throwing apparatus.

(b) An abandon-ship drill must be held on each vessel in alternate weeks. If none can be held during the appointed week, because of bad weather or other unavoidable constraint, one must be held at the first opportunity afterward. If the crew changes more than once in any 2 weeks, one must be held as soon after the arrival of each crew as practicable.

(1) Any crew member excused from an abandon-ship drill must participate in the next one, so that each member participates in at least one each month. Unless more than 25 percent of the members have participated in one on that particular vessel in the previous month, one must be held before the vessel leaves port if reasonable and practicable; but, unless the Commandant (G–MOC) accepts alternative arrangements as at least equivalent, one must be held not later than 24 hours after the vessel leaves port in any event.

(2)(i) On a voyage likely to take more than 24 hours to complete, a muster of offshore workers must be held on departure. The master shall ensure that each worker is assigned to a survival craft and is directed to its location. Each person in charge of such a craft shall maintain a list of workers assigned to the craft.

(ii) On a voyage likely to take 24 hours or less to complete, the master shall call the attention of each offshore worker to the emergency instructions required by § 131.330.

(3) Each abandon-ship drill must include—

(i) Summoning of crew members and offshore workers to survival craft with the general alarm;

(ii) Simulation of an abandon-ship emergency that varies from drill to drill;

(iii) Reporting of crew members and offshore workers to survival craft, and preparing for, and demonstrating the duties assigned under the procedure described in the station bill for, the particular abandon-ship emergency being simulated;

(iv) Checking to see that crew members and offshore workers are suitably dressed;

(v) Checking to see that immersion suits and lifejackets are correctly donned;

(vi) Lowering of at least one lifeboat (far enough that the davit head has completed its travel and the fall wire of the lifeboat has begun to pay out) or, if no lifeboats are required, lowering of one rescue boat, after any necessary preparation for launching;

(vii) Starting and operating of the engine of the lifeboat or rescue boat; and

(viii) Operation of davits used for launching liferafts.

(4) As far as practicable, at successive drills different lifeboats must be lowered to meet the requirements of paragraph (b)(3)(vi) of this section.

(5) As far as practicable, each abandon-ship drill must be conducted as if there were an actual emergency.

(6) Each lifeboat must be launched with its assigned crew aboard during an abandon-ship drill, and be maneuvered in the water, at least once each 3 months that the vessel is operated.

(7) Each rescue boat must be launched with its assigned crew aboard and be maneuvered in the water—

(i) Once each month that the vessel is operated, if reasonable and practicable; but,

(ii) In any event, at least once each 3 months that the vessel is operated.

(8) If drills for launching lifeboats and rescue boats are carried out with the vessel making headway, the drills must, because of the danger involved, be practiced only in waters where the drills are safe, under the supervision of an officer experienced in such drills.

(9) At least one abandon-ship drill each 3 months must be held at night, unless the master determines it unsafe.

(10) Emergency lighting for mustering and abandonment must be tested at each abandon-ship drill.

(c) The master of each vessel carrying immersion suits shall ensure that—

(1) Each crew member either—

(i) Wears an immersion suit in at least one abandon-ship drill a month unless it is impracticable because of warm weather; or

(ii) Participates in at least one immersion-suit drill a month that includes donning an immersion suit and being instructed in its use;

(2) In each abandon-ship drill, each offshore worker aboard is instructed in the use of immersion suits; and

(3) Each offshore worker is told at the beginning of the voyage where immersion suits are stowed aboard and is encouraged to read the instructions for donning and using the suits.

(d) Each crew member aboard the vessel must be given training in the use of lifesaving appliances and in the duties assigned by the station bill.

(1) Except as provided by paragraph (d)(2) of this section, training aboard in the use of the vessel's lifesaving appliances, including equipment on survival craft, must be given to each crew member as soon as possible but not later than 2 weeks after the member joins the vessel.

(2) If a crew member is on a regularly scheduled rotating assignment to a vessel, training aboard in the use of the vessel's lifesaving appliances, including equipment on survival craft, must be given to the member not later than 2 weeks after the member first joins the vessel.

(3) Each crew member must be instructed in the use of the vessel's lifesaving equipment and appliances and in survival at sea during alternate weeks, normally in the weeks when abandon-ship drills are not held. If individual instructional sessions cover different parts of the vessel's lifesaving system, they must cover each part of the vessel's lifesaving equipment and appliances each 2 months. Each member must be instructed in at least—

(i) Operation and use of the vessel's inflatable liferafts;

(ii) Problems of hypothermia, first aid for hypothermia, and other appropriate procedures; and

(iii) Special procedures necessary for use of the vessel's lifesaving equipment and appliances in heavy weather.

(4) Training in the use of davit-launched inflatable liferafts must take place at intervals of not more than 4 months on each vessel with such liferafts. Whenever practicable this must include the inflation and lowering of a liferaft. If this liferaft is a special one intended for training only, and is not part of the vessel's lifesaving system, it must be conspicuously so marked.

(e) Dates when musters are held, details of abandon-ship drills, drills on other lifesaving equipment and appliances, and training aboard must be entered in the vessel's official logbook. Each logbook entry must include the following, as applicable:

(1) Time and date.

(2) Length of drill or training session.

(3) Identification of survival craft used in drills.

(4) Subject of training session.

(5) Statement on the condition of the equipment used.

(6) Unless a full muster, drill, or training session is held at the appointed time, the circumstances and the extent of the muster, drill, or training session held.

§ 131.535 Firefighting training and drills.

(a) A fire drill must be held on each vessel, normally on alternate weeks. It must not be held as part of the abandon-ship drill, nor immediately before or after the abandon-ship drill. If none can be held on schedule, because of bad weather or other unavoidable constraint, one must be held at the next opportunity.

(b) Any crew member excused from a fire drill must participate in the next one, so that each member participates in at least one each month. Unless more than 25 percent of the members have participated in one on that particular vessel in the previous month, one must be held before the vessel leaves port if reasonable and practicable; but, unless the Commandant (G–MOC) accepts alternative arrangements as at least equivalent, one must be held not later than 24 hours after the vessel leaves port in any event.

(c) Each fire drill must include—

(1) Summoning of crew members and offshore workers to their stations with the general alarm;

(2) Simulation of a fire emergency that varies from drill to drill;

(3) Reporting of crew members and offshore workers to stations, and preparing for, and demonstrating of the duties assigned under the procedure described in the station bill for, the particular fire emergency being simulated;

(4) Starting of fire pumps and use of a sufficient number of outlets to determine that the system is working properly;

(5) Bringing out each breathing apparatus and other item of rescue and safety equipment from the emergency-equipment lockers, and demonstrating of the use of each item by the person or persons that will make use of it;

(6) Operation of each watertight door;

(7) Operation of each self-closing fire door;

(8) Closing of each fire door and each door within the fire boundary; and

(9) Closing of each ventilation closure of each space protected by a fixed fire-extinguishing system.

(d) Each fire drill must, as far as practicable, be conducted as if there were an actual emergency.

(e) The dates when fire drills are held, and details of training in fire fighting and of fire drills, must be entered in the vessel's official logbook. Each logbook entry must include the following, as applicable:

(1) Time and date.

(2) Length of drill or training session.

(3) Number and lengths of hose used.

(4) Subject of training session.

(5) Statement on the condition of the equipment used.

(6) Unless a full drill or training session is held at the appointed time, the circumstances and the extent of the drill or training session held.

§ 131.540 Operational readiness.

(a) Except as provided by § 131.545(e) of this subpart, ach lifesaving appliance and each item of equipment for a lifeboat, liferaft, survival craft, rescue boat, life float, or buoyant apparatus must be in good working order and

ready for immediate use before the vessel leaves port and at any time when the vessel is away from port.

(b) Each deck where a lifeboat, liferaft, survival craft, rescue boat, life float, or buoyant apparatus is stowed, launched, or boarded must be kept clear of obstructions that would interfere with the breaking out, launching, or boarding of the lifesaving appliance.

§ 131.545 Maintenance in general.

(a) For each lifesaving appliance, the manufacturer's instructions for maintenance of the appliances aboard must be aboard and must include the following:

(1) Checklists for use in the inspections required by § 131.565(a) of this subpart.

(2) Instructions for maintenance and repair.

(3) A schedule of periodic maintenance.

(4) A diagram of lubrication points with the recommended lubricants.

(5) A list of replaceable parts.

(6) A list of sources of spare parts.

(7) A log for records of inspections, maintenance, and repair.

(b) The master shall ensure that maintenance is carried out to comply with the instructions required by paragraph (a) of this section.

(c) For lifesaving appliances constructed on or before July 1, 1986, paragraph (a) of this section need be complied with only to the extent that appliances' manufacturers' instructions are available.

(d) The cognizant OCMI may accept, instead of the instructions required by paragraph (a) of this section, a program for planned shipboard maintenance that includes the items listed in that paragraph.

(e) If lifeboats and rigid liferafts are maintained and repaired on the vessel while the vessel is under way, there must be enough lifeboats and liferafts available for use on the vessel to accommodate each person aboard the vessel.

(f) Except in an emergency, no extensive repairs or alterations may be made to any lifesaving appliance without advance notice to the cognizant OCMI. As far as possible, each repair or alteration must be made to comply with the requirements for the appliance in subchapter Q of this chapter. This OCMI may require each appliance that has been extensively repaired or in any way altered to undergo each pertinent test in subchapter Q of this chapter.

(g) The master shall report each emergency repair or alteration to a lifesaving appliance, as soon as practicable, either to the OCMI in the next port in the United States where the vessel calls or, if the vessel does not regularly call at ports in the United States, to the OCMI responsible for the next foreign port where the vessel calls.

(h) No lifeboat or rigid liferaft may be repaired or reconditioned for use on a vessel other than the one it was originally built for, unless specifically permitted by the cognizant OCMI. The lifeboat or rigid liferaft must be so repaired or reconditioned under the supervision of this OCMI, unless he or she specifically allows otherwise.

§ 131.550 Maintenance of falls.

(a) Each fall used with a launching appliance must be turned end for end at intervals of not more than 30 months.

(b) Each fall used with a launching appliance must be renewed either when necessary because of deterioration or after the passage of not more than 5 years, whichever occurs earlier.

(c) Each fall used with a launching appliance must have a corrosion-resistant tag permanently marked with—

(1) The date the new fall was installed; and

(2) The last date, if any, the fall was turned end for end.

§ 131.555 Spare parts and repair equipment.

Spare parts and repair equipment must be provided for each lifesaving appliance and component that either is subject to excessive wear or consumption or needs to be replaced regularly. These parts and equipment must be kept aboard the OSV, except that, if the vessel operates daily out of the same shore base, they may be kept at that base.

§ 131.560 Weekly tests and inspections.

The following tests and inspections must be carried out weekly:

(a) Each lifesaving appliance and launching appliance must be visually inspected to ensure that it is ready for use.

(b) Each engine of a lifeboat or a rescue boat must be run ahead and astern for not less than 3 minutes, unless the ambient temperature is below the minimal temperature required for starting the engine.

(c) The general alarm system must be activated.

(d) Each battery for starting the engine of a lifeboat or a rescue boat, or for energizing a searchlight, a fixed installation of a radio in a lifeboat, or a portable radio, must be brought up to full charge at least once a week if the battery is—

(1) Of a type that requires recharging; and

(2) Not connected to a device that keeps it continuously charged.

(e) The transmitter of each fixed installation of a radio in a lifeboat and that of each portable radio must be tried out at least once a week with a dummy antenna load.

§ 131.565 Monthly tests and inspections.

(a) Each lifesaving appliance, including lifeboat equipment, must be inspected monthly against the checklist required by § 131.545(a)(1) of this subpart to ensure that it is aboard and in good order. A report of the inspection, including a statement on the condition of the appliance, must be entered in the vessel's logbook.

(b) Each Emergency Position Indicating Radio Beacon (EPIRB) and each Search and Rescue Transponder (SART), other than an EPIRB or SART in an inflatable liferaft, must be tested monthly. The EPIRB must be tested using the integrated test circuit and the output indicator (test button) to determine that it works.

§ 131.570 Quarterly inspections.

(a) Each apparatus that controls a lifeboat winch, including motor controllers, emergency switches, master switches, and limit switches, must be inspected once each 3 months.

(b) The inspection must involve the removal of drain plugs and the opening of drain valves to ensure that enclosures are free of water.

(c) The date of the inspection required by this section and the condition of the equipment must be entered in the vessel's logbook.

§ 131.575 Yearly inspections and repair.

(a) Each lifeboat, rescue boat, rigid liferaft, buoyant apparatus, and life float must be stripped, cleaned, and thoroughly inspected and repaired as needed at least once a year. This procedure includes emptying and cleaning each fuel tank and refilling it with fresh fuel.

(b) Each davit, winch, fall, and other launching-appliance must be thoroughly inspected at least once a year, and repaired as needed.

(c) Each item of survival equipment with an expiration date must be replaced during the annual inspection and repair if this date has passed.

(d) Each battery used in an item of survival equipment and clearly marked with an expiration date must be replaced during the annual inspection and repair if this date has passed.

(e) Except a storage battery used in a lifeboat or in a rescue boat, each battery used in an item of survival equipment and not clearly marked with an expiration date must be replaced during the annual inspection and repair.

(f) Compliance with the requirements of this section does not relieve the master or person in charge of the duty of compliance with requirements in § 131.540(a) of this subpart to keep the equipment ready for immediate use when the vessel is under way.

§ 131.580 Servicing of inflatable liferafts, inflatable lifejackets, inflatable buoyant apparatus, and inflated rescue boats.

(a) Except for an inflatable liferaft or an inflatable buoyant apparatus less than two years of age, each inflatable liferaft, inflatable lifejacket, inflatable buoyant apparatus, and hybrid inflatable lifejacket or work vest must be serviced within 12 months of—

(1) Its initial packing; and

(2) Each subsequent servicing, except when a servicing due after 12 months is delayed not more than 5 months until the next scheduled inspection of the OSV.

(b) Each inflatable liferaft and inflatable buoyant apparatus must be serviced—

(1) Whenever the container of the raft is damaged, or the straps or seal broken; and

(2) In compliance with subpart 160.151 of this chapter.

(c) Each inflatable lifejacket must be serviced in compliance with subpart 160.176 of this chapter.

(d) Each hybrid inflatable lifejacket or work vest must be serviced in accordance with the manual provided under § 160.077–29 of this chapter.

(e) Repair and maintenance of inflatable rescue boats must follow the manufacturers' instructions. Each repair, except an emergency repair made aboard the vessel, must be made at a servicing facility approved by the Commandant (G–MSE).

§ 131.585 Periodic servicing of hydrostatic-release units.

(a) Except a disposable hydrostatic-release unit with an expiration date, each hydrostatic-release unit must be serviced—

(1) Within 12 months of its manufacture and within 12 months of each subsequent servicing, except when a servicing due after 12 months is delayed not more than 5 months until the next scheduled inspection of the vessel; and

(2) In compliance with subpart 160.062 of this chapter.

(b) The springs of each spring-tensioned gripe used with a hydrostatic-release unit must be renewed when the unit is serviced and tested.

§ 131.590 Firefighting equipment.

(a) The master shall ensure that the vessel's required firefighting equipment is on board in the prescribed location and always ready for use, other than when the equipment is being serviced.

(b) The master shall, at least once each 12 months, nsure the performance of the tests and inspections of each portable fire extinguisher, semiportable fire extinguisher, and fixed fire-extinguishing system aboard described by Table 132.350 of this subchapter.

(c) The master shall keep records of these tests and inspections, showing the dates of their performance, the number or other identification of each unit undergoing them, and the name of the person or company conducting them. The records must be made available to the marine inspector upon request and must be kept for the period of validity of the vessel's current Certificate of Inspection.

(d) The conducting of tests and inspections required by this section does not relieve the master of his or her responsibility to maintain the prescribed firefighting equipment in working order for use at any time when the vessel is under way.

Subpart F—Logs

§ 131.610 Logbooks and records.

(a) Each OSV must by statute, or by regulations in this subchapter, have certain logbooks or records. The master shall make all entries required by statute, or by regulations in this subchapter.

(b) 46 U.S.C. 11301 states that a vessel of the United States, except one on a voyage from a port in the United States to a port in Canada, shall have an official logbook if the vessel is—

(1) On a voyage from a port in the United States to a foreign port; or

(2) Of at least 100 gross tons and on a voyage between a port in the United States on the Atlantic Ocean and one on the Pacific Ocean.

(c) The Coast Guard gratuitously furnishes to masters of vessels of the United States the official logbook as Form CG–706B or CG–706C, depending upon the number of persons employed as crew. The first several pages of this logbook list various acts of Congress governing logbooks and the entries required in them.

(d) When a voyage is completed, or after a specified time has elapsed, the master shall file the official logbook containing required entries with the OCMI at or nearest the port where the vessel may be.

(e) Unless an official logbook is required, the owner, operator, or master

shall supply an alternative log or record for making entries required by law, including regulations in this subchapter. This log or record need not be filed with this OCMI, but must be kept available for review by a marine inspector for a year after the date that the latest entry concerns.

§ 131.620 Matters that must be logged.

The following matters must be entered in each vessel's logbook:

(a) Safety Orientation for Offshore Workers. As held. See § 131.320.

(b) Tests and inspection of Steering Gear, Whistle, and Means of Communication. Before departure. See § 131.505.

(c) Draft and Loadline Markings. Before leaving port. Ocean and coastwise voyages only. See § 131.510.

(d) Verification of Compliance with Applicable Stability Requirements. See § 131.513.

(e) Periodic Sanitary Inspections. After periodic sanitary inspections made by the master. See § 131.515.

(f) Hatches and Other Openings. Each opening and closing, or departure from port without closing (except by vessels on protected waters). See § 131.520.

(g) Tests of Emergency Lighting and Power. Weekly, monthly, and twice-yearly. See § 131.525.

(h) Abandon-Ship Training and Drills, and Firefighting Training and Drills. As held. See §§ 131.530 and 131.535.

(i) Inspection of Lifeboat Winches. Once each 3 months. See § 131.570.

§ 131.630 Entries in official logbooks.

On each vessel required to have an Official Logbook, the items required by 46 U.S.C. 11301, as well as the items required by § 131.620, must be entered in the logbook.

Subpart G—Work Vests

§ 131.710 Approved work vests.

Each buoyant work vest carried aboard must be approved under subpart 160.053 of this chapter or, as a commercial hybrid personal flotation device, under subpart 160.077 of this chapter.

§ 131.720 Use.

(a) An approved buoyant work vest is an item of safety apparel and may be carried aboard for wear by a crew member when working near or over the water.

(b) The vest may not count towards the vessel's complement of lifejackets.

(c) The vest may not be worn instead of a lifejacket during a drill.

§ 131.730 Shipboard stowage.

The master shall ensure that no work vest is stowed where any lifejacket is stowed.

§ 131.740 Shipboard inspections.

Each buoyant work vest must be subject to examination by a marine inspector, to determine its serviceability. If found serviceable, it may continue in service; but no buoyant work vest is stamped as inspected. If not found serviceable, and if determined irreparable by the inspector, a buoyant work vest must be destroyed in the presence of the inspector.

Subpart H—Markings for Fire Equipment and Emergency Equipment

§ 131.800 General.

(a) This section prescribes markings necessary for the guidance of persons aboard in case of an emergency. The markings may be modified or omitted if they are unnecessary, because either the vessel is small or particular circumstances warrant, and if the cognizant OCMI approves.

(b) Each stateroom notice, directional sign, and the like must be printed in English and in other languages appropriate to the service of the vessel.

(c) Where this subpart specifies red letters, letters of a contrasting color on a red background are acceptable.

§ 131.805 General alarm bell, switch.

The switch in the pilothouse that activates the general alarm bell must be clearly and permanently identified either by letters on a metal plate or with a sign in red letters on a suitable background that state the following: ''GENERAL ALARM.''

§ 131.810 General alarm bell.

Each general alarm bell must be identified by red letters at least 13 millimeters (½-inch) high that state the following: ''GENERAL ALARM—WHEN BELL RINGS GO TO YOUR STATION.''

§ 131.815 Alarm for fixed gaseous fire-extinguishing system.

Each alarm for a fixed gaseous fire-extinguishing system must be conspicuously identified, using the following statement: ''WHEN ALARM SOUNDS, LEAVE AT ONCE: [CARBON DIOXIDE] [HALON] BEING RELEASED.''

§ 131.820 Branch lines of fire-extinguishing system.

The valves of each branch line in the fire extinguishing system must be plainly and permanently marked, indicating the spaces served.

§ 131.825 Controls of fire-extinguishing system.

Each control cabinet or space containing a valve or manifold for a fire extinguishing system must be distinctly marked in conspicuous red letters at least 50 millimeters (2 inches) high that state the following: ''FIRE APPARATUS FOR [CARBON DIOXIDE] [HALON]''.

§ 131.830 Fire-hose stations.

Each fire station must be identified in red letters and figures at least 50 millimeters (2 inches) high that state the following: ''FIRE STATION #1,'' ''* * * 2,'' ''* * * 3,'' and so on. Where the hose is not so stowed in the open or behind glass as to be readily seen, this identification must be so placed as to be readily seen from a distance.

§ 131.835 Portable fire extinguishers.

(a) Except as provided by paragraph (b) of this section, ach portable fire extinguisher must be marked with a number, and the site of its stowage must be marked with a corresponding number at least 13 millimeters (½-inch) high.

(b) If only one type and size of portable fire extinguisher is carried, the number may be omitted.

§ 131.840 Emergency lighting.

Emergency lighting must be marked with a letter ''E'' at least 13 millimeters (½-inch) high.

§ 131.845 Instructions for shift of steering gear.

(a) Instructions, including diagrams, for a shift of steering gear and for a shift to the alternative steering stations must be on water-resistant material and posted at each steering station and in the steering-engine room, relating, in order, the different steps to take in either shift.

(b) The instructions must indicate each clutch or pin to be ''in'' or ''out'' and each valve or switch to be ''open'' or ''closed'' in a shift to any means of steering for which the vessel is equipped.

(c) The instructions must specify that each steering wheel or lever, and each rudder, must be amidships before any shift of steering gear or steering stations.

(d) Each clutch, gear, wheel, lever, valve, or switch used during any shift of steering gear or steering stations must be numbered or lettered on a metal plate or painted so that the numbers or letters are recognizable at a reasonable distance.

§ 131.850 Rudder orders.

At each steering station there must be installed a suitable notice on the wheel or lever, or in some other place directly in the helmsman's line of sight, to indicate the direction in which to turn the wheel or lever for ''right rudder'' and for ''left rudder.''

§ 131.855 Lifeboats and rescue boats.

(a) The following must be plainly marked or painted on each side of the bow of each lifeboat and rescue boat in block capital letters and numbers:

(1) The name of the vessel.

(2) The number of the boat. (The boats on each side of the vessel must be numbered from forward to aft. If there are boats on both sides of the vessel, the odd numbers must be on the starboard side.)

(3) For each vessel in ocean service, the name of the port whose marking on the stern is required by §67.123 of this chapter.

(b) The following must be plainly marked or painted on each side of the bow of each lifeboat and rescue boat in block capital letters and numbers:

(1) The length and beam of the boat.

(2) The number of persons the boat will hold. This number must—

(i) Be the number of persons the boat is equipped for; and

(ii) Not be greater than the number of persons the boat is approved for, as shown on its nameplate.

(c) The following must be plainly marked or painted on each lifeboat and rescue boat, visible from above the boat:

(1) The number of the boat.

(2) The name of the vessel.

(d) Each lifeboat and rescue boat must be marked with Type II retro-reflective material approved under subpart 164.018 of this chapter. The arrangement of the retro-reflective material must comply with IMO Resolution A.658(16).

§ 131.860 Rigid liferafts.

(a) The following must be plainly marked or painted, near one entrance of each rigid liferaft:

(1) The name of the vessel.

(2) For each vessel in ocean service, the name of the port whose marking on the stern is required by §67.123 of this chapter.

(b) The length of the painter must be plainly marked or painted, near one entrance of each rigid liferaft.

(c) The number of persons the rigid liferaft is approved for must be plainly marked or painted, over each entrance to each raft, in letters and numbers at least 102 millimeters (4 inches) high and in a color contrasting to that of the raft. This number must—

(1) Be the number of persons the rigid liferaft is equipped for; and

(2) Not be greater than the number of persons the rigid liferaft is approved for, as shown on its nameplate.

(d) The rigid liferaft must be marked with the words ''SOLAS A pack'' or ''SOLAS B pack'', to reflect the pack inside.

§ 131.865 Inflatable liferafts and inflatable buoyant apparatus.

The number of the inflatable liferaft or inflatable buoyant apparatus and the number of persons it is approved for must be marked or painted, in a conspicuous place in the immediate vicinity of each raft and each apparatus, in letters and numbers at least 38 millimeters (1–½ inches) high and in a color contrasting to that of the raft or apparatus. Each raft or apparatus stowed on the side of a vessel must be numbered like a liferaft in compliance with §199.178 (c) and (d) of this chapter. No letters or numbers may go on the liferaft or on the container of the apparatus.

§ 131.870 Life floats and buoyant apparatus.

(a) The name of the vessel must be plainly marked or painted on each life float or buoyant apparatus, and on each oar and paddle.

(b) The number of persons each life float or buoyant apparatus is approved for must be plainly marked or painted on each float or apparatus in letters and numbers at least 38 millimeters (1–½ inches) high and in a color contrasting to that of the float or apparatus. This number must—

(1) Be the number of persons the float or apparatus is equipped for; and

(2) Not be greater than the number of persons the float or apparatus is approved for, as shown on its nameplate.

§ 131.875 Lifejackets, immersion suits, and ring buoys.

(a) Each lifejacket, immersion suit, and ring life buoy must be marked in block capital letters with the vessel's name.

(b) Each container for lifejackets and immersion suits must be marked in letters and numbers at least 50 millimeters (2 inches) high with the number, identity, or IMO symbol specified by IMO Resolution A.760(18), and size of the items stowed inside.

(c) Each ring buoy on a vessel in ocean service must be marked in block capital letters with the name of the port whose marking on the stern of the vessel is required by §67.123 of this chapter.

(d) Each stowage site for a ring buoy must be marked ''LIFE BUOY'' or marked with the IMO symbol.

(e) Each lifejacket must be marked with Type I retro-reflective material

approved under subpart 164.018 of this chapter. The arrangement of the retro-reflective material must comply with IMO Resolution A.658(16).

(f) Each ring life buoy must be marked with Type I or II retro-reflective material approved under subpart 164.018 of this chapter. The arrangement of the retro-reflective material must comply with IMO Resolution A.658(16).

§ 131.880 Fire hoses and axes.

Each fire hose and axe must be marked with the vessel's name.

§ 131.890 EPIRBs and SARTs.

The name of the vessel must be plainly marked or painted on each Emergency Position Indicating Radio Beacon (EPIRB) and on each Search and Rescue Transponder (SART), except on an EPIRB or SART—

(a) In an inflatable liferaft; or

(b) Permanently installed in a survival craft.

§ 131.893 Watertight doors and watertight hatches.

Each watertight door in a bulkhead that must be watertight in compliance with the requirements in part 174 of this chapter, and each watertight hatch, must be marked on both sides in letters at least 50 millimeters (2 inches) high that state the following: ''WATERTIGHT DOOR—KEEP CLOSED EXCEPT FOR PASSAGE'' or ''WATERTIGHT HATCH—KEEP CLOSED WHEN NOT IN USE''.

§ 131.896 Remote stopping-systems.

The remote stopping-systems required by §129.540 of this subchapter must be clearly marked to show what system each controls.

§ 131.899 Fire dampers.

Each fire damper installed within the boundary of a space protected by a fixed fire extinguishing system must be fitted with an indicator showing whether the damper is open or closed and must be marked with red letters at least 13 millimeters (½-inch) high stating ''FIRE DAMPER'' and, as otherwise appropriate, identifying the space served by the fire damper.

Subpart I—Miscellaneous

§ 131.905 Statutory penalties.

(a) The marine-safety statutes and other statutes impose criminal and civil penalties for violating the applicable provisions of this subchapter. Possible sanctions include:

(1) Assessment and collection of civil monetary penalty.

(2) Criminal prosecution, where no loss of life results.

(3) Criminal prosecution for manslaughter, where loss of life results from violating marine-safety statutes or regulations or from misconduct, negligence, or inattention to duty.

(4) Libel against vessel.

(b) 46 U.S.C. Chapter 77 allows, in addition to the foregoing, the suspension or revocation of licenses, certificates, or documents issued by the Coast Guard, for incompetence, misconduct, or negligence or for violating marine-safety statutes or regulations.

§ 131.910 Notices to mariners and aids to navigation.

Each master and mate shall acquaint himself or herself with the latest information published by the Coast Guard and the U.S. Navy regarding aids to navigation in the area in which the vessel operates.

§ 131.915 Persons allowed in pilothouse and on navigational bridge.

No person may be in the pilothouse while the vessel is under way, unless connected with the navigation of the vessel or authorized for good cause by the master or mate on watch.

§ 131.920 Level of manning.

Each vessel must carry the personnel required by the Certificate of Inspection, as determined by the cognizant OCMI, based on an evaluation under part 15 of this chapter.

§ 131.925 Compliance with provisions of Certificate of Inspection.

The master of the vessel shall ensure compliance with each provision of the Certificate of Inspection. Nothing in this subchapter prevents the master's diverting the vessel from the route prescribed in the Certificate, or taking other steps necessary and prudent to

assist vessels in distress or to handle similar emergencies.

§ 131.930 Display of stability letter.

If the Coast Guard issues a stability letter under §170.120 of this chapter, the letter must be readily available to the person on watch in the pilothouse of the vessel.

§ 131.935 Prevention of oil pollution.

Each vessel must be operated in compliance with—

(a) Section 311 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1321); and

(b) 33 CFR parts 151, 155, and 156.

§ 131.940 Marine sanitation device.

Each vessel with installed toilet facilities must have a marine sanitation device in compliance with 33 CFR part 159.

§ 131.945 Display of plans.

Each vessel must have a permanently exhibited, for the guidance of the master and crew members, general arrangement plans showing, for each deck, the various fire-retardant bulkheads together with particulars of the—

(a) Fire-detection systems;

(b) Manual-alarm systems;

(c) Fire-extinguishing systems;

(d) Fire doors;

(e) Means of ingress to the different compartments; and

(f) Ventilating-systems, including the—

(1) Positions of the dampers;

(2) Site of the remote means of stopping the fans; and

(3) Identification of the fans serving each section.

§ 131.950 Placard on lifesaving signals and helicopter recovery.

(a) Each vessel must have readily available to the person on watch in the pilothouse a placard (Form CG–811) containing instructions—

(1) For the use of lifesaving signals set forth in Regulation 16, Chapter V, of SOLAS 74/83; and

(2) In helicopter recovery.

(b) The signals must be employed by vessels or persons in distress when communicating with lifesaving stations and maritime rescue units.

§ 131.955 Display of license.

Each master and licensed officer on an vessel shall conspicuously display his or her license in compliance with 46 U.S.C. 7110.

§ 131.960 Use of auto-pilot.

When the automatic pilot is used in areas of high traffic density, conditions of restricted visibility, or any other hazardous navigational situations, the master shall ensure that—

(a) It is possible to immediately establish manual control of the vessel's steering;

(b) A competent person is ready at all times to take over steering control; and

(c) The changeover from automatic to manual control of the vessel's steering and the reverse is made by, or under the supervision of, the master or officer of the watch.

§ 131.965 Sounding of whistle.

No vessel may sound its whistle within any harbor limits of the United States unless it needs to.

§ 131.970 Unauthorized lighting.

No master of a vessel may authorize or permit the vessel's carrying of any lighting not required by law that will interfere in any way with any other vessel's ability to distinguish the vessel's navigation lighting.

§ 131.975 Searchlights.

No person may flash, or cause to be flashed, the rays of a searchlight or other blinding light onto the bridge or into the pilothouse of any vessel, OSV or other, under way.

§ 131.980 Lookouts and watches.

Nothing in this part exonerates any master or officer of the watch from the consequences of any neglect to keep a proper lookout or to maintain a proper fire watch, or of any neglect of any precaution that may be required by the ordinary practice of seamen, by general prudence, or by the special circumstances of the case. Each master shall set added watches when necessary to guard against fire or other danger

and to give an alarm in case of accident or disaster.

PART 132—FIRE-PROTECTION EQUIPMENT

Subpart A—Fire Main

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132.110 Piping.
132.120 Fire pumps.
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Subpart B—Portable and Semiportable Fire Extinguishers

132.210 Classification.
132.220 Installation.
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132.310 Fixed fire-extinguishing systems for paint lockers.
132.320 Helicopter-landing decks.
132.330 Fire monitors.
132.340 Equipment installed although not required.
132.350 Tests and inspections of fire-extinguishing equipment.
132.360 Fire axes.
132.370 Added requirements for fixed independent and portable tanks.

AUTHORITY: 46 U.S.C. 3306, 3307; 49 CFR 1.46.

SOURCE: CGD 82–004 and CGD 86–074, 62 FR 49348, Sept. 19, 1997, unless otherwise noted.

Subpart A—Fire Main

§ 132.100 General.

(a) Except as provided by paragraphs (b) and (c) of this section, each vessel must be equipped with a fire main that complies with this subpart.

(b) Each vessel of less than 100 gross tons and not more than 19.8 meters (65 feet) in length may have, instead of a fire main that complies with this subpart, a hand-operated pump and a hose capable of providing an effective stream of water to each part of the vessel.

(c) A garden hose of nominal inside diameter of at least 16 millimeters (5/8-inch) complies with paragraph (b) of this section if the hose is—

(1) Of good commercial grade and is constructed of an inner rubber tube, plies of braided-fabric reinforcement, and an outer cover made of rubber or equivalent fire-resistant material; and

(2) Fitted with a commercial garden-hose nozzle of high-grade bronze or equivalent metal capable of providing a solid stream and a spray pattern.

§ 132.110 Piping.

(a) Except as provided for liftboats by § 134.180 of this subchapter, each fitting, flange, valve, and run of piping must meet the applicable requirements of part 128 of this subchapter. Piping must be—

(1) Hot-dip galvanized;

(2) At least extra-heavy schedule; or

(3) Of a suitable corrosion-resistant material.

(b) Each distribution cut-off valve must be marked in compliance with § 131.820 of this subchapter.

§ 132.120 Fire pumps.

(a) Except as provided by § 132.100(b) of this subpart, each vessel must be equipped with one self-priming power-driven fire pump capable of delivering a single stream of water from the highest hydrant, through the hose and nozzle at a Pitot-tube pressure of at least 345 kPa (50 psi [pounds per square inch]).

(b) Each fire pump must be fitted on the discharge side with a pressure gauge.

(c) Each fire pump must be fitted on the discharge side with a relief valve set to relieve at either 172 kPa (25 psi) in excess of the pressure necessary to maintain the requirements of paragraph (a) of this section or 862 kPa (125 psi), whichever is greater. The relief valve is optional if the pump is not capable of developing pressure exceeding the greater amount.

(d) If two propulsion engines are installed, the pump required by paragraph (a) of this section may be driven by one of the engines. If only one propulsion engine is installed, the pump must be driven by a source of power independent of the engine.

(e) If two fire pumps are installed, and if one pump remains available for service on the fire main at any time, the other pump may be used for other purposes.

(f) Each fire pump must be capable of providing the quantity of water required to comply with paragraph (a) of this section while meeting any other demands placed on it, as by a branch line connected to the fire main for washing the anchor or the deck.

(g) No branch line may be directly connected to the fire main except for fighting fires or for washing the anchor or the deck. Each discharge line for any other purpose must be clearly marked and must lead from a discharge manifold near the fire pump.

(h) When a fire monitor is connected to the fire main system, it must lead from a discharge manifold near the fire pump.

(i) The total cross-sectional area of piping leading from a fire pump may not be less than that of the pump-discharge outlet.

(j) In no case may a pump connected to a line for flammable or combustible liquid be used as a fire pump.

(k) A fire pump must be capable of both manual operation at the pump and, if a remote operating station is fitted, operation at that station.

§ 132.130 Fire stations.

(a) Except as provided by paragraph (b) of this section, ire stations must be so numerous and so placed that each part of the vessel accessible to persons aboard while the vessel is being operated, and each cargo hold, are reachable by at least two effective spray patterns of water. At least two such patterns must come from separate hydrants. At least one must come from a single length of hose.

(b) Each part of the main machinery space, including the shaft alley if it contains space assigned for the stowage of combustibles, must be reachable by at least two streams of water. Each stream must come from a single length of hose, from a separate fire station.

(c) Each fire station must be numbered in compliance with §131.830 of this subchapter.

(d) Each part of the fire main on a weather deck must be either protected against freezing or fitted with cut-out valves and drain valves so that exposed parts of the piping may be shut off and drained in freezing weather. Except when closed against freezing, the cut-out valves must be sealed open.

(e) Each outlet at a fire hydrant must be at least 38 millimeters (1½ inch) in diameter and, to minimize the possibility of kinking, must be fitted so that no hose leads upward from it.

(f) Each fire station must be equipped with a spanner suitable for use on the hose there.

(g) Each fire station must have at least one length of fire hose. Each hose on the station must have a fire nozzle approved under subpart 162.027 of this chapter that can discharge both solid stream and water spray.

(h) Each pipe and fire hydrant must be placed so that the fire hose may be easily coupled to them. Each station must be readily accessible. No deck cargo may interfere with access to the stations; each pipe must run as far away from this cargo as practicable, to avoid risk of damage by the cargo.

(i) Each fire hydrant or ''Y'' branch must be equipped with a valve such that the fire hose may be removed while there is pressure on the fire main.

(j) Each fire hydrant connection must be of brass, bronze, or equivalent metal. The threads of fire hose couplings must be of brass or other suitable corrosion-resistant material and comply with NFPA 1963.

(k) Each fire hydrant must have a fire hose 15.2 meters (50 feet) in length, with a minimum diameter of 38 millimeters (1½ inches), connected to an outlet, for use at any time.

(l) No fire hose, when part of the fire equipment, may be used for any purpose except fire-fighting, fire drills, and testing.

(m) A suitable hose rack or other device must be provided for each fire hose. Each rack on a weather deck must be placed so as to protect its hose from heavy weather.

(n) Each section of fire hose must be lined commercial fire hose, or lined fire hose that meets Standard 19 of Underwriters Laboratories, Inc. (UL). Hose that bears the UL label as lined fire hose complies with this section.

Subpart B—Portable and Semiportable Fire Extinguishers

§ 132.210 Classification.

(a) Each portable fire extinguisher and semiportable fire extinguisher is classified by a symbol combining letter and number. The letter indicates the type of fire that the unit should extinguish; the number indicates the relative size of the unit.

(b) The types of fire are the following:

(1) ''A''—fires in ordinary combustible materials, where the quenching and cooling effect of quantities of either water or solutions containing large percentages of water is essential.

(2) ''B''—fires in flammable liquids, greases, and the like, where the blanketing effect of a smothering-agent is essential.

(3) ''C''—fires in electrical equipment, where the use of nonconducting extinguishing-agent is essential.

(c) The sizes of units run from ''I'' for the smallest to ''V'' for the largest. Sizes I and II are portable fire extinguishers; sizes III, IV, and V, which exceed 25 kilograms (55 pounds) in gross weight, are semiportable fire extinguishers and must be fitted with suitable hose and nozzle or other practicable means to cover any part of the space involved. Typical portable and semiportable fire extinguishers are set forth by Table 132.210 of this section.

TABLE 132.210

Classification		Halon 1211, 1301, and 1211–1301 mixtures kgs. (lbs.)	Foam, liters (gallons)	Carbon dioxide, kgs. (lbs.)	Dry chemicals, kgs. (lbs.)
Type	Size				
A	II		9.46 (2½)		
B	I	1.13 (2½)		1.8 (4)	0.91 (2)
B	II	4.5 (10)	9.46 (2½)	6.8 (15)	4.5 (10)
B	III		45.4 (12)	15.9 (35)	9 (20)
B	IV		75.7 (20)	22.6 (50)	13.6 (30)
B	V		151.4 (40)	453 (100)	22.6 (50)
C	I	1.13 (2½)		1.8 (4)	.91 (2)
C	II	4.5 (10)		6.8 (15)	4.5 (10)

(d) Each portable fire extinguisher and semiportable fire extinguisher must have permanently attached an identification plate that gives the name of the extinguishing-agent, the capacity of the agent in liters (gallons) or kilograms (pounds), the classification of the extinguisher expressed by letter or letters indicating the type or types of fire for which it is intended, and the identifying mark of the manufacturer.

§ 132.220 Installation.

(a) Each portable fire extinguisher approved under subpart 162.028 of this chapter and each semiportable fire extinguisher approved under subpart 162.039 of this chapter must be installed in compliance with Table 132.220 of this section. The placement of each extinguisher must satisfy the cognizant OCMI, who may also deem added extinguishers necessary for the proper protection of the vessel.

TABLE 132.220.—CARRIAGE OF PORTABLE AND SEMIPORTABLE FIRE EXTINGUISHERS

Space	Classification (see § 132.210)	Number and placement
.		
Safety areas: Communicating passageways	A–II	1. In each main passageway, not more than 45.7 meters (150 feet) apart (permissible in stairways).
Pilothouse	C–I	2. In vicinity of exit.
Service spaces: Galleys	B–II or C–11	1. For each 230 square meters (2,500 feet^2) or fraction thereof, suitable for hazards involved.
Paint lockers	B–II	1. Outside space, in vicinity of exit.
Accessible baggage and storerooms	A–II	1. For each 230 square meters (2,500 feet^2) or fraction thereof, located in vicinity of exits, either inside or outside spaces.
Work shops and similar spaces	A–II	1. Outside space in vicinity of exit.

TABLE 132.220.—CARRIAGE OF PORTABLE AND SEMIPORTABLE FIRE EXTINGUISHERS—Continued

Space	Classification (see § 132.210)	Number and placement
Machinery spaces: Internal-combustion propulsion-machinery.	B–II	1. For each 1,000 brake horsepower, but not fewer than 2 nor more than 6.
	B–III	1. Required. (1), (2)
Electric propulsion motors or generators of open type.	C–II	1. For each propulsion motor or generator unit.
Auxiliary spaces: Internal combustion	B–II	1. Outside space in vicinity of exit. (2)
Electric motors and emergency generators.	C–II	1. Outside space in vicinity of exit. (2)

(1) Not required where a fixed gaseous fire-extinguishing system is installed.
(2) Not required on vessels of less than 300 gross tons.

(b) Each semiportable fire extinguisher must be mounted or otherwise placed in the open so as to be readily visible.

(c) Except as provided by paragraph (d) of this section, each portable fire extinguisher must be mounted or otherwise placed in the open or behind glass so as to be readily visible.

(d) A portable fire extinguisher may be mounted or otherwise placed in an enclosure together with the fire hose, if the enclosure is marked in compliance with § 131.830 of this subchapter.

(e) Each portable fire extinguisher and its station must be numbered to comply with § 131.835 of this subchapter.

(f) No portable or semiportable fire extinguisher with a nameplate indicating that it needs protection from freezing may be mounted or otherwise placed where freezing temperatures are foreseeable.

§ 132.230 Spare charges.

(a) Except as provided by paragraph (b) or (c) of this section, each vessel must carry spare charges for 50 percent of the portable fire extinguishers required by § 132.220 of this subpart.

(b) Rather than comply with paragraph (a) of this section, a vessel may carry one extra portable extinguisher of the same classification.

(c) If extinguishers of a particular classification cannot be readily recharged by crew members, a vessel must— rather than comply with paragraph (a) of this section—carry one more extinguisher of that classification.

(d) Each spare charge must be packaged so as to minimize the hazards to personnel recharging the extinguishers.

§ 132.240 Stowage of semiportable fire extinguishers.

The frame or support of each semiportable fire extinguisher of size III, IV, or V must be secured to prevent the extinguisher from shifting in heavy weather.

Subpart C—Miscellaneous

§ 132.310 Fixed fire-extinguishing systems for paint lockers.

(a) Except as provided by paragraph (b) of this section, a fixed gaseous fire-extinguishing system or another approved fixed fire-extinguishing system must be installed in each paint locker.

(b) No fixed fire-extinguishing system need be installed in a paint locker that is—

(1) Less than 1.7 cubic meters (60 cubic feet) in volume;

(2) Accessible only from the weather deck; and

(3) Not adjacent to a tank for flammable or combustible liquid.

(c) Each fixed fire-extinguishing system installed must comply with part 95 of this chapter or be approved by the Commanding Officer, Marine Safety Center.

§ 132.320 Helicopter-landing decks.

Each vessel with a helicopter-landing deck must meet the fire fighting requirements of part 108 of this chapter.

§ 132.330 Fire monitors.

(a) Each fire monitor of the fire main system must be fitted with a shut-off valve at the monitor and at the connection to the fire main discharge manifold required by § 132.120(h) of this part.

(b) Fire monitor piping must comply with § 132.110 of this part.

(c) Each fire monitor must be protected against over-pressure.

§ 132.340 Equipment installed although not required.

A vessel may install equipment for detection of and protection against fires beyond that required by this subchapter, unless the excess equipment in any way endangers the vessel or the persons aboard. This equipment must be listed and labeled by a nationally recognized testing laboratory.

§ 132.350 Tests and inspections of fire-extinguishing equipment.

(a) Each master of a vessel shall ensure that the tests and inspections, of fire-extinguishing equipment, described by paragraph (b) of this section are performed—

(1) Every 12 months; or

(2) Not later than the next inspection for certification and periodic inspection, unless the total time from the date of the last tests and inspections exceeds 15 months.

(b) The master shall provide satisfactory evidence of the servicing of fire-extinguishing equipment, required by paragraph (c) of this section, to the marine inspector. If any of the equipment or records have not been properly maintained, a qualified servicing facility may be required to perform the required inspections, maintenance, and hydrostatic tests.

(c) The following tests and inspections of fire-extinguishing equipment must be performed by the owner, operator, or master, or by a qualified servicing facility, to verify compliance with paragraph (a) of this section:

(1) Each portable fire extinguisher must be inspected, maintained, and hydrostatically tested as required by Chapter 4 of NFPA 10 with the frequency specified by NFPA 10. Carbon-dioxide and halon portable fire extinguishers must be refilled when the weight loss of net content exceeds that specified for fixed systems by Table 132.350. Further, each must be examined for excessive corrosion and for general condition. A tag issued by a qualified servicing facility, and attached to each extinguisher, will be acceptable evidence that the necessary maintenance has been conducted.

(2) Each semiportable fire extinguisher and each fixed fire-extinguishing system must be—

(i) Inspected and tested as required by Table 132.350 of this subpart;

(ii) Inspected, tested, and marked as required by §§ 147.60 and 147.65 of this chapter;

(iii) Inspected to ensure that piping, controls, and valves are in good general condition with no excessive corrosion; and

(iv) Inspected and tested to determine that alarms and ventilation shutdowns for each fire-extinguishing system operate properly.

TABLE 132.350.—TESTS OF SEMIPORTABLE AND FIXED FIRE-EXTINGUISHING SYSTEMS

Type of system	Test
Carbon dioxide	Weigh cylinders. Recharge if weight loss exceeds 10% of weight of charge. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the manufacturer's instruction manual. Inspect hoses and nozzles to be sure they are clean.
Halon	Weigh cylinders. Recharge if weight loss exceeds 5% of weight of charge. If the system has a pressure gauge, also recharge if pressure loss (adjusted for temperature) exceeds 10%. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the manufacturer's instruction manual. Inspect hoses and nozzles to be sure they are clean.
Dry chemical (cartridge-operated)	Examine pressure cartridge and replace if end is punctured or if cartridge has leaked or is in unsuitable condition. Inspect hose and nozzle to see that they are clear. Insert charged cartridge. Ensure that dry chemical is free-flowing (not caked) and that extinguisher contains full charge.
Dry chemical (stored pressure)	See that pressure gauge is in opera ting range. If not, or if seal is broken, weigh or otherwise determine that extinguisher is fully charged with dry chemical. Recharge if pressure is low or if dry chemical is needed.

TABLE 132.350.—TESTS OF SEMIPORTABLE AND FIXED FIRE-EXTINGUISHING SYSTEMS—Continued

Type of system	Test
Foam (stored pressure)	See that pressure gauge, if there is one, is in operating range. If it is not, or if seal is broken, weigh or otherwise determine that extinguisher is fully charged with foam. Recharge if pressure is low or if foam is needed. Replace premixed agent every 3 years.

(3) The fire-main system must be operated, and the pressure checked at the remotest and highest outlets. Each fire hose must be subjected to a test pressure, equivalent either to the maximal pressure to which it may be subjected in service or to 690 kPa (100 psi), whichever is greater.

(4) All systems for detecting smoke and fire, including sensors and alarms, must be inspected and tested.

[CGD 82–004 and CGD 86–074, 62 FR 49348, Sept. 19, 1997, as amended by USCG 1999–4976, 65 FR 6507, Feb. 9, 2000]

§ 132.360 Fire axes.

(a) Each vessel of less than 100 gross tons must carry one fire axe.

(b) Each vessel of 100 or more gross tons must carry two fire axes.

(c) Each fire axe must be so placed as to be readily available in an emergency.

(d) Each fire axe must be so placed in the open or behind glass that it is readily visible, except that, if the enclosure is marked in compliance with §131.830 of this subchapter, the axe may be placed in an enclosure together with the fire hose.

§ 132.370 Added requirements for fixed independent and portable tanks.

(a) When carrying fixed independent tanks on deck or portable tanks in compliance with §125.110 of this subchapter, each vessel must also comply with §§98.30–37 and 98.30–39 of this chapter.

(b) When carrying portable tanks in compliance with §125.120 of this subchapter, each vessel must also comply with 49 CFR 176.315.

PART 133—LIFESAVING SYSTEMS

Subpart A—General

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AUTHORITY: 46 U.S.C. 3306, 3307; 49 CFR 1.46.

SOURCE: CGD 84–069, 61 FR 25304, May 20, 1996, unless otherwise noted.

Subpart A—General

§ 133.03 Relationship to international standards.

This subpart and subpart B of this part are based on Chapter III, SOLAS. Section numbers in this subpart and

subpart B of this part are generally related to the regulation numbers in Chapter III, SOLAS, but paragraph designations are not related to the numbering in Chapter III, SOLAS. To find the corresponding Chapter III, SOLAS regulation for this subpart and subpart B of this part, beginning with §133.10, divide the section number following the decimal point by 10.

§133.07 Additional equipment and requirements.

The OCMI may require an OSV to carry specialized or additional lifesaving equipment other than as required in this part if the OCMI determines that the conditions of a voyage present uniquely hazardous circumstances which are not adequately addressed by existing requirements.

§133.09 Equivalents.

When this part requires a particular fitting, material, or lifesaving appliance or arrangement, the Commandant (G–MSE) may accept any other fitting, material, or lifesaving appliance or arrangement that is at least as effective as that required by this part. The Commandant may require engineering evaluations and tests to determine the equivalent effectiveness of the substitute fitting, material, or lifesaving appliance or arrangement.

§133.10 Applicability.

(a) Unless expressly provided otherwise in this part, this part applies to all inspected OSVs of the United States flag, including liftboats.

(b) Offshore supply vessels which were constructed prior to October 1, 1996, must—

(1) By October 1, 1997, meet the requirements of §§133.60(a), 133.80, and 133.90;

(2) By October 1, 1997, fit retro-reflective material on all floating appliances, lifejackets, and immersion suits; and

(3) Offshore supply vessels may retain the arrangement of lifeboats, lifeboat davits, winches, inflatable liferafts, liferaft launching equipment, rescue boats, lifefloats, and buoyant apparatus previously required and approved for the OSV, as long as the arrangement or appliance is maintained in good condition to the satisfaction of the OCMI.

(c) When any lifesaving appliance or arrangement on an OSV subject to this part is replaced, or when the OSV undergoes repairs, alterations, or modifications of a major character involving replacement of, or any addition to, the existing lifesaving appliances or arrangements, each new lifesaving appliance and arrangement must meet the requirements of this part, unless the OCMI determines that the OSV cannot accommodate the new appliance or arrangement.

[CGD 84–069, 61 FR 25304, May 20, 1996; 61 FR 40281, Aug. 1, 1996]

§133.20 Exemptions.

(a) If a District Commander determines that the overall safety of the persons on board an OSV will not be significantly reduced, the District Commander may grant an exemption from compliance with a provision of this part to a specific OSV for a specified geographic area within the boundaries of the Coast Guard District. This exemption may be limited to certain periods of the year.

(b) Requests for exemption under this section must be in writing to the OCMI for transmission to the District Commander in the area in which the OSV is in service or will be in service.

(c) If the exemption is granted by the District Commander, the OCMI will endorse the OSV's Certificate of Inspection with a statement describing the exemption.

§133.40 Evaluation, testing and approval of lifesaving appliances and arrangements.

(a) Each item of lifesaving equipment required by this part to be carried on board the OSV must be approved.

(b) Each item of lifesaving equipment carried on board the OSV in addition to those required by this part must—

(1) Be approved; or

(2) Be accepted by the cognizant OCMI for use on the OSV.

(c) The Commandant (G–MSE) may accept a novel lifesaving appliance or arrangement if it provides a level of safety equivalent the requirements of this part and if the appliance or arrangement—

(1) Is evaluated and tested in accordance with IMO Resolution A.520(13), Code of Practice for the Evaluation, Testing and Acceptance of Prototype Novel Life-saving Appliances and Arrangements; or

(2) Has successfully undergone evaluation and tests that are substantially equivalent to those recommendations.

(d) During an OSV's construction, and when any modification to the lifesaving arrangement is done after construction, a OSV owner must obtain acceptance of lifesaving arrangements from the Commandant (G–MSC).

(e) The OCMI may accept substitute lifesaving appliances other than those required by this part, except for—

(1) Survival craft and rescue boats; and

(2) Survival craft and rescue boat launching and embarkation appliances.

(f) Acceptance of lifesaving appliances and arrangements will remain in effect unless—

(1) The OCMI deems their condition to be unsatisfactory or unfit for the service intended; or

(2) The OCMI deems the crew's ability to use and assist others in the use of the lifesaving appliances or arrangements to be inadequate.

§ 133.45 Tests and inspections of lifesaving equipment and arrangements.

(a) *Initial inspection.* The initial inspection of lifesaving appliances and arrangements for certification includes a demonstration of—

(1) The proper condition and operation of the survival craft and rescue boat launching appliances at loads ranging from light load to 10 percent overload;

(2) The proper condition and operation of rescue boats, including engines and release mechanisms;

(3) The proper condition of flotation equipment such as lifebuoys, lifejackets, immersion suits, work vests, lifefloats, buoyant apparatus, and associated equipment;

(4) The proper condition of distress signaling equipment, including EPIRB and pyrotechnic signaling devices;

(5) The proper condition of line-throwing appliances;

(6) The proper condition and operation of embarkation appliances, including embarkation ladders and marine evacuation systems;

(7) The ability of the crew to effectively carry out abandon-ship procedures; and

(8) The ability to meet the egress and survival craft launching requirements of this part.

(b) *Reinspections.* Tests and inspections of lifesaving equipment shall be carried out during each inspection for renewal of certification and periodic inspection, and shall demonstrate, as applicable,—

(1) The proper condition and operation of the survival craft and rescue boat launching appliances at loads ranging from light load to full load;

(2) The proper condition and operation of rescue boats including engines and release mechanisms;

(3) The proper condition of flotation equipment such as lifebuoys, lifejackets, immersion suits, work vests, lifefloats, buoyant apparatus, and associated equipment;

(4) That each inflatable liferaft and inflatable lifejacket has been serviced as required under this chapter;

(5) That each hydrostatic release unit, other than a disposable hydrostatic release unit, has been serviced as required under this chapter; and

(6) That the crew has the ability to effectively carry out abandon-ship procedures.

(c) *Other inspections.* Lifesaving appliances and arrangements are subject to tests and inspections described in paragraph (b) of this section during OSV boardings to ensure that the appliances and arrangements comply with applicable requirements, are in satisfactory condition, and remain fit for service.

[CGD 84–069, 61 FR 25304, May 20, 1996, as amended by USCG 1999–4976, 65 FR 6507, Feb. 9, 2000]

Subpart B—Requirements for All OSVs

§ 133.60 Communications.

(a) *Emergency position indicating radiobeacons (EPIRB).* (1) Each OSV must carry a category 1 406 MHz satellite EPIRB meeting the requirements of 47 CFR part 80.

(2) When the OSV is underway, the EPIRB must be stowed in its float-free bracket with the controls set for automatic activation and mounted in a manner so that it will float free if the OSV sinks.

(3) Each EPIRB should have the name of the OSV plainly marked or painted on its label, except for EPIRBs in an inflatable liferaft or permanently installed in a survival craft.

(b) *Distress flares.* Each OSV must—

(1) Carry not less than 12 rocket parachute flares approved under approval series 160.136; and

(2) Stow the flares on or near the OSV's navigating bridge.

(c) *Onboard communications and alarm systems.* Each OSV must meet the requirements for onboard communications between emergency control stations, muster and embarkation stations, and strategic positions on board, and the emergency alarm system requirements in part J of this chapter, and be supplemented by either a public address system or other suitable means of communication.

(d) *Emergency position indicating radiobeacon alternative.* OSVs, as an alternative to the requirements in paragraph (a) of this section, may until February 1, 1999, have a Coast Guard-approved class A EPIRB, if the EPIRB was—

(1) Manufactured after October 1, 1988; and

(2) Installed on the OSV on or before July 5, 1996.

[CGD 84–069, 61 FR 25304, May 20, 1996, as amended by USCG 1998–4442, 63 FR 52191, Sept. 30, 1998]

§ 133.70 Personal lifesaving appliances.

(a) *Lifebuoys.* Each OSV must carry lifebuoys approved under approval series 160.150 or 160.050 as follows:

(1) *Number.* The number of lifebuoys carried must be as prescribed in table 133.70 of this section.

TABLE 133.70

Length of vessel in meters (feet)	Minimum number of ring lifebuoys	
	Ocean service	Coastwise service
Under 30 (98)	8	3
30 (98) and under 60 (196)	8	4
60 (196) and under 100 (328)	8	6
100 (328) and over	12	12

(2) *Stowage.* Lifebuoys must be stowed as follows:

(i) Each lifebuoy must be capable of being rapidly cast loose.

(ii) Each lifebuoy must not be permanently secured to the OSV in any way.

(iii) Each lifebuoy stowage position must be marked with either the words ''LIFEBUOY'' or ''LIFE BUOY'', or with the appropriate symbol from IMO Resolution A.760(18).

(iv) Lifebuoys must be so distributed as to be readily available on each side of the OSV and, as far as practicable, on each open deck extending to the side of the OSV. At least one lifebuoy must be located near the stern of the OSV. The lifebuoys with attached self-igniting lights must be equally distributed on both sides of the OSV.

(3) *Color and markings.* Lifebuoys must be colored and marked as follows:

(i) Each lifebuoy must be orange.

(ii) Each lifebuoy must be marked in block capital letters with the name of the OSV and the name of the port required to be marked on the stern of the OSV under subpart 67.123 of this chapter.

(4) *Attachments and fittings.* Lifebuoys must have the following attachments and fittings:

(i) At least one lifebuoy on each side of the OSV fitted with a buoyant lifeline that is—

(A) At least as long as twice the height where it is stowed above the waterline in the lightest seagoing condition, or 30 meters (100 feet), whichever is the greater;

(B) Non-kinking;

(C) Not less than 8 millimeters (5⁄16 inch) in diameter;

(D) Of a breaking strength which is not less than 5 kiloNewtons (1,124 pounds-force); and

(E) Resistant to deterioration from ultraviolent light. Line that is certified by the manufacturer or is synthetic and a dark color meets this requirement.

(ii) Except for an OSV in coastwise service and under 30 meters (99 feet) in length, at least one-half the total number of lifebuoys, but not less than two, must each be fitted with a self-igniting light approved under approval series 161.010. The self-igniting light must not be attached to the lifebuoys required by this section to be fitted with lifelines. However, if the OSV carries less than four lifebuoys, a buoyant lifeline can be fitted to one of the lifebuoys with a self-igniting light.

(b) *Lifejackets.* Each OSV must carry lifejackets approved under approval series 160.002, 160.005, 160.055, 160.077, 160.155, 160.176, or 160.177. If the OSV carries inflatable lifejackets, they must be of the same or similar design and have the same method of operation.

(1) *General.* Each OSV must carry a lifejacket for each person on board and in addition, a sufficient number of lifejackets must be carried for persons on watch and for use at remotely located survival craft stations.

(2) *Stowage.* Lifejackets must be stowed as follows:

(i) The lifejackets must be readily accessible.

(ii) The lifejacket stowage positions must be marked with either the word ''LIFEJACKETS'' or with the appropriate symbol from IMO Resolution A.760(18).

(iii) The additional lifejackets required by paragraph (b)(1) of this section must be stowed on the bridge, in the engine control room, and at other manned watch stations..

(3) *Markings.* Each lifejacket must be marked—

(i) In block capital letters with the name of the OSV; and.

(ii) With type I retro-reflective material approved under approval series 164.018. The arrangement of the retro-reflective material must meet IMO Resolution A.658(16).

(4) *Lifejacket lights.* Each lifejacket must have a lifejacket light approved under approval series 161.112 or 161.012 securely attached to the front shoulder area of the lifejacket. However, lifejacket lights bearing Coast Guard approval number 161.012/2/1 are not permitted on OSVs certificated to operate on waters where water temperature may drop below 10° C (50° F).

(c) *Immersion suits or anti-exposure suits.* Immersion suits must be approved under approval series 160.171, and anti-exposure suits must be approved under approval series 160.153.

(1) *General.* Each OSV, except OSVs operating in the Gulf of Mexico or on other routes between 32 degrees north latitude and 32 degrees south latitude, must carry—

(i) An immersion suit or anti-exposure suit of suitable size for each person assigned to the rescue boat crew; and

(ii) An immersion suit of the appropriate size for each person on board. The immersion suits required under this paragraph count toward meeting the requirements of paragraph (c)(1)(i) of this section.

(2) *Stowage.* Immersion suits and anti-exposure suits must be stowed as follows:

(i) Immersion suits and anti-exposure suits must be stowed so they are readily accessible, and the stowage positions must be marked with the words ''IMMERSION SUITS'' or ''ANTI-EXPOSURE SUITS'' as appropriate, or with the appropriate symbol from IMO Resolution A.760(18).

(ii) If watch stations, work stations, or work sites are remote from cabins, staterooms, or berthing areas and the immersion suits are stowed in those locations, there must be, in addition to the immersion suits required under paragraph (c)(1)(ii) of this section, enough immersion suits stowed at the watch stations, work stations, or work sites to equal the number of persons normally on watch in, or assigned to, those locations at any time.

(3) *Markings.* Each immersion suit or anti-exposure suit must be marked in such a way as to identify the person or OSV to which it belongs.

(4) *Lights for immersion suits or anti-exposure suits.* Each immersion suit or anti-exposure suit must have a lifejacket light approved under approval series 161.112 or 161.012 securely attached to the front shoulder area of the

immersion suit or anti-exposure suit. However, lifejacket lights bearing Coast Guard approval number 161.012/2/1 are not permitted on OSVs certificated to operate on waters where water temperature may drop below 10° C (50° F).

(d) *Lifejacket, immersion suit, and anti-exposure suit containers.* Each lifejacket, immersion suit, and anti-exposure suit container must be marked in block capital letters and numbers with the quantity, identity, and size of the equipment stowed inside the container. The equipment may be identified in words, or with the appropriate symbol from IMO Resolution A.760(18).

[CGD 84–069, 61 FR 25304, May 20, 1996; 61 FR 40281, Aug. 1, 1996, as amended at 63 FR 52816, Oct. 1, 1998]

§ 133.80 Emergency instructions.

(a) *General.* Copies of clear instructions must be provided on the OSV, detailing the actions that each person on board should follow in the event of an emergency.

(b) *Emergency instructions.* Illustrations and instructions in English and any other appropriate language, as determined by the OCMI, must be conspicuously displayed at each muster station and in spaces where offshore workers are carried, to inform offshore workers of—

(1) The fire and emergency signal;

(2) Their muster station;

(3) The essential actions they must take in an emergency;

(4) The location of lifejackets; and

(5) The method of donning lifejackets.

§ 133.90 Operating instructions.

Each OSV must have posters or signs displayed in the vicinity of each survival craft and the survival craft's launching controls that—

(a) Illustrate the purpose of controls;

(b) Illustrate the procedures for operating the launching device;

(c) Give relevant instructions or warnings;

(d) Can be easily seen under emergency lighting conditions; and

(e) Display symbols in accordance with IMO Resolution A.760(18).

§ 133.105 Survival craft.

(a) Each survival craft must be approved and equipped as follows:

(1) Each inflatable liferaft—

(i) On an OSV on an unlimited oceans route, must be approved under approval series 160.151 and be equipped with a SOLAS A pack;

(ii) On an OSV on an oceans route limited to within 50 nautical miles of the shore, must be approved under approval series 160.151 and be equipped with either a SOLAS A pack or SOLAS B pack; and

(iii) On an OSV on a coastwise route, must be approved under approval series 160.051 or 160.151, with any approved equipment pack.

(2) Each rigid liferaft must be approved under approval series 160.118 and be equipped as specified in table 133.175 of this part.

(3) Each inflatable buoyant apparatus must be approved under approval series 160.010.

(4) Each lifefloat must be approved under approval series 160.027 and be equipped with the following:

(i) *One boathook.*

(ii) *Two paddles.* Each paddle must be at least 1.2 meters (4 feet) long and buoyant.

(iii) *One painter.* The painter must—

(A) Be at least 30 meters (100 feet) long, but not less than three times the distance between the deck where the lifefloats are stowed and to the OSV's waterline in the lightest seagoing condition;

(B) Have a breaking strength of at least 6.7 kiloNewtons (1,500 pounds-force), except that if the capacity of the lifefloat is 50 persons or more, the breaking strength must be at least 13.4 kiloNewtons (3,000 pounds-force);

(C) If made of a synthetic material, be dark in color or certified by the manufacturer to be resistant to deterioration from ultraviolet light;

(D) Be stowed in such a way that it runs out freely when the buoyant apparatus, inflatable buoyant apparatus, or lifefloat floats away from the sinking OSV; and

(E) Have a float-free link meeting the requirements of part 160, subpart 160.073 of this chapter, connecting the painter to the OSV.

(iv) *One self-igniting light.* The self-igniting light must be approved under approval series 161.010, and must be attached to the buoyant apparatus, inflatable buoyant apparatus, or lifefloat by a 12-thread manila or equivalent lanyard, at least 5.5 meters (18 feet) long. The self-igniting light is not required on a lifefloat with a capacity of 24 persons or less.

(5) Each marine evacuation system must be approved under approval series 160.175.

(6) Lifeboats may be substituted for liferafts. If lifeboats are installed on an OSV, their installation and arrangement must meet the applicable requirements of subchapter W of this chapter.

(b) Except as provided in paragraph (c) of this section, OSVs must carry one or more liferafts with an aggregate capacity that will accommodate the total number of persons on board. The liferafts must be—

(1) Stowed in a position providing for easy side-to-side transfer at a single open deck level; or

(2) Additional liferafts must be provided to bring the total capacity available on each side to at least 100 percent of the total number of persons on board. If additional liferafts are provided and the rescue boat required under §133.135 is also a lifeboat, it may be included in the aggregate capacity requirement.

(c) Each OSV operating in the Gulf of Mexico, as an alternative to the requirements of paragraph (b) of this section, may carry a sufficient number of inflatable buoyant apparatus or a sufficient number of lifefloats, having an aggregate capacity that, together with any lifeboats, rescue boats, and liferafts, will accommodate the total number of persons on board.

[CGD 84–069, 61 FR 25304, May 20, 1996; 61 FR 40281, Aug. 1, 1996]

§133.110 Survival craft muster and embarkation arrangements.

(a) Each OSV must have muster stations that—

(1) Are near the embarkation stations, unless the muster station is the embarkation station;

(2) Permit ready access for the offshore workers to the embarkation station, unless the muster station is the embarkation station; and

(3) Have sufficient room to marshal and instruct the offshore workers.

(b) Each muster station must have sufficient space to accommodate all persons assigned to muster at that station. One or more muster stations must be close to each embarkation station.

(c) Each muster station and embarkation station must be readily accessible to accommodation and work areas.

(d) Each muster station and embarkation station must be adequately illuminated by lighting supplied from the emergency source of electrical power.

(e) Each davit-launched survival craft muster station and embarkation station must be arranged to enable stretcher cases to be placed in the survival craft.

(f) Each launching station or each two adjacent launching stations with an embarkation position more than 3 meters (10 feet) above the waterline in the lightest seagoing condition, must have an embarkation ladder as follows:

(1) Each embarkation ladder must be approved under approval series 160.117 or approval series 160.017.

(2) Each embarkation ladder must extend in a single length, from the deck to the waterline in the lightest seagoing condition under unfavorable conditions of trim and with the OSV listed not less than 15 degrees either way.

(3) Each embarkation ladder may be replaced by a device approved to provide safe and rapid access to survival craft in the water, if the OCMI permits the device, provided that there is at least one embarkation ladder on each side of the OSV.

(g) Each davit-launched liferaft must be arranged to be boarded and launched from a position immediately adjacent to the stowed position or from a position to where, under §133.130, the liferaft is transferred before launching.

(h) If a davit-launched survival craft is embarked over the edge of the deck, the craft must be provide with a means for bringing it against the side of the OSV and holding it alongside the OSV to allow persons to safely embark.

(i) If a davit-launched survival craft or rescue boat is not intended to be

moved to the stowed position with persons on board, the craft must be provided with a means for bringing it against the side of the OSV and holding it alongside the OSV to allow persons to safely disembark after a drill.

§ 133.120 Launching stations.

(a) Each launching station must be positioned to ensure safe launching with clearance from—

(1) The propeller; and

(2) The steeply overhanging portions of the hull.

(b) Each survival craft must be launched down the straight side of the OSV.

(c) Each launching station in the forward part of the OSV must—

(1) Be located aft of the collision bulkhead in a sheltered position; and

(2) Have a launching appliance approved as being of sufficient strength for forward installation.

[CGD 84–069, 61 FR 25304, May 20, 1996; 61 FR 40281, Aug. 1, 1996]

§ 133.130 Stowage of survival craft.

(a) *General.* Each survival craft must be stowed as follows:

(1) Each survival craft must be as close to the accommodation and service spaces as possible.

(2) Each survival craft must be stowed in a way that neither the survival craft nor its stowage arrangements will interfere with the embarkation and operation of any other survival craft or rescue boat at any other launching station.

(3) Each survival craft must be as near the water surface as is safe and practicable.

(4) Other than liferafts intended for throw-overboard launching, each survival craft must be not less than 2 meters above the waterline with the OSV—

(i) In the fully loaded condition;

(ii) Under unfavorable conditions of trim; and

(iii) Listed up to 20 degrees either way, or to the angle where the OSV's weatherdeck edge becomes submerged, whichever is less.

(5) Each survival craft must be sufficiently ready for use so that two crew members can complete preparations for embarkation and launching in less than 5 minutes.

(6) Each survival craft must be fully equipped as required under this part.

(7) Each survival craft must be in a secure and sheltered position and protected from damage by fire and explosion, as far as practicable.

(8) Each survival craft must not require lifting from its stowed position in order to launch, except that—

(i) A davit-launched liferaft may be lifted by a manually powered winch from its stowed position to its embarkation position; or

(ii) A survival craft that weights 185 kilograms (407.8 pounds) or less, may require lifting of not more than 300 millimeters (1 foot).

(b) *Additional liferaft stowage requirements.* In addition to meeting the requirements of paragraph (a) of this section, each liferaft must be stowed as follows:

(1) Each liferaft must be stowed to permit manual release from its securing arrangements.

(2) Each liferaft must be stowed at a height above the waterline in the lightest seagoing condition not greater than the maximum stowage height indicated on the liferaft container. Each liferaft without an indicated maximum stowage height must be stowed not more than 18 meters (59 feet) above the waterline in the OSV's lightest seagoing condition.

(3) Each liferaft must be arranged to permit it to drop into the water from the deck on which it is stowed. A liferaft stowage arrangement meets this requirement if it—

(i) Is outboard of the rail or bulwark;

(ii) Is on stanchions or on a platform adjacent to the rail or bulwark; or

(iii) Has a gate or other suitable opening to allow the liferaft to be pushed directly overboard and—

(A) Each gate or opening must be large enough to allow the liferaft to be pushed overboard; and

(B) If the liferaft is intended to be available for use on either side of the OSV, a gate or opening must be provided on each side.

(4) Each davit-launched liferaft must be stowed within reach of its lifting hook, unless some means of transfer is

provided that is not rendered inoperable—

(i) Within the limits of trim and list and list specified in paragraph (a)(4)(iii) of this section;

(ii) By OSV motion; or

(iii) By power failure.

(5) Each rigid container for an inflatable liferaft to be launched by a launching appliance must be secured in a way that the container or parts of it are prevented from falling into the water during and after inflation and launching of the contained liferaft.

(6) Each liferaft must have a painter system providing a connection between the OSV and the liferaft.

(7) Each liferaft or group of liferafts must be arranged for float-free launching. The arrangement must ensure that the liferaft or liferafts when released and inflated, are not dragged under by the sinking OSV. A hydrostatic release unit used in a float-free arrangement must be approved under approval series 160.162.

(c) *Additional lifefloat stowage requirements.* Each lifefloat must be capable of float-free launching and be arranged as follows:

(1) Lifefloats must be secured to the OSV by—

(i) A hydrostatic release unit approved under approval series 160.062 or 160.162 and that is appropriate for the size and number of the lifefloats attached to them; or

(ii) Lashings that can be easily slipped.

(2) A painter must be secured to the lifefloat by—

(i) The attachment fitting provided by the manufacturer; or

(ii) A wire or line that encircles the body of the lifefloat and will not slip off, and meets the requirements of § 133.105(a)(4)(iii).

(3) If lifefloats are arranged in groups with each group secured by a single painter,—

(i) The combined weight of each group must not exceed 185 kilograms (407.8 pounds);

(ii) Each lifefloat must be individually attached to the group's single painter by its own painter which must be long enough to allow floating without contact with any other lifefloat in the group;

(iii) The strength of the float-free link and the strength of the group's single painter must be appropriate for the combined capacity of the group of lifefloats;

(iv) The group of lifefloats must not be stowed in more than four tiers. When stowed in tiers, the separate units must be kept apart by spacers; and

(v) The group of lifefloats must be stowed to prevent shifting with easily detached lashings.

[CGD 84–069, 61 FR 25304, May 20, 1996, as amended at 63 FR 52816, Oct. 1, 1998]

§ 133.135 Rescue boats.

(a) Each OSV must carry at least one rescue boat. Each rescue boat must be approved under approval series 160.056 and equipped as specified in table 133.175 of this part.

(b) Offshore supply vessels, as an alternative to the requirement in paragraph (a) of this section, may carry a motor-propelled workboat or a launch if the workboat or launch must meet the embarkation, launching, and recovery arrangement requirements in § 133.160(a), (c), (d), (e), and (f).

(c) A rescue boat is not required for a vessel operating on the continental shelf of the United States, if—

(1) The OCMI determines the vessel is arranged to allow a helpless person to be recovered from the water;

(2) The recovery of the helpless person can be observed from the navigating bridge; and

(3) The vessel does not regularly engage in operations that restrict its maneuverability.

[CGD 84–069, 61 FR 25304, May 20, 1996, as amended by USCG–2000–7790, 65 FR 58463, Sept. 29, 2000]

§ 133.140 Stowage of rescue boats.

(a) Rescue boats must be stowed as follows:

(1) Each rescue boat must be ready for launching in not more than 5 minutes.

(2) Each rescue boat must be in a position suitable for launching and recovery.

(3) Each rescue boat must be stowed in a way that neither the rescue boat nor its stowage arrangements will

interfere with the operation of any survival craft at any other launching station.

(b) Each rescue boat must be provided a means for recharging the rescue boat batteries from the OSV's power supply at a supply voltage not exceeding 50 volts.

(c) Each inflated rescue boat must be kept fully inflated at all times.

§ 133.145 Marine evacuation system launching arrangements.

(a) *Arrangements.* Each marine evacuation system must have the following arrangements:

(1) Each marine evacuation system must be capable of being deployed by one person.

(2) Each marine evacuation system must enable the total number of persons for which it is designed, to be transferred from the OSV into the inflated liferafts within a period of 10 minutes from the time an abandon-ship signal is given.

(3) Each marine evacuation system must be arranged so that liferafts may be securely attached to the platform and released from the platform by a person either in the liferaft or on the platform.

(4) Each marine evacuation system must be capable of being deployed from the OSV under unfavorable conditions of trim of up to 10 degrees either way and of list of up to 20 degrees either way.

(5) If the marine evacuation system has an inclined slide, the angle of the slide from horizontal must be within a range of 30 to 35 degrees when the OSV is upright and in the lightest seagoing condition.

(6) Each marine evacuation system platform must be capable of being restrained by a bowsing line or other positioning system that is designed to deploy automatically, and if necessary, be capable of being adjusted to the position required for evacuation.

(b) *Stowage.* Each marine evacuation system must be stowed as follows:

(1) There must not be any openings between the marine evacuation system's embarkation station and the OSV's side at the OSV's waterline in the lightest seagoing condition.

(2) The marine evacuation system's launching positions must be arranged, as far as practicable, to be straight down the OSV's side and safely clear the propeller and any steeply overhanging positions of the hull.

(3) The marine evacuation system must be protected from any projections of the OSV's structure or equipment.

(4) The marine evacuation system's passage and platform, when deployed; its stowage container; and its operational arrangement must not interfere with the operation of any other lifesaving appliance at any other launching station.

(5) Where appropriate, the marine evacuation system's stowage area must be protected from damage by heavy seas.

(c) *Stowage of associated liferafts.* Inflatable liferafts used in conjunction with the marine evacuation system must be stowed as follows:

(1) Each inflatable liferaft used in conjunction with the marine evacuation system must be close to the system container, but capable of dropping clear of the deployed chute and boarding platform.

(2) Each inflatable liferaft used in conjunction with the marine evacuation system must be capable of individual release from its stowage rack.

(3) Each inflatable liferaft used in conjunction with the marine evacuation system must be stowed in accordance with § 133.130.

(4) Each inflatable liferaft used in conjunction with the marine evacuation system must be provided with preconnected or easily connected retrieving lines to the platform.

§ 133.150 Survival craft launching and recovery arrangements: General.

(a) All survival craft required for abandonment by the total number of persons on board must be capable of being launched with their full complement of persons and equipment within 10 minutes from the time the abandon-ship signal is given.

(b) Each launching appliance for a davit-launched liferaft must be approved under approval series 160.163, with an automatic disengaging apparatus approved under approval series 160.170.

(c) Unless expressly provided otherwise, each survival craft must be provided launching appliances or marine evacuation systems, except—

(1) Those survival craft that can be boarded from a position on deck less than 4.5 meters (14.75 feet) above the waterline in the lightest seagoing condition and that have a mass of not more than 185 kilograms (407 pounds);

(2) Those survival craft that can be boarded from a position on deck less than 4.5 meters (14.75 feet) above the waterline in the lightest seagoing condition and that are stowed for launching directly from the stowed position, under unfavorable conditions of trim of 10 degrees and list of 20 degrees either way;

(3) Those survival craft that are carried in excess of the survival craft for 200 percent of the total number of persons on board the OSV, and that have a mass of not more than 185 kilograms (407 pounds);

(4) Those survival craft carried in excess of the survival craft for 200 percent of the total number of persons on board the OSV, and are stowed for launching directly from the stowed position under unfavorable conditions of trim of 10 degrees and list of 20 degrees either way;

(5) Those survival craft that are provided for use in conjunction with a marine evacuation system, and stowed for launching directly from the stowed position under unfavorable conditions of trim of 10 degrees and list of 20 degrees either way; or

(6) Liferafts installed on liftboats.

(d) Each launching appliance must be arranged so that the fully equipped survival craft the launching appliance serves can be safely launched against unfavorable conditions of trim of up to 10 degrees either way and of list of up to 20 degrees either way,—

(1) When the survival craft is loaded with its full complement of persons; and

(2) When not more than the required operating crew is on board.

(e) A launching appliance must not depend on any means other than gravity or stored mechanical power, independent of the OSV's power supplies, to launch the survival craft the launching appliance serves, in the fully loaded and equipped condition, and also in the light condition.

(f) Each launching appliance's structural attachment to the OSV must be designed to be at least 4.5 times—

(1) The load imparted on the attachment by the launching appliance and its fully loaded survival craft under the most adverse combination of list and trim as required under paragraph (b) of this section; and

(2) The ultimate strength of the construction material.

(g) Each launching appliance must be arranged so that—

(1) All parts requiring regular maintenance by the OSV's crew are readily accessible and easily maintained;

(2) The launching appliance remains effective under conditions of icing;

(3) The same type of release mechanism is used for each similar survival craft carried on board the OSV;

(4) The preparation and handling of each survival craft at any one launching station does not interfere with the prompt preparation and handling of any other survival craft at any other station;

(5) The persons on board the OSV can safely and rapidly board the survival craft;

(6) Each davit-launched liferaft can be boarded by its full complement of persons within 3 minutes from the time the instruction to board is given: and

(7) During preparation and launching, the survival craft, its launching appliance, and the area of water into which it is to be launched is illuminated by lighting supplied from the emergency source of electrical power.

(h) Each launching mechanism must be arranged so it may be actuated by one person, both from a position on the OSV's deck, and from a position within the survival craft. Each launching and recovery arrangement must allow the operator on the deck to observe the survival craft at all times during launching.

(i) Means must be provided outside the machinery space to prevent any discharge of water onto survival craft during abandonment.

[CGD 84–069, 61 FR 25304, May 20, 1996, as amended at 63 FR 52816, Oct. 1, 1998]

§ 133.153 Survival craft launching and recovery arrangements using falls and a winch.

Survival craft launching and recovery arrangements, in addition to meeting the requirements in §133.150, must meet the following requirements:

(a) Each fall wire must be of rotation-resistant and corrosion-resistant steel wire rope.

(b) The breaking strength of each fall wire and each attachment used on the fall must be at least six times the load imparted on the fall by the fully-loaded survival craft.

(c) Each fall must be long enough for the survival craft to reach the water with the OSV in its lightest seagoing condition, under unfavorable conditions of trim and with the OSV listed not less than 20 degrees either way.

(d) Each unguarded fall must not pass near any operating position of the winch, such as hand cranks, pay-out wheels, and brake levers.

(e) Each winch drum must be arranged so the fall wire winds onto the drum in a level wrap. A multiple drum winch must be arranged so that the falls wind off at the same rate when lowering, and onto the drums at the same rate when hoisting.

(f) Each fall, where exposed to damage or fouling, must have guards or equivalent protection. Each fall that leads along a deck must be covered with a guard that is not more than 300 millimeters (1 foot) above the deck.

(g) The lowering speed for a fully loaded survival craft must be not less than that obtained from the following formula:

(1) $S=0.4+(0.02\ H)$, where S is the speed of lowering in meters per second, and H is the height in meters from the davit head to the waterline at the lightest seagoing condition.

(2) $S=79+(1.2\ H)$, where S is the speed of lowering in feet per minute, and H is the height in feet.

(h) The lowering speed for a survival craft loaded with all of its equipment must be not less than 70 percent of the speed required under paragraph (g) of this section.

(i) The lowering speed for a fully loaded survival craft must be not more than 1.3 meters per second (256 feet per minute).

(j) If a survival craft is recovered by electric power, the electrical installation, including the electric power-operated boat winch, must meet the requirements in part 129 of this chapter. If a survival craft is recovered by any means of power, including a portable power source, safety devices must be provided which automatically cut off the power before the davit arms or falls reach the stops in order to avoid overstressing the falls or davits, unless the motor is designed to prevent such overstressing.

(k) Each launching appliance must be fitted with brakes that meet the following requirements:

(1) The brakes must be capable of stopping the descent of the survival craft or rescue boat and holding it securely when loaded with its full complement of persons and equipment.

(2) The brake pads must, where necessary, be protected from water and oil.

(3) Manual brakes must be arranged so that the brake is always applied unless the operator, or a mechanism activated by the operator, holds the brake control in the off position.

[CGD 84–069, 61 FR 25304, May 20, 1996; 61 FR 40281, Aug. 1, 1996]

§ 133.160 Rescue boat embarkation, launching and recovery arrangements.

(a) Each davit for a rescue boat must be approved under approval series 160.132 with a winch approved under approval series 160.115. If the launching arrangement uses a single fall, the davit may be of a type which is turned out manually, and the release mechanism may be an automatic disengaging apparatus approved under approval series 160.170 instead of a lifeboat release mechanism. Each rescue boat must be able to be boarded and launched directly from the stowed position with the number of persons assigned to crew the rescue boat on board. If the rescue boat is also a lifeboat and the other lifeboats are boarded and launched from an embarkation deck, the arrangements must be such that the rescue boat can also be boarded and launched from the embarkation deck.

(b) Each rescue boat must be capable of being launched with the OSV making headway of 5 knots in calm water. A painter may be used to meet this requirement.

(c) Each rescue boat embarkation and launching arrangement must permit the rescue boat to be boarded and launched in the shortest possible time.

(d) Rapid recovery of the rescue boat must be possible when loaded with its full complement of persons and equipment.

(e) Each rescue boat launching appliance must be fitted with a powered winch motor.

(f) Each rescue boat launching appliance must be capable of hoisting the rescue boat when loaded with its full rescue boat complement of persons and equipment at a rate of not less than 0.3 meters per second (59 feet per minute).

[CGD 84–069, 61 FR 25304, May 20, 1996, as amended at 63 FR 52816, Oct. 1, 1998]

§ 133.170 Line-throwing appliance.

(a) *General.* Each OSV must have a line-throwing appliance that is approved under approval series 160.031 or 160.040.

(b) *Stowage.* The line-throwing appliance and its equipment must be readily accessible for use.

(c) *Additional equipment.* Each OSV must carry the following equipment for the line-throwing appliance:

(1) The equipment on the list provided by the manufacturer with the approved appliance.

(2) An auxiliary line that—

(i) For an appliance approved under approval series 160.040, is at least 450 meters (1,500 feet) long;

(ii) For an appliance approved under approval series 160.031, is at least 150 meters (500 feet) long;

(iii) Has a breaking strength of at least 40 kiloNewtons (9,000 pounds-force); and

(iv) Is, if synthetic, a dark color or certified by the manufacturer to be resistant to deterioration from ultraviolet light.

§ 133.175 Survival craft and rescue boat equipment.

(a) All rescue boat equipment must be as follows:

(1) The equipment must be secured within the boat by lashings, storage in lockers or compartments, storage in brackets or similar mounting arrangements, or other suitable means.

(2) The equipment must be secured in such a manner as not to interfere with any abandonment procedures or reduce seating capacity.

(3) The equipment must be as small and of as little mass as possible.

(4) The equipment must be packed in a suitable and compact form.

(5) The equipment should be stowed so the items do not—

(i) Reduce the seating capacity;

(ii) Adversely affect the seaworthiness of the survival craft or rescue boat; or

(iii) Overload the launching appliance.

(b) Each rigid liferaft and rescue boat, unless otherwise stated in this paragraph, must carry the equipment specified for it in table 133.175 of this section. Each item in the table has the same description as in §199.175 of this chapter.

NOTE: Item numbers in the first column of Table 133.175 are not consecutive because not all of the items listed in section 199.175 are required on OSVs.

TABLE 133.175.—SURVIVAL CRAFT EQUIPMENT

Item No.	Item	Oceans		Coastwise	
		Rigid liferaft (SOLAS A Pack)	Rescue boat	Rigid liferaft (SOLAS B Pack)	Rescue boat
1	Bailer[1]	1	1	1	1
3	Boathook		1		1
4	Bucket[2]		1		1
5	Can opener	3			
6	Compass		1		1
8	Drinking cup	1			
9	Fire extinguisher		1		1

TABLE 133.175.—SURVIVAL CRAFT EQUIPMENT—Continued

Item No.	Item	Oceans		Coastwise	
		Rigid life-raft (SOLAS A Pack)	Rescue boat	Rigid life-raft (SOLAS B Pack)	Rescue boat
10	First-aid kit	1	1	1	1
11	Fishing kit	1	.....	.....	.....
12	Flashlight	1	1	1	1
14	Heaving line	1	2	1	2
15	Instruction card	1	.....	1	.....
17	Knife[1 3]	1	1	1	1
18	Ladder	.....	1	.....	1
19	Mirror, signalling	1	.....	1	.....
20	Oars, units[4]	.....	1	.....	1
	Paddles	2	.....	2	.....
21	Painter	1	1	1	1
22	Provisions (units per person)	1	.....	.....	.....
23	Pump[5]	.....	1	.....	1
24	Radar reflector	1	1	1	1
26	Repair kit[5]	.....	1	.....	1
27	Sea anchor	2	1	2	1
28	Searchlight	.....	1	.....	1
29	Seasickness kit (units per person)	1	.....	1	.....
30	Signal, smoke	2	.....	1	.....
31	Signal, hand flare	6	.....	6	.....
32	Signal, parachute flare	4	.....	4	.....
34	Sponge[5]	2	2	2	2
35	Survival instructions	1	.....	1	.....
36	Table of lifesaving signals	1	.....	1	.....
37	Thermal protective aids (percent of persons)[6]	10%	10%	10%	10%
39	Towline	.....	1	.....	1
40	Water (liters per person)	1.5	.....	1	.....
41	Whistle	1	1	1	1

Notes:
[1] Each liferaft equipped for 13 persons or more must carry two of these items.
[2] Not required for inflated or rigid-inflated rescue boats.
[3] A hatchet counts towards this requirement in rigid rescue boats.
[4] Oars are not required on a free-fall lifeboat; a unit of oars means the number of oars specified by the boat manufacturer.
[5] Not required for a rigid rescue boat.
[6] Sufficient thermal protective aids are required for at least 10% of the persons the survival craft is equipped to carry, but not less than two.

[CGD 84–069, 61 FR 25304, May 20, 1996, as amended by USCG–1999–6216, 64 FR 53227, Oct. 1, 1999]

PART 134—ADDED PROVISIONS FOR LIFTBOATS

Sec.
134.100 Applicability.
134.110 Initial inspection.
134.120 Inspection for certification.
134.130 New construction.
134.140 Structural standards.
134.150 Liftboat-jacking systems.
134.160 Freeboard markings.
134.170 Operating manual.
134.180 Piping for fire-main suction.

AUTHORITY: 46 U.S.C. 3306, 3307; 49 CFR 1.46.

SOURCE: CGD 82–004 and CGD 86–074, 62 FR 49352, Sept. 19, 1997, unless otherwise noted.

§ 134.100 Applicability.

This part, as well as parts 125 through 133 of this subchapter, applies to each liftboat of United States flag to which this subchapter applies.

§ 134.110 Initial inspection.

Liftboat jacking systems, liftboat legs, liftboat leg pads, and arrangements for supply of water to fire mains, as well as the items listed by § 126.340 of this subchapter, will normally be inspected during the initial inspection to determine whether the liftboat was built in compliance with developed plans and meets applicable regulations.

§ 134.120 Inspection for certification.

Liftboat jacking systems, liftboat legs, liftboat leg pads, and arrangements for supply of water to fire

mains, as well as the items listed by §126.430 of this subchapter, will normally be inspected during an inspection for certification and periodic inspection to determine whether the liftboat is in satisfactory condition and fit for the service intended.

[CGD 82–004 and CGD 86–074, 62 FR 49352, Sept. 19, 1997, as amended by USCG 1999–4976, 65 FR 6507, Feb. 9, 2000]

§134.130 New construction.

Each applicant for an original Certificate of Inspection and for approval of plans must submit, as well as three copies of those required by §127.110 of this subchapter, three copies of the following plans:

(a) Operating Manual for Liftboats.

(b) Legs, details of supporting structure, and structural calculations.

§134.140 Structural standards.

(a) Except as provided by paragraph (b) of this section, each liftboat must comply with the ABS's ''Rules for Building and Classing Mobile Offshore Drilling Units'', assuming a steady wind speed of 100 knots for liftboats in unrestricted service, and 70 knots for liftboats in restricted service under normal operating conditions and 100 knots under severe storm conditions, as follows:

(1) The main hull structure, legs, and supporting structure must comply with Section 3/4.3 of the Rules.

(2) The calculations required by Section 3/4.3 of the Rules must assume the vessel to be in the most adverse loading conditions described by Sections 3/2.1 and 3/4.1 of the Rules.

(3) Unless otherwise agreed upon by the Commandant (G–MSE), the calculations on column-buckling required by Section 3/4.3 of the Rules, must employ an effective-length factor, ''K'', of not less than 2.0.

(4) The calculations on single-rack jacking systems required by Sections 3/2.1 and 3/4.1 of the Rules must include an extra bending moment caused by the most adverse eccentric loading of the legs.

(b) Standards of classification societies other than the ABS, and other established standards acceptable to the Commandant (G–MSE), may be used.

(c) Upon submittal of the plans required by §§127.110 and 133.130 of this subchapter, the standard used in the design must be specified.

(d) If no established standard is used in the design, etailed design calculations must be submitted with the plans required by §§127.110 and 133.130 of this subchapter.

§134.150 Liftboat-jacking systems.

(a) For this subchapter, liftboat jacking systems are vital systems and must comply with Sections 4/1.13.1 through 4/1.13.3 of the ABS's ''Rules for Building and Classing Mobile Offshore Drilling Units'' as well as meet the applicable requirements of part 128 of this subchapter.

(b) Each control system for a liftboat jacking system must be designed so that loss of power, loss of pressure in the hydraulic system, or low hydraulic-fluid level will activate a visible and audible alarm at the operating station and will not result in the liftboat's uncontrolled descent.

§134.160 Freeboard markings.

Freeboard markings required by §174.260 of this subchapter must be both permanently scribed or embossed and painted white or yellow on a dark background.

§134.170 Operating manual.

(a) Each liftboat must have aboard an operating manual approved by the Coast Guard as complying with this section.

(b) The operating manual must be available to, and written so as to be easily understood by, the crew members of the liftboat and must include the following:

(1) A table of contents and general index.

(2) A general description of the vessel, including—

(i) Major dimensions;

(ii) Tonnages; and

(iii) Load capacities for—

(A) Various cargoes;

(B) Crane hook; and

(C) Helicopter-landing deck.

(3) Designed limits for each mode of operation, including—

(i) Draft;

(ii) Air gap;

(iii) Wave height;
(iv) Wave period;
(v) Wind;
(vi) Current;
(vii) Temperatures; and
(viii) Other environmental factors.

(4) The heaviest loads allowable on deck.

(5) Information on the use of any special cross-flooding fittings and on the location of valves that may require closure to prevent progressive flooding.

(6) Guidance on preparing the vessel for heavy weather and on what to do when heavy weather is forecast, including when critical decisions or acts—such as leaving the area and heading for a harbor of safe refuge, or evacuating the vessel—should be accomplished.

(7) Guidance on operating the vessel while changing mode and while preparing the vessel to make a move, and information on how to avoid structural damage from shifting loads during heavy weather.

(8) Information on inherent operational limitations for each mode and on changing modes, including preloading instructions.

(9) Guidance on the proper procedures for discovering the flooding of a normally buoyant leg or leg pad, precautionary information concerning the effects on stability of flooded legs, and what to do upon discovering the flooding of a normally buoyant leg or leg pad.

(10) A description, a diagram, operating guidance for the bilge system, and an alternative method of dewatering.

(11) A general arrangement diagram showing the locations of—

(i) Watertight and weathertight compartments;

(ii) Openings in the hull and structure;

(iii) Vents and closures;

(iv) Shutdowns for mechanical and electrical emergencies, and for emergencies affecting ventilation;

(v) Alarms for flooding and for too-high and too-low levels;

(vi) Fire and gas detectors; and

(vii) Access to different compartments and decks.

(12) A list of shutdown locations for emergencies and guidance on restarting mechanical and electrical equipment and equipment for ventilation after shutdowns.

(13) A diagram of the hazardous locations (if applicable).

(14) A diagram of the emergency-power system.

(15) Stability information setting forth the maximum allowable height of the center of gravity in relation to draft data, displacement, and other applicable parameters unique to the design of the unit to determine compliance with the intact and damage stability criteria, under §§174.250 and 174.255 of this chapter.

(16) Curves of form as required under §170.075(a)(3) of this chapter.

§ 134.180 Piping for fire-main suction.

(a) Except as provided by paragraph (b) of this section, suction lines must comply with §132.110 of this subchapter.

(b) Suction lines that extend below the main deck outside the hull plating and that supply the fire pump with the liftboat in the elevated mode must be metallic, unless they comply with §56.60–25(c) of this chapter for vital fresh-water and salt-water service, except that they may be of unlimited length.

PARTS 135–139 [RESERVED]

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(Revised as of October 1, 2000)

The Director of the Federal Register has approved under 5 U.S.C. 552(a) and 1 CFR part 51 the incorporation by reference of the following publications. This list contains only those incorporations by reference effective as of the revision date of this volume. Incorporations by reference found within a regulation are effective upon the effective date of that regulation. For more information on incorporation by reference, see the preliminary pages of this volume.

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American Society of Mechanical Engineers Three Park Avenue, New York, NY 10016–5990; Telephone: (800) THE–ASME	
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American Society for Nondestructive Testing (ASNT) P.O. Box 21142, Columbus, OH 43221	
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American Society for Testing and Materials 100 Barr Harbor Drive, West Conshohocken, PA, 19428-2959, Telephone (610) 832-9585, FAX (610) 832-9555	
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ASTM B 117–73 (Reapproved 1979)—Method of Salt Spray (Fog) Testing.	114.400
ASTM B 117–95 Standard Practice for Operating Salt Spray (FOG) Apparatus.	110.10–1; 110.15–1(b)
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ASTM B 122/B 122 M-95, Standard Specification for Copper-Nickel-Tin Alloy, Copper-Nickel-Zinc Alloy (Nickel Silver), and Copper-Nickel Alloy Plate, Sheet, Strip, and Rolled Bar.	114.600; 119.440
ASTM B 127-98, Standard Specification for Nickel-Copper Alloy (UNS NO4400) Plate, Sheet, and Strip.	114.600; 119.440
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ASTM D 93–94 Flash Point by Pensky-Martens Closed Cup Tester	114.400
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Commandant [G–MVI], 2100 2nd St. SW., Washington, DC 20593	
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Department of Defense	
DODSSP Standarization Document Order Desk, 700 Robbins Ave., Bldg. 4D, Philadelphia, PA 19111-5098	
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400 Stanwix St., Pittsburgh, PA 15222	
RP 12.6–1976 Installation of Intrinsically Safe Instrument Systems in Class I Hazardous Locations.	111.105–15(b)(2)
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PO Box 4287, Houston, TX 77210–4287	
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International Maritime Organization (formerly Inter-Governmental Maritime Organization)

4 Albert Embankment, London SE1 7SR, England Telephone: 0171-587 3210; FAX: 0171-587 3210; Telex: 23588. Purchase from: IMO Sales, New York Nautical Instrument and Service Corp., 140 W. Broadway, New York, NY 10013. Telephone: (212) 962-4522; FAX: (212) 406-8420

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The International Society for Measurement and Control (ISA) 67 Alexander Drive, PO Box 12277, Research Triangle Park, NC 27709	
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National Electrical Manufacturers Association 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209; Telephone: (703) 841–3200; FAX: (703) 841–3300	
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National Fire Protection Association 1 Batterymarch Park, Quincy, MA 02269–9101, Telephone: (800) 344-3555	
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Underwriters Laboratories, Inc. Available from: Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112, Telephone (800) 854–7179 or Global Engineering Documents, 7730 Carondelet Ave., Suite 470, Clayton, MO 63105, Telephone (800) 854–7179	
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97 Authority citation revised; section and subpart authority citations removed 4350, 33059
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97.34–5 Revised 4350
97.34–25 Added 4350
97.35–5 (a)(10) added; eff. 11–17–86 33059
97.37–60 Added; eff. 11–17–86 33059
107 Authority citation revised; section authority citations removed 15498
107.317 (b) revised 15498
108 Authority citation revised; section authority citations removed 4350
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110 Authority citation revised; section authority citations removed 15498
110.25–3 (a)(1) revised; (b) removed 15498

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91.40–3 Added 39653
91.40–5 Revised 39654
91.43–1 (Subpart 91.43) Added 39654
92 Authority citation revised; section authority citations removed 18364
92.07–10 (g) added 18364
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96 Authority citation revised 18364
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97.07–1 (Subpart 97.07) Revised 47536
98 Authority citation revised; section authority citations removed 7776
98.31–5—98.31–15 (Subpart 98.31) Added 7776
107 Authority citation revised 6978
107.305 (ii) revised 6978
109 Authority citation revised 6979, 47536
109.121 Revised 6979
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109.411 Revised 47536
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111 Authority citation revised 31626
111.105–32 (b)(1) amended; eff. 11–1–87 31626

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90 Authority citation revised; section authority citations removed 36025, 37567
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90.01–15 Added 34297
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90.05–35 (a)(1)(ii) and (2)(iii) revised 36025
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91 Authority citation revised 7748, 32231, 37567
91.25–20 (a)(1) table footnote 1 and (2) table footnote 1 revised 7748
91.40–1 (a) and (d) amended 32231
91.40–3 (a) (1) and (2) amended; (b) through (f) redesignated as (c) through (g); new (b) added; (a) introductory text, (1) Table 91–40–3(a) and (2) Table 91.40–3(b), new (e) introductory text, and new (f) revised 32231
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91.43–1 (Subpart 91.43) Heading revised 32232
91.43–1 (a) amended 32232
91.55–15 (a)(2) amended 34534
92 Interpretation 32050
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93 Authority citation revised; section authority citations removed 37567
93.20–05 (a) amended 34534
94 Authority citation revised 17704
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94.01–3 Added 17704
94.20–15 (j) revised 17705
95 Authority citation revised 7748
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95.15–20 (i) revised 7749
96 Authority citation revised 17705
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96.01–3 Added 17705
96.07–5 (b), (c), and (d) added 20624
96.35–5 (c) revised 17705
97 Authority citation correctly revised 13117
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97.70–1 Note revised 36025
97.70–10 (a)(1) Note and (e)(1) revised 36025
97.70–25 (b)(3) revised 36025
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98 Authority citation revised 28974
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98.30–4 Added; interim 28974
98.31–10 Heading revised; interim 28974
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99 Authority citation revised; section authority citations removed 36026, 37567
105 Authority citation revised; section authority citations removed 36026, 37567
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107.115 (b)(1) amended 34534
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107.117 (a) and (b) amended 34534
107.235 (b)(3) note revised 7749
108 Authority citation revised; section authority citations removed 7749
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108.101 Added 17705
108.431 Heading revised; (c) added 7749
108.451 (h) removed 7749
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110.25–3 (a)(1) and (3) amended 34534
111 Authority citation revised 37567
111.01–9 Revised 17846
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111.54–3 Added 17847
112 Authority citation revised 37567
113 Authority citation revised 37568
113.35–3 (f) added 17847

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90.01–7 Added 50380
91.55–15 (a)(3) revised 19571
98.01–1—98.01–5 (Subpart 98.01) Heading revised; interim 50964
98.01–1 Heading revised; interim 50964
98.01–3 Added; interim 50965
98.25–95 (a) revised; interim 50965
98.25–97 Added; interim 50965
98.30–4 Regulation at 53 FR 28974 confirmed 12629
98.31–10 Regulation at 53 FR 28974 confirmed 12629
98.35–7 (b) revised 19571
107.01–3 Added 50380
107.317 (b) revised 19571
110.01–4 Added 50380
110.25–3 (a)(1) revised 19571

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90.01–15 (b) amended 2525
90.05–1 (a)(1) and Table 90.05–1(a) footnote 6 revised 30661
90.05–10 (a)(2)(i) and (ii) revised 30661
90.05–35 Revised 37410
90.10–20 Added 2525
91 Authority citation revised 2525, 21550
Authority citation revised 32248
91.27–13 Added 2525

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91.37–1 (d) amended 21550
91.37–5 (a) amended 21550
91.37–40 (a) and (c) amended 21550
91.55–5 (i) added 32248
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(i) correctly designated 40260
91.60–1—91.60–45 (Subpart 91.60) Heading revised 30661
91.60–5 (a) revised 30661
91.60–45 (a) revised 30661
92.03–1 (Subpart 92.03) Added 32248
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94.10–1 (d) revised 30662
94.20–15 (nn) revised 30662
98 Technical correction 43063
98.01–1—98.01–5 (Subpart 98.01) Regulation at 54 FR 50964 confirmed 41917
98.01–1 (b) and (d) removed 37411
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98.25–95 Regulation at 54 FR 50965 confirmed 41917
98.25–97 Regulation at 54 FR 50965 confirmed 41917
98.30–1—98.30–39 (Subpart 98.30) Heading revised 37411
98.30–1 Revised 37411
98.30–2 Added 37411
98.30–3 Revised 37411
98.30–4 Redesignated as 98.30–14; new 98.30–4 added 37411
98.30–5 Redesignated as 98.30–6; new 98.30–5 added 37411
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98.30–8 Added 37412
98.30–9 Heading and (b)(2) revised 37412
(b)(2) introductory text correctly revised 47477
98.30–10 Added 37412
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98.31–5 Amended 37412
98.33–1—98.33–15 (Subpart 98.33) Added 37412
98.33–5 (b) corrected 47477
98.33–15 (h) and (i) correctly added 47477

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98.35–1—98.35–50 (Subpart 98.35) Removed 37412
107.305 (r) added 32248
(r) Technical correction 38441
107.401—107.413 (Subpart D) Heading revised 30662
107.401 (a) and (b) revised 30662
107.405 (a) revised 30662
107.409 (b) revised 30662
107.413 (a), (b), (c), and (d) revised 30662
108.801 (Subpart I) Added 32248
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109.103 Heading revised 30663
109.557 (b) revised 37413

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91 Authority citation revised 35825
91.55–5 (b)(11) revised 35825
(b)(11) footnote 1 correctly added 46354
92.01–2 Added 35825
92.01–13 Revised 35825
95.01–2 Added 35825
95.10–10 (c) revised 35826
98.30–4 (b) amended 13598
98.33–1 (b)(1) and (2) amended 13598
107.305 (m) revised 35826
108.101 Revised 35826
108.427 (c) revised 35826

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90.01–15 (b) revised (OMB number); eff. 12–10–92 41822
90.05–35 Heading revised; note added 36246
96.30–1—96.30–90 (Subpart 96.30) Revised 48325
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96.30–5 (a) corrected 56406
96.35–1 Revised 48325
96.35–5 (b) revised 48325
96.35–10 (a) revised 48325
96.35–90 Revised 48326
97.15–7 Added; eff. 12–10–92 41822
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97.35–5 (a)(4) through (10) redesignated as (a)(6) through (12); new (a)(4) and (5) added; eff. 12–10–92 41823
97.40–10 Heading and (a) revised; (b) and (c) redesignated as (c) and (d); new (b), (e), (f) and (g) added; eff. 12–10–92 41823
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108.497 (a) and (d)(1) revised 48326
108.661 (e) added; eff. 12–10–92 41823
108.703 (a) revised 48326
109.227 Added; eff. 12–10–92 41823
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97 Authority citation revised 16779, 39966
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98.01–1 (e) amended 17011

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90 Authority citation revised 48051
90.05–20 Revised; interim 57640
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90.05–40 Removed 48051
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90.10–24 Removed 48051
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90.10–40 (b) and (c) revised; interim 57640
90.10–42 Added; interim; eff. 3–31–96 17157
90.30–10 Removed; interim 57640
90.35–5 (a) amended 50464
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91 Authority citation revised 48051
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91.25–10 (a) designation and (b) removed 48051
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91.40–3 (e)(1), (3) and (g) amended 50464
91.50–1 (a) amended 50464
91.60–1 Revised 48051
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91.60–30 Removed 48051
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91.60–40 (e) removed; (f) redesignated as (e) 48051
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92.01–2 (a) amended 50464
93.20–15 (b) amended 50464
94.01–3 (a) amended 50464
95.01–2 (a) amended 50464
95.10–10 (l)(2) removed; (l)(3) and (4) redesignated as (l)(2) and (3) 48051
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96.01–3 (a) amended 50464
97 Authority citation revised 48051
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97.27–10 Removed 48051
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97.95–1 (Subpart 97.95) Added; interim; eff. 3–31–96 17157
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98.30–14 (a)(2), (3), (b)(1) and (2) amended 50464
98.30–17 Revised; interim; eff. 3–31–96 17157
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99 Removed 48051
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105 Authority citation revised 17157
105.45–1 Revised; interim; eff. 3–31–96 17157
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107.117 (a) and (b) amended 50464
107.265 (a)(2) amended 50464
107.267 (a)(2) and (b) amended 50464
107.413 (b), (c) and (d) amended 50464
108.101 (a) amended 50464
108.105 (a) amended 50464
108.109 (a) amended 50465
108.201 (a) amended 50465
108.508 (a)(1), (2) and (3) amended 50465
110.10–1 (a) amended 50465
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110.20–1 Introductory text amended 50465
110.25–3 (a)(3) amended 50465
111 Authority citation revised 24782
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125—139 (Subchapter L) Added; interim 57640

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91.15–1 Revised; interim 25289
91.15–5 Added; interim 68521
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91.40–3 (e)(1), (3) and (g) amended 50729
91.55–15 (a)(2) amended 50729
91.60–45 (a) amended 50729
92.01–2 (a) amended 50729
92.01–13 Removed 26005
92.20–01—92.20–90 (Subpart 92.20) Revised 26005
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95.01–2 (a) amended 50729
95.05–10 (g) removed; (a) introductory text, (b) and (c) revised 26006
95.05–20 Removed 26006
95.10–10 (i) revised; (i–1), (i–2) and (l) removed; (j) and (k) redesignated as (l) and (m); new (j), new (k) and (n) added 26007
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97 Comment period reopened 13098
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97.14–1—97.14–20 (Subpart 97.14) Removed; interim 25289
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107 Authority citation revised 68521
107.111 Amended; interim 25289
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107.205 Added; interim 68521
107.231 (h), (i) and (z) removed; (j) through (y), (aa), (bb) and (cc) redesignated as (h) through (y); new (b) through new (g) and new (v) revised; interim 25290
107.239 Removed; interim 25290
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107.258 (a)(1) amended 50730
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109.501—109.505 (Subpart E) Heading revised; interim 25303
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111.75–16 Regulation at 61 FR 28282 confirmed 23906
111.75–17 Regulation at 61 FR 28282 confirmed 23906
(b) and (c) amended 23909
111.75–18 Regulation at 61 FR 28282 confirmed 23906
111.75–20 Regulation at 61 FR 28283 confirmed 23906
(a) introductory text amended 23909
111.77–3 Regulation at 61 FR 28283 confirmed 23906
111.77–5 Regulation at 61 FR 28283 confirmed 23906
111.77–7 Regulation at 61 FR 28283 confirmed 23906
111.77–9 Regulation at 61 FR 28283 confirmed 23906

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111.77–11 Regulation at 61 FR 28283 confirmed 23906
111.79–1 Regulation at 61 FR 28283 confirmed 23906
111.79–5 Regulation at 61 FR 28283 confirmed 23906
111.79–7 Regulation at 61 FR 28283 confirmed 23906
111.79–13 Regulation at 61 FR 28283 confirmed 23906
111.81–1 Regulation at 61 FR 28283 confirmed 23906
111.81–5 Regulation at 61 FR 28283 confirmed 23906
111.81–7 Regulation at 61 FR 28283 confirmed 23906
111.81–9 Regulation at 61 FR 28283 confirmed 23906
111.81–11 Regulation at 61 FR 28283 confirmed 23906
111.81–13 Regulation at 61 FR 28283 confirmed 23906
111.83–3 Regulation at 61 FR 28283 confirmed 23906
111.85–1 Regulation at 61 FR 28283 confirmed 23906
111.87–3 Regulation at 61 FR 28283 confirmed 23906
111.89–1 (Subpart 111.89) Regulation at 61 FR 28283 confirmed 23906
111.91–1 Regulation at 61 FR 28283 confirmed 23906
111.91–3 Regulation at 61 FR 28283 confirmed 23906
111.95–1 Regulation at 61 FR 28283 confirmed 23906
111.95–3 Regulation at 61 FR 28283 confirmed 23906
111.95–5 Regulation at 61 FR 28283 confirmed 23906
111.95–7 Regulation at 61 FR 28283 confirmed 23906
111.97–5 Regulation at 61 FR 28283 confirmed 23906
111.99–1—111.99–5 (Subpart 111.99) Regulation at 61 FR 28284 confirmed 23906
111.99–1 Regulation at 61 FR 28284 confirmed 23906
111.99–3 Regulation at 61 FR 28284 confirmed 23906
111.99–5 Regulation at 61 FR 28284 confirmed 23906
111.105–1 Regulation at 61 FR 28284 confirmed 23906

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111.105–3 Regulation at 61 FR 28284 confirmed 23906
111.105–5 Regulation at 61 FR 28284 confirmed 23906
111.105–7 Regulation at 61 FR 28284 confirmed 23906
111.105–9 Regulation at 61 FR 28284 confirmed 23906
111.105–10 Regulation at 61 FR 28284 confirmed 23906
111.105–11 Regulation at 61 FR 28284 confirmed 23906
(a) amended 23909
111.105–15 Regulation at 61 FR 28284 confirmed 23906
111.105–17 Regulation at 61 FR 28284 confirmed 23906
(a) revised 23909
111.105–19 Regulation at 61 FR 28284 confirmed 23906
111.105–21 Regulation at 61 FR 28285 confirmed 23906
111.105–23 Regulation at 61 FR 28285 confirmed 23906
111.105–25 Regulation at 61 FR 28285 confirmed 23906
111.105–29 Regulation at 61 FR 28285 confirmed 23906
111.105–31 Regulation at 61 FR 28285 confirmed 23906
(f)(4), (i)(1), (j), (k), (l) introductory text and (n) revised 23909
111.105–32 Regulation at 61 FR 28285 confirmed 23906
(f)(1), (g)(1), (i)(2) and (j)(2) revised 23909
111.105–35 Regulation at 61 FR 28285 confirmed 23906
111.105–37 Regulation at 61 FR 28285 confirmed 23906
111.105–39 Regulation at 61 FR 28285 confirmed 23906
Introductory text and (a) amended 23909
111.105–40 Regulation at 61 FR 28285 confirmed 23906
(a) and (c) introductory text amended 23909
111.105–41 Regulation at 61 FR 28285 confirmed 23906
111.105–43 Regulation at 61 FR 28285 confirmed 23906
(c) amended 23909
111.105–45 Regulation at 61 FR 28285 confirmed 23906

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111.107–1 Regulation at 61 FR 28286 confirmed 23906
(c)(1) revised 23910
112.05–1 Regulation at 61 FR 28286 confirmed 23906
112.05–5 Regulation at 61 FR 28286 confirmed 23906
(d) revised 23910
112.15–1 Regulation at 61 FR 28286 confirmed 23906
112.15–5 Regulation at 61 FR 28287 confirmed 23906
112.35–7 Regulation at 61 FR 28287 confirmed 23906
112.39–1 Regulation at 61 FR 28287 confirmed 23906
112.39–3 Regulation at 61 FR 28287 confirmed 23906
112.43–1 Regulation at 61 FR 28287 confirmed 23906
112.43–3 Regulation at 61 FR 28287 confirmed 23906
112.43–5 Regulation at 61 FR 28287 confirmed 23906
112.43–7 Regulation at 61 FR 28287 confirmed 23906
112.43–11 Regulation at 61 FR 28287 confirmed 23906
112.43–13 Regulation at 61 FR 28287 confirmed 23906
112.43–15 Regulation at 61 FR 28287 confirmed 23906
112.43–17 Regulation at 61 FR 28287 confirmed 23906
112.45–1—112.45–5 (Subpart 112.45) Regulation at 61 FR 28287 confirmed 23906
112.45–5 Regulation at 61 FR 28287 confirmed 23906
112.50–1 Regulation at 61 FR 28287 confirmed 23906
112.50–3 Regulation at 61 FR 28287 confirmed 23906
112.50–5 Regulation at 61 FR 28288 confirmed 23906
112.50–7 Regulation at 61 FR 28288 confirmed 23906
112.55–15 Regulation at 61 FR 28288 confirmed 23906
113.05–7 Regulation at 61 FR 28288 confirmed 23906
(a) and (b) amended 23910
113.10–1—113.10–9 (Subpart 113.10) Regulation at 61 FR 28288 confirmed 23906

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113.10–7 Regulation at 61 FR 28288 confirmed 23906
Amended 23910
113.10–9 Regulation at 61 FR 28288 confirmed 23906
113.20–3 Regulation at 61 FR 28288 confirmed 23906
Amended 23910
113.25–1—113.25–30 (Subpart 113.25) Regulation at 61 FR 28288 confirmed 23906
113.25–6 Regulation at 61 FR 28288 confirmed 23906
113.25–8 Regulation at 61 FR 28288 confirmed 23906
113.25–9 Regulation at 61 FR 28288 confirmed 23906
113.25–10 Regulation at 61 FR 28288 confirmed 23906
Heading revised; (a) introductory text and (b) amended 23910
113.25–11 Regulation at 61 FR 28288 confirmed 23906
(a) amended 23910
113.25–12 Regulation at 61 FR 28289 confirmed 23906
113.25–16 Regulation at 61 FR 28289 confirmed 23906
113.25–30 Regulation at 61 FR 28289 confirmed 23906
113.30–1—113.30–25 (Subpart 113.30) Regulation at 61 FR 28289 confirmed 23906
113.30–3 Regulation at 61 FR 28289 confirmed 23906
113.30–5 Regulation at 61 FR 28289 confirmed 23906
(a)(7) added; (h)(1) revised 23910
113.30–10 Regulation at 61 FR 28289 confirmed 23906
113.30–20 Regulation at 61 FR 28289 confirmed 23906
113.30–25 Regulation at 61 FR 28289 confirmed 23906
(c), (e) and (h) amended; (i) revised 23910
113.35–3 Regulation at 61 FR 28290 confirmed 23906
113.35–5 Regulation at 61 FR 28290 confirmed 23906
113.35–7 Regulation at 61 FR 28290 confirmed 23906
113.35–9 Regulation at 61 FR 28290 confirmed 23906
113.35–11 Regulation at 61 FR 28290 confirmed 23906

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113.35–17 Regulation at 61 FR 28290 confirmed 23906
113.35–19 Regulation at 61 FR 28290 confirmed 23906
113.37–5 Regulation at 61 FR 28290 confirmed 23906
113.37–10 Regulation at 61 FR 28290 confirmed 23906
113.40–10 Regulation at 61 FR 28290 confirmed 23906
(b) amended 23910
113.43–3 (a) introductory text amended 23910
113.50–1—113.50–20 (Subpart 113.50) Regulation at 61 FR 28290 confirmed 23906
113.50–1 Regulation at 61 FR 28290 confirmed 23906
113.50–5 Regulation at 61 FR 28290 confirmed 23906
(g) amended 23910
113.50–10 Regulation at 61 FR 28290 confirmed 23906
113.50–15 Regulation at 61 FR 28291 confirmed 23906
113.50–20 Regulation at 61 FR 28291 confirmed 23906
113.50–25 Regulation at 61 FR 28291 confirmed 23906
113.65–5 Regulation at 61 FR 28291 confirmed 23906
113.70–5 (Subpart 113.70) Regulation at 61 FR 28291 confirmed 23906
114—122 (Subchapter K) Regulation at 61 FR 885 confirmed 51347
114 Authority citation revised 51347
114.110 (a) revised; (b), (c) and (g) removed; (d), (e) and (f) redesignated as (c), (d) and (b); eff. 10–30–97 51347
114.400 (b) amended 51047
(b) amended; eff. 10–30–97 51347
(b) amended 64305
114.540 (b) amended; eff. 10–30–97 51348
114.600 (b) amended 51047
(b) amended; eff. 10–30–97 51348
114.800 (b) revised; eff. 10–30–97 51348
115 Authority citation revised 67515
115.103 Amended 51047
115.600 (b) amended; eff. 10–30–97 51348
115.612 (b) amended; eff. 10–30–97 51348

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115.802 (c) amended; eff. 10–30–97 51348
115.808 (a)(2), (4), (d), (e) introductory text and (2) amended 51047
(a)(1) and (4) amended; eff. 10–30–97 51348
115.810 (b) table amended; eff. 10–30–97 51348
115.812 (a) revised; eff. 10–30–97 51348
115.920 (d) amended 51047
115.925 Added 67515
115.930 Amended 51047
116.300 (b)(1)(ii) amended; (b)(2) added; eff. 10–30–97 51348
116.405 (f) revised; eff. 10–30–97 51348
116.415 (a)(1), (b) table and (c) table amended; eff. 10–30–97 51348
116.422 (b)(2), (c)(1) and (2) amended; eff. 10–30–97 51349
116.427 (a)(1) revised; eff. 10–30–97 51349
116.433 (g) added; eff. 10–30–97 51350
116.435 (c)(9) amended; (c)(10) added; eff. 10–30–97 51350
116.438 (a) through (m) redesignated as (b) through (n); new (a) added; new (m)(2), (3) and (6) revised; eff. 10–30–97 51350
116.439 (d) amended; (e) revised; eff. 10–30–97 51350
(e) amended 64305
116.440 (c) amended; eff. 10–30–97 51350
116.500 (k)(1) amended 51047
(h) and (p)(1) revised; (k)(1) amended; eff. 10–30–97 51350
(h) amended 64305
116.510 (b)(2) amended 51047
116.520 (b) introductory text revised; eff. 10–30–97 51350
116.600 (c) amended; eff. 10–30–97 51350
116.610 (f)(3), (i), (j) and (k) removed; (f)(4) through (8) redesignated as (f)(3) through (7); eff. 10–30–97 51350
116.810 (b) and (c) amended; eff. 10–30–97 51350
116.820 (d)(1) and (2) amended 51047
117.10 Amended 51047
Revised; eff. 10–30–97 51350
117.68 (a) heading and introductory text amended; eff. 10–30–97 51350
117.70—117.78 (Subpart C) Heading revised; eff. 10–30–97 51350

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117.70 (a)(1) amended 51047
(c)(5) amended; eff. 10–30–97 51350
117.71 (b) introductory text and (d) amended 51047
(e) added; eff. 10–30–97 51350
117.130 (a)(2) amended 51047
(b) amended; eff. 10–30–97 51350
(b) amended 64305
117.150 (a) introductory text revised; eff. 10–30–97 51350
(a) introductory text amended 64305
117.175 (c) through (f) redesignated as (d) through (g); new (c) added; new (f)(4) revised; eff. 10–30–97 51351
(f)(4) amended 64305
117.200 (a)(1) through (4), (b) and (c) introductory text and table amended; eff. 10–30–97 51351
(a)(1) through (4) amended 64305
117.210 (b) redesignated as (c); new (b) added; new (c) revised; eff. 10–30–97 51351
(c) amended 64305
118 Authority citation revised 51351
118.300 (c) revised; (e) amended; eff. 10–30–97 51351
118.310 (a) revised; (c) and (d) added; eff. 10–30–97 51351
118.320 (a) and (c)(1) amended; eff. 10–30–97 51351
(c)(1) amended 64305
118.400 (e) introductory text amended; eff. 10–30–97 51351
118.410 (b)(2) and (c)(2)(ii) revised; (d)(1), (7)(i), (ii), (8)(iii), (f)(4)(v) and (5)(i) amended; eff. 10–30–97 51351
118.500 (a) table amended; eff. 10–30–97 51351
119.320 (a) and (b) redesignated as (b) and (a); eff. 10–30–97 51352
119.405 Amended 51047
119.430 (d) removed; (e) through (l) redesignated as (d) through (k); eff. 10–30–97 51352
119.458 (a) amended; eff. 10–30–97 51352
119.465 (f) revised; eff. 10–30–97 51352
119.510 (b) amended 51047
120.312 Introductory text amended; eff. 10–30–97 51352
120.320 (b)(2) amended; eff. 10–30–97 51352

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120.340 (i) amended; (i)(1) and (2) added; eff. 10–30–97 51352
120.378 Added; eff. 10–30–97 51352
120.380 (f) amended; eff. 10–30–97 51352
120.432 (b)(4) and (c) amended; eff. 10–30–97 51352
120.434 Amended; eff. 10–30–97 51352
121.220 (a) amended; eff. 10–30–97 51352
121.240 (c)(3) and (4) amended; eff. 10–30–97 51352
121.702 Heading amended; eff. 10–30–97 51352
121.710 Revised; eff. 10–30–97 51352
Amended 64306
122.304 (a)(6) amended; eff. 10–30–97 51352
122.335 (a) amended; eff. 10–30–97 51352
122.356 Amended; eff. 10–30–97 51352
122.410 Amended; eff. 10–30–97 51352
122.420 (b) redesignated as (c); new (b) added; eff. 10–30–97 51352
122.506 (a) introductory text and (b) introductory text revised; (c) and (d) redesignated as (d) and (e); new (c) added; eff. 10–30–97 51352
122.518 (b) amended; eff. 10–30–97 51353
122.520 (b)(2) amended; eff. 10–30–97 51353
122.524 (c)(3) revised; eff. 10–30–97 51353
122.602 Revised; eff. 10–30–97 51353
122.604 (b) amended; eff. 10–30–97 51353
(a) introductory text, (d) and (e) introductory text amended 64306
122.610 Amended 51047
122.612 (b) and (f) amended; eff. 10–30–97 51353
122.730 (b)(2) revised; eff. 10–30–97 51353
122.910 Amended 51047
125 Regulation at 60 FR 57643 confirmed; revised; eff. 10–20–97 49321
125.180 (b) amended; eff. 10–30–97 51047
126 Regulation at 60 FR 57643 confirmed 49321
Revised; eff. 10–20–97 49324
Authority citation revised 67515
126.480 Added 67515

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127 Regulation at 60 FR 57646 confirmed 49321
Revised; eff. 10–20–97 49328
128 Regulation at 60 FR 57649 confirmed 49321
Revised; eff. 10–20–97 49331
129 Regulation at 60 FR 57650 confirmed 49321
Revised; eff. 10–20–97 49332
130 Regulation at 60 FR 57655 confirmed 49321
Revised; eff. 10–20–97 49337
131 Regulation at 60 FR 57658 confirmed 49321
Revised; eff. 10–20–97 49340
132 Regulation at 60 FR 57667 confirmed 49321
Revised; eff. 10–20–97 49348
134 Regulation at 60 FR 57670 confirmed 49321
Revised; eff. 10–20–97 49352

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90.05–10 Regulation at 61 FR 25288 confirmed 52813
90.10–3 Regulation at 61 FR 25288 confirmed 52813
90.10–29 Regulation at 61 FR 25288 confirmed 52813
90.27–1 (Subpart 90.27) Regulation at 61 FR 25288 confirmed 52813
91.15–1 Regulation at 61 FR 25289 confirmed 52813
91.20–20 Regulation at 61 FR 25289 confirmed 52813
91.25–15 Regulation at 61 FR 25289 confirmed 52813
94 Regulation at 61 FR 25289 confirmed 52813
96.06–1 (Subpart 90.06) Regulation at 61 FR 25289 confirmed 52813
97.01–2 (b) amended 52191
97.07–1 Amended 52191
97.13–1 Regulation at 61 FR 25289 confirmed 52813
97.13–5 Regulation at 61 FR 25289 confirmed 52813
97.13–10 Regulation at 61 FR 25289 confirmed 52813
97.13–15 Regulation at 61 FR 25289 confirmed 52813
97.13–20 Regulation at 61 FR 25289 confirmed 52813

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97.14–1—97.14–20 (Subpart 97.14) Regulation at 61 FR 25289 confirmed 52813
97.15–25 Regulation at 61 FR 25289 confirmed 52813
97.15–35 Regulation at 61 FR 25289 confirmed 52813
97.15–37 Regulation at 61 FR 25289 confirmed 52813
97.15–40 Regulation at 61 FR 25289 confirmed 52813
97.15–45 Regulation at 61 FR 25289 confirmed 52813
97.15–50 Regulation at 61 FR 25289 confirmed 52813
97.15–65 Regulation at 61 FR 25289 confirmed 52813
97.15–70 Regulation at 61 FR 25289 confirmed 52813
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97.37–37 Regulation at 61 FR 25289 confirmed 52813
97.37–40 Regulation at 61 FR 25289 confirmed 52813
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97.37–43 Regulation at 61 FR 25289 confirmed 52813
97.37–55 Regulation at 61 FR 25289 confirmed 52813
97.39–1 (Subpart 97.39) Regulation at 61 FR 25289 confirmed 52813
97.85–1—97.85–10 (Subpart 97.85) Regulation at 61 FR 25289 confirmed 52813
107 Authority citation revised 52813
107.111 Regulation at 61 FR 25289 confirmed 52813
Amended; eff. 11–2–98 52814
107.231 Regulation at 61 FR 25290 confirmed 52813
(w) removed; eff. 11–2–98 52814
107.239 Regulation at 61 FR 25290 confirmed 52813
107.243 Regulation at 61 FR 25290 confirmed 52813
107.305 Regulation at 61 FR 25290 confirmed 52813
(cc) revised; eff. 11–2–98 52814
108.101 Regulation at 61 FR 25290 confirmed 52813
108.103 Regulation at 61 FR 25291 confirmed 52813
108.105 Regulation at 61 FR 25291 confirmed 52813

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108.500—108.597 (Subpart E) Regulation at 61 FR 25291 confirmed 52813
(a) and (b) revised; eff. 11–2–98 52814
108.540 (h)(3) and (4) revised; eff. 11–2–98 52814
108.565 (a)(3) revised; eff. 11–2–98 52814
108.570 (c)(1) amended; eff. 11–2–98 52814
108.575 (b) table amended; eff. 11–2–98 52814
108.580 (b)(3)(i) and (c)(2)(i) revised; eff. 11–2–98 52814
108.645 Regulation at 61 FR 25298 confirmed 52813
(a)(1)(ii), (2) and (b)(2) revised; eff. 11–2–98 52815
108.646 Regulation at 61 FR 25298 confirmed 52813
(c) revised; eff. 11–2–98 52815
108.647 Regulation at 61 FR 25298 confirmed 52813
108.649 Regulation at 61 FR 25298 confirmed 52813
(b), (c), (e)(1) and (g) revised; eff. 11–2–98 52815
108.650 Regulation at 61 FR 25299 confirmed 52813
108.655 Regulation at 61 FR 25299 confirmed 52813
108.901 (Subpart J) Regulation at 61 FR 25299 confirmed 52813
(b) introductory text, (6) introductory text, (ix), (x), (7) introductory text and (c) introductory text revised; eff. 11–2–98 52815
109.105 (b) amended 52191
109.207 Regulation at 61 FR 25299 confirmed 52813
109.208 Regulation at 61 FR 25299 confirmed 52813
109.213 Regulation at 61 FR 25299 confirmed 52813
(a)(2)(vi), (ix), (b), (c)(2), (d)(5), (7), (f)(2)(vii), (g)(7)(v)(G) and (h)(1)(iv) revised; eff. 11–2–98 52815
109.215 Regulation at 61 FR 25301 confirmed 52813
109.217 Regulation at 61 FR 25301 confirmed 52813
109.219 Regulation at 61 FR 25301 confirmed 52813
109.221 Regulation at 61 FR 25301 confirmed 52813

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109.225 Regulation at 61 FR 25301 confirmed 52813
109.301 Regulation at 61 FR 25301 confirmed 52813
(d)(2) and (g)(4) revised; eff. 11–2–98 52816
109.305 Regulation at 61 FR 25302 confirmed 52813
109.307 Regulation at 61 FR 25302 confirmed 52813
109.313 Regulation at 61 FR 25302 confirmed 52813
109.314 Regulation at 61 FR 25302 confirmed 52813
109.317 Regulation at 61 FR 25302 confirmed 52813
109.320 Regulation at 61 FR 25302 confirmed 52813
109.321 Regulation at 61 FR 25302 confirmed 52813
109.323 Regulation at 61 FR 25302 confirmed 52813
109.325 Regulation at 61 FR 25303 confirmed 52813
109.341 Regulation at 61 FR 25303 confirmed 52813
109.425 Regulation at 61 FR 25303 confirmed 52813
Revised; eff. 11–2–98 52816
109.433 Regulation at 61 FR 25303 confirmed 52813
109.501 Regulation at 61 FR 25303 confirmed 52813
109.503 (Subpart E) Regulation at 61 FR 25303 confirmed 52813
109.505 Regulation at 61 FR 25303 confirmed 52813
116.415 (c) table amended 52191
116.438 (n)(1) and (3) amended 52191
116.500 (d) amended 52191
116.520 (b)(1) amended 52191
120.312 Heading revised 52191
125.160 Regulation at 61 FR 25303 confirmed 52813
125.180 Regulation at 61 FR 25303 confirmed 52813
133 Regulation at 61 FR 25304 confirmed 52813
133.60 (a) heading revised 52191
133.70 (a)(3)(ii), (b)(4), (c)(3) and (4) revised; eff. 11–2–98 52816
133.130 (a)(2) revised; eff. 11–2–98 52816
133.150 (c)(6) revised; eff. 11–2–98 52816
133.160 (a) revised; eff. 11–2–98 52816

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91.15–5 (b) revised 30439
91.60–15 (a) and (b) amended 53226
91.60–20 Removed 53226
91.60–40 (c) amended 53226
92.01–2 Removed 67181
95.01–2 (b) amended 67181
95.15–5 (a), (d)(1) table, (3), (4) table and (e)(3) amended 53226
95.15–10 (b), (d) and (f) amended 53226
95.15–20 (b) amended 53226
95.15–90 (a)(2) amended 53226
96.01–3 (b) amended 67181
96.35–5 (c) amended 67181
97.01–2 (b) amended 67181
98.01–3 (b) amended 53226
105.01–3 Added 67182
105.05–10 (a), (c)(1) and (2) amended 53226
107.115 (b)(2) and (3) amended 53226
107.205 (b) revised 30439
107.260 (a) amended 53226
107.269 Amended 53226
107.279 (b) and (c) amended 53226
108.101 (b) amended 67182
108.237 (b) amended 53226
108.497 (b) amended 67182
108.500 (b) amended 67182
108.705 Heading revised; (a) amended 53226
109.105 (b) amended 67182
109.431 (b) amended 53227
110.10–1 (b) amended 67182,
111.60–1 (c)(4) amended 67182
114.600 (b) amended 67182
118.400 (d) amended 53227
119.440 (a)(1) table amended 67183
125.180 (b) amended 53227, 67183
133.175 (b) introductory text revised 53227

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90 Authority citation revised 6501
90.10–1 Redesignated as 90.10–2; new 90.10–1 added 6501
90.10–2 Redesignated as 90.10–3; new 90.10–2 redesignated from 90.10–1 6501

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90.10–3 Redesignated from 90.10–2 6501
90.35–5 (a) amended 58461
91 Authority citation revised 6501
91.01–10 Heading, (a) and (c)(2) amended 6501
91.25–5 Revised 6501
91.25–20 (a) introductory text revised 6501
(a) introductory text corrected 11904
91.25–25 (a) amended 6501
91.25–38 Amended 6501
91.25–40 Amended 6501
91.25–45 Amended 6501
91.27–1—91.29–15 (Subpart 91.27) Heading revised 6501
91.27–1 Revised 6501
91.27–5 Revised 6502
91.27–10 Removed 6502
91.27–13 Revised 6502
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91.60–1 Amended 6503
91.60–15 Revised 6503
91.60–35 Revised 6503
91.60–40 Revised 6503
91.60–45 (a) amended 58461
92 Effective date confirmation 10943
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95.10–10 (c) ameded 58461
96 Effective date confirmation 10943
97 Effective date confirmation 10943
97.15–55 (a) amended 58461
97.36–1 (a) amended 58461
98 Authority citation revised 6503
98.25–95 (a)(2) amended 6503
105 Effective date confirmation 10943
105.10–15 Amended 58461
107 Authority citation revised 6503
107.111 Amended 6503
107.115 (b)(1) amended 58461
107.201 (b) and (c) amended 6503
107.211 (d) revised 6503
107.215 Heading revised; (a), (b) and (c) amended; (d) added 6503
107.258 (a)(1) amended 58461
107.260 (c)(2) amended 6504
107.269 Revised 6504
107.270 Added 6504
107.279 (b), (c) and (d) revised 6504
107.283 Added 6504
107.317 (c) and (d) amended 58461

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107.405 (b) amended 6504
108 Effective date confirmation 10943
108.427 (a) amended 58462
109 Effective date confirmation 10943
109.563 (a)(6) amended 58462
110 Authority citation revised 6504
Effective date confirmation 10943
110.10–1 (b) amended 58462
110.15–1 (b) amended 58462
110.30–5 Revised 6504
111 Effective date confirmation 10943
111.97–3 Amended 58462
111.97–5 (b) amended 58462
114 Authority citation revised 6504
Effective date confirmation 10943
114.400 (b) amended 6504, 58462
114.600 (b) amended 58462
115 Authority citation revised 6504
115.105 (e) amended 6504
115.107 Revised 6504
115.404 Existing text designated as (a); (b) added 6504
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115.500 Revised 6505
115.502 Revised 6505
115.812 (a) amended 6505
116.405 (f) amended 58462
116.422 (b)(2) amended 58462
116.423 (a)(4) introductory text amended 58462

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116.730 Amended 58462
118.410 (f)(4)(v) amended 58462
119 Effective date confirmation 10943
119.422 Heading, (a) and (e) introductory text revised 58462
121.240 Note added 58463
125 Effective date confirmation 10943
125.160 Amended 6505
125.180 (b) amended 58463
126 Authority citation revised 6505
126.250 Heading and (a) amended 6505
126.420 Revised 6505
126.510—126.530 (Subpart E) Revised 6505
128.310 (a) amended 58463
128.420 Heading revised; (a) amended 58463
128.430 Heading revised; (a) and (b) amended 58463
132 Authority citation revised 6507
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132.350 (a)(2) amended 6507
133 Authority citation revised 6507
Authority citation corrected 11904
133.45 (b) amended 6507
133.135 (a) amended 58463
134 Authority citation revised 6507
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134.120 Amended 6507