SUBCHAPTER D—TANK VESSELS

PART 30—GENERAL PROVISIONS

NOTE: Parts 151 through 157 in 33 CFR subchapter O contain additional design, equipment, and operations requirements relating to pollution prevention for vessels that carry oil.

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30.30–3 Evaluation materials.
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30.30–11 Determinations.

AUTHORITY: 46 U.S.C. 2103, 3306, 3703; Pub. L. 103–206, 107 Stat. 2439; 49 U.S.C. 5103, 5106; Department of Homeland Security Delegation No. 0170.1; Section 30.01–2 also issued under the authority of 44 U.S.C. 3507; Section 30.01–05 also issued under the authority of Sec. 4109, Pub. L. 101–380, 104 Stat. 515.

EFFECTIVE DATE NOTE: By USCG–2012–0919, 79 FR 53631, Sept. 10, 2014, the authority citation to part 30 was revised, effective Oct. 10, 2014. For the convenience of the user, the revised text is set forth as follows:

AUTHORITY: 46 U.S.C. 2103, 3306, 3703; Department of Homeland Security Delegation No. 0170.1(II)(92)(a), (92)(b).

SOURCE: CGFR 65–50, 30 FR 16657, Dec. 30, 1965, unless otherwise noted.

Subpart 30.01—Administration

§ 30.01–1 Purpose of regulations.

(a) The rules and regulations in this subchapter are prescribed for all tank vessels in accordance with the intent of the various statutes administered by the Coast Guard and to provide for a correct and uniform administration of the vessel inspection requirements applicable to tank vessels.

[CGFR 68–32, 33 FR 5712, Apr. 12, 1968]

§ 30.01–2 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.
§ 31.10–5(a)	1625–0038
§ 31.10–21	1625–0032
§ 31.10–22	1625–0032
§ 31.10–32	1625–0038
§ 31.10–33	1625–0038
§ 31.37–15	1625–0038
§ 31.40–35	1625–0038
§ 35.20–7	1625–0064
§ 35.35–30	1625–0039
§ 39.10–13	1625–0038

[49 FR 38120, Sept. 27, 1984, as amended by CGD 89–037, 57 FR 41821, Sept. 11, 1992; USCG–2004–18884, 69 FR 58345, Sept. 30, 2004]

§ 30.01–3 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 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 National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030 or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.* Also, it is available for inspection at the Commandant (CG–ENG), Attn: Office of Design and Engineering Systems, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7509; telephone 202–372–1405, and is available from the sources listed below.

(b) American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, telephone 610–832–9585, *http://www.astm.org.*

(1) ASTM D 323–94, Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method), incorporation by reference approved for §§ 30.10–22; 30.10–59.

(2) [Reserved]

[USCG–2009–0702, 74 FR 49226, Sept. 25, 2009, as amended by USCG–2013–0671, 78 FR 60146, Sept. 30, 2013]

§ 30.01–5 Application of regulations—TB/ALL.

NOTE: 33 CFR subchapter O (parts 151 through 157) contains additional design, equipment, and operations requirements relating to pollution prevention for vessels that carry oil.

(a) The regulations in this subchapter contain requirements for materials, design, construction, inspection, manning, and operation of tank vessels, including handling and stowage of cargo and duties of officers and crew. However, vessels certificated as passenger, cargo, and miscellaneous vessels, whose principal purpose or use is not the carriage of flammable or combustible liquid cargo in bulk, may be granted a permit to carry limited quantities of flammable or combustible liquid cargo in bulk in the grades indicated:

(1) Passenger vessels:

(i) Grade E in an integral tank; and

(ii) Grade E in a portable tank, including a marine portable tank (MPT), in accordance with subpart 98.30 or 98.33 of this chapter.

(2) Cargo vessels:

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

(ii) 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 chapter.

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

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

(ii) 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 chapter.

(b) [Reserved]

(c) The vessels and services to which each regulation applies are indicated by letters in the heading of the section or paragraph. The first letter or two letters indicate the type of vessel and the letter or letters following the oblique line indicate the waters in which such vessels may operate. These letters are described as follows:

(1) ''T'' signifies a tankship.

(2) ''B'' signifies a tank barge when it precedes an oblique line; or it signifies service on bays, sounds, and lakes other than the Great Lakes when it follows an oblique line.

(3) ''ALL'' signifies service on all waters.

(4) ''O'' signifies service on ocean waters.

(5) ''C'' signifies services on coastwise waters.

(6) ''L'' signifies service on Great Lakes waters.

(7) ''R'' signifies service on river waters.

(d) This subchapter is applicable to all U.S.-flag vessels indicated in column 2 of table 2.01–7(a), except as follows:

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

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

(3) 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.

(e) This subchapter shall be applicable to all foreign flag vessels carrying combustible or flammable liquid cargo in bulk while in the navigable waters over which the United States has jurisdiction, except that:

(1) A vessel of a foreign nation signatory to the International Convention for Safety of Life at Sea, 1974, which has on board a current valid Safety Equipment Certificate, or a vessel of a foreign nation having inspection laws approximating those of the United States, together with reciprocal inspection arrangements with the United States and which has on board a current valid certificate of inspection issued by its government under such arrangements, in either case, shall be subject only to the requirements of § 35.01–1 and the safety and cargo handling requirements in subparts 35.30 and 35.35 of this subchapter. In addition, these vessels shall report marine casualties occurring while they are in the navigable waters of the United States as required by subpart 35.15.

(2) A foreign flag vessel, except a public vessel, which operates on or enters the navigable waters of the United States, or which transfers oil in any port or place subject to the jurisdiction of the United States, must comply with the provisions of § 31.10–21a and subparts 32.53, 32.59 and 34.05 of this chapter, as applicable.

(f) Notwithstanding the exceptions previously noted in paragraph (e) 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.

(g) Manned barges carrying any of the cargoes listed in table 30.25–1 will

be considered individually by the Commandant and may be required to comply with the requirements of subchapter O of this chapter, as applicable, as well as the requirements of this subchapter.

(h) Subpart 30.30 contains procedures for evaluating vessel personnel licensing and certification programs of foreign countries which license or certificate personnel serving on tank vessels that enter or operate in U.S. navigable waters and ports.

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 30.01–5, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

EFFECTIVE DATE NOTE: By USCG–2012–0919, 79 FR 53631, Sept. 10, 2014, § 30.01–5 was amended by removing the phrase ''carrying passengers or passengers–for–hire'' from Table 30.01–5(d), column 5, rows 3 and 4, and removing the word ''None'' from column 5, row 6, adding in its place the phrase ''All vessels not covered by columns 2, 3, 4, and 6'', effective Oct. 10, 2014; however, Table 30.01–5(d) was removed by USCG–2014–0688, 79 FR 58279, Sept. 29, 2014.

§ 30.01–6 Application to vessels on an international voyage.

(a) Except 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 that 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 des Rosiers to West Point, Anticosti Island and, on the north side of Anticosti Island, the 63rd 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 80–123, 45 FR 64586, Sept. 30, 1980; CGD 90–008, 55 FR 30660, July 26, 1990; CGD 84–069, 61 FR 25286, May 20, 1996; USCG–2001–10224, 66 FR 48619, Sept. 21, 2001]

§ 30.01–7 Ocean or unlimited coastwise vessels on inland and Great Lakes Routes—TB/OC.

(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 route, including the Great Lakes.

§ 30.01–10 Application of regulations governing alterations or repairs—TB/ALL.

When major alterations or major repairs of tank vessels become necessary the work shall be done under the direction of the Officer in Charge, Marine Inspection, and shall be in accordance with the regulations in effect for new construction insofar as possible. When minor alterations or minor repairs of tank vessels become necessary such work shall be under the direction of the Officer in Charge, Marine Inspection, and shall be in accordance with the regulations in effect at the time the vessel was contracted for or built,

or in accordance with the regulations in effect for new construction insofar as possible.

§ 30.01–15 Effective date of regulations—TB/ALL.

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 of tank vessels, 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 tank vessels.

[CGFR 65–50, 30 FR 16657, Dec. 30, 1997, as amended by CGD 95–028, 62 FR 51197, Sept. 30, 1997]

Subpart 30.10—Definitions

§ 30.10–1 Definition of terms—TB/ALL.

Certain terms used in the regulations in this subchapter are defined in this subpart.

§ 30.10–2 Accommodation space—TB/ALL.

The term *accommodation space* means any public space such as a hall, dining room, mess room, lounge, corridor, lavatory, cabin, office, hospital, cinema, game and hobby room, pantry that contains no cooking appliances, and a similar space open to the passengers and crew.

[CGD 74–127, 41 FR 3842, Jan. 26, 1976]

§ 30.10–2a Anniversary date—TB/ALL.

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 6499, Feb. 9, 2000]

§ 30.10–3 Approved—TB/ALL.

The term *approved* means approved by the Commandant unless otherwise stated.

§ 30.10–5 Cargo—TB/ALL.

The term *cargo* means combustible liquid, flammable liquid, or liquefied flammable gas unless otherwise stated.

§ 30.10–5a Cargo area—TB/ALL.

The term *cargo area* means that part of a vessel that includes the cargo tanks and other tanks into which cargo or cargo vapors are intentionally introduced, holds containing these tanks, all intervening space within, between, below, or outboard of these tanks or holds, and the deck area over the length and beam of the vessel above these tanks, holds, or spaces.

[CGD 74–127, 41 FR 3842, Jan. 26, 1976]

§ 30.10–5b Cargo control station—TB/ALL.

The term *cargo control station* means a location that is manned during cargo transfer operations for the purpose of directing or controlling the loading or unloading of cargo.

[CGD 74–127, 41 FR 3842, Jan. 26, 1976]

§ 30.10–6 Cargo handling room—TB/ALL.

The term *cargo handling room* means any enclosed space where cargo is pumped, compressed, or processed. Examples of *cargo handling rooms* are pump rooms, compressor rooms, and cargo valve rooms.

[CGFR 68–65, 33 FR 19983, Dec. 28, 1968]

§ 30.10–6a Category A machinery space—TB/ALL.

The term *Category A machinery space* means any space and trunks and ducts to such a space that contains:

(a) Internal combustion machinery used for main propulsion;

(b) Internal combustion machinery used for purposes other than main propulsion where the total aggregate power is at least 500 brake horsepower;

(c) Internal combustion machinery that uses a fuel that has a flash point of less than 43.3°C (110°F); or

(d) One or more oil fired boilers or oil fuel units.

[CGD 74–127, 41 FR 3842, Jan. 26, 1976]

§ 30.10–7 Certificated—TB/ALL.

The term *certificated* when applied to tank vessels refers to a vessel covered by a certificate of inspection issued by the Coast Guard; when applied to men employed on tank vessels, the term refers to a certificate of ability issued by the Coast Guard.

§ 30.10–9 Classification requirements—TB/ALL.

The term *classification requirements* means applicable rules and supplementary requirements of the American Bureau of Shipping, or other recognized classification society.

§ 30.10–11 Coastwise—TB/C.

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

§ 30.10–13 Cofferdam—TB/ALL.

The term *cofferdam* means a void or empty space separating two or more compartments for the purpose of isolation or to prevent the contents of one compartment from entering another in the event of the failure of the walls of one to retain their tightness.

§ 30.10–14 Combination carrier—TB/ALL.

The term *combination carrier* means a tank vessel designed to carry alternatively liquid and solid cargoes in bulk.

[CGD 74–127, 41 FR 3843, Jan. 26, 1976]

§ 30.10–15 Combustible liquid—TB/ALL.

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 subchapter, combustible liquids are referred to by grades, as follows:

(a) *Grade D.* Any combustible liquid having a flashpoint below 150 °F. and above 80 °F.

(b) *Grade E.* Any combustible liquid having a flashpoint of 150 °F. or above.

[CGFR 65–50, 30 FR 16657, Dec. 30, 1965, as amended by CGD 73–96, 42 FR 49023, Sept. 26, 1977]

§ 30.10–17 Commandant—TB/ALL.

The term *Commandant* means the Commandant of the Coast Guard.

§ 30.10–19 Coast Guard District Commander—TB/ALL.

The term *Coast Guard District Commander* means an officer of the Coast Guard designated as such by the Commandant to command all Coast Guard activities within his district which include the enforcement and administration of Subtitle II, Title 46, U.S. Code, Title 46 and Title 33, U.S. Code, and regulations issued under these statutes.

[CGFR 65–50, 30 FR 16657, Dec. 30, 1965, as amended by CGD 95–028, 62 FR 51197, Sept. 30, 1997]

§ 30.10–19a Control space—TB/ALL.

The term *control space* means an enclosed space in which is located a ship's radio, main navigating equipment, or emergency source of power or in which is located centralized fire recording or fire control equipment, but not including firefighting apparatus that must be located in the cargo area or individual pieces of firefighting equipment.

[CGD 74–127, 41 FR 3843, Jan. 26, 1976]

§ 30.10–20 Deadweight or DWT—TB/ALL.

The term *deadweight* or *DWT* means the difference in metric tons between the lightweight displacement and the total displacement of a vessel measured in water of specific gravity 1.025 at the load waterline corresponding to the summer freeboard assigned according to 46 CFR, subchapter E.

[CGD 74–127, 41 FR 3843, Jan. 26, 1976]

§ 30.10–21 Flammable or inflammable—TB/ALL.

The words *flammable* and *inflammable* are interchangeable or synonymous terms for the purpose of the regulations in this subchapter.

§ 30.10–22 Flammable liquid—TB/ALL.

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:

(a) *Grade A.* Any flammable liquid having a Reid[1] vapor pressure of 14 pounds or more.

(b) *Grade B.* Any flammable liquid having a Reid[1] vapor pressure under 14 pounds and over 8½ pounds.

(c) *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 65–50, 30 FR 16657, Dec. 30, 1965, as amended by CGD 73–96, 42 FR 49023, Sept. 26, 1977; USCG–2000–7790, 65 FR 58458, Sept. 29, 2000]

§ 30.10–23 Flame arrester—TB/ALL.

The term *flame arrester* means any device or assembly of a cellular, tubular, pressure, or other type used for preventing the passage of flames into enclosed spaces.

§ 30.10–25 Flame screen—TB/ALL.

The term *flame screen* means a fitted single screen of corrosion-resistant wire of at least 30 by 30 mesh, or two fitted screens, both of corrosion-resistant wire, of at least 20 by 20 mesh, spaced not less than ½ inch or more than 1½ inches apart.

§ 30.10–27 Flashpoint—TB/ALL.

The term *flashpoint* indicates the temperature in degrees Fahrenheit at which a liquid gives off a flammable vapor when heated in an open-cup tester. For the purpose of the regulations in this subchapter, flashpoints determined by other testing methods will be equivalent to those determined with an open-cup tester, as follows:

TABLE 30.10–27—EQUIVALENT FLASHPOINTS

[In degrees Fahrenheit]

Open-cup tester	Tag closed-cup tester (A.S.T.M.)	Pensky-Martens closed tester (A.S.T.M.)
80	75	
150		140

[1] American Society for Testing Materials Standard D 323 (incorporated by reference, see § 30.01–3), Method of Test for Vapor Pressure of Petroleum Products (Reid Method).

[CGFR 65–50, 30 FR 16657, Dec. 30, 1965, as amended by USCG–2014–0688, 79 FR 58279, Sept. 29, 2014]

§ 30.10–29 Gas free—TB/ALL.

The term *gas free* means free from dangerous concentrations of flammable or toxic gases.

§ 30.10–31 General rules and regulations—TB/ALL.

The term *general rules and regulations* means the requirements contained in this chapter.

§ 30.10–33 Great Lakes—TB/L.

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

§ 30.10–35 Headquarters—TB/ALL.

The term *Headquarters* means the Commandant (CG–CVC), Attn: Office of Commercial Vessel Compliance, U.S. Coast Guard Stop 7501, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7501.

[CGFR 65–50, 30 FR 16657, Dec. 30, 1965, as amended by CGFR 68–32, 33 FR 5712, Apr. 12, 1968; CGD 88–070, 53 FR 34533, Sept. 7, 1988; USCG–2013–0671, 78 FR 60146, Sept. 30, 2013]

§ 30.10–37 Keel laying date—TB/ALL.

The term *keel laying date* means the date upon which progressive construction identifiable with a specific vessel begins, including construction of the first module or prefabricated section of the hull that is identifiable with that vessel.

[CGD 74–127, 41 FR 3843, Jan. 26, 1976]

§ 30.10–38 Lightweight—TB/ALL.

The term *lightweight* means the displacement of a vessel in metric tons without cargo, oil fuel, lubricating oil, ballast water, fresh water, feedwater in tanks, consumable stores, and persons and their effects.

[CGD 74–127, 41 FR 3843, Jan. 26, 1976]

§ 30.10–39 Liquefied flammable gas—TB/ALL.

The term *liquefied flammable gas* means any flammable gas having a Reid vapor pressure exceeding 40 pounds, which has been liquefied.

[CGFR 66–33, 31 FR 15267, Dec. 6, 1966]

§ 30.10–41 Lakes, bays, and sounds—TB/B.

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

§ 30.10–42 Machinery space—TB/ALL.

The term *machinery space* means any space that contains machinery and related equipment including Category A machinery spaces, propelling machinery, boilers, oil fuel units, steam and internal combustion engines, generators and centralized electrical machinery, oil filling stations, refrigeration, stabilizing, ventilation, and air conditioning machinery, and similar spaces and trunks to such spaces.

[CGD 74–127, 41 FR 3843, Jan. 26, 1976]

§ 30.10–43 Marine inspector or inspector—TB/ALL.

The terms *marine inspector* or *inspector* 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 the enforcement and administration of Subtitle II, Title 46, U.S. Code, Title 46 and Title 33, U.S. Code, and regulations issued under these statutes.

[CGFR 65–50, 30 FR 16657, Dec. 30, 1965, as amended by CGD 95–028, 62 FR 11597, Sept. 30, 1997; USCG-1998–4442, 63 FR 52190, Sept. 30, 1998]

§ 30.10–45 Ocean—TB/O.

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

§ 30.10–47 Officer in Charge, Marine Inspection—TB/ALL.

The term *Officer in Charge, Marine Inspection,* 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 enforcement and administration of Subtitle II, Title 46, U.S. Code, Title 46 and Title 33, U.S. Code, and regulations issued under these statutes.

[CGFR 65–50, 30 FR 16657, Dec. 30, 1965, as amended by CGD 95–028, 62 FR 51197, Sept. 30, 1997]

§ 30.10–48 Oil fuel—TB/ALL.

The term *oil fuel* means oil used as fuel for machinery in the vessel in which it is carried.

[CGD 74–127, 41 FR 3843, Jan. 26, 1976]

§ 30.10–48a Oil fuel unit—TB/ALL.

The term *oil fuel unit* means the equipment used for the preparation of oil fuel for delivery to an oil fired boiler, the equipment used for the preparation of heated oil fuel for delivery to an internal combustion engine, and any oil fuel pressure pump, filter, and heater that deals with oil at a pressure of more than 1.8 kilograms per square centimeter (25 p.s.i.) gauge.

[CGD 74–127, 41 FR 3843, Jan. 26, 1976]

§ 30.10–49 Permit—TB/ALL.

The term *permit* refers to endorsement on the certificate of inspection, authorizing the presence on board of liquid flammable or combustible cargoes in bulk, issued by an Officer in Charge, Marine Inspection, for a tank vessel which is found to be in substantial compliance with the regulations in this subchapter.

§ 30.10–50 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]

§ 30.10–55 Pressure vacuum relief valve—TB/ALL.

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.

§ 30.10–57 Recognized classification society—TB/ALL.

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

§ 30.10–59 Reid vapor pressure—TB/ALL.

The term *Reid vapor pressure* means the vapor pressure of a liquid at a temperature of 100 °F., expressed in pounds per square inch absolute, as determined by the *Reid Method* as described in the American Society for Testing Materials Standard D 323 (incorporated by reference, see § 30.01–3), Method of Test for Vapor Pressure of Petroleum Products. This Standard is available at Headquarters for reading purposes or it may be purchased from the Society at 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959.

[CGFR 65–50, 30 FR 16657, Dec. 30, 1965, as amended by USCG–2000–7790, 65 FR 58458, Sept. 29, 2000]

§ 30.10–61 Rivers—TB/R.

Under this designation shall be included all tank vessels whose navigation is restricted to rivers and/or to canals, exclusively.

§ 30.10–62 Self-propelled tank vessel—TB/ALL.

Self-propelled tank vessel means a self-propelled tank vessel other than a tankship.

[CGD 79–116, 62 FR 25135, May 8, 1997]

§ 30.10–62a Service spaces—TB/ALL.

Service spaces are spaces that are used for galleys, pantries containing cooking appliances, lockers, storerooms, paint and lamp rooms and similar spaces that contain highly combustible materials, laundries, garbage and trash disposal and stowage rooms, workshops other than those forming part of the machinery spaces, and similar spaces and trunks to such spaces.

[CGD 74–127, 41 FR 3843, Jan. 26, 1976]

§ 30.10–63 Spark arrester—TB/ALL.

The term *spark arrester* means any device, assembly, or method of a mechanical, centrifugal, cooling, or other type and of a size suitable for the retention or quenching of sparks in exhaust pipes from internal combustion engines.

§ 30.10–65 Tank barge—B/ALL.

The term *tank barge* means a nonself-propelled tank vessel.

[CGD 79–116, 62 FR 25135, May 8, 1997]

§ 30.10–67 Tankship—T/ALL.

The term *tankship* means a self-propelled tank vessel constructed or adapted primarily to carry oil or hazardous material in bulk in the cargo spaces.

[CGD 79–116, 62 FR 25135, May 8, 1997]

§ 30.10–69 Tank vessel—TB/ALL.

The term *tank vessel* means a vessel that is constructed or adapted to carry, or that carries, oil or hazardous material in bulk as cargo or cargo residue, and that—

(a) Is a vessel of the United States;

(b) Operates on the navigable waters of the United States; or

(c) Transfers oil or hazardous material in a port or place subject to the jurisdiction of the United States.

[CGD 79–116, 62 FR 25135, May 8, 1997]

§ 30.10–71 Tankerman—TB/ALL.

The following ratings are established in part 13 of this chapter. The terms for the ratings identify persons holding valid endorsements 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 17155, Apr. 4, 1995, as amended by USCG–2006–24371, 74 FR 11264, Mar. 16, 2009]

Subpart 30.15—Equivalents

§ 30.15–1 Conditions under which equivalents may be used—TB/ALL.

(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.

[CGFR 65–50, 30 FR 16657, Dec. 30, 1965, as amended by USCG–2004–18884, 69 FR 58345, Sept. 30, 2004; USCG–2004–18884, 69 FR 68089, Nov. 23, 2004]

Subpart 30.25—Commodities Regulated

§ 30.25–1 Cargoes carried in vessels certificated under the rules of this subchapter.

The cargoes listed in table 30.25–1 are flammable or combustible and when transported in bulk must be in vessels certificated under the rules of this subchapter. A mixture or blend of two or more cargoes appearing in table 30.25–1 may be transported under the provisions of this subchapter. A category A, B, or C noxious liquid substance (NLS) cargo, as defined in §153.2 of this chapter, that is listed in table 30.25–1 and any mixture containing one or more category A, B, or C NLS cargoes listed in table 30.25–1 may be carried in bulk under this subchapter if the vessel is not regulated under part 153 of this chapter. If the vessel is regulated under §153.1 of this chapter, category A, B, and C NLS cargoes must be carried under part 153, or, as an alternative in the case of category C oil-like NLS, under 33 CFR part 151. Requirements for category D NLS cargoes and mixtures of non-NLS cargoes with category D NLS cargoes are in 33 CFR part 151.

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES

Cargo name	IMO Annex II Pollution Category
Acetone	III
Acetophenone	@D
Acrylonitrile-Styrene copolymer dispersion in Polyether polyol	D
Alcohols (C13+)	III
Alcoholic beverages, n.o.s.	III
Alcohol(C6–C17)(secondary) poly(3-6)ethoxylates	A
Alcohol(C6–C17)(secondary) poly(7-12)ethoxylates	B
Alcohol(C9–C11) poly(2.5-9)ethoxylate	B
Alcohol(C12–C15) poly(...)ethoxylates, *see* Alcohol(C12–C16) poly(...)ethoxylates	.....
Alcohol(C12–C16) poly(1-6)ethoxylates	A
Alcohol(C12–C16) poly(7-19)ethoxylates	B
Alcohol(C12–C16) poly(20+)ethoxylates	C
Alkanes (C6–C9)	C
n-Alkanes (C10+)	III
iso- & cyclo-Alkanes (C10–C11)	D
iso- & cyclo-Alkanes (C12+)	III
Alkaryl polyether (C9–C20)	B
Alkenyl(C11+) amine	D
Alkenyl(C16–C20) succinic anhydride)	D
Alkyl(C8+)amine, Alkenyl (C12+) acid ester mixture	D
Alkyl(C9+)benzenes	III
Alkylbenzenesulfonic acid (4% or less)	#
Alkyl dithiothiadiazole (C6–C24)	D
Alkyl ester copolymer (C4–C20)	D
Alkyl(C7–C11) phenol poly(4-12)ethoxylates	B
Alkyl phenol sulfide (C8–C40), *see* Alkyl(C8–C40) phenol sulfide	.....
Alkyl(C8–C40) phenol sulfide	D

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Alkyl(C9–C15) phenyl propoxylate	III
n-Alkyl phthalates, see individual phthalates	.....
Alkyl sulfonic acid ester of phenol	III
Aminoethyldiethanolamine, Aminoethylethanolamine solution	III
Amyl acetate (all isomers)	C
Amyl alcohol (iso-, n-, sec-, primary)	D
Amyl alcohol (tert-)	III
Amylene, see Pentene (all isomers)	C
tert-Amyl methyl ether (Methyl tert-pentyl ether)	C
Amyl methyl ketone, see Methyl amyl ketone	D
Animal and Fish oils, n.o.s.	D
(*see also* Oil, edible, *or* Oil, misc.)	
Including:	
Cod liver oil	
Lanolin	
Neatsfoot oil	
Pilchard oil	
Sperm oil	
Animal and Fish acid oils and distillates, n.o.s.	D
Including:	
Animal acid oil	
Fish acid oil	
Lard acid oil	
Mixed acid oil	
Mixed general acid oil	
Mixed hard acid oil	
Mixed soft acid oil	
Aryl polyolefin (C11–C50)	D
Asphalt	I
Asphalt blending stocks:	
Roofers flux	I
Straight run residue	I
Barium long chain (C11–C50) alkaryl sulfonate	B
Barium long chain alkyl(C8–C14)phenate sulfide	[A]
Behenyl alcohol	III
Benzene tricarboxylic acid trioctyl ester	III
Benzyl alcohol	C
Brake fluid base mixtures	D
(*containing Poly(2-8)alkylene(C2–C3) glycols, Polyalkylene(C2–C10) glycol monoalkyl(C1–C4) ethers, and their borate esters*)	
Butane	LFG
Butene, see Butylene.	
Butene oligomer	B
Butyl acetate (all isomers)	C
Butyl alcohol (iso-, n-, sec-, tert-), *see* Butyl alcohol (all isomers)	.....
Butyl alcohol (all isomers)	III
Butyl benzyl phthalate	A
Butylene	LFG
Butylene glycol	D
1,3-Butylene glycol, see Butylene glycol	.....
Butylene polyglycol, see Butylene glycol	.....
iso-Butyl formate	D
n-Butyl formate	@D
Butyl heptyl ketone	[C]
Butyl methyl ketone, see Methyl butyl ketone	.....
n-Butyl propionate	C
Butyl stearate	III
Butyl toluene	@A
gamma-Butyrolactone	D
Calcium alkyl(C9)phenol sulfide, polyolefin phosphorosulfide mixture	A
Calcium alkyl salicylate, see Calcium long chain alkyl salicylate (C13+)	.....
Calcium long chain alkaryl sulfonate (C11–C50)	D
Calcium long chain alkyl phenate (C8–C40), see Calcium long chain alkyl(C5–C10) phenate *or* Calcium long chain alkyl(C11–C40) phenate	.....
Calcium long chain alkyl(C5–C10) phenate	C
Calcium long chain alkyl(C11–C40) phenate	D
Calcium long chain alkyl phenate sulfide (C8–C40)	D
Calcium long chain alkyl phenolic amine (C8–C40)	III
Calcium long chain alkyl salicylate (C13+)	C
Caprolactam solutions	D

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Cetyl alcohol (hexadecanol), see Alcohols (C13+)	
Cetyl-Stearyl alcohol), *see* Alcohols (C13+)	III
† Coal tar	A
Copper salt of long chain (C17+) alkanoic acid	[D]
Cumene (isopropylbenzene), see Propylbenzene (all isomers)	
Cyclohexane	C
Cyclohexanol	D
1,3-Cyclopentadiene dimer (molten)	B
p-Cymene	C
Decahydronaphthalene	D
iso-Decaldehyde	@C
n-Decaldehyde	@B
Decane, see n-Alkanes (C10+)	
Decene	B
Decyl acetate	B
Decyl alcohol (all isomers)	B
n-Decylbenzene, *see* Alkyl(C9+)benzenes	III
Detergent alkylate	D
Diacetone alcohol	D
Dialkyl(C10–C14) benzenes, *see* Alkyl(C9+)benzenes	III
Dialkyl(C8–C9) diphenylamines	D
Dialkyl(C7–C13) phthalates *Including:* *Diisodecyl phthalate* *Diisononyl phthalate* *Dinonyl phthalate* *Ditridecyl phthalate* *Diundecyl phthalate*	D
Dibutyl carbinol, see Nonyl alcohol (all isomers)	
ortho-Dibutyl phthalate	A
Dicyclopentadiene, *see* 1,3-Cyclopentadiene dimer (molten)	B
Diethylbenzene	A
Diethylene glycol	D
Diethylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	
Diethylene glycol butyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether acetate	
Diethylene glycol dibutyl ether	D
Diethylene glycol diethyl ether	III
Diethylene glycol ethyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	
Diethylene glycol ethyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether acetate	
Diethylene glycol n-hexyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	
Diethylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	
Diethylene glycol methyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether acetate	
Diethylene glycol phenyl ether	#
Diethylene glycol phthalate	D
Diethylene glycol propyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	
Di-(2-ethylhexyl)adipate	D
Di-(2-ethylhexyl)phthalate, see Dioctyl phthalates	
Diethyl phthalate	C
Diglycidyl ether of Bisphenol A	B
Diheptyl phthalate	III
Dihexyl phthalate	III
Diisobutylcarbinol, *see* Nonyl alcohol (all isomers)	C
Diisobutylene	B
Diisobutyl ketone	D
Diisobutyl phthalate	B
Diisodecyl phthalate, see Dialkyl(C7–C13) phthalates	
Diisononyl adipate	D
Diisononyl phthalate, see Dialkyl(C7–C13) phthalates	
Diisooctyl phthalate	III
Diisopropylbenzene (*all isomers*)	A
Diisopropyl naphthalene	D
Dimethyl adipate	B
Dimethylbenzene, see Xylenes	
Dimethyl glutarate	C
Dimethyl phthalate	C
Dimethylpolysiloxane, *see* Polydimethylsiloxane	III
2,2-Dimethylpropane-1,3-diol (molten or solution)	D
Dimethyl succinate	C
Dinonyl phthalate, see Dialkyl(C7–C13) phthalates	
Dioctyl phthalate	III

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Dipentene	C
Diphenyl	A
Diphenyl, Diphenyl ether mixture	A
Diphenyl ether	A
Diphenyl ether, Biphenyl phenyl ether mixture	A
Dipropylene glycol	III
Dipropylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	.....
Dipropylene glycol dibenzoate	[D]
Dipropylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	.....
Distillates:	
Flashed feed stocks	I
Straight run	I
Ditridecyl adipate	III
Ditridecyl phthalate, see Dialkyl(C7–C13) phthalates	.....
Diundecyl phthalate, see Dialkyl(C7–C13) phthalates	.....
Dodecane (all isomers), *see also* n-Alkanes (C10+)	III
Dodecanol	B
Dodecene (all isomers)	B
Dodecyl alcohol, *see* Dodecanol	.....
Dodecylbenzene, *see* Alkyl(C9+)benzenes	III
Dodecyl hydroxypropyl sulfide	A
Dodecyl phenol	A
Dodecyl xylene	III
Drilling mud (low toxicity) (*if flammable or combustible*)	[III]
Ethane	LFG
2-Ethoxyethyl acetate	C
Ethoxylated alkyloxy alkyl amine, see Ethoxylated long chain (C16+) alkyloxyalkanamine	.....
Ethoxylated long chain (C16+) alkyloxyalkanamine	D
Ethoxy triglycol (*crude*)	D
Ethyl acetate	D
Ethyl acetoacetate	D
Ethyl alcohol	III
Ethyl amyl ketone	C
Ethylbenzene	B
Ethyl butanol	@D
Ethyl tert-butyl ether	C
Ethyl butyrate	C
Ethyl cyclohexane	C
Ethylene	LFG
Ethylene carbonate	III
Ethylene glycol	D
Ethylene glycol acetate	D
Ethylene glycol butyl ether acetate	C
Ethylene glycol diacetate	C
Ethylene glycol dibutyl ether	[D]
Ethylene glycol ethyl ether acetate, see 2-Ethoxyethyl acetate	.....
Ethylene glycol methyl butyl ether	D
Ethylene glycol methyl ether acetate	C
Ethylene glycol phenyl ether	D
Ethylene glycol phenyl ether, Diethylene glycol phenyl ether mixture	D
Ethylene-Propylene copolymer (*in liquid mixtures*)	[III]
Ethyl-3-ethoxypropionate	C
2-Ethylhexaldehyde, see Octyl aldehydes	.....
2-Ethylhexanoic acid, see Octanoic acid (all isomers)	.....
2-Ethylhexanol, see Octanol (all isomers)	.....
Ethylhexoic acid, see 2-Ethylhexanoic acid	.....
Ethyl hexyl phthalate	C
2-Ethyl-2-(hydroxymethyl) propane-1,3-diol, C8–C10 ester	D
Ethyl propionate	D
Ethyl toluene	B
Fatty acid (saturated, C13+), *see* Fatty acid (saturated, C14+)	.....
Fatty acid (saturated, C14+)	III
Formamide	D
Furfuryl alcohol	C
† Gas oil, cracked	I
Gasoline blending stocks:	
Alkylates	I
† Reformates	I
Gasolines:	
† Automotive (*containing not over 4.23 grams lead per gallon*)	I

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
† Aviation (*containing not over 4.86 grams lead per gallon*)	I
Casinghead (*natural*)	I
Polymer	I
† Straight run	I
Glycerine	III
Glycerine (83%), Dioxanedimethanol (17%) mixture	D
Glycerol, see Glycerine	
Glycerol monooleate	D
Glycerol polyalkoxylate	III
Glyceryl triacetate	III
Glycidyl ester of tertiary carboxylic acid, see Glycidyl ester of tridecyl acetic acid	
Glycidyl ester of C10 trialkylacetic acid, *see* Glycidyl ester of tridecyl acetic acid	B
Glycidyl ester of tridecyl acetic acid	B
Glycidyl ester of versatic acid, see Glycidyl ester of tridecyl acetic acid	
Glycol diacetate, see Ethylene glycol diacetate	
Glycol triacetate, see Glyceryl triacetate	
Glyoxal solution (40% or less)	D
Glyphosate solution (not containing surfactant)	D
Heptadecane, see n-Alkanes (C10+)	
Heptane (all isomers), *see* Alkanes (C6–C9)	C
Heptanoic acid	D
Heptanol (all isomers)	C
Heptene (all isomers)	C
Heptyl acetate	B
Herbicide (C15 -H22 -NO2 -Cl), see Metolachlor	
1-Hexadecylnaphthalene, 1,4-bis(Hexadecyl)naphthalene mixture	III
Hexaethylene glycol, see Polyethylene glycol	
Hexamethylene glycol	III
Hexamethylenetetramine solutions	D
Hexane (all isomers), *see* Alkanes (C6–C9)	C
Hexanoic acid	D
Hexanol	D
Hexene (all isomers)	C
Hexyl acetate	B
Hexylene glycol	III
Hog grease, see Lard	
2-Hydroxy-4-(methylthio)butanoic acid	C
Hydroxy terminated polybutadiene, *see* Polybutadiene, hydroxy terminated	
Isophorone	D
Jet fuels:	
† JP-4	I
JP-5 (*kerosene, heavy*)	I
JP-8	@I
Kerosene	I
Lactic acid	D
Lard	III
Latex (ammonia (1% or less) inhibited)	D
Latex, liquid synthetic	III
including:	
Styrene-butadiene rubber	III
Carboxylated styrene-butadiene copolymer	III
Lecithin	III
Long chain alkaryl polyether (C11–C20)	C
Long chain alkaryl sulfonic acid (C16–C60)	D
Long chain alkylphenate/Phenol sulfide mixture	III
Magnesium long chain alkaryl sulfonate (C11–C50)	D
Magnesium long chain alkyl phenate sulfide (C8–C20)	[D]
Magnesium long chain alkyl salicylate (C11+)	C
Magnesium nonyl phenol sulfide, see Magnesium long chain alkyl phenate sulfide (C8–C20)	
Magnesium sulfonate, see Magnesium long chain alkaryl sulfonate (C11–C50)	
2-Mercaptobenzothiazol (*in liquid mixtures*)	#
Methane	LFG
3-Methoxy-1-butanol	III
3-Methoxybutyl acetate	D
1-Methoxy-2-propyl acetate	#
Methoxy triglycol (triethylene glycol methyl ether), see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	
Methyl acetate	III
Methyl acetoacetate	D
Methyl alcohol	D
Methyl amyl acetate	C

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Methyl amyl alcohol	C
Methyl amyl ketone	D
Methyl butanol, see the amyl alcohols	
Methyl butenol	D
Methyl tert-butyl ether	D
Methyl butyl ketone	D
Methyl butyrate	C
Methyl ethyl ketone	III
N-Methylglucamine solution (70% or less)	III
Methyl heptyl ketone	B
Methyl isobutyl carbinol, see Methyl amyl alcohol	
Methyl isobutyl ketone	D
3-Methyl-3-methoxybutanol	III
3-Methyl-3-methoxybutyl acetate	III
Methyl naphthalene	A
Methyl pentene, see Hexene (all isomers)	
Methyl tert-pentyl ether (*IMO cargo name*) tert-Amyl methyl ether	
2-Methyl-1,3-propanediol	III
Methyl propyl ketone	D
N-Methyl-2-pyrrolidone	D
Metolachlor	B
Mineral spirits	I
Myrcene	D
Naphtha:	
† Aromatic (*having less than 10% Benzene*)	@I
Heavy	@I
Paraffinic	@I
† Petroleum	I
† Solvent	I
Stoddard Solvent	@I
† Varnish makers' and painters' (75%)	@I
Naphthalene sulfonic acid-formaldehyde copolymer, sodium salt solution	D
Naphthenic acid	A
Nonane (all isomers), *see* Alkanes (C6–C9)	C
Nonanoic acid (all isomers)	D
Nonanoic, Tridecanoic acid mixture	@D
Nonene (all isomers)	B
Nonyl acetate	C
Nonyl alcohol (all isomers)	C
Nonyl methacrylate *monomer*	D
Nonyl phenol	A
Nonyl phenol poly(4+)ethoxylates	B
Nonyl phenol sulfide (90% or less), see Alkyl phenol sulfide (C8–C40)	
Noxious liquid, N.F., (1) n.o.s. (''trade name'' contains ''principle components'') ST 1, Cat A (*if combustible*)	A
Noxious liquid, F., (2) n.o.s. (''trade name'' contains ''principle components'') ST 1, Cat A	A
Noxious liquid, N.F., (3) n.o.s. (''trade name'' contains ''principle components'') ST 2, Cat A (*if combustible*)	A
Noxious liquid, F., (4) n.o.s. (''trade name'' contains ''principle components'') ST 2, Cat A	A
Noxious liquid, N.F., (5) n.o.s. (''trade name'' contains ''principle components'') ST 2, Cat B (*if combustible*)	B
Noxious liquid, N.F., (6) n.o.s. (''trade name'' contains ''principle components'') ST 2, Cat B, mp. equal to or greater than 15 deg. C (*if combustible*)	B
Noxious liquid, F., (7) n.o.s. (''trade name'' contains ''principle components'') ST 2, Cat B	B
Noxious liquid, F., (8) n.o.s. (''trade name'' contains ''principle components'') ST 2, Cat B, mp. equal to or greater than 15 deg. C	B
Noxious liquid, N.F., (9) n.o.s. (''trade name'' contains ''principle components'') ST 3, Cat A (*if combustible*)	A
Noxious liquid, F., (10) n.o.s. (''trade name'' contains ''principle components'') ST 3, Cat A	A
Noxious liquid, N.F., (11) n.o.s. (''trade name'' contains ''principle components'') ST 3, Cat B (*if combustible*)	B
Noxious liquid, N.F., (12) n.o.s. (''trade name'' contains ''principle components'') ST 3, Cat B, mp. equal to or greater than 15 deg. C (*if combustible*)	B
Noxious liquid, F., (13) n.o.s. (''trade name'' contains ''principle components'') ST 3, Cat B	B
Noxious liquid, F., (14) n.o.s. (''trade name'' contains ''principle components'') ST 3, Cat B, mp. equal to or greater than 15 deg. C	B
Noxious liquid, N.F., (15) n.o.s. (''trade name'' contains ''principle components'') ST 3, Cat C (*if combustible*)	C
Noxious liquid, F., (16) n.o.s. (''trade name'' contains ''principle components'') ST 3, Cat C	C
Noxious liquid, n.o.s. (17) (''trade name,'' contains ''principal components''), Category D (*if flammable or combustible*)	D
Non-noxious liquid, n.o.s. (18) (''trade name,'' contains ''principal components''), appendix III (*if flammable or combustible*)	III
Octadecene, see the olefin or alpha-olefin entries	
Octadecenoamide solution (*oleamide*)	[D]
Octane (all isomers), *see* Alkanes (C6–C9)	C

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Octanoic acid (all isomers)	D
Octanol (all isomers)	C
Octene (all isomers)	B
Octyl acetate	C
Octyl alcohol (iso-, n-), see Octanol (all isomers)	
Octyl aldehydes	B
Octyl decyl adipate	III
Octyl phthalate (Di-(2-ethylhexyl)phthalate), see Dioctyl phthalates	
Oil, edible:	
Beechnut	D
Castor	D
Cocoa butter	D
Coconut	D
Cod liver	D
Corn	D
Cottonseed	D
Fish, *n.o.s.*	D
Groundnut	D
Hazelnut	D
Lard	@III
Maize, *see* Corn oil	D
Nutmeg butter	D
Olive	D
Palm	D
Palm kernel	D
Peanut	D
Poppy	D
Raisin seed	D
Rapeseed	D
Rice bran	D
Safflower	D
Salad	D
Sesame	D
Soya bean	D
Sunflower, *see* Sunflower seed	D
Sunflower seed	D
Tucum	D
Vegetable, *n.o.s.*	D
Walnut	D
Oil, fuel:	
No. 1 (*kerosene*)	I
No. 1-D	I
No. 2	I
No. 2-D	I
No. 4	I
No. 5	I
No. 6	I
Oil, misc:	
Aliphatic	@I
Animal, *n.o.s.*	D
Aromatic	I
Clarified	I
Coal	#
Coconut oil, fatty acid	C
Coconut oil, fatty acid methyl ester	D
Cottonseed, fatty acid, see Cottonseed oil, fatty acid	
† Crude	I
Diesel	I
Gas, high pour	@I
Gas, low pour	@I
Gas, low sulfur	@I
Heartcut distillate	I
Lanolin	D
Linseed	D
Lubricating	I
Mineral	I
Mineral seal	@I
Motor	I
Neatsfoot	D
Oiticica	D

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Palm oil, fatty acid methyl ester	D
Penetrating	I
Perilla	D
Pilchard	D
Pine	C
Residual	I
Road	I
Rosin	B
Seal	I
Soapstock	#
Soya bean (epoxidized)	[D]
Sperm	D
Spindle	I
Tall	B
Tall, fatty acid	C
Transformer	I
Tung	D
Turbine	I
Whale	D
alpha-Olefins (C6–C18)	B
alpha-Olefins (C13–C18)	III
Olefin mixtures (C5–C7)	C
Olefin mixtures (C5–C15)	B
Olefins (C13+, all isomers)	III
Olefin/Alkyl ester copolymer (molecular weight 2000+)	D
Oleic acid	D
Oleyl alcohol (octadecenol), see Alcohols (C13+)	.....
Palm kernel acid oil, methyl ester	[D]
Palm stearin	D
n-Paraffins (C10–C20), see n-Alkanes (C10+)	.....
Pentadecanol, see Alcohols (C13+)	.....
Pentaethylene glycol, see Polyethylene glycols	.....
Pentaethylenehexamine	D
Pentane (all isomers)	C
Pentanoic acid	D
Pentene (all isomers)	C
n-Pentyl propionate	C
Petrolatum	III
1-Phenyl-1-xylyl ethane	C
Phosphate esters, alkyl(C12–C14) amine	B
Phosphosulfurized bicyclic terpene	#
Pinene, see the alpha- or beta- isomers	.....
alpha-Pinene	A
beta-Pinene	B
Polyalkylene glycols, Polyalkylene glycol monoalkyl ethers mixtures	@D
Polyalkylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	.....
Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	D
Including:	
Diethylene glycol butyl ether	
Diethylene glycol ethyl ether	
Diethylene glycol n-hexyl ether	
Diethylene glycol methyl ether	
Diethylene glycol n-propyl ether	
Dipropylene glycol butyl ether	
Dipropylene glycol methyl ether	
Polypropylene glycol methyl ether	
Triethylene glycol butyl ether	
Triethylene glycol ethyl ether	
Triethylene glycol methyl ether	
Tripropylene glycol methyl ether	
Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether acetate	D
Including:	
Diethylene glycol butyl ether acetate	
Diethylene glycol ethyl ether acetate	
Diethylene glycol methyl ether acetate	
Polyalkylene oxide polyol	C
Polycarboxylic ester (C9+), see Ditridecyl adipate.	
Polyalkyl(C10–C20) methacrylate	D
Polybutadiene, hydroxy terminated	[III]
Polybutene	III

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Polybutenyl succinimide	D
Polydimethylsiloxane	#
Polyether (molecular weight 2000+)	D
Polyethylene glycol	III
Polyethylene glycol dimethyl ether	III
Polyethylene glycol monoalkyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	
Polyglycerine, Sodium salts solution (containing less than 3% Sodium hydroxide)	III
Polyglycerol	III
Polyisobutenyl anhydride adduct	III
Poly(4+)isobutylene	III
Polymerized esters	#
Polyolefin (molecular weight 300+)	III
Polyolefin amide alkeneamine (C17+)	D
Polyolefin amide alkeneamine (C28+)	D
Polyolefin amide alkeneamine borate (C28–C250)	D
Polyolefin amide alkeneamine/Molybdenum oxysulfide mixture	C
Polyolefin amide alkeneamine polyol	D
Polyolefin anhydride	D
Polyolefin ester (C28–C250)	D
Polyolefin phenolic amine (C28–C250)	D
Polyolefin phosphorosulfide, barium derivative (C28–C250)	C
Poly(20)oxyethylene sorbitan monooleate	III
Poly(5+)propylene	III
Polypropylene glycol	D
Polypropylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	
Polysiloxane	III
Potassium oleate	C
Potassium salt of polyolefin acid	III
Propane	LFG
n-Propoxypropanol (propylene glycol propyl ether), see Propylene glycol monoalkyl ether	
iso-Propyl acetate	III
n-Propyl acetate	D
iso-Propyl alcohol	III
n-Propyl alcohol	III
iso-Propylbenzene (cumene), see Propylbenzene (all isomers)	
n-Propylbenzene, see Propylbenzene (all isomers)	
Propylbenzene (all isomers)	A
iso-Propylcyclohexane	C
Propylene	LFG
Propylene-butylene copolymer	III
Propylene carbonate	III
Propylene dimer	C
Propylene glycol	III
Propylene glycol n-butyl ether, see Propylene glycol monoalkyl ether	
Propylene glycol ethyl ether, see Propylene glycol monoalkyl ether	
Propylene glycol methyl ether, see Propylene glycol monoalkyl ether	
Propylene glycol methyl ether acetate	D
Propylene glycol monoalkyl ether	D
Including:	
n-Propoxypropanol	
Propylene glycol n-butyl ether	
Propylene glycol ethyl ether	
Propylene glycol methyl ether	
Propylene glycol propyl ether	
Propylene glycol phenyl ether	D
Propylene glycol propyl ether, see Propylene glycol monoalkyl ether	
Propylene polymer (*in liquid mixtures*)	#
Propylene tetramer	B
Propylene trimer	B
Pseudocumene, see Trimethylbenzenes	
Rum, see Alcoholic beverages, n.o.s.	
Sodium acetate, Glycol, Water mixture (containing 1% or less, Sodium hydroxide) (*if flammable or combustible*)	#
Sodium acetate solution	D
Sodium benzoate *solution*	D
Sodium long chain alkyl salicylate (C13+)	[C]
Soyabean oil (epoxidized)	[D]
Stearic acid, see Fatty acid (saturated, C14+)	
Stearyl alcohol (*octadecanol*)	III
Sulfohydrocarbon (C3–C88)	D
Sulfohydrocarbon, long chain (C18+) alkylamine	B

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Sulfolane	D
Sulfurized fat (C14–C20)	D
Sulfurized polyolefinamide alkene(C28–C250)amine	D
Tallow	D
Tallow alcohol, see Alcohols (C13+)	
Tallow fatty acid	D
Tallow *alkyl* nitrile	#
Tetradecanol, see Alcohols (C13+)	
Tetradecene, see the olefin or alpha-olefin entries	
Tetradecylbenzene, *see* Alkyl(C9+)benzenes	III
Tetraethylene glycol	III
Tetrahydronaphthalene	C
Tetrapropylbenzene, see Alkyl(C9+)benzenes	
Toluene	C
Triarylphosphate, see Triisopropylated phenyl phosphates	
Tributyl phosphate	B
Tricresyl phosphate (less than 1% of the ortho isomer)	A
Tridecane, see n-Alkanes (C10+)	
Tridecanoic acid	B
Tridecanol, see Alcohols (C13+)	
Tridecene, see Olefins (C13+)	
Tridecyl acetate	III
Tridecylbenzene, *see* Alkyl(C9+)benzenes	III
Triethylbenzene	A
Triethylene glycol	III
Triethylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	
Triethylene glycol butyl ether mixture	#
Triethylene glycol di-(2-ethylbutyrate)	[C]
Triethylene glycol ether mixture	#
Triethylene glycol ethyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	
Triethylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	
Triethyl phosphate	D
Triisooctyl trimellitate	#
Triisopropanolamine	III
Triisopropylated phenyl phosphates	A
Trimethylbenzene (all isomers)	A
Trimethylol propane polyethoxylate	D
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	III
2,2,4-Trimethyl-3-pentanol-1-isobutyrate	#
Tripropylene, see Propylene trimer	
Tripropylene glycol	III
Tripropylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1–C6) ether	
Trixylenyl phosphate	A
Trixylyl phosphate, *see* Trixylenyl phosphate	A
Turpentine	B
†*Turpentine substitute, see* White spirit (low (15–20%) aromatic)	
Undecanol, see 1- Undecyl alcohol	
Undecene	B
1- Undecyl alcohol	B
Undecylbenzene, *see* Alkyl(C9+)benzenes	III
Vegetable oils, n.o.s. (*see also* Oil, edible)	D

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

Cargo name	IMO Annex II Pollution Category
Including:	
Beechnut oil	
Castor oil	
Cocoa butter	
Coconut oil	
Corn oil	
Cottonseed oil	
Groundnut oil	
Hazelnut oil	
Linseed oil	
Nutmeg butter	
Oiticica oil	
Olive oil	
Palm kernel oil	
Palm oil	
Peel oil (oranges and lemons)	
Perilla oil	
Poppy oil	
Raisin seed oil	
Rapeseed oil	
Rice bran oil	
Safflower oil	
Salad oil	
Sesame oil	
Soya bean oil	
Sunflower seed oil	
Tucum oil	
Tung oil	
Walnut oil	
Vegetable acid oils and distillates, n.o.s.	D
Including:	
Corn acid oil	
Cottonseed acid oil	
Dark mixed acid oil	
Groundnut acid oil	
Mixed acid oil	
Mixed general acid oil	
Mixed hard acid oil	
Mixed soft acid oil	
Rapeseed acid oil	
Safflower acid oil	
Soya acid oil	
Sunflower seed acid oil	
Waxes:	D
Candelilla	@D
Carnauba	@D
Paraffin	III
†*White spirit, see* White spirit (low (15–20%) aromatic)	.....
†White spirit (low (15–20%) aromatic)	B
Wine, see Alcoholic beverages, n.o.s.	.....
Xylenes (*ortho-, meta-, para-)*	C
Zinc alkaryl dithiophosphate (C7–C16)	C
Zinc alkenyl carboxamide	D
Zinc alkyl dithiophosphate (C3–C14)	B

NOTE: See table 2 of part 153 for additional cargoes permitted to be carried by tank barge.
Explanation of Symbols: As used in this table the following stands for:
A, B, C, D—NLS Category of Annex II of MARPOL 73/78.
I—Considered an ''oil'' under Annex I of MARPOL 73/78.
III—Appendix III of Annex II (non-NLS cargoes) of MARPOL 73/78.
LFG—Liquefied flammable gas.
#—No determination of NLS status. For shipping on an oceangoing vessel, see 46 CFR 153.900(c).
[ ]—A NLS category in brackets indicates that the product is provisionally categorized and that further data are necessary to complete the evaluation of its pollution hazards. Until the hazard evaluation is completed, the pollution category assigned is used.
@—The NLS category has been assigned by the U.S. Coast Guard, in absence of one assigned by the IMO. The category is based upon a GESAMP Hazard Profile or by analogy to a closely related product having an NLS assigned.
†—The provisions contained in 46 CFR part 197, subpart C, may apply to this cargo.
Abbreviations for Noxious liquid Cargoes:
N.F.—non-flammable (flash point greater than 60 degrees C (140 degrees F) cc).
F.—flammable (flash point less than or equal to 60 degrees C (140 degrees F) cc).
n.o.s.—not otherwise specified.

ST—Ship type.
Cat—Pollution category.
Words in italic are not part of the cargo name but may be used in addition to the cargo name.
When one entry references another entry by use of the word "*see*", and both names are in roman type, either name may be used as the cargo name (e.g., Diethyl ether, *see* Ethyl ether). However, the referenced entry is preferred.

[CGD 00–7079, 65 FR 67157, Nov. 8, 2000]

EFFECTIVE DATE NOTE: By USCG–2013–0423, 78 FR 50152, Aug. 16, 2013, § 30.25–1 was revised, effective Sept. 16, 2013. At 78 FR 56837, Sept. 16, 2013, the effectiveness was delayed until Jan. 16, 2014. At 79 FR 2106, Jan. 13, 2014, the effectiveness was delayed until Jan. 16, 2015. For the convenience of the user, the revised text is set forth as follows:

§ 30.25–1 Cargoes carried in vessels certificated under the rules of this subchapter.

(a) Table 30.25–1 lists flammable or combustible cargoes that, when transported in bulk, must be in vessels certificated under this subchapter D.

(b) A mixture or blend of two or more cargoes appearing in Table 30.25–1 may be transported under this subchapter D.

(c) A mixture or blend of one or more cargoes appearing in Table 30.25–1 and one or more cargoes appearing in Table 2, 46 CFR part 153, may be carried under this subchapter D if the mixture is flammable or combustible.

(d) Any mixture containing one or more substance categorized by the International Maritime Organization (IMO) and listed in Table 30.25–1 as a category X, Y, or Z noxious liquid substance (NLS) may be carried in bulk—

(1) Under this subchapter D if the vessel is not regulated under 46 CFR part 153;

(2) Under part 153 if the vessel is regulated under that part; or alternatively under 33 CFR part 151 in the case of a category Y oil-like NLS; or

(3) Under 33 CFR part 151 if the cargo is a category Z NLS or a mixture of non-NLS and category Z NLS cargoes.

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES

[See NOTES at the end of the Table for explanation of symbols and terms used. See Table 2, 46 CFR part 153, for additional cargoes that may be carried by tank barge.]

Cargo name	IMO Annex II pollution category
Acetochlor*	X
Acetone	Z
Acetophenone	#
Acrylonitrile-Styrene copolymer dispersion in polyether polyol	Y
Alcohol(C6-C17)(secondary) poly(3-6)ethoxylates	Y
Alcohol(C6-C17)(secondary) poly(7-12)ethoxylates	Y
Alcohol(C9-C11) poly(2.5-9)ethoxylate	Y
Alcohol(C12-C15) poly(. . .)ethoxylates, see Alcohol(C12-C16) poly(. . .) ethoxylates	Y
Alcohol(C12-C16) poly(1-6)ethoxylates	Y
Alcohol(C12-C16) poly(7-19)ethoxylates	Y
Alcohol(C12-C16) poly(20+)ethoxylates	Y
Alcohols (C13+)	Y
Alcoholic beverages, n.o.s.	Z
Aliphatic oil	I
Alkanes (C6-C9)	X
Iso- and cyclo-alkanes (C10-C11)	Y
Iso- and cyclo-alkanes (C12+)	Y
n-Alkanes (C10+)	Y
Alkaryl polyethers (C9-C20)	Y
Alkenyl(C11+) amide*	X
Alkenyl(C8+) amine, Alkenyl(C12+) acid ester mixture	#
Alkyl acrylate-Vinylpyridine copolymer in toluene*	Y
Alkylbenzene, alkylindane, alkylindene mixture (each C12-C17)*	Z
Alkyl(C3-C4) benzenes*	Y
Alkyl(C5-C8) benzenes*	X
Alkyl(C8-C9) phenylamine in aromatic solvents*	Y
Alkyl(C9+) benzenes	Y
Alkyl(C11-C17) benzene sulfonic acid*	Y
Alkylbenzene sulfonic acid (4% or less)	#
Alkyl dithiocarbamate (C19-C35)*	Y
Alkyl dithiothiadiazole (C6-C24)	Y
Alkyl ester copolymer (C4-C20)	Y
Alkyl(C7-C11)phenol poly(4-12) ethoxylate	Y
Alkyl phenol sulfide (C8-C40), see Alkyl(C8-C40) phenol sulfide.	
Alkyl(C8-C40) phenol sulfide	Z
Alkyl(C8-C9) phenylamine in aromatic solvents*	Y

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

[See NOTES at the end of the Table for explanation of symbols and terms used. See Table 2, 46 CFR part 153, for additional cargoes that may be carried by tank barge.]

Cargo name	IMO Annex II pollution category
Alkyl(C9-C15) phenyl propoxylate	Z
Alkyl(C8-C10) polyglucoside solution (65% or less)*	Y
Alkyl(C12-C14) polyglucoside solution (55% or less)*	Y
Alkyl(C8-C10)/(C12-C14):(40% or less/60% or more) polyglucoside solution (55% or less)*	Y
Alkyl(C8-C10)/(C12-C14):(60% or more/40% or less) polyglucoside solution (55% or less)*	Y
Alkyl(C8-C10)/(C12-C14):(50%/50%) polyglucoside solution (55% or less)*	Y
Alkyl(C10-C20, saturated and unsaturated) phosphate*	Y
n-Alkyl phthalates, see individual phthalates.	
Alkyl sulfonic acid ester of phenol	Y
Aminoethyldiethanolamine/Aminoethylethanolamine solution	Z
2-Amino-2-methyl-1-propanol*	Z
Amyl acetate (all isomers)	Y
Amyl alcohol (iso-, n-, sec-, primary, tert-)	Z
tert-Amyl ethyl ether*	Z
tert-Amyl methyl ether	X
Amyl methyl ketone, see Methyl amyl ketone.	
Amylene, see Pentene (all isomers).	
Animal acid oil	#
Animal and Fish acid oils and distillates, n.o.s.	#
Animal and Fish oils, n.o.s.	#
Animal oil	#
Aromatic oil	I
Aryl polyolefins (C11-C50)	Y
Asphalt	I
Asphalt blending stocks:	
Roofers flux	I
Straight run residue	I
Aviation alkylates (C8 paraffins and iso-paraffins BPT 95-120 °C)*	X
Barium long-chain alkyl (C8-C14) phenate sulfide	#
Beechnut oil	#
Behenyl alcohol, see Alcohols (C13+).	
Benzene tricarboxylic acid, trioctyl ester	Y
Benzyl acetate*	Y
Benzyl alcohol	Y
Brake fluid base mix: Poly(2-8)alkylene(C2-C3) glycols/Polyalkylene(C2-C10) glycols monoalkyl(C1-C4) ethers and their borate esters	Z
Butene, see Butylene.	
Butene oligomer	X
Butyl acetate (all isomers)	Y
Butyl alcohol (iso-, n-, sec-, tert-), see Butyl alcohol (all isomers).	
Butyl alcohol (all isomers)	Z
Butylbenzene (all isomers)*	X
Butyl benzyl phthalate	X
Butyl butyrate (all isomers)*	Y
Butylene glycol	Z
1,3-Butylene glycol, see Butylene glycol.	
iso-Butyl formate	#
n-Butyl formate	#
Butyl heptyl ketone	#
Butyl methyl ketone, see Methyl butyl ketone.	
n-Butyl propionate	Y
Butyl stearate	#
Butyl toluene	#
gamma-Butyrolactone	Y
Calcium alkyl(C9)phenol sulfide, polyolefin phosphorosulfide mixture	#
Calcium alkyl salicylate, see Calcium long-chain alkyl salicylate (C13+).	
Calcium long-chain alkaryl sulfonate (C11-C50)	#
Calcium long-chain alkyl phenate (C8-C40), see Calcium long-chain alkyl(C5-C10) phenate *or* Calcium long-chain alkyl(C11-C40) phenate.	
Calcium long-chain alkyl(C5-C10) phenate	Y
Calcium long-chain alkyl(C11-C40) phenate	Y
Calcium long-chain alkyl phenolic amine (C8-C40)	#
Calcium long-chain alkyl salicylate (C13+)	Y
Candelilla wax, see Waxes.	
Caprolactam solutions, see epsilon-Caprolactam (molten or aqueous solutions).	
epsilon-Caprolactam (molten or aqueous solutions)*	Z
Carnauba wax, see Waxes.	
Cetyl alcohol, see Alcohols (C13+).	

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

[See NOTES at the end of the Table for explanation of symbols and terms used. See Table 2, 46 CFR part 153, for additional cargoes that may be carried by tank barge.]

Cargo name	IMO Annex II pollution category
Cetyl- stearyl alcohol, see Alcohols (C13+).	
Chlorinated paraffins (C10-C13)*	X
1-(4-Chlorophenyl)-4,4-dimethyl-pentan-3-one*	Y
Citric acid (70% or less)*	Z
Clarified oil	I
Coal oil	#
Coconut oil fatty acid methyl ester*	Y
Cod liver oil	#
Copper salt of long-chain (C17+) alkanoic acid	Y
Corn acid oil	#
Cotton seed acid oil	#
Cotton seed, fatty acid, see Cotton seed oil, fatty acid.	
Cotton seed oil, fatty acid	#
Crude Isononylaldehyde	#
Crude Isopropanol	@Z
dagger; Crude oil	I
Cumene , see Propylbenzene (all isomers).	
Cycloheptane*	X
Cyclohexane	Y
Cyclohexanol	Y
Cyclohexyl acetate*	Y
1,3-Cyclopentadiene dimer (molten)	Y*
Cyclopentane*	Y
Cyclopentene*	Y
p-Cymene	Y
Dark mixed acid oil	#
Decahydronaphthalene	Y
iso-Decaldehyde	#
n-Decaldehyde	#
Decane, see n-Alkanes (C10+).	
Decanoic acid*	X
Decene	X
Decyl acetate	#
Decyl alcohol (all isomers)	Y
n-Decylbenzene, see Alkyl(C9+)benzenes.	
Detergent alkylate, see Alkyl(C9+)benzenes.	
Diacetone alcohol	Z
Dialkyl(C10-C14) benzenes, see Alkyl(C9+) benzenes.	
Dialkyl(C8-C9) diphenylamines	Z
Dialkyl(C7-C13) phthalates	X
Including:	
Diisodecyl phthalate.	
Diisononyl phthalate.	
Dinonyl phthalate.	
Ditridecyl phthalate.	
Diundecyl phthalate.	
Dibutyl carbinol, see Nonyl alcohol (all isomers).	
Dibutyl hydrogen phosphonate*	Y
2,6-Di-ter*t*-butylphenol*	X
Dibutyl phthalate*	X
ortho-Dibutyl phthalate, see Dibutyl phthalate.	
Dibutyl terephthalate*	Y
Dicyclopentadiene, see 1,3-Cyclopentadiene dimer (molten).	
Diesel oil	I
Diethylbenzene	Y
Diethylene glycol	Z
Diethylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Diethylene glycol butyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate.	
Diethylene glycol diethyl ether	Z
Diethylene glycol ethyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Diethylene glycol ethyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate.	
Diethylene glycol n-hexyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Diethylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Diethylene glycol methyl ether acetate, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate.	
Diethylene glycol phenyl ether	#
Diethylene glycol phthalate	Y
Diethylene glycol propyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Di-(2-ethylhexyl)adipate	Y

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

[See NOTES at the end of the Table for explanation of symbols and terms used. See Table 2, 46 CFR part 153, for additional cargoes that may be carried by tank barge.]

Cargo name	IMO Annex II pollution category
Di-(2-ethylhexyl)phthalate, see Dioctyl phthalate.	
Diethyl phthalate	Y
Diglycidyl ether of bisphenol A	X
Diglycidyl ether of bisphenol F*	Y
Diheptyl phthalate	Y
Di-n-hexyl adipate*	X
Dihexyl phthalate	Y
Diisobutyl carbinol, see Nonyl alcohol (all isomers).	
Diisobutylene	Y
Diisobutyl ketone	Y
Diisobutyl phthalate	X
Diisodecyl phthalate, see Dialkyl(C7-C13) phthalates.	
Diisononyl adipate	Y
Diisononyl phthalate, see Dialkyl(C7-C13) phthalates.	
Diisooctyl phthalate	Y
Diisopropylbenzene (*all isomers*)	X
Diisopropylnaphthalene	Y
Dimethyl adipate	X
Dimethylbenzene, see Xylenes.	
Dimethyl glutarate	Y
Dimethyl octanoic acid*	Y
Dimethyl phthalate	Y
Dimethylpolysiloxane	Y
2,2-Dimethylpropane-1,3-diol (molten or solution)	Z
Dimethyl succinate	Y
Dinonyl phthalate	Y
Dioctyl phthalate	X
Dipentene	Y
Diphenyl	X
Diphenylamine (molten)*	Y
Diphenylamines, alkylated*	Y
Diphenyl/Diphenyl ether mixtures	X
Diphenyl ether	X
Diphenyl ether/Diphenyl phenyl ether mixture	X
Diphenylol propane-epichlorohydrin resins*	X
Dipropylene glycol	Z
Dipropylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Dipropylene glycol dibenzoate	#
Dipropylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Dithiocarbamate ester (C7-C35)*	X
Distillates:	
Flashed feed stocks	I
Straight run	I
Diundecyl phthalate	Y
Dodecane (all isomers)	Y
Dodecanol, see Dodecyl alcohol.	
Dodecene (all isomers)	X
Dodecyl alcohol	Y
Dodecyl benzene, see Alkyl (C9+) benzenes.	
Dodecyl hydroxypropyl sulfide	X
Dodecyl phenol	X
Dodecyl xylene	Y
Drilling brines (containing zinc salts) (if flammable or combustible)*	X
Drilling brines, including: Calcium bromide solution, calcium chloride solution and sodium chloride solution (if flammable or combustible)*	Z
Drilling mud (low toxicity) (if flammable or combustible)	#
ETBE, see Ethyl tert-butyl ether.	
2-Ethoxyethyl acetate	Y
Ethoxylated alkyloxy alkyl amine, see Ethoxylated long-chain (C16+) alkyloxyalkylamine.	
Ethoxy triglycol (crude)	#
Ethyl acetate	Z
Ethyl acetoacetate	Z
Ethyl alcohol	Z
Ethyl amyl ketone	Y
Ethylbenzene	Y
Ethyl butanol	#
Ethyl tert-butyl ether	Y
Ethyl butyrate	Y

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

[See NOTES at the end of the Table for explanation of symbols and terms used. See Table 2, 46 CFR part 153, for additional cargoes that may be carried by tank barge.]

Cargo name	IMO Annex II pollution category
Ethyl cyclohexane	Y
S-Ethyl dipropylthiocarbamate *	Y
Ethylene carbonate	Z
Ethylene glycol	Y
Ethylene glycol acetate	Y
Ethylene glycol butyl ether acetate	Y
Ethylene glycol diacetate	Y
Ethylene glycol dibutyl ether	#
Ethylene glycol ethyl ether acetate, see 2-Ethoxyethyl acetate.	
Ethylene glycol methyl butyl ether	#
Ethylene glycol methyl ether acetate	Y
Ethylene glycol phenyl ether	Z
Ethylene glycol phenyl ether/Diethylene glycol phenyl ether mixture	Z
Ethyl-3-ethoxypropionate	Y
2-Ethylhexaldehyde, see Octyl aldehydes.	
2-Ethylhexanoic acid	Y
Ethylhexoic acid, see 2-Ethylhexanoic acid.	
2-Ethylhexanol, see Octanol (all isomers).	
Ethyl hexyl phthalate	#
2-Ethyl-2-(hydroxymethyl) propane-1,3-diol, (C8-C10) ester	Y
Ethyl propionate	Y
Ethyl toluene	Y
Fatty acid (saturated, C13+)	Y
Fatty acids, (C16+) *	Y
Fatty acids, essentially linear (C6-C18) 2-ethylhexyl ester *	Y
Fish acid oil	#
Formamide	Y
Furfuryl alcohol	Y
dagger; Gas oil, cracked	I
Gas oil, high pour	I
Gas oil, low pour	I
Gas oil, low sulfur	I
Gasoline blending stocks:	
Alkylates	I
dagger; Reformates	I
Gasolines:	
dagger; Automotive (*containing not over 4.23 grams lead per gallon*)	I
dagger; Aviation (*containing not over 4.86 grams lead per gallon*)	I
Casinghead (*natural*)	I
Polymer	I
dagger; Straight run	I
Gasoline (Natural gas condensate)	I
Glycerine	Z
Glycerine (83%), Dioxanedimethanol (17%) mixture	#
Glycerol, see Glycerine.	
Glycerol ethoxylated *	OS
Glycerol monooleate	Y
Glycerol polyalkoxylate	#
Glycerol, propoxylated and ethoxylated *	Z
Glycerol/sucrose blend propoxylated and ethoxylated *	Z
Glyceryl triacetate	Z
Glycidyl ester of tridecyl acetic acid, see Glycidyl ester of C10 trialkylacetic acid.	
Glycidyl ester of versatic acid, see Glycidyl ester of C10 trialkylacetic acid.	
Glycidyl ester of C10 trialkylacetic acid	Y
Glycol diacetate, see Ethylene glycol diacetate.	
Glycol triacetate, see Glyceryl triacetate.	
Glyoxal solution (40% or less)	Y
Glyphosate solution (not containing surfactant)	Y
Groundnut acid oil	#
Groundnut oil *	Y
Hazelnut oil	#
Heartcut distillate	I
Heptadecane, see n-Alkanes (C10+).	
Heptane (all isomers)	X
Heptanoic acid, see n-Heptanoic acid.	
n-Heptanoic acid *	Z
Heptanol (all isomers)	Y
Heptene (all isomers)	Y

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

[See NOTES at the end of the Table for explanation of symbols and terms used. See Table 2, 46 CFR part 153, for additional cargoes that may be carried by tank barge.]

Cargo name	IMO Annex II pollution category
Heptyl acetate	Y
Herbicide (C15H22NO2Cl), see N-(2-Methoxy-1-methyl ethyl)-2-ethyl-6-methylchloroacetanilide.	
Hexadecanol, see Alcohol (C 13+).	
1-Hexadecylnaphthalene/1,4-Bis(hexadecyl)naphthalene mixture	Y
Hexaethylene glycol, see Polyethylene glycol.	
Hexamethylene glycol	Z
Hexamethylenetetramine solutions	Z
Hexane (all isomers)	Y
1,6-Hexanediol, distillation overheads*	Y
Hexanoic acid	Y
Hexanol	Y
Hexene (all isomers)	Y
Hexyl acetate	Y
Hexylene glycol	Z
Hydrogenated starch hydrolysate*	OS
2-Hydroxy-4-(methylthio)butanoic acid	Z
Hydroxy terminated polybutadiene, see Polybutadiene, hydroxy terminated.	
Illipe oil*	Y
Isoamyl alcohol*	Z
Isobutyl alcohol*	Z
Isobutyl formate*	Z
Isobutyl methacrylate*	Z
Isopropyl acetate*	Z
Isopropyl alcohol*	Z
Isopropylcyclohexane*	Y
Jatropha oil*	Y
Jet fuels:	
dagger; JP-4	I
JP-5 (*kerosene, heavy*)	I
JP-8	I
Kerosene	I
Lactic acid	Z
Lanolin oil	#
Lard acid oil	#
Latex: Carboxylated styrene-Butadiene copolymer; Styrene-Butadiene rubber*	Z
Lauric acid*	X
Lecithin	OS
Long-chain alkaryl polyether (C11-C20)	Y
Long-chain alkaryl sulfonic acid (C16-C60)	Y
Long-chain alkylphenate/Phenol sulfide mixture	Y
Lubricating oil	I
L-Lysine solution (60% or less)*	Z
Magnesium long-chain alkaryl sulfonate (C11-C50)	Y
Magnesium long-chain alkyl phenate sulfide (C8-C20)	#
Magnesium long-chain alkyl salicylate (C11+)	Y
Magnesium nonyl phenol sulfide, see Magnesium long-chain alkyl phenate sulfide (C8-C20).	
Mango kernel oil*	Y
2-Mercaptobenzothiazol (*in liquid mixtures*)	#
3-Methoxy-1-butanol	Z
3-Methoxybutyl acetate	Y
1-Methoxy-2-propyl acetate	#
N-(2-Methoxy-1-methyl ethyl)-2-ethyl-6-methylchloroacetanilide*	X
Methoxy triglycol, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Methyl acetate	Z
Methyl acetoacetate	Z
Methyl alcohol	Y
Methylamyl acetate	Y
Methylamyl alcohol	Z
Methyl amyl ketone	Z
Methyl butanol, see the amyl alcohols.	
Methylbutenol	Y
Methyl tert-butyl ether	Z
Methyl butyl ketone	Y
Methylbutynol*	Z
Methyl butyrate	Y
Methylcyclohexane*	Y
Methylcyclopentadiene dimmer*	Y
Methyl 3-(3,5 di-tert-butyl-4-hydroxyphenyl)propionate crude melt*	[Y]

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

[See NOTES at the end of the Table for explanation of symbols and terms used. See Table 2, 46 CFR part 153, for additional cargoes that may be carried by tank barge.]

Cargo name	IMO Annex II pollution category
Methyl ethyl ketone	Z
N-Methylglucamine solution (70% or less)	Z
Methyl heptyl ketone	#
Methyl isobutyl carbinol, see Methyl amyl alcohol.	
Methyl isobutyl ketone	Z
3-Methyl-3-methoxybutanol	Z
3-Methyl-3-methoxybutyl acetate	#
Methyl pentene, see Hexene (all isomers).	
Methyl tert-pentyl ether, see tert-Amyl methyl ether.	
2-Methyl-1,3-propanediol	Z
Methyl propyl ketone	Z
N-Methyl-2-pyrrolidone	Y
Methyl salicylate *	Y
Metolachlor, see N-(2-Methoxy-1-methylethyl)-2-ethyl-6-methylchloroacetanilide.	
Mineral oil	I
Mineral seal oil	I
Mineral spirits	I
Mixed acid oil	#
Mixed general acid oil	#
Mixed hard acid oil	#
Mixed soft acid oil	#
Motor oil	I
MTBE, see Methyl tert-butyl ether.	
Myrcene	X
Naphtha:	
dagger; Aromatic (*having less than 10% Benzene*)	I
Heavy	I
Paraffinic	I
dagger; Petroleum	I
dagger; Solvent	I
Stoddard Solvent	I
dagger; Varnish makers' and painters' (75%)	I
Naphthenic acid	#
Neatsfoot oil	#
Neodecanoic acid *	Y
Nitrilotriacetic acid, trisodium salt solution *	Y
Nonane (all isomers)	X
Nonanoic acid (all isomers)	Y
Nonanoic, Tridecanoic acid mixture	#
Nonene (all isomers)	Y
Nonyl acetate	#
Nonyl alcohol (all isomers)	Y
Nonyl methacrylate monomer	Y
Nonylphenol	X
Nonylphenol poly(4+)ethoxylate	Y
Nonyl phenol sulfide (90% or less), see Alkyl (C8-C40) phenol sulfide.	
Noxious liquid, F, (2) n.o.s. (''trade name'' contains ''principle components'') ST 1, Cat X	X
Noxious liquid, F, (4) n.o.s. (''trade name'' contains ''principle components'') ST 2, Cat X	X
Noxious liquid, F, (6) n.o.s. (''trade name'' contains ''principle components'') ST 2, Cat Y	Y
Noxious liquid, F, (8) n.o.s. (''trade name'' contains ''principle components'') ST 3, Cat Y	Y
Noxious liquid, F, (10) n.o.s. (''trade name'' contains ''principle components'') ST 3, Cat Z	Z
Noxious liquid, (11) n.o.s. (''trade name'' contains ''principle components'') Cat Z (if flammable or combustible)	Z
Non noxious liquid, (12) n.o.s. (''trade name'' contains ''principle components'') Cat OS (if flammable or combustible)	OS
Nutmeg butter oil	#
Octadecanol, see Alcohols (C13+).	
Octadecene, see the olefin or alpha-olefin entries.	
Octadeceneamide solution	#
Octamethylcyclotetrasiloxane*	Y
Octane (all isomers)	X
Octanoic acid (all isomers)	Y
Octanol (all isomers)	Y
Octene (all isomers)	Y
Octyl acetate, see n-Octyl acetate.	
n-Octyl acetate *	Y
Octyl alcohol (iso-, n-), see Octanol (all isomers).	
Octyl aldehydes	Y
Octyl decyl adipate	Y

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

[See NOTES at the end of the Table for explanation of symbols and terms used. See Table 2, 46 CFR part 153, for additional cargoes that may be carried by tank barge.]

Cargo name	IMO Annex II pollution category
Octyl phthalate, see Dioctyl phthalate.	
Oil, edible: Poppy seed	I
Oil, fuel:	
No. 1 (*kerosene*)	I
No. 1-D	I
No. 2	I
No. 2-D	I
No. 4	I
No. 5	I
No. 6	I
Oiticica oil	#
alpha-Olefins (C6-C18) mixtures	X
alpha-Olefins (C13-C18) mixtures, see alpha-Olefins (C6-C18).	
Olefins (C13+, all isomers)	Y
Olefin-Alkyl ester copolymer (molecular weight 2000+)	Y
Olefin mixtures (C5-C7)	Y
Olefin mixtures (C5-C15)	X
Oleic acid	Y
Oleyl alcohol, see Alcohols (C13+).	
Orange juice (concentrated) *	OS
Palm kernel acid oil, methyl ester	#
Palm kernel olein *	Y
Palm kernel stearin *	Y
Palm mid-fraction *	Y
Palm oil fatty acid methyl ester *	Y
Palm olein *	Y
Palm stearin *	Y
Paraffin wax	Y
n-Paraffins (C10-C20), see n-Alkanes (C10+).	
Peanut oil, see Groundnut oil.	
Peel oil (oranges and lemons)	#
Penetrating oil	I
Pentadecanol, see Alcohols (C13+).	
Pentaethylene glycol, see Polyethylene glycols.	
Pentane (all isomers)	Y
Pentanoic acid	Y
Pentene (all isomers)	Y
n-Pentyl propionate	Y
Perilla oil	#
Petrolatum	Y
1-Phenyl-1-xylyl ethane	Y
Phosphate esters, alkyl (C12-C14) amine	Y
Phosphosulfurized bicyclic terpene	#
Pilchard oil	#
Pinene, see the alpha- or beta- isomers.	
alpha-Pinene	X
beta-Pinene	X
Pine oil *	X
Polyalkyl(C18-C22) acrylate in xylene *	Y
Polyalkylene glycols, polyalkylene glycol monoalkyl ethers mixtures	#
Polyalkylalkenaminesuccinimide, molybdenum oxysulfide *	Y
Polyalkylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Poly(2-8)alkylene glycol monoalkyl (C1-C6) ether	Z
Including:	
Diethylene glycol butyl ether.	
Diethylene glycol ethyl ether.	
Diethylene glycol n-hexyl ether.	
Diethylene glycol methyl ether.	
Diethylene glycol n-propyl ether.	
Dipropylene glycol butyl ether.	
Dipropylene glycol methyl ether.	
Polypropylene glycol methyl ether.	
Triethylene glycol butyl ether.	
Triethylene glycol ethyl ether.	
Triethylene glycol methyl ether.	
Tripropylene glycol methyl ether.	
Poly(2-8)alkylene glycol monoalkyl (C1-C6) ether acetate	Y
Including:	

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

[See NOTES at the end of the Table for explanation of symbols and terms used. See Table 2, 46 CFR part 153, for additional cargoes that may be carried by tank barge.]

Cargo name	IMO Annex II pollution category
Diethylene glycol butyl ether acetate.	
Diethylene glycol ethyl ether acetate.	
Diethylene glycol methyl ether acetate.	
Polyalkylene oxide polyol	#
Polyalkyl(C10-C20) methacrylate	Y
Polyalkyl(C10-C18) methacrylate/ethylene-propylene copolymer mixture*	Y
Polybutadiene, hydroxy terminated	#
Polybutene	Y
Polybutenyl succinimide	Y
Poly(2+)cyclic aromatics*	X
Polydimethylsiloxane, see Dimethylpolysiloxane.	
Polyether (molecular weight 1350+)	Y
Polyether polyols	#
Polyethylene glycol	Z
Polyethylene glycol dimethyl ether	Z
Poly(ethylene glycol) methylbutenyl ether (MW≤1000)*	Z
Polyethylene glycol monoalkyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Polyglycerine, sodium salt solution (containing less than 3% sodium hydroxide)	Z
Polyglycerol	#
Polyisobutenamine in aliphatic (C10-C14) solvent*	Y
Polyisobutenyl anhydride adduct	Z
Poly(4+)isobutylene	Y
Polymerized esters	#
Polyolefin amide alkeneamine (C17+)	Y
Polyolefin amide alkeneamine (C28+), see Polyolefin amide alkeneamine (C17+).	
Polyolefin amide alkeneamine borate (C28-C250)	Y
Polyolefin amide alkeneamine/Molybdenum oxysulfide mixture	#
Polyolefin amide alkeneamine polyol	Y
Polyolefinamine (C28-C250)*	Y
Polyolefinamine in alkyl (C2-C4) benzenes*	Y
Polyolefinamine in aromatic solvent*	Y
Polyolefin aminoester salts (molecular weight 2000+)*	Y
Polyolefin anhydride	Y
Polyolefin ester (C28-C250)	Y
Polyolefin phenolic amine (C28-C250)	Y
Polyolefin phosphorosulfide, barium derivative (C28-C250)	Y
Poly(20)oxyethylene sorbitan monooleate	Y
Poly(5+)propylene	Y
Polypropylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Polysiloxane	Y
Poppy oil	#
Potassium oleate	Y
Potassium salt of polyolefin acid	#
n-Propoxypropanol, see Propylene glycol monoalkyl ether.	
n-Propyl acetate	Y
n-Propyl alcohol	Y
iso-Propylbenzene, see Propylbenzene (all isomers).	
n-Propylbenzene, see Propylbenzene (all isomers).	
Propylbenzene (all isomers)	Y
Propylene-Butylene copolymer	#
Propylene carbonate	Z
Propylene dimer	#
Propylene glycol	Z
Propylene glycol n-butyl ether, see Propylene glycol monoalkyl ether.	
Propylene glycol ethyl ether, see Propylene glycol monoalkyl ether.	
Propylene glycol methyl ether, see Propylene glycol monoalkyl ether.	
Propylene glycol methyl ether acetate	Z
Propylene glycol monoalkyl ether	Z
Including:	
n-Propoxypropanol.	
Propylene glycol n-butyl ether.	
Propylene glycol ethyl ether.	
Propylene glycol methyl ether.	
Propylene glycol propyl ether.	
Propylene glycol phenyl ether	Z
Propylene glycol propyl ether, see Propylene glycol monoalkyl ether.	
Propylene polymer (*in liquid mixtures*)	#
Propylene tetramer	X

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

[See NOTES at the end of the Table for explanation of symbols and terms used. See Table 2, 46 CFR part 153, for additional cargoes that may be carried by tank barge.]

Cargo name	IMO Annex II pollution category
Propylene trimer	Y
Pseudocumene, see Trimethylbenzenes.	
Raisin seed oil	#
Rapeseed acid oil	#
Rape seed oil fatty acid methyl esters*	Y
Residual oil	I
Road oil	I
Rosin*	Y
Rosin oil	#
Rum, see Alcoholic beverages, n.o.s.	
Safflower acid oil	#
Salad oil	#
Seal oil	I
Sesame oil	#
Soapstock oil	#
Sodium acetate, Glycol, Water mixture (containing 1% or less, Sodium hydroxide) (if flammable or combustible)	#
Sodium benzoate	Z
Sodium long-chain alkyl salicylate (C13+)	#
Sodium thiocyanate solution (56% or less)*	Y
Soya acid oil	#
Soyabean fatty acid methyl ester	#
Soyabean oil (epoxidized)	#
Spindle oil	I
Stearic acid, see Fatty acid (saturated, C13+).	
Stearyl alcohol, see Alcohols (C13+).	
Sulfohydrocarbon (C3-C88)	Y
Sulfohydrocarbon, long-chain (C18+) alkylamine	#
Sulfolane	Y
Sulfurized fat (C14-C20)	Z
Sulfurized polyolefinamide alkene(C28-C250) amine	Z
Sunflower oil, see Sunflower seed acid oil.	
Sunflower seed acid oil	#
Tall oil, distilled*	Y
Tall oil, fatty acid	#
Tallow	Y
Tallow alcohol, see Alcohols (C13+).	
Tallow alkyl nitrile	#
Tallow fatty acid	Y
TAME, see tert-Amyl methyl ether.	
Tetradecanol, see Alcohols (C13+).	
Tetradecene, see alpha-Olefins (C6-C18) mixtures, Olefin mixtures (C5-C15), or Olefins (C13+, all isomers).	
Tetradecylbenzene, see Alkyl(C9+)benzenes.	
Tetraethylene glycol	Z
Tetraethyl silicate monomer/oligomer (20% in ethanol)*	Z
Tetrahydronaphthalene	Y
Tetramethylbenzene (all isomers)*	X
Tetrapropylbenzene, see Alkyl(C9+)benzenes.	
Toluene	Y
Transformer oil	I
Triarylphosphate, see Triisopropylated phenyl phosphates.	
Tributyl phosphate	Y
Tridecane	Y
Tridecanoic acid	Y
Tridecanol, see Alcohols (C13+).	
Tridecene, see Olefins (C13+, all isomers).	
Tridecyl acetate	Y
Tridecylbenzene, see Alkyl(C9+)benzenes.	
Triethylbenzene	X
Triethylene glycol	Z
Triethylene glycol butyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Triethylene glycol butyl ether mixture	#
Triethylene glycol di-(2-ethylbutyrate)	#
Triethylene glycol ether mixture	#
Triethylene glycol ethyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Triethylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Triethyl phosphate	Z
Triisooctyl trimellitate	#
Triisopropanolamine	Z

TABLE 30.25–1—LIST OF FLAMMABLE AND COMBUSTIBLE BULK LIQUID CARGOES—Continued

[See NOTES at the end of the Table for explanation of symbols and terms used. See Table 2, 46 CFR part 153, for additional cargoes that may be carried by tank barge.]

Cargo name	IMO Annex II pollution category
Triisopropylated phenyl phosphates	X
Trimethylbenzene (all isomers)	X
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	Y
2,2,4-Trimethyl-1,3-pentanediol-1-isobutyrate*	Y
2,2,4-Trimethyl-3-pentanol-1-isobutyrate	#
Tripropylene, see Propylene trimer.	
Tripropylene glycol	Z
Tripropylene glycol methyl ether, see Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether.	
Trixylenyl phosphate, see Trixylyl phosphate.	
Trixylyl phosphate	X
Tucum oil	#
Turbine oil	I
Turpentine	X
dagger; *Turpentine substitute, see* White spirit (low (15–20%) aromatic).	
Undecanoic acid	Y
1-Undecanol, see Undecyl alcohol.	
Undecene, see 1-Undecene.	
1-Undecene	X
1-Undecyl alcohol, see Undecyl alcohol.	
Undecyl alcohol	X
Undecylbenzene, see Alkyl(C9+)benzenes.	
Vegetable oils, n.o.s	#
Vegetable protein solution (hydrolyzed) (if flammable or combustible)*	OS
Walnut oil	#
Waxes	Y
dagger; *White spirit, see* White spirit (low (15–20%) aromatic).	
dagger; White spirit, low (15–20%) aromatic	Y
Wine, see Alcoholic beverages, n.o.s.	
Xylenes	Y
Xylenes/Ethylbenzene (10% or more) mixture*	Y
Zinc alkaryl dithiophosphate (C7-C16)	Y
Zinc alkenyl carboxamide	Y
Zinc alkyl dithiophosphate (C3-C14)	Y

NOTES:

"#" = NLS status is undetermined—see 46 CFR 153.900(c) for shipping on an oceangoing vessel.

"dagger;" = Marine occupational safety and health regulations for benzene, 46 CFR part 197, subpart C, may apply to this cargo.

"[ ]" = Provisional categorization to which the United States is party.

"@" = The NLS category has been assigned by the U.S. Coast Guard, in absence of one assigned by the IMO. The category is based upon a GESAMP Hazard Profile or by analogy to a closely related product having an NLS assigned.

"*" From the March 2012 Annex to the 2007 edition of the IBC Code.

"Cat" = Pollution category.

"F" = Flammable (flash point less than or equal to 60 degrees C (140 degrees F) NLS.

"I" = An "oil" under MARPOL Annex I.

Italicized words are not part of the cargo name but may be used in addition to the cargo name.

"n.o.s." = Not otherwise specified.

"OS" = An "other substance" considered at present to present no harm to marine resources, human health, amenities, or other legitimate uses of the sea when discharged into the sea from tank cleaning or deballasting operations.

"see" = A redirection to the preferred, alternative cargo name—for example in "*Diethyl ether, see* Ethyl ether," the pollution category for "diethyl ether" will be found under the preferred, alternative cargo name "ethyl ether."

"ST" = Ship type.

"X," "Y," and "Z" = NLS categories under MARPOL Annex II.

§ 30.25–3 Benzene.

The provisions contained in 46 CFR part 197, subpart C, apply to liquid cargoes containing 0.5% or more benzene by volume.

[CGD 88–040, 56 FR 65006, Dec. 13, 1991]

Subpart 30.30—Interim Procedures for Evaluating Vessel Personnel Licensing and Certification Programs of Foreign Countries

SOURCE: CGD 79–081a, 45 FR 23427, Apr. 7, 1980, unless otherwise noted.

§ 30.30–1 Scope and purpose.

(a) This subpart contains procedures for evaluating vessel personnel licensing and certification programs of foreign countries. Evaluations are done for countries which license or certificate personnel serving on tank vessels that enter or operate in U.S. navigable waters and ports.

(b) The purpose of each evaluation is to determine whether a foreign licensing and certification program has standards that are comparable to or more stringent than U.S. standards.

(c) A determination that licensing and certification standards of a foreign country are not comparable to or more stringent than U.S. standards will subject tank vessels manned with officers licensed by that country to the prohibition in 33 U.S.C. 1228(a)(5) on operation with those officers in U.S. navigable waters and ports.

§ 30.30–3 Evaluation materials.

The materials to be submitted for evaluation must include the English text of the following:

(a) All laws, decrees, orders, and regulations relating to manning, training, qualification, and watchkeeping of personnel on tank vessels engaged in foreign trade.

(b) A copy of each type of license and certificate issued by the country to tank vessel personnel.

§ 30.30–5 Submission of evaluation materials.

(a) The evaluation materials listed in § 30.30–3 should be sent to Commandant (CG–CVC), Attn: Office of Commercial Vessel Compliance, U.S. Coast Guard Stop 7501, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7501. The materials should include the name and address of the person to whom correspondence concerning the evaluation can be sent.

(b) Updated materials may be submitted at any time during the evaluation process.

[CGD 79–081a, 45 FR 23427, Apr. 7, 1980, as amended by CGD 95–072, 60 FR 50461, Sept. 29, 1995; CGD 96–041, 61 FR 50726, Sept. 27, 1996; USCG–2009–0702, 74 FR 49226, Sept. 25, 2009; USCG–2013–0671, 78 FR 60146, Sept. 30, 2013]

§ 30.30–7 Availability of materials.

Evaluation materials submitted in accordance with this subpart will be available for inspection and copying at Coast Guard Headquarters. Contact Commandant (CG–CVC), Attn: Office of Commercial Vessel Compliance, U.S. Coast Guard Stop 7501, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7501; telephone 202–372–1251.

[USCG–2013–0671, 78 FR 60146, Sept. 30, 2013]

§ 30.30–9 Evaluation.

Materials submitted in accordance with this subpart will be evaluated by comparison to the regulations in parts 5, 10, and 13 of this chapter, and by comparison to the U.S. laws referenced in those regulations.

[CGD79–081a, 45 FR 23427, Apr. 7, 1980, as amended by CGD 97–057, 62 FR 51043, Sept. 30, 1997]

§ 30.30–11 Determinations.

(a) After evaluation of materials submitted in accordance with this subpart, a determination will be made as to whether the licensing and certification program described by the materials has standards that are comparable to or more stringent than standards set by the regulations and laws referenced in § 30.30–9.

(b) Notice of each determination made in accordance with this section and a brief explanation of reasons therefor will be published in the FEDERAL REGISTER. A copy of this notice will also be sent to the person whose name is provided in accordance with § 30.30–5.

(c) Each determination remains in effect for 5 years unless sooner cancelled.

(d) Any request to reconsider a determination must be submitted to the address listed in § 30.30–5 and must include a statement of reasons in support. The person submitting the request will be notified in writing of the action taken.

[CGD 79–081a, 45 FR 23427, Apr. 7, 1980, as amended by USCG–2004–18884, 69 FR 58345, Sept. 30, 2004; USCG–2004–18884, 69 FR 68089, Nov. 23, 2004]

PART 31—INSPECTION AND CERTIFICATION

Subpart 31.01—General

Sec.
31.01–1 Inspections required—TB/ALL, preemptive effect.
31.01–3 Alternate compliance.
31.01–5 Scope of initial inspection—TB/ALL.
31.01–10 Authority of marine inspectors—TB/ALL.
31.01–15 Application for a Certificate of inspection—TB/ALL.
31.01–20 Application for inspection of a new tank vessel or conversion of a vessel to a tank vessel—TB/ALL.

Subpart 31.05—Certificates of Inspection

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Subpart 31.30—Marine Engineering

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Subpart 31.35—Electrical Engineering

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Subpart 31.36—Lifesaving Appliances and Arrangements

31.36–1 Lifesaving appliances and arrangements—TB/ALL.

Subpart 31.40—Certificates Under International Convention for Safety of Life at Sea, 1974

31.40–1 Application—T/ALL.
31.40–5 Cargo Ship Safety Construction Certificate—T/ALL.
31.40–10 Cargo Ship Safety Equipment Certificate—T/ALL.
31.40–15 Cargo Ship Safety Radio Certificate—T/ALL.
31.40–25 Exemption Certificate—T/ALL.
31.40–30 Safety Management Certificate—T/ALL.
31.40–35 Availability of certificates.
31.40–40 Duration of Convention certificates—T/ALL.
31.40–45 American Bureau of Shipping—T/ALL.

AUTHORITY: 33 U.S.C. 1321(j); 46 U.S.C. 2103, 3205, 3306, 3307, 3703; 46 U.S.C. Chapter 701; 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; Department of Homeland Security Delegation No. 0170.1.

Section 31.10–21 also issued under the authority of Sect. 4109, Pub. L. 101–380, 104 Stat. 515.

SOURCE: CGFR 65–50, 30 FR 16662, Dec. 30, 1965, unless otherwise noted.

Subpart 31.01—General

§ 31.01–1 Inspections required—TB/ALL, preemptive effect.

(a) Every tank vessel subject to the regulations in this subchapter shall be inspected every 5 years or more often, if necessary, by the Coast Guard to see that the hull, boilers, machinery, equipment, apparatus for storage, and appliances of the vessel comply with marine inspection laws, and the regulations in this subchapter, and when applicable, subchapters E, F, J, O, Q, S, and W of this chapter and 33 CFR parts 155 and 157.

(b) Tank vessels which are laid up, dismantled, and out of commission are exempt from inspections required by law or regulations in this subchapter, provided that such vessels are cleaned of all cargo residue and maintained in a gas free condition.

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

(d) The regulations in this part have preemptive effect over State or local regulations in the same field.

[CGFR 65–50, 30 FR 16662, Dec. 30, 1965, as amended by CGFR 70–10, 35 FR 3709, Feb. 25, 1970; CGD 80–009, 48 FR 36458, Aug. 11, 1983; CGD 79–023, 48 FR 51006, Nov. 4, 1983; CGD 84–069, 61 FR 25286, May 20, 1996; CGD 97–057, 62 FR 51043, Sept. 30, 1997; USCG-1999–4976, 65 FR 6499, Feb. 9, 2000; USCG–2006–24797, 77 FR 33872, June 7, 2012]

§ 31.01–3 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 (CG–ENG), Attn: Office of Design and Engineering Systems, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7509; telephone 202–372–1372 or fax 202–372–1925. 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; USCG-2004–18884, 69 FR 58345, Sept. 30, 2004; USCG–2006–25697, 71 FR 55745, Sept. 25, 2006; USCG–2009–0702, 74 FR 49226, Sept. 25, 2009; USCG–2013–0671, 78 FR 60146, Sept. 30, 2013]

§ 31.01–5 Scope of initial inspection—TB/ALL.

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 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.

[CGFR 65–50, 30 FR 16662, Dec. 30, 1965, as amended by CGFR 68–32, 33 FR 5712, Apr. 12, 1968; CGFR 68–82, 33 FR 18804, Dec. 18, 1968; CGD 82–036, 48 FR 654, Jan. 6, 1983; CGD 79–032, 49 FR 25455, June 21, 1984; CGD 95–012, 60 FR 48049, Sept. 18, 1995]

§ 31.01–10 Authority of marine inspectors—TB/ALL.

Inspectors may at any time lawfully inspect any tank vessel.

§ 31.01–15 Application for a Certificate of inspection—TB/ALL.

(a) 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 of Inspection. 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.

(b) The application should be on Form CG-3752, Application for Inspection of U.S. Vessel, which requires information on name and type of vessel, nature of employment and route in which to be operated, grade or type of cargo to be carried, place where and date when the vessel may be inspected, and that no other application has been made to any Officer in Charge, Marine Inspection, since the issuance of the last valid certificate of inspection.

[CGFR 65–50, 30 FR 16662, Dec. 30, 1965, as amended by USCG-1999–4976, 65 FR 6499, Feb. 9, 2000]

§ 31.01–20 Application for inspection of a new tank vessel or conversion of a vessel to a tank vessel—TB/ALL.

Prior to the commencement of the construction of any new tank vessel, or prior to the commencement of the conversion of any vessel to a tank vessel, application for the approval of contract plans and specifications and for a certificate of inspection shall be made in writing to the Coast Guard and no such construction or conversion shall be proceeded with until such approval is granted. (See § 31.10–1.)

Subpart 31.05—Certificates of Inspection

§ 31.05–1 Issuance of certificate of inspection—TB/ALL.

(a) When a tank vessel is found to comply with all applicable regulations, including the applicable provisions of subchapters E, F, J, O, Q, S, and W of this chapter and of 33 CFR parts 104, 155, and 157, the Officer in Charge, Marine Inspection will issue a certificate of inspection to the vessel or to its owners.

(b) Certificates of inspection for tank vessels shall be similar in form to certificates issued to other cargo vessels, and in addition to the manning requirements and waters over which they may be operated, they shall be appropriately endorsed *Inspected and approved for the carriage of flammable or combustible liquids of Grade A, B, C, D, or E* (as the case may be), and such endorsement shall serve as a permit for such vessel to operate. The endorsement for the carriage of liquefied flammable gases is set forth in § 38.01–5 of this subchapter.

(c) The certificate of inspection shall be delivered to the master or owner of the tank vessel to which it relates.

[CGFR 65–50, 30 FR 16662, Dec. 30, 1965, as amended by CGD 73–96, 42 FR 49024, Sept. 26, 1977; CGD 79–023, 48 FR 51006, Nov. 4, 1983; CGD 84–069, 61 FR 25286, May 20, 1996; USCG-2003–14749, 68 FR 39314, July 1, 2003]

§ 31.05–5 Posting the certificate of inspection—TB/ALL.

The certificate of inspection shall be framed under glass and posted in a conspicuous part of the vessel, except that where it is not practicable to so expose the certificate of inspection it shall be carried in the vessel in such manner as authorized by the Officer in Charge, Marine Inspection.

§ 31.05–10 Period of validity for a Certificate of Inspection—TB/ALL.

(a) A Certificate of Inspection is valid for 5 years.

(b) 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.

(c) 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.

[CGFR 68–82, 33 FR 18804, Dec. 18, 1968, as amended by CGD 95–012, 60 FR 48049, Sept. 18, 1995; USCG–1999–4976, 65 FR 6499, Feb. 9, 2000]

§ 31.05–15 Certificate of inspection; terms; endorsements—TB/ALL.

The terms, endorsements and conditions set forth on a certificate of inspection shall have the same force and effect as the regulations contained in this subchapter.

Subpart 31.10—Inspections

§ 31.10–1 Recognized classification society—TB/ALL.

(a) In the inspection of hulls, boilers, and machinery, the current standards established by the American Bureau of Shipping and designated *Rules for Building and Classing Steel Vessels* respecting material and construction of hulls, boilers, and machinery, except as otherwise provided for by law and regulations in this chapter, shall be accepted as standard by the Coast Guard.

(b) The current standards established by the American Bureau of Shipping in effect at the time of construction of the vessel, or otherwise as applicable, shall be used. The book *Rules for Building and Classing Steel Vessels* is usually published annually and may be purchased from the American Bureau of Shipping, ABS Plaza, 16855 Northchase Drive, Houston, TX 77060. These standards may also be examined at the Coast Guard Headquarters. Contact Commandant (CG–5PS), Attn: Director of Commercial Regulations and Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7509, or at the office of any Coast Guard District Commander or Officer in Charge, Marine Inspection.

(c) The approved plans and certificate of the American Bureau of Shipping, or other recognized classification society for classed vessels, may be accepted by the Coast Guard as evidence of the structural efficiency of the hull and reliability of machinery of vessels subject to the regulations in this subchapter, except as otherwise provided for by laws and regulations in this chapter.

[CGFR 65–50, 30 FR 16662, Dec. 30, 1965, as amended by CGFR 68–32, 33 FR 5712, Apr. 12, 1968; CGD 88–070, 53 FR 34533, Sept. 7, 1988; 53 FR 37570, Sept. 27, 1988; 53 FR 44011, Nov. 1, 1988; CGD 95–072, 60 FR 50461, Sept. 29, 1995; USCG–2000–7790, 65 FR 58459, Sept. 29, 2000; USCG–2009–0702, 74 FR 49226, Sept. 25, 2009; USCG–2010–0759, 75 FR 60002, Sept. 29, 2010; USCG–2013–0671, 78 FR 60146, Sept. 30, 2013]

§ 31.10–5 Inspection of new tank vessels—TB/ALL.

(a) *Plans.* Triplicate copies of contract plans and specifications shall be forwarded to the Officer in Charge, Marine Inspection, in whose district the construction will take place, for submission to the Commanding Officer (MSC), Attn: Marine Safety Center, U.S. Coast Guard Stop 7410, 4200 Wilson Boulevard Suite 400, Arlington, VA 20598–7410, for approval, but if the tank vessel is to be classed, such plans and specifications shall first be approved by a recognized classification society. If the plans and specifications are found to be in substantial agreement with the regulations in this chapter, they shall be approved, properly stamped and dated and distributed as follows: One set to owner or builder; one set to Officer in Charge, Marine Inspection, of the district in which the vessel is to be built; and one set shall be retained at the Marine Safety Center. If such plans and specifications are not approved, the Marine Safety Center shall notify the owner or builder promptly wherein they fail to comply with the regulations in this chapter. For list of electrical plans see subchapter J (Electrical Engineering) of this chapter.

(1) The plans and specifications shall include the arrangement of the cargo gear. Prior to submission to the Officer in Charge, Marine Inspection, plans and specifications for cargo gear shall be approved by either a recognized classification society or the International Cargo Gear Bureau, Inc., whose home office is located at 321 West 44th Street, New York, NY 10036, on the Internet at *http://www.icgb.com.*

(2) 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 § 32.16–1 of this subchapter.

(b) *Inspection.* During construction, and upon completion of each tank vessel, it shall be inspected by the Officer in Charge, Marine Inspection, to determine whether it has been built in accordance with the approved plans and specifications, and, if so, a certificate of inspection endorsed as a permit for the carriage of flammable or combustible liquids in bulk for the proper grade or grades of cargo shall be issued to the vessel or its owner.

(c) *Certificate of class may be accepted.* In the event such tank vessel is classed by the American Bureau of Shipping or other recognized classification society, the approved plans and certificates of such society may be accepted by the Coast Guard as evidence of the structural efficiency of the hull and reliability of machinery, except as otherwise provided for by law and the rules and regulations in this subchapter.

[CGFR 65–50, 30 FR 16662, Dec. 30, 1965, as amended by CGD 74–125A, 47 FR 15230, Apr. 8, 1982; CGD 85–099, 55 FR 32247, Aug. 8, 1990; CGD 95–028, 62 FR 51197, Sept. 30, 1997; USCG–2000–7790, 65 FR 58459, Sept. 29, 2000; USCG–2007–29018, 72 FR 53964, Sept. 21, 2007; USCG–2008–0906, 73 FR 56509, Sept. 29, 2008; USCG–2009–0702, 74 FR 49226, Sept. 25, 2009; USCG–2013–0671, 78 FR 60146, Sept. 30, 2013]

§ 31.10–10 Vessels converted to tank vessels—TB/ALL.

The procedure for the inspection of vessels converted to tank vessels shall conform to the inspection for new tank vessels as called for in § 31.10–5(b), and such vessels shall comply with the requirements of inspections for converted vessels as set forth in the regulations in this subchapter.

§ 31.10–15 Inspection for certification—TB/ALL.

(a) After receiving an application for inspection, the OCMI will inspect a tank vessel in his or her jurisdiction once every 5 years. The OCMI will ensure that every tank vessel is of a structure suitable for the carriage of flammable and/or combustible liquids in bulk and for the proper grade or grades of cargo the vessel carries while in service. If the OCMI deems it necessary, he or she may direct the vessel to be put in motion, and may adopt any other suitable means to test the tank vessel and its equipment.

(b) 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, life-saving appliances, fire-detecting and extinguishing equipment, pilot boarding 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 vessels, 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.

(c) If the vessel passes the inspection for certification, the OCMI will issue a new Certificate of Inspection.

[CGFR 65–50, 30 FR 16662, Dec. 30, 1965, as amended by CGFR 68–32, 33 FR 5712, Apr. 12, 1968; CGFR 68–82, 33 FR 18804, Dec. 18, 1968; CGD 82–036, 48 FR 655, Jan. 6, 1983; CGD 79–032, 49 FR 25455, June 21, 1984; CGD 95–012, 60 FR 48049, Sept. 18, 1995; CGD 95–027, 61 FR 25997, May 23, 1996; USCG–1999–4976, 65 FR 6499, Feb. 9, 2000]

§ 31.10–16 Inspection and certification of cargo gear—TB/ALL.

(a) 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 competent persons or a recognized organization or nonprofit association approved by the Commandant to certify the suitability of the cargo gear.

(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 recognized cargo gear organization; or

(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.

(e) The authorization for organizations to perform the required inspection is granted by the Chief, Office of Vessel Activities, Commandant (CG–CVC), and will continue until superseded, canceled, or modified. The following organizations are currently recognized by the Commandant (CG–CVC) as having the technical competence to handle the required inspection:

(1) National Cargo Bureau, Inc., with home offices at 17 Battery Place, Suite 1232, New York, NY 10004; on the Internet at *http://www.natcargo.org*.

(2) The International Cargo Gear Bureau, Inc., with home office at 321 West 44th Street, New York, NY 10036; on the Internet at *http://www.icgb.com*.

[CGFR 65–50, 30 FR 16662, Dec. 30, 1965, as amended by CGD 95–028, 62 FR 51197, Sept. 30, 1997; USCG–2007–29018, 72 FR 53964, Sept. 21, 2007; USCG–2008–0394, 73 FR 35961, June 25, 2008; USCG–2008–0906, 73 FR 56509, Sept. 29, 2008]

§ 31.10–17 Annual and periodic inspections—TB/ALL.

(a) *Annual inspection.* Your vessel must undergo an annual inspection within 3 months before or after each anniversary date, except as specified 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 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 vessel's 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 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 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 § 31.10–15(b). The OCMI will ensure 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 vessel's 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.

[USCG-1999–4976, 65 FR 6499, Feb. 9, 2000]

§ 31.10–17a 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 § 31.10–17 (a) and (b) and your Certificate of Inspection must be endorsed.

[USCG-1999–4976, 65 FR 6500, Feb. 9, 2000]

§ 31.10–18 Firefighting equipment: General—TB/ALL.

(a) It shall be the duty of the owner, master, or person in charge of a tank vessel to require and have performed at least once in every 12 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 paragraphs (b), (c), and (d) of this section. 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 marine 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 logbook. 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.

(b) The following tests and inspections of portable fire extinguishing equipment shall be made:

TABLE 31.10–18(b)

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.
Stored pressure (water, antifreeze or loaded stream).	See that pressure gage is in operating range. If not, or if seal is broken, weigh or otherwise determine that full charge is in extinguisher. Recharge if pressure is low or if extinguishing agent is needed.
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 if they are clear. Insert charged cartridge. Be sure dry chemical is freeflowing (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.

TABLE 31.10–18(b)—Continued

Type unit	Test
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.

(c) The following tests and inspections of fixed fire extinguishing equipment shall be made:

TABLE 31.10–18(c)

Type system	Test
Foam	Systems utilizing a soda solution must have that solution replaced. In all cases, ascertain that powder is not caked.
Carbon dioxide	Weigh cylinders. Recharge cylinder if weight loss exceeds 10 percent of the weight of the 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 for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed carbon dioxide systems must be tested or renewed, as required by 46 CFR 147.60 and 147.65.
Halon 1301 and halocarbon.	Recharge or replace if weight loss exceeds 5 percent of the weight of the charge or if cylinder has a pressure gauge, recharge cylinder if pressure loss exceeds 10 percent adjusted for temperature. 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 for damage or decay. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections to Halon 1301 and halocarbon cylinders must be tested or renewed, as required by 46 CFR 147.60 and 147.65 or 147.67.
	NOTE: Halon 1301 system approvals have expired, but existing systems may be retained if they are in good and serviceable condition to the satisfaction of the Coast Guard inspector.
Inert gas	Recharge or replace cylinder if cylinder pressure loss exceeds 5 percent of the specified gauge pressure, adjusted for temperature. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Ensure that nozzles are unobstructed. Cylinders must be tested and marked, and all flexible connections on fixed inert extinguishers must be tested or renewed, as required by 46 CFR 147.60 and 147.66.
Water mist	Maintain system in accordance with the maintenance instructions in the system manufacturer's design, installation, operation, and maintenance manual.

(d) Deck foam systems shall be tested at the inspection for certification and the periodic inspection by discharging foam for approximately 15 seconds from any nozzle designated by the marine inspector. It shall not be required to deliver foam from all foam outlets, but all lines and nozzles shall be tested with water to prove them to be clear of obstruction. Before the inspection for certification and periodic inspection of deck foam systems utilizing a mechanical foam system, a representative sample of the foam liquid shall be submitted to the manufacturer who will issue a certificate indicating gravity, pH, percentage of water dilution and solid content.

(e) At each inspection for certification, periodic inspection, and at such other times as considered necessary, the inspector shall determine that all fire extinguishing equipment is in suitable condition and that the tests and inspections required by paragraphs (b) through (i) of this section have been conducted. In addition, the marine inspector may require such tests as are considered necessary to determine the condition of the equipment.

(f) The marine inspector must check all fire extinguishing system piping, controls, valves, and alarms to ascertain that the system is in good operating condition. For carbon dioxide or clean agent systems as described in 46 CFR subpart 95.16, the marine inspector must:

(1) Verify that flow is continuous and that the piping and nozzles are unobstructed; and

(2) Verify that any discharge delays and pre-discharge alarms function properly during the flow test.

(g) The fire main system shall be operated and the pressure checked at the most remote and highest outlets by the marine inspector. All fire hose 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. The marine inspector shall check that the hose couplings are securely fastened in accordance with the regulations of this subchapter.

(h) At each inspection for certification, periodic inspection, and at such other times as considered necessary, all carbon dioxide cylinders for fixed, semiportable, and portable systems shall be examined and replaced if any corrosion is found. They shall also be checked by weighing to determine their contents, and if found to be more than 10 percent under the required contents of carbon dioxide, they shall be recharged.

(i) Steam smothering lines shall be tested with at least 50 pounds per square inch of air pressure or by blowing steam through the lines at the working pressure and a survey made for detecting corrosion and defects using hammer test or such other means as may be necessary.

[CGFR 65–50, 30 FR 16662, Dec. 30, 1965, as amended by CGFR 68–32, 33 FR 5712, Apr. 12, 1968; CGD 84–044, 53 FR 7748, Mar. 10, 1988; USCG-1999–4976, 65 FR 6500, Feb. 9, 2000; USCG–2006–24797, 77 FR 33872, June 7, 2012]

§ 31.10–18a Liquefied gas vessels: additional firefighting equipment inspections.

(a) Once during each 12 month period after the month an original Certificate of Inspection is issued for a liquefied gas vessel under § 31.05–1, the master shall ensure that the firefighting systems required in part 154 of this chapter for a liquefied gas vessel meets the following:

(1) The exterior water spray system must past a water spray test.

(2) The dry chemical system must meet the manufacturer's specifications for—

(i) The amount of dry chemical powder; and

(ii) The pressure for nitrogen bottles.

(3) The piping, valves, and controls of the system must be operable.

(b) On the same date that the requirements under paragraph (a) of this section are met, the master shall record in the vessel's official logbook the following information:

(1) The date of the inspection.

(2) The identification of each device inspected.

(3) The name of the inspector.

[CGD 74–289, 44 FR 26006, May 3, 1979]

§ 31.10–19 All firefighting equipment may be tested—TB/ALL.

(a) During the inspection of firefighting equipment, the Officer in Charge, Marine Inspection, may require fire apparatus to be tested, and used, except as provided under §§ 31.10–18(h) and 34.15–90(a) of this subchapter.

(b) [Reserved]

§ 31.10–20 Definitions relating to hull examinations—T/B ALL.

As used in this part—

(a) *Drydock examination* means hauling out of 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 39649, Oct. 23, 1987, as amended by CGD 84–024, 53 FR 32229, Aug. 24, 1988; CGD 95–028, 62 FR 51197, Sept. 30, 1997]

§ 31.10–21 Drydock examination, internal structural examination, cargo tank internal examination, and underwater survey intervals—TB/ALL.

(a) Except as provided in paragraphs (b) through (g) of this section, each tank 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 inspected in accordance with the intervals set forth in table 31.10–21(a). Where table 31.10–21(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 31.10-21(a).--SALT WATER SERVICE VESSELS EXAMINATION INTERVALS IN YEARS

	Ship and single hull barge[9]	Double hull barge with internal framing[1]	Double hull barge with external framing[2]	Single hull barge with independent tanks[3,9]	Wood hull ship and barge	Ship and single hull barge Grade D and E cargoes only[4,9]	Double hull barge Grade D and E cargoes only[5]	Single hull asphalt barge[6,9]	Double hull asphalt barge[7]
Drydock	2.5	5.0	5.0	5.0	2.5	2.5	5.0	2.5	5.0
Internal structural	2.5	2.5	2.5	2.5	5.0	5.0	2.5	10.0	2.5
Cargo tank internal	[8]2.5	[8]5.0	[8]10.0	[8]10.0	[8]2.5	5.0	10.0	10.0	15.0

Notes:

[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 where the cargo tanks are 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 single hull tankships and tank barges certificated for the carriage of Grade D and E cargoes only.

[5]Applicable to double hull tank barges (double sides, ends, and bottoms) certificated for the carriage of Grade D and E cargoes only.

[6]Applicable to single hull tank barges certificated for the carriage of asphalt only.

[7]Applicable to double hull tank barges (double sides, ends, and bottoms) certificated for the carriage of asphalt only.

[8]Or as specified in part 38 or 151 as applicable

[9]Enhanced survey requirements apply as specified in 33 CFR part 157.

(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 31.10–21(b). Where table 31.10–21(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 31.10-21(b).-- FRESH WATER SERVICE VESSELS EXAMINATION INTERVALS IN YEARS

	Ship and single hull barge[9]	Double hull barge with internal framing[1]	Double hull barge with external framing[2]	Single hull barge with independent tanks[3,9]	Wood hull ship and barge	Ship and single hull barge Grade D and E cargoes only[4,9]	Double hull barge Grade D and E cargoes only[5]	Single hull asphalt barge[6,9]	Double hull asphalt barge[7]
Drydock	5.0	10.0	10.0	10.0	2.5	5.0	10.0	5.0	10.0
Internal structural	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	5.0
Cargo tank internal	[8]5.0	[8]5.0	[8]10.0	[8]10.0	[8]2.5	5.0	10.0	10.0	15.0

Notes:

[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 where the cargo tanks are 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 single hull tankships and tank barges certificated for the carriage of Grade D and E cargoes only.

[5]Applicable to double hull tank barges (double sides, ends, and bottoms) certificated for the carriage of Grade D and E cargoes only.

[6]Applicable to single hull tank barges certificated for the carriage of asphalt only.

[7]Applicable to double hull tank barges (double sides, ends, and bottoms) certificated for the carriage of asphalt only.

[8]Or as specified in part 38 or 151 as applicable

[9]Enhanced survey requirements apply as specified in 33 CFR part 157.

(b) During each inspection or reinspection for certification, all wing voids, rakes, cofferdams, and other void spaces on tank 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 examination, 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 31.10–21(a) of this section) or that are in fresh water service with a five year drydock interval (as indicated in table 31.10–21(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 (CG–CVC);

(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 (CG–CVC) 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 (CG–CVC) may authorize extensions to the examination intervals specified in paragraph (a) of this section.

[CGD 84–024, 52 FR 39649, Oct. 23, 1987, as amended at 53 FR 32230, Aug. 24, 1988; 53 FR 34872, Sept. 8, 1988; CGD 95–072, 60 FR 50461, Sept. 29, 1995; CGD 91–045, 61 FR 39792, July 30, 1996; CGD 96–041, 61 FR 50726, Sept. 27, 1996; CGD 95–028, 62 FR 51198, Sept. 30, 1997; USCG–2009–0702, 74 FR 49226, Sept. 25, 2009]

§ 31.10–21a Periodic gauging of tank vessel midbodies more than 30 years old that carry certain oil cargoes—TB/ALL.

(a) As used in this section, the term ''midbody'' means the 40-percent midship length (0.40L) of the tank vessel. The age of the midbody is determined from its year of original construction.

(b) Midbodies of all tank vessels certificated to carry a pollution category I oil cargo listed in 46 CFR table 30.25–1 must undergo an initial gauging survey and periodic regauging surveys as follows:

(1) An initial midbody gauging survey must be accomplished no later than the next drydocking inspection

after the midbody becomes 30 years old.

(2) Regaugings:

(i) Midbodies of double hull tank vessels, or single hull tank vessels with independent tanks, that operated in fresh water at least 6 months in every 12-month period since the last drydock examination must be regauged at intervals not exceeding 10 years;

(ii) Midbodies of all other tank vessels must be regauged at intervals not exceeding 5 years.

(c) The midbody gauging survey must be comprised of at least three transverse (girth) belts of deck, bottom, side, inner hull, trunk, and longitudinal bulkhead plating and attached longitudinal members. The number and specific locations of the gauging points shall be to the satisfaction of the Officer in Charge of Marine Inspection (OCMI).

(d) Except as provided in paragraph (f) of this section, within 60 days of the vessel's required compliance date the owner or operator shall submit the following to the OCMI that issued the vessel's current Certificate of Inspection:

(1) The gauging survey results.

(2) An engineering analysis signed by a registered Professional Engineer licensed by any state of the United States or the District of Columbia, or signed by a Coast Guard-approved organization, that—

(i) Certifies the vessel's compliance with the minimum section modulus and plating thickness requirements of subpart 32.59 of this chapter; or

(ii) Proposes structural repairs and/or modifications that will bring the vessel up to the required strength standards.

(e) The vessel owner or operator shall keep a permanent copy of the Coast Guard-approved gauging report available for inspection by the OCMI.

(f) Instead of the submittals required by paragraphs (c) and (d) of this section, current classification with the American Bureau of Shipping or another recognized classification society, or a load line certificate issued in accordance with the International Convention on Load Lines or the International Voyage Load Line Act, may be submitted as evidence of compliance with the requirements of this section.

[CGD 91–209, 58 FR 52602, Oct. 8, 1993]

§ 31.10–22 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 vessel'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, cargo tank internal examination or underwater survey or whenever repairs are made to the barge's hull.

[CGD 84–024, 52 FR 39651, Oct. 23, 1987]

§ 31.10–24 Integral fuel oil tank examinations—T/ALL.

(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 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 39651, Oct. 23, 1987, as amended at 53 FR 32230, Aug. 24, 1988]

§ 31.10–25 Inspection covering repairs and alterations involving safety—TB/ALL.

No extensive alterations involving the safety of a tank vessel either in regard to hull or machinery shall be made without the approval of the Commandant. Before such alterations are carried out, copies of plans and specifications in triplicate for the work involved shall be forwarded to the Officer in Charge, Marine Inspection, in whose zone the repairs will be made, for submission to Headquarters for approval. If approved one set of the plans and specifications, properly stamped and dated, shall be returned to the owner or to the repair yard designated by the owner; one set to the Officer in Charge, Marine Inspection, who forwarded the plans and specifications to Headquarters; and one set shall be retained at Headquarters. If such plans and specifications are not approved, the Commandant shall promptly notify the owner or designated shipyard wherein they fail to comply with the regulations in this chapter. No extensive repairs to the hull or machinery which affect the safety of a vessel shall be made without the knowledge of the Officer in Charge, Marine Inspection.

§ 31.10–30 Stability requirements—TB/ALL.

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

[CGD 79–023, 48 FR 51006, Nov. 4, 1983]

§ 31.10–32 Loading information—TB/ALL.

(a) This section applies to each tankship and tank barge the construction of which begins on or after September 6, 1977.

(b) Each tank vessel over 300 feet in length must have the loading information prescribed in either § 42.15–1(a) or § 45.105(a) of this chapter. For tank vessels subject to the Load Line Acts the information must be approved by the Commandant or by a recognized classification society that is approved by the Commandant. For tank vessels not subject to the Load Line Acts loading information must be approved by the Commandant. If the vessel is a tankship, the approved information must be provided to the master of the vessel. If the vessel is a tank barge, the information must be provided to the person in charge of handling the cargo during loading or off-loading of the barge.

[CGD 75–041, 42 FR 28887, June 6, 1977; 42 FR 35650, July 11, 1977]

§ 31.10–35 Permit to proceed to another port for repair—TB/ALL.

(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.

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

(c) 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. Passengers may not be carried if the certificate of inspection has expired.

(d) The permit shall be carried in a manner similar to that described in § 31.05–5 for a certificate of inspection.

§ 31.10–40 Inspection during trial trip—T/ALL.

On the trial trip of each new or converted tankship, an inspector shall be present to observe from the standpoint of safety in the carriage of flammable and/or combustible liquids in bulk, the operation of boilers, engines, steering gear, and auxiliaries; and if not satisfied with the performance of such boilers and machinery, appliances, and apparatus for stowage, he shall make such requirements as in his judgment will overcome any deficiencies which may have come under his observation.

§ 31.10–45 Inspection of crew accommodations—TB/ALL.

Crew's quarters shall be inspected to determine their sanitary condition. The Officer in Charge, Marine Inspection, upon completing such inspection, shall notify the master or officer in charge of the vessel of his findings, which shall be entered in the vessel's log book.

§ 31.10–50 Inspection of bilges—TB/ALL.

(a) When inspecting oil-burning vessels, either internal-combustion type or steam-driven type, the marine inspector shall examine the tank tops and bilges in the fireroom and engineroom to see that there is no accumulation of oil which might create a fire hazard.

Subpart 31.15—Manning of Tank Vessels

§ 31.15–1 Officers and crews—TB/ALL.

The Officer in Charge, Marine Inspection (OCMI), that inspects the vessel enters on the Certificate of Inspection (COI) for each tank vessel the complement of officers and crew that are required by statute and regulation and that in the judgment of the OCMI are necessary for its safe operation. The OCMI may change the complement from time to time by endorsement to the COI for changes in conditions of employment.

[CGD 79–116, 60 FR 17155, Apr. 4, 1995]

§ 31.15–5 Tank barges—B/ALL.

Tank barges subject to the provisions of this subchapter need not be manned unless, in the judgment of the Officer in Charge, Marine Inspection, such manning is necessary for the protection of life and property and for the safe operation of the vessel.

[CGD 81–059, 54 FR 151, Jan. 4, 1989]

§ 31.15–10 Towing vessels may carry persons in addition to crew—B/LBR.

(a) Towing vessels engaged in towing tank barges on the Great Lakes, inland waters, or rivers, may be authorized by the Coast Guard District Commander of the district to carry on board such number of persons in addition to its crew as shall be deemed necessary to carry on the legitimate business of such towing vessel or barge, not exceeding, however, one person to every net ton of the towing vessel.

(b) A Coast Guard District Commander granting a license to a vessel engaged in towing to carry persons in addition to its crew shall notify the Officer in Charge, Marine Inspection, in whose jurisdiction the vessel receiving the permit is engaged, and the Officer in Charge, Marine Inspection, shall keep a record of the same.

Subpart 31.20—Waters Operated Over

§ 31.20–1 Waters—TB/ALL.

The certificate of inspection shall show the waters over which the tank vessel is permitted to operate, such as: all waters; oceans; coastwise; Great Lakes; bays, sounds, and lakes other than the Great Lakes; rivers; or inland waters tributary to the Gulf of Mexico.

Subpart 31.25—Load Lines

§ 31.25–1 Load lines required—TB/OCL.

All tank vessels of 150 gross tons or over, or 79 feet in length or greater, navigating the oceans, coastwise waters, and Great Lakes are subject to the regulations in parts 42 to 45, inclusive, subchapter E (Load Lines), of this chapter, as applicable.

[CGFR 69–72, 34 FR 17481, Oct. 29, 1969]

Subpart 31.30—Marine Engineering

§ 31.30–1 Marine engineering regulations and material specifications—TB/ALL.

(a) All tank vessels are subject to the regulations contained in parts 50 to 63, inclusive, of subchapter F (Marine Engineering) of this chapter, whenever applicable, except as such regulations are modified by the regulations in this subchapter for tank vessels.

[CGFR 68–82, 33 FR 18804, Dec. 18, 1968]

Subpart 31.35—Electrical Engineering

§ 31.35–1 Electrical installations, lighting and power equipment, batteries, etc.—TB/ALL.

All tank vessels are subject to the regulations contained in subchapter J (Electrical Engineering) of this chapter except as such regulations are modified by the regulations in this subchapter for tank vessels.

§ 31.35–5 Communications; alarm systems, telephone and voice tube systems, engine telegraph systems, etc.—TB/ALL.

All tank vessels are subject to the regulations contained in subchapter J (Electrical Engineering) of this chapter except as such regulations are modified by the regulations in this subchapter for tank vessels.

Subpart 31.36—Lifesaving Appliances and Arrangements

§ 31.36–1 Lifesaving appliances and arrangements—TB/ALL.

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

[CGD 84–069, 61 FR 25286, May 20, 1996]

Subpart 31.40—Certificates Under International Convention for Safety of Life at Sea, 1974

§ 31.40–1 Application—T/ALL

The provisions of this subpart shall apply to all tankships on an international voyage. (See § 30.01–6 of this chapter.)

[CGD 95–012, 60 FR 48049, Sept. 18, 1995, as amended by USCG-1999–4976, 65 FR 6500, Feb. 9, 2000]

§ 31.40–5 Cargo Ship Safety Construction Certificate—T/ALL.

(a) All tankships 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 tankships shall meet the applicable requirements of this chapter for tankships on an international voyage.

[CGFR 65–50, 30 FR 16662, Dec. 30, 1965, as amended by CGD 90–008, 55 FR 30660, July 26, 1990]

§ 31.40–10 Cargo Ship Safety Equipment Certificate—T/ALL.

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

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

§ 31.40–15 Cargo Ship Safety Radio Certificate—T/ALL.

Every tankship 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 6500, Feb. 9, 2000]

§ 31.40–25 Exemption Certificate—T/ALL.

(a) A tankship 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 tankship 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.

§ 31.40–30 Safety Management Certificate—T/ALL.

All tankships 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]

§ 31.40–35 Availability of certificates.

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

[USCG–1999–4976, 65 FR 6500, Feb. 9, 2000]

§ 31.40–40 Duration of Convention certificates—T/ALL.

(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 6500, Feb. 9, 2000]

§ 31.40–45 American Bureau of Shipping—T/ALL.

(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 tankships 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 from May 26, 1965, 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 tankship on an international voyage and on direct application to the American Bureau of Shipping, the Bureau may issue to such tankship a Cargo Ship Safety Construction Certificate, having a period of validity of not more than 60 months after ascertaining that the tankship:

(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 tankship 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 16662, Dec. 30, 1965, as amended by CGD 90–008, 55 FR 30660, July 26, 1990; CGD 96–041, 61 FR 50726, Sept. 27, 1996; USCG–2000–7790, 65 FR 58459, Sept. 29, 2000]

PART 32—SPECIAL EQUIPMENT, MACHINERY, AND HULL REQUIREMENTS

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32.15–10 Sounding machines—T/OCL.
32.15–15 Anchors, Chains, and Hawsers—TB/ALL.
32.15–30 Radar—T/OC.
32.15–35 Magnetic Compass and Gyrocompass—T/OC.

Subpart 32.16—Navigation Bridge Visibility

32.16–1 Navigation bridge visibility-T/ALL.

Subpart 32.20—Equipment Installations

32.20–1 Equipment installations on vessels during World War II—TB/ALL.
32.20–5 Pressure vacuum relief valves—TB/ALL.
32.20–10 Flame arresters—TB/ALL.
32.20–20 Liquid level gaging—T/ALL.

Subpart 32.25—General Alarm Systems

32.25–1 General alarm systems for tankships and manned tank barges.

Subpart 32.30—Sound Powered Telephone, Voice Tube, and Engine Order Telegraph Systems

32.30–1 Voice tubes or telephone equipment—T/ALL.
32.30–5 Engine order telegraph equipment—T/ALL.

Subpart 32.35—Main and Auxiliary Machinery

32.35–1 Boilers and machinery—TB/ALL.
32.35–5 Installation of internal combustion engines—TB/ALL.
32.35–10 Steering apparatus on tank vessels—TB/ALL.
32.35–15 Installation of air compressors on tank vessels contracted for on or after June 15, 1977—TB/ALL.

Subpart 32.40—Accommodations for Officers and Crew

32.40–1 Application—TB/ALL.
32.40–5 Intent—T/ALL.
32.40–10 Location of crew spaces—T/ALL.
32.40–15 Construction—T/ALL.
32.40–20 Sleeping accommodations—T/ALL.
32.40–25 Washrooms and toilet rooms—T/ALL.
32.40–30 Messrooms—T/ALL.
32.40–35 Hospital space—T/ALL.
32.40–40 Other spaces—T/ALL.
32.40–45 Lighting—T/ALL.
32.40–50 Heating and cooling—T/ALL.
32.40–55 Insect screens—T/ALL.
32.40–60 Crew accommodations on tankships of less than 100 gross tons and manned tank barges—T/ALL.
32.40–65 Crew accommodations on tankships constructed before June 15, 1987—T/ALL.

Subpart 32.45—Electrical Installations

32.45–1 Installation and details.

Subpart 32.50—Pumps, Piping, and Hose for Cargo Handling

32.50–1 Cargo pumps for tank vessels constructed on or after November 10, 1936—TB/ALL.
32.50–3 Cargo discharge—TB/ALL.
32.50–5 Cargo pump gauges on tank vessels constructed on or after November 10, 1936—TB/ALL.
32.50–10 Cargo pumps on tank vessels with independent cargo tanks which were constructed prior to November 10, 1936—TB/ALL.

32.50–15 Cargo piping on tank vessels constructed on or after July 1, 1951—TB/ALL.
32.50–20 Cargo piping for tank vessels constructed between November 10, 1936, and July 1, 1951—TB/ALL.
32.50–25 Cargo pumps and piping on tank vessels constructed prior to November 10, 1936—TB/ALL.
32.50–30 Cargo hose—TB/ALL.
32.50–35 Remote manual shutdown for internal combustion engine driven cargo pump on tank vessels—TB/ALL.

Subpart 32.52—Bilge Systems

32.52–1 Bilge pumps on tank vessels constructed or converted on or after November 19, 1952—TB/ALL.
32.52–5 Bilge piping for pump rooms and adjacent cofferdams on tank vessels constructed or converted on or after November 19, 1952—TB/ALL.
32.52–10 Bilge pumps and piping on tank vessels constructed or converted prior to November 19, 1952—TB/ALL.

Subpart 32.53—Inert Gas System

32.53–1 Application—T/ALL.
32.53–3 Exemptions.
32.53–5 Operation—T/ALL.
32.53–10 General—T/ALL.
32.53–30 Positive pressure—T/ALL.

Subpart 32.55—Ventilation and Venting

32.55–1 Ventilation of tank vessels constructed on or after July 1, 1951—TB/ALL.
32.55–5 Ventilation of tank vessels constructed between November 10, 1936, and July 1, 1951—TB/ALL.
32.55–10 Ventilation of tank vessels contracted prior to November 10, 1936—TB/ALL.
32.55–15 Ventilation for hold spaces—TB/ALL.
32.55–20 Venting of cargo tanks of tankships constructed on or after July 1, 1951—T/ALL.
32.55–25 Venting of cargo tanks of tank barges constructed on or after July 1, 1951—B/ALL.
32.55–30 Venting of cargo tanks of tank vessels constructed between November 10, 1936, and July 1, 1951—TB/ALL.
32.55–35 Venting of cargo tanks on tank vessels constructed prior to November 10, 1936—TB/ALL.
32.55–45 Venting of cofferdams and void spaces of tank vessels constructed on or after November 10, 1936—TB/ALL.
32.55–50 Ventilation of tankships that have a keel laying date on or after January 1, 1975—T/ALL.

Subpart 32.56—Structural Fire Protection for Tank Ships With a Keel Laying Date On or After January 1, 1975

32.56–1 Application—T/ALL.
32.56–5 General—T/ALL.
32.56–10 Navigation positions—T/ALL.
32.56–15 Deck spills—T/ALL.
32.56–20 Insulation of exterior boundaries: Superstructures and deckhouses—T/ALL.
32.56–21 Openings in exterior boundaries: Accommodation, service, and control spaces—T/ALL.
32.56–22 Openings in and insulation of boundaries: Other spaces—T/ALL.
32.56–25 Category A machinery spaces: Windows and port lights—T/ALL.
32.56–30 Category A machinery spaces: Bulkheads and decks—T/ALL.
32.56–35 Doors—T/ALL.
32.56–40 Category A machinery spaces: Insulation—T/ALL.
32.56–45 Draft stops—T/ALL.
32.56–50 Combustible veneers—T/ALL.
32.56–55 Control spaces—T/ALL.
32.56–60 Ventilation ducts—T/ALL.

Subpart 32.57—Structural Fire Protection for Tank Vessels Contracted for On or After January 1, 1963

32.57–1 Application—TB/ALL.
32.57–5 Definitions—TB/ALL.
32.57–10 Construction—TB/ALL.

Subpart 32.59—Minimum Longitudinal Strength and Plating Thickness Requirements for Unclassed Tank Vessels That Carry Certail Oil Cargoes—TB/ALL

32.59–1 Minimum section modulus and plating thickness requirements—TB/ALL.

Subpart 32.60—Hull Requirements for Tank Vessels Constructed On or After July 1, 1951

32.60–1 Scantlings, material, and workmanship—TB/ALL.
32.60–5 Subdivision of cargo space—TB/ALL.
32.60–10 Segregation of cargo; Grade A, B, C, or D—TB/ALL.
32.60–15 Segregation of cargo; Grade E—TB/ALL.
32.60–20 Pumprooms on tank vessels carrying Grade A, B, C, D and/or E liquid cargo—TB/ALL.
32.60–25 Living quarters—TB/ALL.
32.60–30 Tank vessels with independent tanks—TB/ALL.
32.60–35 Tank vessels carrying Grade A liquid cargo—TB/ALL.

32.60–40 Construction and testing of cargo tanks and bulkheads—TB/ALL.
32.60–45 Segregation of spaces containing the emergency source of electric power—TB/ALL.

Subpart 32.63—Hull and Cargo Tank Requirements for Tank Barges Constructed or Converted On or After July 1, 1964, and Carrying Certain Dangerous Bulk Cargoes

32.63–1 Application—B/ALL.
32.63–5 Barge hull classifications—B/ALL.
32.63–8 Alternative arrangements—B/ALL.
32.63–10 Rakes and coamings—B/ALL.
32.63–20 Hull structure—B/ALL.
32.63–25 Cargo tanks and supports—B/ALL.

Subpart 32.65—Hull Requirements for Tank Vessels Constructed On or After November 10, 1936, and Prior to July 1, 1951

32.65–1 Application—TB/ALL.
32.65–5 Scantlings, material, and workmanship—TB/ALL.
32.65–10 Subdivision of cargo space—TB/ALL.
32.65–15 Cofferdams—TB/ALL.
32.65–20 Pumprooms—TB/ALL.
32.65–25 Living quarters—TB/ALL.
32.65–30 Tank vessels with independent tanks—TB/ALL.
32.65–35 Tank vessels carrying Grade A liquids—TB/ALL.
32.65–40 Construction and testing of cargo tanks and bulkheads—TB/ALL.

Subpart 32.70—Hull Requirements for Steel Hull Tank Vessels Constructed Prior to November 10, 1936

32.70–1 Application—TB/ALL.
32.70–5 Hull requirements; general—TB/ALL.
32.70–10 Cofferdams—TB/ALL.
32.70–15 Pumprooms—TB/ALL.
32.70–20 Pump-engine compartment—TB/ALL.
32.70–25 Cargo tanks—TB/ALL.

Subpart 32.75—Hull Requirements for Wood Hull Tank Vessels Constructed Prior to November 10, 1936

32.75–1 Application—TB/ALL.
32.75–5 Hull requirements; general—TB/ALL.
32.75–10 Cargo tanks—TB/ALL.
32.75–15 Electric bonding and grounding for tanks—TB/ALL.
32.75–20 Hold spaces and bulkheads—TB/ALL.

Subpart 32.80—Tank Barges Constructed of Materials Other Than Steel or Iron

32.80–1 General requirements—B/ALL.

Subpart 32.85—Lamp and Paint Rooms and Similar Compartments on Tankships

32.85–1 Fireproofing of lamp, oil and paint rooms—T/ALL.

Subpart 32.90—Pilot Boarding Equipment

32.90–1 Pilot boarding equipment.

AUTHORITY: 46 U.S.C. 2103, 3306, 3703, 3719; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1; Subpart 32.59 also issued under the authority of Sec. 4109, Pub. L. 101–380, 104 Stat. 515.

SOURCE: CGFR 65–50, 30 FR 16671, Dec. 30, 1965, unless otherwise noted.

Subpart 32.01—General

§ 32.01–1 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register 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 Coast Guard Headquarters. Contact Commandant (CG–ENG), Attn: Office of Design and Engineering Systems, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7509. You may also inspect this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal__register/code__of__federal__regulations/ibr__locations.html.* All material is available from the sources indicated in paragraph (b) of this section.

(b) American Bureau of Shipping (ABS), ABS Plaza, 16855 Northchase Drive, Houston, TX 77060, 281–877–5800, *http://www.eagle.org.*

(1) Rules for Building and Classing Steel Vessels, 1989, incorporation by reference approved for §§ 32.15–15; 32.60–10; 32.65–40.

(2) [Reserved]

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

(1) ASTM D4986–98, Standard Test Method for Horizontal Burning Characteristics of Cellular Polymeric Materials, incorporation by reference approved for § 32.57–10.

(2) ASTM F1273–91 (Reapproved 2007), Standard Specification for Tank Vent Flame Arresters (approved December 1, 2007), incorporation by reference approved for § 32.20–10.

[CGD88–032, 56 FR 35820, July 29, 1991, as amended by CGD 95–072, 60 FR 50461, Sept. 29, 1995; CGD 96–041, 61 FR 50727, Sept. 27, 1996; CGD 97–057, 62 FR 51043, Sept. 30, 1997; USCG–1999–5151, 64 FR 67177, Dec. 1, 1999; USCG–2000–7790, 65 FR 58459, Sept. 29, 2000; USCG–2009–0702, 74 FR 49227, Sept. 25, 2009; USCG–2012–0866, 78 FR 13249, Feb. 27, 2013; USCG–2013–0671, 78 FR 60146, Sept. 30, 2013]

Subpart 32.02—Safety Requirements

§ 32.02–1 Means of escape—T/ALL.

On all tankships where the plans and arrangements will possibly permit, all passageways leading to living quarters, or places where anyone may be regularly employed, shall be provided with not less than two avenues of escape so located that if one of such avenues is not available another may be. The locality and arrangement of such additional means of escape shall be determined by the inspectors as will in their judgment best carry out the purpose for which this provision was made.

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965. Redesignated by CGD 88–032, 56 FR 35820, July 29, 1991]

§ 32.02–5 Communication between deckhouses—TB/OCLB.

On all tank vessels where the distance between deckhouses is more than 46 meters (150 feet), a fixed means of 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 satisfactory condition to the satisfaction of the Officer in Charge, Marine Inspection.

[CGD 95–027, 61 FR 25997, May 23, 1996]

§ 32.02–10 Rails—TB/ALL.

(a) All tank vessels, except unmanned tank barges, contracted for on or after July 1, 1969, 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. All rails shall consist of solid or tubular sections or chains or wire rope or a combination thereof.

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

(c) Tank vessels contracted for prior to July 1, 1969, except unmanned tank barges, 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 paragraph (a) of this section. Otherwise, existing rails and bulwarks previously approved will be considered satisfactory so long as they are maintained in good condition. Minor repairs and alterations may be made to the same standards as the original construction.

(d) All tank vessels in ocean and coastwise service, except unmanned tank barges, constructed on or after June 15, 1987, must have suitable storm rails installed in all passageways and at the deckhouse sides on weather decks where persons on board might have normal access. Storm rails must be installed on both sides of passageways which are six feet or more in width. Tank vessels to which this paragraph applies constructed prior to June

15, 1987, may retain previously accepted or approved installations so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

[CGFR 69–72, 34 FR 17481, Oct. 29, 1969, as amended by CGD 84–073; 52 FR 18362, May 15, 1987; 52 FR 22751, June 15, 1987. Redesignated by CGD 88–032, 56 FR 35820, July 29, 1991]

§ 32.02–15 Guards at dangerous places—TB/ALL.

All exposed and dangerous places such as gears and machinery shall be properly protected with covers, guards or rails in order that the danger of accidents may be minimized. On vessels equipped with radio communication, the lead-ins shall be efficiently incased or insulated to insure against accidental shock. Such lead-ins shall be located so as not to interfere with the launching of lifeboats and life rafts.

[CGFR 65–50, 30 FR 16671, Dec 30, 1965. Redesignated by CGD 88–032, 56 FR 35820, July 29, 1991]

Subpart 32.05—Markings

§ 32.05–1 Draft marks and draft indicating systems—TB/ALL.

(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 observance. 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 cutaway skeg, the datum line from which the drafts shall be taken, shall be obtained by projecting the line of the bottom of the 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 16671, Dec. 30, 1965, as amended by CGD 89–037, 57 FR 41821, Sept. 11, 1992]

§ 32.05–5 Vessel's name on equipment—TB/ALL.

The equipment of all tank vessels, such as fire hose, fire axes, lifeboats, life rafts, life preservers, and lifeboats, shall be painted or branded with the name of the vessel upon which they are used.

§ 32.05–10 Name of tankship—T/ALL.

Every tankship shall have the name marked upon each bow and upon the stern, and the home port shall also be marked upon the stern. The name shall be in a light color on a dark ground, or in a dark color on a light ground, and shall be distinctly visible. The smallest letters used shall be not less than 4 inches in size. In addition, every tankship shall have her name conspicuously displayed in distinct plain letters, of not less than 6 inches in size, on each outer side of the pilothouse.

[CGFR 65–50, 30 FR 16657, Dec. 30, 1965, as amended by CGFR 72–104R, 37 FR 14233, July 18, 1972]

§ 32.05–15 Name of tank barge—B/ALL.

Every tank barge shall have its name or number carved, punch-marked, or welded on the main beam, inside the cargo hatch, or other suitable permanent part of the vessel's structure for the purpose of identification. The vessel's name or number shall be so displayed at the highest part of the vessel's hull or permanent structure that

the name or number can be seen from either side.

[CGFR 65–50, 30 FR 16657, Dec. 30, 1965, as amended by CGFR 72–104R, 37 FR 14233, July 18, 1972]

Subpart 32.15—Navigation Equipment

§ 32.15–5 Whistles—T/ALL.

(a) [Reserved]

(b) On tankships contracted for on and after November 19, 1955 means shall be provided to operate the whistle from a position adjacent to the main steering station and from the steering station on top of the pilothouse where such steering station is fitted. Details of the whistle operating devices shall meet the requirements of subchapter J (Electrical Engineering) of this chapter.

NOTE: Appendix A in 33 CFR subchapter D contains the International Regulations for Preventing Collisions at Sea, 1972.

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965, as amended by CGD 74–125A, 47 FR 15230, Apr. 8, 1982; CGD 82–036, 48 FR 654, Jan. 6, 1983]

§ 32.15–10 Sounding machines—T/OCL.

All mechanically propelled vessels in ocean or coastwise service of 500 gross tons and over, and all mechanically propelled vessels in of 500 gross tons and over 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 deep-sea sounding apparatus.

[CGD 95–027, 61 FR 25997, May 23, 1996]

§ 32.15–15 Anchors, Chains, and Hawsers—TB/ALL

(a) *Application.* Use the following table to determine which provisions of this section apply to you:

If you own . . .	And . . .	Then . . .
(1) A tankship or a manned seagoing barge.	It was constructed before June 15, 1987,	It must meet the requirements of paragraphs (d) and (f).
(2) A tankship or a manned seagoing barge.	It was constructed on or after June 15, 1987,	It must meet all the requirements of this section except paragraphs (d) and (e).
(3) An unmanned barge equipped with anchors.		It must meet the requirements of paragraphs (e) and (f).

(b) *Ocean, Coastwise, or Great Lakes Service.* Tankships in ocean, coastwise, or Great Lakes service and manned seagoing barges must be fitted with anchors, chains and hawsers in general agreement with the standards established by the American Bureau of Shipping. The current standards of other recognized classification societies may also be accepted upon approval by the Commandant.

(c) *Lakes, Bays, and Sounds, or River Service.* Tankships in lakes, bays, and sounds, or river service must be fitted with such ground tackle and hawsers as deemed necessary by the Officer in Charge, Marine Inspection, depending upon the size of the tankship and the waters on which it operates.

(d) *Tankships and Barges Constructed Before June 15, 1987.* For each tankship or manned seagoing barge constructed before June 15, 1987, except a barge specified in paragraph (e) of this section, the equipment previously accepted or approved is satisfactory for the same service so long as it is maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection (OCMI). If the service of the vessel changes, the OCMI will evaluate the suitability of the equipment.

(e) *Barges Equipped with Anchors to Comply with 33 CFR 155.230(b)(1).* Each barge equipped with an anchor, to comply with 33 CFR 155.230(b)(1), must be fitted with an operable anchoring system that includes a cable or chain, and a winch or windlass. All components of the system must be in general conformity with the standards issued by a recognized classification society. Inquiries concerning classification society standards for anchoring systems should be directed to Commandant (CG–ENG–3), Attn: Systems Engineering Division, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7509; telephone 202–372–1378 or fax 202–372–1925. If the Coast Guard finds that your anchoring system is not in general conformity with an approved standard, it

will advise you how to bring it into such conformity.

(f) *Operation and Performance.* Each anchor, exposed length of chain or cable, and hawser must be visually inspected before the barge begins each voyage. The anchor must be stowed so that it is ready for immediate use in an emergency. The barge must have a working means for releasing the anchor that can be operated safely by one or two persons.

[CGD 84–073, 52 FR 18362, May 15, 1987; 52 FR 22751, June 15, 1987, as amended by USCG 1998–4443, 63 FR 71764, Dec. 30, 1998; USCG 1998–4443, 65 FR 31813, May 19, 2000; USCG–2006–25697, 71 FR 55746, Sept. 25, 2006; USCG–2009–0702, 74 FR 49227, Sept. 25, 2009; USCG–2013–0671, 78 FR 60147, Sept. 30, 2013]

§ 32.15–30 Radar—T/OC.

All tankships 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 74–074, 42 FR 5963, Jan. 31, 1977]

§ 32.15–35 Magnetic Compass and Gyrocompass—T/OC.

(a) All tankships in ocean or coastwise service must be fitted with a magnetic compass.

(b) All tankships 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 tankship 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 74–074, 42 FR 5963, Jan. 31, 1977]

Subpart 32.16—Navigation Bridge Visibility

§ 32.16–1 Navigation bridge visibility-T/ALL.

Each tankship 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 an 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; and

(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 32247, Aug. 8, 1990]

Subpart 32.20—Equipment Installations

§ 32.20–1 Equipment installations on vessels during World War II—TB/ALL.

Boilers, pressure vessels, machinery, piping, electrical and other installations, including lifesaving, firefighting and other safety equipment, installed on vessels during the Unlimited National Emergency declared by the President on May 27, 1941, and prior to the termination of title V of the Second War Powers Act, as extended (sec. 501, 56 Stat. 180, 50 U.S.C. 635), which do not fully meet the detailed requirements of the regulations in this chapter, may be continued in service if found to be satisfactory by the Commandant for the purpose intended. In each instance prior to final action by the Commandant, the Officer in Charge, Marine Inspection, shall notify Headquarters of the facts in the case, together with recommendations relative to suitability for retention.

§ 32.20–5 Pressure vacuum relief valves—TB/ALL.

The pressure vacuum relief valve shall be of a type and size approved by the Commandant for the purpose intended. For specifications and procedures re approval, see subpart 162.017 of subchapter Q (Specifications) of this chapter.

§ 32.20–10 Flame arresters—TB/ALL.

Flame arresters must be of a type and size suitable for the purpose intended and meet ASTM F 1273 (incorporated by reference, see § 32.01–1).

[CGD 88–032, 56 FR 35821, July 29, 1991, as amended by USCG–2000–7790, 65 FR 58459, Sept. 29, 2000]

§ 32.20–20 Liquid level gaging—T/ALL.

On tankships, the construction or conversion of which is started on or after July 1, 1951, a method for determining the level of the liquid in a cargo tank without opening ullage holes, cargo hatches, or Butterworth plates, shall be provided on all tankships certificated for the carriage of Grade A liquids: *Provided*, That ullage holes fitted with sounding pipes tightly secured to the underside of the tank tops, open at the bottom, and extending to within 18 inches or less of the bottom of the tank shall be considered as complying with the foregoing requirement.

Subpart 32.25—General Alarm Systems

§ 32.25–1 General alarm systems for tankships and manned tank barges.

A general alarm system must be installed on tankships and manned tank barges which meets the requirements in subchapter J (Electrical Engineering Regulations) of this chapter.

[CGD 74–125A, 47 FR 15230, Apr. 8, 1982]

Subpart 32.30—Sound Powered Telephone, Voice Tube, and Engine Order Telegraph Systems

§ 32.30–1 Voice tubes or telephone equipment—T/ALL.

Each tankships must have communication equipment which meets the requirements in subchapter J (Electrical Engineering Regulations) of this chapter.

[CGD 74–125A, 47 FR 15230, Apr. 8, 1982]

§ 32.30–5 Engine order telegraph equipment—T/ALL.

Each tankship must have an engine order telegraph system which meets the requirements in subchapter J (Electrical Engineering Regulations) of this chapter.

[CGD 74–125A, 47 FR 15230, Apr. 8, 1982]

Subpart 32.35—Main and Auxiliary Machinery

§ 32.35–1 Boilers and machinery—TB/ALL.

Boilers, main and auxiliary machinery, and piping systems shall conform to the requirements of subchapter F (Marine Engineering) of this chapter, except as otherwise provided for in this subchapter.

§ 32.35–5 Installation of internal combustion engines—TB/ALL.

Each internal combustion engine located on the weather deck shall be provided with a ventilated metal hood or, where space permits, with a well-ventilated metal housing of sufficient size to allow for proper operation and maintenance.

§ 32.35–10 Steering apparatus on tank vessels—TB/ALL.

Tank vessels shall be provided with steering apparatus as required by part 58 of subchapter F (Marine Engineering) of this chapter.

[CGFR 68–82, 33 FR 18805, Dec. 18, 1968]

§ 32.35–15 Installation of air compressors on tank vessels contracted for on or after June 15, 1977—TB/ALL.

No tank vessel, except an oil pollution clean-up vessel, that carries petroleum products grades A thru D contracted for on or after June 15, 1977 may have an air compressor on an air compressor intake installed in any of the following cargo areas:

(a) A cargo handling room.

(b) An enclosed space containing cargo piping.

(c) A space in which cargo hose is stowed.

(d) A space adjacent to a cargo tank or cargo tank hold.

(e) A space within three meters of any of the following:

(1) A cargo tank opening.

(2) An outlet for cargo gas or vapor.

(3) A cargo pipe flange.

(4) A cargo valve.

(5) An entrance or ventilation opening to a cargo handling room.

(f) Except for tank barges, the cargo deck space. For the purpose of this paragraph, *cargo deck space* means the volume bounded by the open deck over the cargo tank block, including all ballast tanks within the cargo tank block, extending to the full width of the vessel, plus three meters (about 10 feet) fore and aft of the cargo tank block and up to a height of 2.4 meters (about 8 feet) above the deck.

(g) An enclosed space having an opening into a location described in paragraphs (a)–(f) of this section.

(h) A location similar to those described in paragraphs (a)–(g) of this section in which cargo vapors or gases may be present.

[CGD 75–017, 42 FR 25735, May 19, 1977, as amended by CGD 75–017, 42 FR 45677, Sept. 12, 1977]

Subpart 32.40—Accommodations for Officers and Crew

SOURCE: CGD 95–027, 61 FR 25997, May 23, 1996, unless otherwise noted.

§ 32.40–1 Application—TB/ALL.

(a) The provisions of this subpart, except § 32.40–60 and § 32.40–65, apply to all tankships of 100 gross tons and over constructed on or after June 15, 1987.

(b) Tankships of less than 100 gross tons and manned tank barges must meet the requirements of § 32.40–60.

(c) Tankships of 100 gross tons and over constructed prior to June 15, 1987, must meet the requirements of § 32.40–65.

§ 32.40–5 Intent—T/ALL.

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.

§ 32.40–10 Location of crew spaces—T/ALL.

(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.

§ 32.40–15 Construction—T/ALL.

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.

§ 32.40–20 Sleeping accommodations—T/ALL.

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

(b) Sleeping accommodations for the crew must be divided into rooms, no one of which may 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 not be 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 two 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.

§ 32.40–25 Washrooms and toilet rooms—T/ALL.

(a) At least 1 toilet, 1 washbasin, and 1 shower or bathtub must be provided for each 8 members or portion thereof in the crew who do not occupy sleeping accommodations 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 must 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.

§ 32.40–30 Messrooms—T/ALL.

(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.

§ 32.40–35 Hospital space—T/ALL.

(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 must be provided.

§ 32.40–40 Other spaces—T/ALL.

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 available on an open deck to which the crew has access when off duty.

§ 32.40–45 Lighting—T/ALL.

Each berth must have a light.

§ 32.40–50 Heating and cooling—T/ALL.

(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.

§ 32.40–55 Insect screens—T/ALL.

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

§ 32.40–60 Crew accommodations on tankships of less than 100 gross tons and manned tank barges—TB/ALL.

(a) The crew accommodations on all tankships of less than 100 gross tons and all manned tank barges must have sufficient size and equipment, and be adequately constructed to provide for the protection of the crew in manner practicable for the size, facilities, and service of the tank vessel.

(b) The crew accommodations must be consistent with the principles underlying the requirements for crew accommodations of tankships of 100 gross tons or more.

§ 32.40–65 Crew accommodations on tankships constructed before June 15, 1987—T/ALL.

All tankships of 100 gross tons and over constructed before June 15, 1987, may retain previously accepted or approved installations and arrangements so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

Subpart 32.45—Electrical Installations

§ 32.45–1 Installation and details.

The installation of all electrical engineering or interior communications systems, together with the details of design, construction, and installation, must meet the requirements of subchapter J (Electrical Engineering Regulations) of this chapter.

[CGD 74–125A, 47 FR 15230, Apr. 8, 1982]

Subpart 32.50—Pumps, Piping, and Hose for Cargo Handling

§ 32.50–1 Cargo pumps for tank vessels constructed on or after November 10, 1936—TB/ALL.

On all tank vessels, the construction or conversion of which is started on or after November 10, 1936, the cargo pumps shall be designed and installed to minimize the danger of sparking. Special care shall be exercised in the design of packing spaces in order to secure ample depth and accessibility of glands. Where cargo pump shafts pierce gastight bulkheads, stuffing boxes with readily accessible gastight glands shall be provided.

§ 32.50–3 Cargo discharge—TB/ALL.

(a) Pumps or other acceptable means shall be used to discharge cargo from gravity type cargo tanks vented at gauge pressures of 4 pounds per square inch or less.

(b) The use of compressed air as the primary means of discharging cargo from such tanks is prohibited.

§ 32.50–5 Cargo pump gauges on tank vessels constructed on or after November 10, 1936—TB/ALL.

(a) [Reserved]

(b) A pressure gage shall be installed for each pump discharge, and it shall be located at a point visible with respect to the pump controls.

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965, as amended by CGD 73–254, 40 FR 40163, Sept. 2, 1975]

§ 32.50–10 Cargo pumps on tank vessels with independent cargo tanks which were constructed prior to November 10, 1936—TB/ALL.

(a) Cargo pumps on tank vessels, the construction or conversion of which was started prior to November 10, 1936, may be located in a hold space containing independent cargo tanks or on deck. If the pump driving unit is of the type permitted in cargo pumprooms, it also may be located in the hold space. If other types of driving units are used, they shall be located on deck or in an engine compartment. If the pump drive shaft passes through decks or bulkheads into a hold space or pumproom, it shall be provided with suitable stuffing boxes at such points.

§ 32.50–15 Cargo piping on tank vessels constructed on or after July 1, 1951—TB/ALL.

(a) On all tank vessels, the construction or conversion of which is started on or after July 1, 1951, the cargo piping shall be:

(1) A fixed cargo piping system shall be installed on a tank vessel carrying Grade A, B, or C cargo. The piping shall be arranged so as to avoid excessive stresses at the joints. For sizes exceeding 2 inches in diameter, flanged, welded, or other approved types of joints shall be employed. Packing material shall be suitable for the cargo carried. Connections at bulkheads shall be made so that the plating does not form part of a flanged joint. Piping may be carried through bunker spaces and deep tanks provided it is run through a pipe tunnel. The tunnel may be omitted where the pipe is extra heavy, all joints are welded, and bends are installed to provide for expansion and contraction.

(2) Tank vessels carrying only Grades D and E cargo may use a portable piping system in lieu of a fixed piping system meeting the requirements of paragraph (a)(1) of this section, provided:

(i) The hose complies with 33 CFR 154.500 or the portable piping complies with part 56 of this chapter;

(ii) The connections comply with 33 CFR 156.130;

(iii) A shutoff valve is at or near the point of entry into the tank;

(iv) Except for the carriage of animal fats and vegetable oils, the system has a closure which forms a vapor-tight seal on the tank opening through which the cargo is transferred, is bolted or dogged in place, and has the hose and drop line connected to it; and

(v) Except for the carriage of animal fats and vegetable oils, the system has a metallic drop line which complies with 46 CFR 153.282.

(3) Cargo piping shall not pass through spaces containing machinery where sources of vapor ignition are normally present: *Provided*, That, in special cases the Commandant may permit the piping to pass through such spaces if Grade E liquids only are involved.

(b) Valve operating rods in cargo tanks shall be solid, except that tank barges having plug cocks inside the cargo tanks may have operating rods of extra heavy pipe with the annular space between the lubricant tube and the pipe wall sealed with a nonsoluble material to prevent penetration of the cargo. Valve operating rods shall be of ample size, well guided and supported, and attached to the valve stems in a manner so as to prevent the operating rods from working loose. Where the operating rods pass through a deck, gastight stuffing boxes shall be fitted. The leads of operating rods shall be as direct as possible. Valves shall be of suitable design for the intended service.

(c) All cargo loading and discharge hose connections shall be fitted with valves or blind flanges.

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965, as amended by CGD 80–009, 48 FR 36458, Aug. 11, 1983]

§ 32.50–20 Cargo piping for tank vessels constructed between November 10, 1936, and July 1, 1951—TB/ALL.

(a) On tank vessels, the construction or conversion of which is started on or after November 10, 1936, and prior to July 1, 1951, the piping shall be arranged so as to avoid excessive stresses at the joints. For sizes exceeding 2 inches in diameter, flanged, welded, or other approved types of joints shall be employed. Packing material shall be suitable for the cargo carried. Connections at bulkheads shall be made so that the plating does not form part of

a flanged joint. Piping may be carried through bunker spaces and deep tanks provided it is run through a pipe tunnel. The tunnel may be omitted where the pipe is extra heavy, all joints are welded, and bends are installed to provide for expansion and contraction.

(b) Cargo piping shall not pass through spaces containing machinery where sources of vapor ignition are normally present: *Provided*, That in special cases the Commandant may permit the piping to pass through such spaces if Grade E liquids only are involved.

(c) Valve operating rods in the cargo tanks shall be solid and of ample size, well guided and supported, and attached to the valve stems in a manner to guard against their working loose. Where such valve rods pass through the deck, gas tight stuffing boxes shall be fitted. The leads of valve rods shall be as direct as possible. All valves and fittings shall be of material, design, and manufacture for the intended service on the cargo system; either rising or nonrising stem valves may be used.

§ 32.50–25 Cargo pumps and piping on tank vessels constructed prior to November 10, 1936—TB/ALL.

On tank vessels, the construction or conversion of which was started prior to November 10, 1936, cargo pumps and piping which do not fully comply with the regulations in this subchapter shall be made as nearly equal to the requirements for tank vessels constructed between November 10, 1936, and July 1, 1951, as is necessary in the interest of safety. Cargo pipe lines may pass through cargo pump engine compartments provided no cargo valves are located therein.

§ 32.50–30 Cargo hose—TB/ALL.

Cargo hose carried on tank vessels must be suitable for oil service and designed to withstand the pressure of the shutoff head of the cargo pump or pump relief valve setting, less static head, but in no case less than 150 pounds per square inch.

NOTE: For additional requirements concerning cargo hose, see 33 CFR 154.500, 155.800 and 156.170.

[CGD 80–009, 48 FR 36458, Aug. 11, 1983]

§ 32.50–35 Remote manual shutdown for internal combustion engine driven cargo pump on tank vessels—TB/ALL.

(a) Any tank vessel which is equipped with an internal combustion engine driven cargo pump on the weather deck shall be provided with a minimum of one remote manual shutdown station, conspicuously marked, and located at the midpoint of such vessel, or 100 feet from the engine, whichever is the more practical. The remote quick acting manual shutdown shall be installed on the engine so as to provide a quick and effective means of stopping the engine (such as by cutting off the intake air).

(b) This regulation applies to all installations of this type on tank vessels, but for such installations now on existing tankships at the date of next biennial inspection or October 1, 1963, whichever occurs later.

Subpart 32.52—Bilge Systems

§ 32.52–1 Bilge pumps on tank vessels constructed or converted on or after November 19, 1952—TB/ALL.

The number and arrangement of bilge pumps on each tank vessel shall conform to the requirements of subchapter F (Marine Engineering) of this chapter, except as hereinafter provided in this subpart.

§ 32.52–5 Bilge piping for pump rooms and adjacent cofferdams on tank vessels constructed or converted on or after November 19, 1952—TB/ALL.

(a) Provisions shall be made for removing drainage from the pumproom bilges and adjacent cofferdams. A separate bilge pump, ejector, or bilge suction from a cargo pump or cargo stripping pump may be provided for this purpose. The bilge pump shall not be located in nor shall the piping pass through spaces containing machinery where sources of vapor ignition are normally present.

(b) Where a bilge suction is provided from a cargo or stripping pump, a stopcheck valve shall be fitted in the suction branch, and an additional stop valve shall be fitted also if the bilge suction branch can be subjected to a head of oil from the filling line.

(c) Means shall be provided for controlling the cargo or pump room bilge pumps and their suctions or discharges in order that a flooded pump room may be pumped out. Suitable portable or manually operated pumps may be accepted as complying with this provision, or alternatively, the pump controls shall be arranged so that they are operable from inside the pump room and either from an accessible position outside the pump room, or from the pump room casing above the freeboard deck.

§ 32.52–10 Bilge pumps and piping on tank vessels constructed or converted prior to November 19, 1952—TB/ALL.

(a) On tank vessels, the construction or conversion of which was started prior to November 19, 1952, bilge pumps and piping which do not fully comply with the regulations of this subchapter shall be made as nearly equal to the requirements for tank vessels constructed on or after November 19, 1952, as is necessary in the interest of safety.

(b) Bilge suctions from hold spaces containing independent cargo tanks may be connected to cargo pumps or stripping pumps, provided the installation complies with the requirements of § 32.52–5(b).

Subpart 32.53—Inert Gas System

SOURCE: CGD 74–127, 41 FR 3843, Jan. 26, 1976, unless otherwise noted.

§ 32.53–1 Application—T/ALL.

(a) Except as provided in paragraphs (b) and (c) of this section, this subpart applies to:

(1) A U.S. crude oil tanker or product carrier of 100,000 DWT tons (metric) or more or combination carrier of 50,000 DWT tons (metric) or more, that has a keel laying date on or after January 1, 1975.

(2) A new (as defined in 46 U.S.C. 3701) crude oil tanker or product carrier, or foreign flag crude oil tanker or product carrier of 20,000 DWT tons or more entering the navigable waters of the U.S.

(3) A crude oil tanker that is equipped with a cargo tank cleaning system that uses crude oil washing.

(4) An existing product carrier of 20,000 deadweight tons (metric) or more that has tank washing machines with a capacity of more than 60 cubic meters per hour after May 31, 1983.

(5) Any other U.S. or foreign flag:

(i) Crude oil tanker or product carrier of 70,000 deadweight tons (metric) and over after May 31, 1981;

(ii) Crude oil tanker between 20,000 and 70,000 deadweight tons (metric) after May 31, 1983;

(iii) Product carrier between 40,000 and 70,000 deadweight tons (metric) after May 31, 1983.

(b) This subpart does not apply to vessels designed to carry only:

(1) Liquefied gas cargo; or

(2) Grade E cargo that is carried at a temperature lower than 5 °C below its flash point.

(c) This part does not apply to vessels as stated in 46 U.S.C. 3702.

[CGD 77–057a, 44 FR 66501, Nov. 19, 1979, as amended by CGD 97–057, 62 FR 51043, Sept. 30, 1997; CGD 95–028, 62 FR 51198, Sept. 30, 1997]

§ 32.53–3 Exemptions.

(a) The Deputy for Operations Policy and Capabilities (CG–DCO–D) grants exemptions for crude oil tankers of less than 40,000 deadweight tons not fitted with high capacity tank washing machines, if the vessel's owner can show that compliance would be unreasonable and impracticable due to the vessel's design characteristics.

(b) Requests for exemptions must be submitted in writing to: Commandant (CG–OES), Attn: Office of Operating and Environmental Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7509.

(c) Each request must be supported by documentation showing that:

(1) The system would be detrimental to the safe operation of the vessel;

(2) It is physically impracticable to install the system; or

(3) Adequate maintenance of the system would be impossible.

(d) The vessel's owner may request a conference. The exemption request file will be available for use in the conference and additional arguments or evidence in any form may be presented. The conference will be recorded. The

presiding officer summarizes the material presented at the conference and submits written recommendations to the Deputy for Operations Policy and Capabilities (CG–DCO–D).

(e) The Deputy for Operations Policy and Capabilities (CG–DCO–D) reviews the exemption request file and decides whether to grant or deny the exemption. The decision shall include an explanation of the basis on which the exemption is granted or denied, and constitutes final agency action.

[CGD 77–057a, 44 FR 66502, Nov. 19, 1979, as amended by CGD 82–063b, 48 FR 29486, June 27, 1983; CGD 88–070, 53 FR 34534, Sept. 7, 1988; CGD 95–072, 60 FR 50461, Sept. 29, 1995; CGD 96–041, 61 FR 50727, Sept. 27, 1996; CGD 97–057, 62 FR 51043, Sept. 30, 1997; USCG–2009–0702, 74 FR 49227, Sept. 25, 2009; USCG–2013–0671, 78 FR 60147, Sept. 30, 2013]

§ 32.53–5 Operation-T/ALL.

Unless the cargo tanks are gas free, the master of each tankship to which this subpart applies shall ensure that the inert gas system is operated as necessary to maintain an inert atmosphere in the cargo tanks.

[USCG-2001–10224, 66 FR 48619, Sept. 21, 2001]

§ 32.53–10 General—T/ALL.

(a) Each tankship to which this subpart applies must have an inert gas system that meets the requirements of this subpart and is approved in accordance with 46 CFR 50.20.

(b) Each inert gas system must be designed, constructed and installed in accordance with the provisions of SOLAS II–2, regulation 62, with the following provisions:

(1) Acceptable types of water seals include the wet and semiwet type. Other types of seals may be accepted on a case by case basis if approval is given by the Coast Guard Marine Safety Center.

(2) If a vapor collection system required to meet part 39 of this subchapter is connected to the inert gas system, the instruction manual required by SOLAS II–2, regulation 62.21 must include procedures relating to vapor collection operations.

[CGD 74–127, 41 FR 3843, Jan. 26, 1976, as amended by CGD 95–028, 62 FR 51198, Sept. 30, 1997]

§ 32.53–30 Positive pressure—T/ALL.

Each inert gas system must be designed to enable the operator to maintain a gas pressure of 100 millimeters (4 inches) of water on filled cargo tanks and during loading and unloading of cargo tanks.

[USCG–2003–16630, 73 FR 65160, Oct. 31, 2008]

Subpart 32.55—Ventilation and Venting

§ 32.55–1 Ventilation of tank vessels constructed on or after July 1, 1951—TB/ALL.

(a) On all tanks vessels, the construction or conversion of which is started on or after July 1, 1951, all enclosed parts of the vessel, other than cargo, fuel and water tanks, cofferdams and void spaces, shall be provided with efficient means of ventilation.

(b) Compartments containing machinery where sources of vapor ignition are normally present shall be ventilated in such a way as to remove vapors from points near the floor level or the bilges. Effective steam or air actuated gas ejectors, blowers or ventilators fitted with heads for natural ventilation, with at least one duct extending to immediately below the floor plates will be approved for this purpose. Machinery spaces below the freeboard deck, in which fuels with flash point of 110 °F or lower are used, shall be equipped with power ventilation. (See § 32.60–20 for other requirements concerning pumprooms.)

§ 32.55–5 Ventilation of tank vessels constructed between November 10, 1936, and July 1, 1951—TB/ALL.

(a) On tank vessels, the construction or conversion of which was started on or after November 10, 1936, and prior to July 1, 1951, all enclosed parts of the vessel, other than cargo, fuel, and water tanks and cofferdams, shall be provided with efficient means of ventilation.

(b) Pumprooms and compartments containing machinery where sources of vapor ignition are normally present shall be ventilated in such a way as to remove vapors from points near the floor level or the bilges. Effective steam or air actuated gas ejectors or

blowers or ventilators fitted with heads for natural ventilation, will be approved for this purpose. (See § 32.65–20 for other requirements concerning pumprooms.)

§ 32.55–10 Ventilation of tank vessels contracted prior to November 10, 1936—TB/ALL.

Ventilation of tank vessels, the construction or conversion of which was started prior to November 10, 1936, shall be equal to the requirements of tank vessels constructed before July 1, 1951, where the changes are, in the opinion of the Officer in Charge, Marine Inspection, necessary in the interest of safety.

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965, as amended by CGFR 66–33, 31 FR 15268, Dec. 6, 1966]

§ 32.55–15 Ventilation for hold spaces—TB/ALL.

Hold spaces containing independent cargo tanks shall be considered to be equivalent to cargo pumprooms and shall be ventilated and safeguarded as such.

§ 32.55–20 Venting of cargo tanks of tankships constructed on or after July 1, 1951—T/ALL.

(a) *Venting required.* (1) On all tankships, the construction or conversion of which is started on or after July 1, 1951, each cargo tank shall be equipped with a vent. The diameter of a vent shall be not less than 2½ inches.

(2) In any case where a venting system is required for a particular grade of liquid, the venting system permitted for a higher grade of liquid may be used instead.

(b) *Grade A liquids.* (1) Cargo tanks in which Grade A liquids are to be transported must be fitted with a venting system consisting of a branch vent line from each cargo tank connected to a vent header which must extend to a height above the weather deck equal to at least 13.1 feet and must terminate at a comparable distance from any living or working space, ventilator inlet, or source of ignition. When special conditions will prevent the vent line or header outlets being permanently installed at a height above the deck of 13.1 feet an adjustable system must be provided which, when extended vertically, is capable of reaching a height of 13.1 feet.

(2) A weather hood may be installed at the vent outlet providing it is of such design as not to direct the flow of vapor below the horizontal.

(3) The branch vent lines shall consist of either:

(i) Pipe with no valves or other hindrances to a free flow of gas; or,

(ii) Piping fitted with a pressure vacuum relief valve, provided means are supplied for relieving all internal pressure on cargo tanks by fitting the valve with a positive means for opening its pressure valve to allow free passage of gases through the branch vent line or by the installation of a by-pass fitted with a manually operated stop valve.

(4) The vent header shall be fitted with a flame arrester or pressure vacuum relief valve. If a pressure vacuum relief valve is used in the header, means shall be provided for relieving all internal pressure on cargo tanks by fitting the valve with a positive means for opening its pressure valve to allow free passage of gases through the header or by the installation of a by-pass fitted with a manually operated stop valve. A suitable means of relieving pressure shall be fitted in the header in order to prevent excess pressure being built up in the tanks, in the event of overfilling of the latter. The vent header system shall be provided with suitable connections for flushing and draining. The vent header system shall be of sufficient capacity as to be able to carry off all displaced air and vapors during loading of the cargo tanks without opening of ullage plates, cargo hatches, etc. See § 32.20–20 for liquid level gaging requirements.

(c) *Grade B or C liquids.* Cargo tanks in which Grade B or C liquids are to be transported shall be fitted with either individual pressure-vacuum relief valves which shall extend to a reasonable height above the weather deck or shall be fitted with a venting system consisting of branch vent lines connected to a vent header which shall extend to a reasonable height above the weather deck and be fitted with a flame arrester or a pressure-vacuum relief valve. The vent header system, if

fitted, shall be provided with suitable connections for flushing and draining, and if desired, stop valves may be placed in the individual branch vent lines provided that each stop valve is bypassed by a pressure-vacuum relief valve.

(d) *Grade D or E liquids.* Cargo tanks in which Grade D or E liquids only are to be transported shall be fitted with gooseneck vents and flame screens.

(e) Tank vents which meet the requirements of SOLAS will be considered equivalent to the provisions of this section.

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965, as amended by CGD 73–96, 42 FR 49024, Sept. 26, 1977; CGD 95–028, 62 FR 51198, Sept. 30, 1997]

§ 32.55–25 Venting of cargo tanks of tank barges constructed on or after July 1, 1951—B/ALL.

(a) *Venting required.* (1) On all tank barges, subject to the provisions of this subchapter the construction or conversion of which is started on or after July 1, 1951, each cargo tank shall be equipped with a vent. The diameter of a vent shall be not less than 2½ inches.

(2) In any case where a venting system is required for a particular grade of liquid, the venting system permitted for a higher grade of liquid may be used instead.

(b) *Grade A, B, or C liquids.* Cargo tanks in which Grade A, B, or C liquids are to be transported shall be fitted with either individual pressure-vacuum relief valves which shall extend to a reasonable height above the weather deck or shall be fitted with a venting system consisting of branch vent lines connected to a vent header which shall extend to a reasonable height above the weather deck and be fitted with a pressure-vacuum relief valve. The vent header system, if fitted, shall be provided with suitable connections for flushing and draining, and if desired, stop valves may be placed in the individual branch vent lines: *Provided,* That each such stop valve is bypassed by a pressure-vacuum relief valve.

(c) *Grade D or E liquids.* Cargo tanks in which Grade D or E liquids only are to be transported shall be fitted with gooseneck vents and flame screens.

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965, as amended by CGFR 70–10, 35 FR 3709, Feb. 25, 1970]

§ 32.55–30 Venting of cargo tanks of tank vessels constructed between November 10, 1936, and July 1, 1951—TB/ALL.

(a) *Venting required.* On all tank vessels, the construction or alteration of which is started on or after November 10, 1936, and prior to July 1, 1951, each cargo tank shall be equipped with a vent. The details of the venting system shall meet the requirements of this section, or alternatively, the requirements of either § 32.55–20 or § 32.55–25, as applicable, shall be met.

(b) *Grade A liquids.* (1) Cargo tanks in which Grade A liquids are to be transported shall be fitted with a venting system consisting of branch vent line from each cargo tank connected to a vent header which shall extend to a reasonable height above the weather deck and be fitted with a flame arrester or pressure-vacuum relief valve. Each branch vent line may be provided with a manually operated control valve, provided it is bypassed with a pressure-vacuum relief valve or each cargo tank to which such a branch vent line is connected is fitted with an independent pressure-vacuum relief valve. The vent header system shall be provided with suitable connections for flushing and draining.

(2) In barges with independent tanks carrying Grade A liquids, separate discharge pipes may be fitted to each pressure-vacuum relief valve, or the pressure-vacuum relief valve may be elevated, so that in either case the discharge from such valve will not be less than 7 feet above the deck where practicable.

(c) *Grade B or C liquids.* Cargo tanks in which Grade B or C liquids are to be transported shall be fitted with individual pressure-vacuum relief valves or shall be fitted with a venting system consisting of branch vent lines connected to a vent header which shall extend to a reasonable height above the weather deck and be fitted with a flame arrester or a pressure-vacuum relief valve.

(d) *Grade D or E liquids.* Cargo tanks in which Grade D or E liquids only are to be transported shall be fitted with gooseneck vents and flame screens unless such tanks are vented by pressure-vacuum relief valves or a venting system of branch vent lines and a vent header.

§ 32.55–35 Venting of cargo tanks on tank vessels constructed prior to November 10, 1936—TB/ALL.

The venting of cargo tanks of tank vessels, the construction or alteration of which was started prior to November 10, 1936, shall be made to equal the requirements of tank vessels constructed before July 1, 1951, where the changes are, in the opinion of the Officer in Charge, Marine Inspection, necessary in the interests of safety: *Provided,* That on such vessels carrying Grade A cargo the requirements in §32.55–30(b) shall be met.

§ 32.55–45 Venting of cofferdams and void spaces of tank vessels constructed on or after November 10, 1936—TB/ALL.

(a) Except as provided in paragraph (b) of this section, on all tank vessels, the construction or conversion of which was started on or after November 10, 1936, cofferdams and void spaces shall be provided with gooseneck vents fitted with a flame screen or pressure-vacuum relief valves. The diameter of a vent shall be not less than 2½ inches.

(b) On unmanned tank barges not fitted with fixed bilge systems in the cofferdams and void spaces, vents for cofferdams and void spaces will not be required.

§ 32.55–50 Ventilation of tankships that have a keel laying date on or after January 1, 1975—T/ALL.

Each tankship that has a keel laying date on or after January 1, 1975, must have deckhouse and superstructure ventilation inlets and outlets and other openings to the exterior arranged to minimize the admission of flammable gas to enclosed spaces that contain a source of ignition.

[CGD 74–127, 41 FR 3844, Jan. 26, 1976]

Subpart 32.56—Structural Fire Protection for Tank Ships With a Keel Laying Date On or After January 1, 1975

SOURCE: CGD 74–127, 41 FR 3844, Jan. 26, 1976, unless otherwise noted.

§ 32.56–1 Application—T/ALL.

(a)This subpart applies to all tankships that have a keel laying date on or after January 1, 1975.

(b) SOLAS-certificated vessels may be considered equivalent to the provisions of this subpart.

[CGD 74–127, 41 FR 3844, Jan. 26, 1976, as amended by CGD 95–028, 62 FR 51198, Sept. 30, 1997]

§ 32.56–5 General—T/ALL.

(a) Except as provided in paragraphs (c) and (d) of this section, each category A machinery space must be aft of the cargo area and pumprooms.

(b) Except as provided in paragraphs (c), (d), and (e) of this section, each accommodation space, service space except isolated storage spaces, and control space and each main cargo control station must be aft of:

(1) The cargo area;

(2) All cargo pumprooms; and

(3) All cofferdams that isolate the cargo area from category A machinery spaces.

(c) Except as provided in paragraph (e) of this section, any pumproom may be recessed below accommodation, service, and control spaces and recessed into any category A machinery space if the distance between the deckhead of the recess and the underside of the accommodation, service, or control space is at least equal to the height of the recess.

(d) Accommodation, service, control and certain machinery spaces, such as spaces for bow thrusters, windlass, and emergency fire pumps, may be located forward of the cargo area and pumprooms if it is demonstrated to the Commandant that the overall degree of safety of the vessel is improved and that the degree of fire and life safety for these spaces is not less than the degree of fire and life safety for similar spaces located aft.

(e) On liquefied gas carriers:

(1) Main cargo control stations may be located in the cargo area;

(2) Accommodation, service, and control spaces may be located over cofferdams that isolate cargo tanks other than integral tanks from category A machinery spaces;

(3) Pumprooms may not be recessed into any space below deck.

§ 32.56–10 Navigation positions—T/ALL.

(a) No navigation position may be above the cargo area unless it is approved by the Commandant as necessary for the safe operation of the vessel.

(b) Each navigation position that is above the cargo area must be separated from the deck by an unenclosed space that extends at least 2 meters (6.6 feet) from the deck to the navigation position.

(c) Openings to navigation positions above cargo areas, except air locks, must be at least 2.4 meters (7.9 feet) above the deck.

§ 32.56–15 Deck spills—T/ALL.

A coaming or other barrier at least .3 meters (1 foot) higher than adjacent spill containment barrier must be provided to prevent cargo spills from flowing aft of the housefront.

§ 32.56–20 Insulation of exterior boundaries: Superstructures and deckhouses—T/ALL.

The following exterior boundaries of superstructures and deckhouses that contain accommodation, service, and control spaces, except wheelhouses, must be insulated to ''A-60'' Class:

(a) The exterior boundaries that face the cargo area.

(b) The portion of the exterior bulkheads and decks within 3 meters (10 feet) of these boundaries.

§ 32.56–21 Openings in exterior boundaries: Accommodation, service, and control spaces—T/ALL.

The following exterior boundaries of accommodation, service, and control spaces, except wheelhouses, must have no openings, and portlights must be of a fixed type with easily operable steel covers on the inside:

(a) The exterior boundaries that face the cargo area.

(b) The portion of the exterior boundaries within 3 meters (10 feet) or the length of the vessel divided by 25, whichever is greater, except that the distance need not exceed 5 meters (16.4 feet), of these boundaries.

§ 32.56–22 Openings in and insulation of boundaries: Other spaces—T/ALL.

If openings are fitted into the following exterior boundaries of any space other than an accommodation, service, or control space, the interior of the space must be insulated to ''A-60'' Class and the space must not provide access to any accommodation, service, or control space:

(a) The exterior boundaries that face the cargo area.

(b) The portion of the exterior boundaries within 3 meters (10 feet) or the length of the vessel divided by 25, whichever is greater, except that the distance need not exceed 5 meters (16.4 feet), of these boundaries.

§ 32.56–25 Category A machinery spaces: Windows and port lights—T/ALL.

(a) Except as provided in paragraph (b) of this section and subpart 111.105, of this chapter, boundaries of category A machinery spaces and boundaries of cargo pumprooms must not be pierced for windows or portlights.

(b) Skylights that can be closed from outside the spaces they serve may be fitted in boundaries of category A machinery spaces.

[CGD 74–127, 41 FR 3844, Jan. 26, 1976, as amended by CGD 74–125A, 47 FR 15230, Apr. 8, 1982]

§ 32.56–30 Category A machinery spaces: Bulkheads and decks—T/ALL.

(a) Bulkheads and decks that separate category A machinery spaces from cargo pumprooms must be ''A'' Class construction.

(b) Bulkheads and decks that separate category A machinery spaces or cargo pumprooms, including the pumproom entrance, from accommodation, service, or control spaces must be ''A-60'' Class construction.

§ 32.56–35 Doors—T/ALL.

(a) Casing doors in category A machinery spaces and all elevator doors must be self-closing and must meet the requirements of 46 CFR 72.05–25(b).

(b) If a means of holding a door open is used, it must be a magnetic holdback or equivalent device that is operated from the bridge or other suitable remote control position.

§ 32.56–40 Category A machinery spaces: Insulation—T/ALL.

Structural insulation within category A machinery spaces must have a barrier such as metal foil, sheet metal, cementitious coating, or other vapor barrier so that the surface of that insulation is impervious to oil and oil vapors.

[CGD 74–127, 41 FR 3844, Jan. 26, 1976, as amended by CGD 74–127, 41 FR 4826, Feb. 2, 1976]

§ 32.56–45 Draft stops—T/ALL.

(a) Where ceilings or linings are fitted in accommodation, service, or control spaces, ''B'' Class bulkheads, except those that form passageways, may stop at the ceiling or lining if draft stops of ''B'' Class construction are fitted between the ceiling or lining and the deck or shell at intervals of 14 meters (45 feet) or less.

(b) Spaces behind the linings of stairways and other trunks must have draft stops at each deck.

§ 32.56–50 Combustible veneers—T/ALL.

(a) Except as provided in paragraph (b) of this section combustible veneers on bulkheads, linings, and ceilings within accommodation, service, or control spaces must be 2 millimeters (.079 inches) or less in thickness.

(b) Veneers on bulkheads, linings, and ceilings in concealed spaces, corridors, stairway enclosures, or control spaces must be an approved interior finish material or a reasonable number of coats of paint.

§ 32.56–55 Control spaces—T/ALL.

Bulkheads and decks that separate control spaces from adjacent spaces must be ''A'' Class construction and insulated against fire. 46 CFR table 72.05–10(e) of the Passenger Vessel Regulations may be used as a guide.

§ 32.56–60 Ventilation ducts—T/ALL.

(a) Each duct for ventilation of Category A machinery spaces that passes through accommodation, service, or control spaces must be:

(1) Constructed of steel and insulated to ''A-60'' Class; or

(2) Constructed of steel, fitted with an automatic fire damper at each boundary where it enters and leaves the Category A machinery space, and insulated to ''A-60'' Class for a distance of 5 meters (16.4 feet) beyond each machinery space boundary.

(b) Each duct for ventilation of accommodation, service, and control spaces that passes through Category A machinery spaces must be constructed of steel and be fitted with an automatic fire damper at each Category A machinery space boundary.

Subpart 32.57—Structural Fire Protection for Tank Vessels Contracted for On or After January 1, 1963

§ 32.57–1 Application—TB/ALL.

(a) The provisions of this subpart shall apply to all tank vessels contracted for on or after January 1, 1963.

(b) SOLAS-certificated vessels may be considered equivalent to the provisions of this subpart.

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965, as amended by CGD 95–028, 62 FR 51198, Sept. 30, 1997]

§ 32.57–5 Definitions—TB/ALL.

(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.* ''A'' Class divisions such as bulkheads and decks, means divisions that are composed of steel or an equivalent metal, suitably stiffened, and made intact with the main structure of the vessel, including the shell, structural bulkheads, or decks. They are constructed so that, if

subjected to the standard fire test, they are capable of preventing the passage of flame and smoke for one hour. In addition, they are insulated with approved structural insulation, bulkhead panels, or deck coverings so that 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, within the time listed below:

Class A-60	60 minutes
Class A-30	30 minutes
Class A-15	15 minutes
Class A-0	0 minutes with no insulation requirement

(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.* 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 16671, Dec. 30, 1965, as amended by CGFR 67–90, 33 FR 1015, Jan. 26, 1968; CGD 74–127, 41 FR 3845, Jan. 26, 1976; CGD 75–032, 41 FR 17910, Apr. 29, 1976]

§ 32.57–10 Construction—TB/ALL.

(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 and from galleys, main pantries and storerooms other than small service lockers shall be of ''A'' Class Construction.

(d) The following conditions apply within accommodation, service, and control spaces:

(1) Corridor bulkheads in accommodation areas shall be of ''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 divisions or 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 the self-closing type. No means shall be provided for locking such doors, 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. 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 or other suitable material having in mind the

risk of fire. This is not intended to preclude the use of other material for nosing, walking surfaces, etc., over the 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 3/8 of an inch.

(7) Except as provided in paragraph (d)(7–a) of this section, ceilings, linings, and insulation, including pipe and duct laggings, must be made of approved incombustible material.

(7–a) Combustible insulations and vapor barriers that have a maximum extent of burning of 122 millimeters (5 inches) or less when tested in accordance with ASTM D 4986, ''Standard Test Method for Horizontal Burning Characteristics of Cellular Polymeric Materials'' (incorporated by reference, see § 32.01–1), may be used within refrigerated compartments.

(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 millimeters (.079 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 coats 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 or equivalent metal construction.

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

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965, as amended by CGFR 66–33, 31 FR 15268, Dec. 6, 1966; CGFR 67–90, 33 FR 1015, Jan. 26, 1968; CGD 74–127, 41 FR 3845, Jan. 26, 1976; CGD 95–028, 62 FR 51198, Sept. 30, 1997; USCG-1998–4442, 63 FR 52190, Sept. 30, 1998; USCG-1999–5151, 64 FR 67177, Dec. 1, 1999]

Subpart 32.59—Minimum Longitudinal Strength and Plating Thickness Requirements for Unclassed Tank Vessels That Carry Certain Oil Cargoes—TB/ALL

§ 32.59–1 Minimum section modulus and plating thickness requirements—TB/ALL.

(a) As used in this section, *Rule* means the current Rules of the American Bureau of Shipping or other recognized classification society, as appropriate for the vessel's present service and regardless of the year the vessel was constructed.

(b) The requirements of this section apply to all in-service, unclassed tank vessels certificated to carry a pollution category I oil cargo listed in 46 CFR Table 30.25–1.

(c) For all vessels except those limited on their Certificate of Inspection to river routes only, the minimum midship section modulus must be—

(1) At least 90 percent of that required by Rule; or

(2) Where there is no specific Rule requirement, at least 100 percent of that which is necessary to meet the bending moment developed under a full load condition in still water, using a permissible bending stress of 12.74 kN/cm^2 (1.30 t/cm^2, 8.25 Ltf/in^2).

(d) Within the 40-percent midship length, the average flange and web thicknesses of each longitudinal stiffener must be as follows:

(1) For deck and bottom stiffeners: at least 85 percent of Rule thickness, unless a buckling analysis demonstrates that lesser thicknesses can be safely tolerated. However, the average thickness must never be less than 80 percent of Rule thickness; and

(2) For side stiffeners: at least 75 percent of Rule thickness.

(e) Within the 40-percent midship length, the average thickness for longitudinal strength plating must be at least as follows:

(1) Weather deck: 75 percent of Rule thickness;

(2) Hatch: 70 percent of Rule thickness;

(3) Trunk: 75 percent of Rule thickness;

(4) Sheer strake: 75 percent of Rule thickness;
(5) Outer sideshell: 75 percent of Rule thickness;
(6) Inner sideshell: 75 percent of Rule thickness;
(7) Outer bottom; 75 percent of Rule thickness;
(8) Inner bottom: 70 percent of Rule thickness;
(9) Keel: 75 percent of Rule thickness;
(10) Bulkheads: 75 percent of Rule thickness.

[CGD 91–209, 58 FR 52602, Oct. 8, 1993]

Subpart 32.60—Hull Requirements for Tank Vessels Constructed On or After July 1, 1951

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.

§ 32.60–1 Scantlings, material, and workmanship—TB/ALL.

(a) All tank vessels, the construction or conversion of which is started on or after July 1, 1951, shall conform to the requirements in this subpart in construction of hulls. The hull and deckhouses shall be of steel or iron construction except that the pilothouse and decks over quarters may be constructed of wood. Scantlings, material, and workmanship, subdivision of cargo spaces, fitting of cofferdams, and testing of tanks shall be at least equivalent to the requirements of the American Bureau of Shipping or other recognized classification society.

(b) See subpart 32.57 for structural fire protection requirements for tank vessels contracted for on or after January 1, 1963.

§ 32.60–5 Subdivision of cargo space—TB/ALL.

The cargo space shall be divided into tight compartments as necessary to avoid excessive stresses and to provide stability.

§ 32.60–10 Segregation of cargo; Grade A, B, C, or D—TB/ALL.

(a) *General.* The galleys, living quarters, navigation spaces, general cargo spaces, boiler rooms, and enclosed spaces where sources of vapor ignition are normally present, shall be segregated from cargo tanks by cofferdams or pump rooms or tanks, either empty or used to carry liquid having a flashpoint of 150 °F. or above, or deck spaces enclosed or open.

(b) *Cargo tank spaces.* Cargo tank spaces shall extend to the main deck, with hatches and vents located on the weather deck. Liquids having a flash point of not less than 150 °F. may be carried in the bulk tanks located beyond the segregating cofferdams and/or pump rooms.

(c) *Enclosed spaces.* (1) Cargo and vent piping passing through enclosed spaces immediately above the bulk cargo tanks shall be continuous except that flanged joints connecting pipe sections will be permitted.

(2) No openings to cargo tank shall be permitted other than stuffing boxes through which valve control rods or permanently installed gage tapes extend and openings for use of tank cleaning machines. Openings for tank cleaning machines, when not in use, shall be kept closed by means of gastight bolted plates and when in use shall be made essentially gas and watertight by covers through which hose or pipe to the tank cleaning machines extend.

(3) The overhead in way of quarters shall be gastight.

(d) *Stowage spaces.* The spaces described in paragraph (c) of this section may be used for stowage purposes and for general cargo provided that adequate ventilation is furnished.

(e) *Openings.* (1) Except as provided in paragraph (c) of this section, there shall be no manholes or other openings from cargo tanks to any other enclosed spaces. An exception may be made to allow direct access from cargo tanks to innerbottoms through gas tight bolted manholes, provided:

(i) The innerbottom tanks are voids or ballast tanks only, and

(ii) The innerbottom tanks are protected from sources of ignition similar to the cargo tanks, and any bilge or ballast pumping system serving the innerbottom tanks are treated like cargo pumping systems.

(2) Any vents, sounding tubes, and similar piping passing through such tanks shall be run in a suitable trunk;

or such piping shall have a wall thickness equal to or greater than the innerbottom plating, but not less than schedule 80, and shall be welded continuously on both sides of the innerbottom plating.

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965, as amended by CGFR 69–72, 34 FR 17481, Oct. 29, 1969]

§ 32.60–15 Segregation of cargo; Grade E—TB/ALL.

(a) *General.* The galleys, living quarters, navigation spaces, general cargo spaces, boilerrooms, and enclosed spaces containing machinery, where sources of vapor ignition are normally present, shall be segregated from the cargo tanks by tight bulkheads and intervening spaces are not required.

(b) *Cargo tank spaces.* Cargo tank spaces can be terminated at any deck with hatches on the same deck, but the vent lines shall be extended to the weather deck. Butterworth openings and extension rods may be located on the tank top.

§ 32.60–20 Pumprooms on tank vessels carrying Grade A, B, C, D and/or E liquid cargo—TB/ALL.

(a) *Cargo pumps.* In tank vessels carrying Grade A, B, C, or D liquid cargo, cargo pumps shall be isolated from source of vapor ignition by gastight bulkheads. A gastight bulkhead between the pumproom and the pump engine room may be pierced for drive shaft and pump engine control rods provided such openings are fitted with stuffing boxes or other approved gland arrangement. A steam driven pump shall not be considered a source of vapor ignition provided the steam temperature does not exceed 500 °F.

(b) *Ventilation for pumprooms on tank vessels the construction or conversion of which is started between July 1, 1951, and January 1, 1963.* (1) Pumprooms of all tank vessels, the construction or conversion of which is started between July 1, 1951, and January 1, 1963, shall be ventilated in such a way as to remove vapors from points near the floor level or bilges. Pumprooms on tankships handling Grade A, B, or C liquid cargo, with machinery located below the freeboard deck, shall be equipped with power ventilation. Pumprooms equipped with power ventilation shall have the ventilation outlets terminate more than six feet from any opening to the interior part of the vessel which normally contains sources of vapor ignition.

(2) For all tank vessels, the construction or conversion of which is started between October 1, 1959, and January 1, 1963, the power ventilation shall not produce a source of vapor ignition in either the pumproom or the ventilation systems associated with the pumproom. The capacity of power ventilation units shall be sufficient to effect a complete change of air in not more than 3 minutes, based upon the volume of the pumproom and associated trunks up to the deck at which access from the weather is provided.

(c) *Ventilation for pumprooms on tank vessels the construction or conversion of which is started on or after January 1, 1963.* (1) For all tank vessels, the construction or conversion of which is started on or after January 1, 1963, the cargo pumprooms shall be fitted in accordance with paragraphs (a) and (d) of this section. Cargo pumprooms on these vessels shall be ventilated in such a way as to remove vapors from points near the floor level or bilges. Cargo pumprooms on tank vessels handling Grade A, B, or C liquid cargo, shall be equipped with power ventilation of the exhaust type having capacity sufficient to effect a complete change of air in not more than 3 minutes based upon the volume of the pumproom and associated trunks up to the deck at which access from the weather is provided.

(2) The power ventilation units shall not produce a source of vapor ignition in either the pumproom or the ventilation systems associated with the pumproom. Inlets to exhaust ducts shall be provided and located near the floor level at points where concentrations of vapors may be expected. Ventilation from the weather deck shall be provided. Power supply ventilation may be fitted in lieu of natural ventilation, but when fitted shall be arranged to avoid turbulence in the cargo pumproom. Cargo pumprooms equipped with power ventilation shall have the ventilation outlets terminate more than 6 feet from any opening to the interior

part of the vessel which normally contains sources of vapor ignition, and shall be so located as to minimize the possibility of recirculating contaminated air through the pumproom.

(3) Cargo pumprooms handling Grade D and/or E liquid cargo only shall be fitted with at least two ducts extended to the weather deck, one of which shall be extended to a point near the floor level. This does not preclude installation of power ventilation, if desired.

(4) The ventilation required in this paragraph shall be sufficient to properly ventilate the pumproom with the access openings closed.

(d) *Access.* The access to a cargo pumproom in a tank vessel carrying Grade A, B, C, or D liquid cargo shall be from the open deck.

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965, as amended by CGFR 70–143, 35 FR 19905, Dec. 30, 1970]

§ 32.60–25 Living quarters—TB/ALL.

For living quarters the partitions and sheathing shall be of an approved fire resistive construction. The specification for incombustible materials is in subchapter Q (Specifications) of this chapter.

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965, as amended by CGD 95–028, 62 FR 51198, Sept. 30, 1997]

§ 32.60–30 Tank vessels with independent tanks—TB/ALL.

(a) Independent cargo tanks may be located in hold spaces or in other cargo tanks; however, a working space of at least 15 inches shall be maintained around each independent tank, or else provisions shall be made for moving such tanks to furnish such working space, except that less than 15 inches around such tanks may be permitted if in the judgment of the Officer in Charge, Marine Inspection, having jurisdiction, a satisfactory inspection of the cargo tanks and hull structure can be made.

(b) When an independent cargo tank is located in an enclosed space other than a cargo tank, such enclosed space shall be considered as equivalent to a pumproom and shall be safeguarded as such as required by this subpart.

(c) Cargo tanks independent of the hull structure shall be supported in saddles or on foundations of steel or other suitable material and securely attached in place to preclude the cargo from being damaged or shifting as a result of collision. The arrangement shall be such as to permit longitudinal and circumferential, or athwartship and vertical, expansion of the cargo tanks. Each tank shall be supported so as to prevent the concentration of excessive loads on the supporting portion of the shell.

§ 32.60–35 Tank vessels carrying Grade A liquid cargo—TB/ALL.

(a) Grade A liquids having a Reid vapor pressure in excess of 25 pounds per square inch shall be transported in cargo tanks which are independent of the hull.

(b) Barges carrying Grade A liquids having a Reid vapor pressure in excess of 25 pounds per square inch shall be of a Type III barge hull as defined in § 32.63–5(b)(3).

[CGFR 70–10, 35 FR 3709, Feb. 25, 1970]

§ 32.60–40 Construction and testing of cargo tanks and bulkheads—TB/ALL.

(a) All cargo tanks vented at gage pressure of 4 pounds per square inch or less shall be constructed and tested as required by standards established by the American Bureau of Shipping or other recognized classification society. The design of cargo tanks integral with the hull and vented at a gage pressure exceeding 4 pounds per square inch but not exceeding 10 pounds per square inch gage pressure will be given special consideration by the Commandant.

(b) Cargo tanks vented at a gage pressure exceeding 10 pounds per square inch are considered to be pressure vessels and shall be of cylindrical or similar design and shall meet the requirements of subchapter F (Marine Engineering) of this chapter.

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965, as amended by CGFR 68–82, 33 FR 18805, Dec. 18, 1968]

§ 32.60–45 Segregation of spaces containing the emergency source of electric power—TB/ALL.

(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 32.63—Hull and Cargo Tank Requirements for Tank Barges Constructed or Converted On or After July 1, 1964, and Carrying Certain Dangerous Bulk Cargoes

§ 32.63–1 Application—B/ALL.

(a) The requirements of this subpart shall apply to all tank barges, the construction or conversion of which is started on or after July 1, 1964, and carrying those cargoes listed in table 30.25–1 which are defined as:

(1) Flammable liquids having a Reid vapor pressure in excess of 25 pounds per square inch, absolute, in independent tanks (part 32).

(2) Liquefied flammable gases (part 38 of this subchapter).

[CGFR 70–10, 35 FR 3709, Feb. 25, 1970]

§ 32.63–5 Barge hull classifications—B/ALL.

(a) Each barge subject to the provision of this subpart shall be assigned a hull type number. The Commandant will designate the barge hull types to be used for carrying cargoes in order to insure that the vessel is designed consistent with the degree and nature of the hazard of the commodity carried.

(b) For this purpose the barge hull types shall be as follows:

(1) *Type I barge hull.* Barge hulls classed as Type I are those designed to carry products which require the maximum preventive measures to preclude the uncontrolled release of the cargo to the waterways and/or atmosphere.

(2) *Type II barge hull.* Barge hulls classed as Type II are those designed to carry products which require substantial preventive measures to preclude uncontrolled release to the atmosphere, but whose uncontrolled release to the waterways does not constitute a longlasting public or operating personnel hazard, though local and temporary pollution may occur.

(3) *Type III barge hull.* Barge hulls classed as Type III are those designed to carry products of sufficient hazard to require a moderate degree of control.

§ 32.63–8 Alternative arrangements—B/ALL.

(a) Alternative arrangements, differing from those specifically required by this subpart, may be considered and approved by the Commandant, if it is demonstrated to his satisfaction that a degree of safety is obtained which is consistent with the intent of this subpart.

§ 32.63–10 Rakes and coamings—B/ALL.

(a) Each barge hull shall be constructed with a suitable blow form (length, shape, and height of headlog) to protect against diving at the maximum speed at which the barge is designed to be towed. In any integrated tow, only the lead barge need comply with this requirement. In any case, the operator of the towing vessel shall be guided by appropriate speed limitations.

(b) All open hopper type barge hulls shall be provided with coamings around the hopper space and, additionally, a 36-inch minimum height plowshare breakwater on the forward rake. Coamings shall have a minimum height of 36 inches forward graduated to a minimum height of 24 inches at midlength and 18 inches thereafter.

§ 32.63–20 Hull structure—B/ALL.

(a) *General.* In addition to complying with the requirements of §32.60–1, as

applicable, barge hulls of Types I and II shall comply with the provisions of this section.

(b) *Types I and II barge hull.* Under an assumed grounding condition such that the forward rake bulkhead rests upon a pinnacle at the water surface, the maximum hull bending stress shall not exceed the following limits:

(1) Independent tanks may be installed in such a manner that they do not contribute to the strength and stiffness of the barge. In such case, the hull stress shall not exceed either 50 percent of the minimum ultimate tensile strength of the material or 70 percent of the yield strength when specified, whichever is greater.

(2) The Commandant may consider a reduction in hull stress when independent tanks are installed in such a manner as to contribute to the strength and stiffness of the barge and this is accounted for in determining the effective section modulus of the barge. In such case, the hull stress shall not exceed the percentage stress values prescribed in paragraph (b)(1) of this section multiplied by the quantity (1.5 − SWT/UTS), where SWT is the stress calculated without including the effect of the tanks, and UTS is the minimum ultimate tensile strength of the material. The value SWT, however, shall in no case be more than 75 percent of UTS.

§ 32.63–25 Cargo tanks and supports—B/ALL.

(a) *General.* Saddles and hold-down securing straps for independent cargo tanks shall be designed to prevent tank failure due to loads induced in the saddles or straps by barge deflection.

(b) *Collision protection.* (1) All independent cargo tanks installed on Type I and Type II barge hulls shall be protected with suitable collision chocks or collision straps to withstand a longitudinal collision load of one and one-half times the weight of the tank and cargo. All other independent cargo tanks shall be provided with suitable collision chocks or collision straps to withstand a longitudinal collision load equal to the weight of the tank and cargo.

(2) All cargo tanks shall be so located as to reduce the likelihood of their being damaged in the event of collision. This protection shall be obtained by locating the cargo tanks not less than 4 feet from the side shell and boxend for Type I hulls and 3 feet for Type II barge hulls, and not less than 25 feet from the headlog at the bow for both types.

(c) *Cargo tank design*—(1) *Types I and II barge hulls.* (i) In addition to requirements provided for in applicable regulations for a specific commodity, cargoes subject to the provisions of this subpart shall be transported in cargo tanks meeting the requirements of this paragraph. Pressure vessel-type cargo tanks shall have sufficient additional strength so as to limit the maximum combined tank stress, including saddle horn and bending stresses, to 1.5 times the maximum allowable hoop stress in still water, and to the yield strength of the tank material or 70 percent of the minimum ultimate tensile strength of the tank material, if less, in the grounded condition as required by § 32.63–20(b).

(ii) Gravity type cargo tanks shall have sufficient additional strength to limit the maximum combined tank stress, including saddle horn and bending stresses, to the yield strength of the tank material or 70 percent of the minimum ultimate tensile strength of the tank material, if less, in the grounded condition as required by § 32.63–20(b).

(2) *Type III barge hulls.* In addition to the requirements of this paragraph, pressure vessel-type cargo tanks shall have sufficient additional strength so as to limit the maximum combined stress, including saddle horn and bending stresses, to 1.5 times the maximum allowable hoop stress.

Subpart 32.65—Hull Requirements for Tank Vessels Constructed On or After November 10, 1936, and Prior to July 1, 1951

§ 32.65–1 Application—TB/ALL.

The requirements in this subpart apply to all tank vessels, the construction or conversion of which was started on or after November 10, 1936, and prior to July 1, 1951.

§ 32.65–5 Scantlings, material, and workmanship—TB/ALL.

The hull and deck houses shall be of steel or iron construction except that the pilothouse and decks over quarters may be constructed of wood. Scantlings, material, and workmanship, subdivision of cargo spaces, fitting of cofferdams, and testing of tanks shall be at least equivalent to the requirements of the American Bureau of Shipping or other recognized classification society.

§ 32.65–10 Subdivision of cargo space—TB/ALL.

The cargo space shall be divided into tight compartments as necessary to avoid excessive stresses and to provide stability.

§ 32.65–15 Cofferdams—TB/ALL.

Tank vessels equipped to carry Grade A, B, C, or D liquids shall have their galleys, living quarters, general cargo spaces, boiler rooms, and enclosed spaces containing propelling machinery or other machinery where sources of vapor ignition are normally present, segregated from their cargo tanks by cofferdams or equivalent pumprooms, tanks, or air spaces.

§ 32.65–20 Pumprooms—TB/ALL.

(a) Tank vessels handling Grade A, B, C, or D liquids shall have their cargo pumps isolated from all sources of vapor ignition by gastight bulkheads. Totally enclosed motors of the ''explosion proof'' type, motors ventilated on both the intake and exhaust by ducts to atmosphere, and engines driven by steam shall not be considered to be sources of vapor ignition. The gastight bulkhead between the pumproom and the pump-engine compartment may be pierced by fixed lights, drive shaft and pump-engine control rods, provided that the shafts and rods are fitted with stuffing boxes where they pass through the gastight bulkheads. The access to a cargo pumproom handling such liquids shall be from the open deck. (See § 32.60–20.0.)

§ 32.65–25 Living quarters—TB/ALL.

Partitions and sheathing shall be of approved fire-resistive construction.

§ 32.65–30 Tank vessels with independent tanks—TB/ALL.

Independent cargo tanks may be located in hold spaces or in other cargo tanks but in all cases a working space of at least 15 inches shall be provided around such independent tanks, or else provisions shall be made for moving them to secure such space. When independent cargo tanks are located in an enclosed space other than a cargo tank, such enclosed space shall be considered as equivalent to a pumproom, and shall be safeguarded as such, as required in the regulations in this subchapter.

§ 32.65–35 Tank vessels carrying Grade A liquids—TB/ALL.

Cargo tanks for Grade A liquids having a Reid vapor pressure in excess of 25 pounds shall be independent of the hull.

§ 32.65–40 Construction and testing of cargo tanks and bulkheads—TB/ALL.

(a) All cargo tanks to be vented at gage pressures of 4 pounds per square inch or less shall be constructed and tested as required by the requirements of the American Bureau of Shipping or other recognized classification society.

(b) All cargo tanks to be vented at gage pressures above 4 pounds per square inch shall be considered as pressure vessels and shall meet the requirements for such vessels as to construction and testing, as set forth in subchapter F (Marine Engineering) of this chapter.

(c) Gastight bulkheads shall be subjected to a thorough hose test.

[CGFR 65–50, 30 FR 16671, Dec. 30, 1965, as amended by CGFR 68–82, 33 FR 18805, Dec. 18, 1968]

Subpart 32.70—Hull Requirements for Steel Hull Tank Vessels Constructed Prior to November 10, 1936

§ 32.70–1 Application—TB/ALL.

All steel hull tank vessels, the construction or conversion of which was started prior to November 10, 1936, shall conform to the requirements in this subpart.

§ 32.70–5 Hull requirements; general—TB/ALL.

The scantlings, material, and workmanship, the subdivision of cargo spaces, the arrangement of cofferdams, the testing of tanks and cofferdams, shall be at least equivalent to the requirements of a recognized classification society for the particular service specified in the application for the certificate of inspection and permit for the transportation of liquid flammable cargoes in bulk as of the date when the tank vessel was built or as of the date when the vessel was converted into a tank vessel. In the absence of such classification requirements, the Officer in Charge, Marine Inspection, shall satisfy himself that the vessel's structure as specified in this section is safe for the service to be specified in its certificate of inspection.

[CGFR 66–33, 31 FR 15268, Dec. 6, 1966]

§ 32.70–10 Cofferdams—TB/ALL.

Tank vessels carrying Grade A, B, or C liquids shall be required to conform to the construction requirements in regard to vertical cofferdams in § 32.65–15, except that a dry cargo compartment shall be considered to be equivalent to a cofferdam, and except as provided for in § 32.70–20.

§ 32.70–15 Pumprooms—TB/ALL.

Tank vessels handling Grade A, B, C or D liquid cargo shall meet the requirements for tank vessels in § 32.65–20 except that the electrical installation shall comply with the requirements of § 32.45–10(c).

§ 32.70–20 Pump-engine compartment—TB/ALL.

No cofferdam will be required between a cargo tank and a compartment containing pumping engines and their auxiliaries which are used exclusively during pumping operations, provided the pumping engine compartment contains no cargo valves and is well ventilated and provided further that internal combustion exhaust within the compartment are completely water jacketed or insulated and that gasoline engine intakes are fitted with effective flame arresters.

§ 32.70–25 Cargo tanks—TB/ALL.

Cargo tanks shall comply with the conditions specified in §§ 32.65–30 and 32.65–35, and shall pass the tests required in § 32.65–40: *Provided, however,* That less than 15 inches around such tanks may be accepted if in the judgment of the Officer in Charge, Marine Inspection, making the inspection, a satisfactory inspection of the cargo tanks and hull structure can be made.

Subpart 32.75—Hull Requirements for Wood Hull Tank Vessels Constructed Prior to November 10, 1936

§ 32.75–1 Application—TB/ALL.

All wood hull tank vessels, the construction or conversion of which was started prior to November 10, 1936, shall conform to the requirements in this subpart.

§ 32.75–5 Hull requirements; general—TB/ALL.

The scantlings, material, and workmanship, and the fitting and fastening of parts shall be at least equivalent to the requirements of a recognized classification society for the particular service specified in the application for certificate of inspection and permit for the transportation of liquid flammable cargoes in bulk as of the date when the tank vessel was built, or as of the date when the vessel was converted into a tank vessel. In the absence of such classification requirements, the Officer in Charge, Marine Inspection, shall satisfy himself that the vessel's structure as specified in this section is safe for the service to be specified in its certificate of inspection.

§ 32.75–10 Cargo tanks—TB/ALL.

Cargo tanks shall be independent of the wood hull, shall be made of steel or iron, and shall pass the tests required in § 32.65–40 (a), (b). Where cargo tanks in wood hulls are not arranged to provide working space around them they shall be so constructed as to allow inspection of the hull, tanks, and bilges, and they shall be so installed that they can be moved to allow repairs to the hull structure and to themselves.

§ 32.75–15 Electric bonding and grounding for tanks—TB/ALL.

All independent cargo tanks in wood hull tank vessels shall be electrically bonded together with stranded copper cable of not less than No. 4B and S gage and one end of this cable shall be grounded to a copper or brass plate of not less than 2 square feet in area and one-sixteenth inch in thickness and this plate shall be securely fastened to the hull, on the outside, at a point where it shall be covered by water when the tank vessel is unloaded.

§ 32.75–20 Hold spaces and bulkheads—TB/ALL.

In wood hull tank vessels containing independent cargo tanks for the transportation of Grade A, B, C, or D liquids, the hold spaces shall be considered as equivalent to a pumproom and shall be safeguarded and ventilated as such as required by § 32.65–20. Where the hold spaces contain equipment or operations which are sources of vapor ignition, such equipment or operations shall be isolated from other spaces by gastight bulkhead or, if it is impracticable to construct a gastight bulkhead, two structurally tight bulkheads without openings, separated by a well-ventilated air space 24 inches wide, where possible may be used.

Subpart 32.80—Tank Barges Constructed of Materials Other Than Steel or Iron

§ 32.80–1 General requirements—B/ALL.

All tank barges with hulls constructed of materials other than iron or steel, the construction or conversion of which was started prior to September 2, 1945, and to which certificates of inspection were issued prior to March 2, 1946, shall be considered the same as tank barges constructed prior to November 10, 1936.

Subpart 32.85—Lamp and Paint Rooms and Similar Compartments on Tankships

§ 32.85–1 Fireproofing of lamp, oil and paint rooms—T/ALL.

Lamp, oil and paint rooms shall be wholly and tightly lined with metal.

Subpart 32.90—Pilot Boarding Equipment

§ 32.90–1 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]

PART 34—FIREFIGHTING EQUIPMENT

Subpart 34.01—General

Sec.
34.01–1 Applicability—TB/ALL, preemptive effect.
34.01–5 Equipment installed but not required—TB/ALL.
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Subpart 34.05—Firefighting Equipment, Where Required

34.05–1 Fire main system—T/ALL.
34.05–5 Fire extinguishing systems—T/ALL.
34.05–10 Portable and semiportable extinguishers—TB/ALL.
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Subpart 34.10—Fire Main System, Details

34.10–1 Application—TB/ALL.
34.10–5 Fire pumps—T/ALL.
34.10–10 Fire station hydrants, hose and nozzles—T/ALL.
34.10–15 Piping—T/ALL.
34.10–90 Installations contracted for prior to May 26, 1965—T/ALL.

Subpart 34.13—Steam Smothering System

34.13–1 Application—T/ALL.

Subpart 34.15—Carbon Dioxide Extinguishing Systems, Details

34.15–1 Application—T/ALL.
34.15–5 Quantity, pipe sizes, and discharge rates—T/ALL.
34.15–10 Controls—T/ALL.
34.15–15 Piping—T/ALL.
34.15–20 Carbon dioxide storage—T/ALL.
34.15–25 Discharge outlets—T/ALL.
34.15–30 Alarms—T/ALL.
34.15–35 Enclosure openings—T/ALL.
34.15–40 Pressure relief—T/ALL.
34.15–50 Lockout valves—T/ALL.
34.15–60 Odorizing units—T/ALL.
34.15–90 Installations contracted for prior to January 1, 1962—T/ALL.

Subpart 34.17—Fixed Foam Extinguishing Systems, Details

34.17–1 Application—T/ALL.
34.17–5 Quantity of foam required—T/ALL.
34.17–10 Controls—T/ALL.
34.17–15 Piping—T/ALL.
34.17–20 Discharge outlets—T/ALL.
34.17–25 Additional protection required—T/ALL.
34.17–90 Installations contracted for prior to January 1, 1962—T/ALL.

Subpart 34.20—Deck Foam System, Details

34.20–1 Application—T/ALL.
34.20–3 Cargo area definition—T/ALL.
34.20–5 Quantity of foam required—T/ALL.
34.20–10 Controls—T/ALL.
34.20–15 Piping—T/ALL.
34.20–20 Discharge outlets—T/ALL.
34.20–25 Foam monitor capacity—T/ALL.
34.20–90 Installations contracted for prior to January 1, 1970—T/ALL.

Subpart 34.25—Water Spray Extinguishing Systems, Details

34.25–1 Application—T/ALL.
34.25–5 Capacity and arrangement—T/ALL.
34.25–10 Controls—T/ALL.
34.25–15 Piping—T/ALL.
34.25–20 Spray nozzles—T/ALL.
34.25–90 Installations contracted for prior to January 1, 1964—T/ALL.

Subpart 34.30—Automatic Sprinkler Systems, Details

34.30–1 Application—TB/ALL.

Subpart 34.50—Portable and Semiportable Extinguishers

34.50–1 Application—TB/ALL.
34.50–5 Classification—TB/ALL.
34.50–10 Location—TB/ALL.
34.50–15 Spare charges—TB/ALL.
34.50–20 Semiportable fire extinguishers—TB/ALL.
34.50–90 Vessels contracted for prior to January 1, 1962—TB/ALL.

Subpart 34.60—Fire Axes

34.60–1 Application—T/ALL.
34.60–5 Number required—T/ALL.
34.60–10 Location—T/ALL.

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

SOURCE: CGFR 65–50, 30 FR 16694, Dec. 30, 1965, unless otherwise noted.

Subpart 34.01—General

§ 34.01–1 Applicability—TB/ALL, preemptive effect.

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

(b) The regulations in this part have preemptive effect over State or local regulations in the same field.

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGD 88–032, 56 FR 35821, July 29, 1991; USCG–2006–24797, 77 FR 33873, June 7, 2012]

§ 34.01–5 Equipment installed but not required—TB/ALL.

(a) Where firefighting equipment is not required, but is installed, the equipment and its installation shall be of an approved type.

§ 34.01–10 Protection for unusual arrangements or special products—TB/ALL.

(a) The provisions of this part contemplate fire protection for tank vessels of conventional design carrying the usual liquid petroleum products in internal tanks. Whenever unusual arrangements exist or special cargoes are carried upon which the vessel's normal firefighting equipment will be ineffective, additional suitable firefighting equipment of approved type shall be carried.

§ 34.01–15 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish 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 National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030 or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*. Also, it is available for inspection at the Coast Guard Headquarters. Contact Commandant (CG–ENG), Attn: Office of Design and Engineering Systems, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7509, telephone 202–372–1405, and is available from the sources listed in this section.

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

(1) ASTM F1121–87 (Reapproved 2010), Standard Specification for International Shore Connections for Marine Fire Applications, (approved March 1, 2010), incorporation by reference approved for § 34.10–15 (''ASTM F 1121'').

(2) [Reserved]

(c) National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169–7471, telephone 617–770–3000, *http://www.nfpa.org*.

(1) NFPA 13–1996, Standard for the Installation of Sprinkler Systems, IBR approved for § 34.30–1 (''NFPA 13–1996'').

(2) NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems, (2008 Edition), IBR approved for § 34.05–5(a)(4) (''NFPA 2001'').

[USCG–2006–24797, 77 FR 33873, June 7, 2012, as amended by USCG–2012–0866, 78 FR 13249, Feb. 27, 2013; USCG–2013–0671, 78 FR 60147, Sept. 30, 2013]

Subpart 34.05—Firefighting Equipment, Where Required

§ 34.05–1 Fire main system—T/ALL.

(a) Fire pumps, piping, hydrants, hose and nozzles shall be installed on all tankships.

(b) The arrangements and details of the fire main system shall be as set forth in subpart 34.10.

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGD 77–057a, 44 FR 66502, Nov. 19, 1979]

§ 34.05–5 Fire extinguishing systems—T/ALL.

(a) Approved fire extinguishing systems must be installed on all tankships in the following locations. 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) *Dry cargo compartments.* A carbon dioxide or water spray system must be installed for the protection of all dry cargo compartments. Where such compartments are readily accessible by means of doors such spaces need be protected only by the fire main system.

(2) *Cargo tanks.* A deck foam system must be installed for the protection of all cargo tank spaces. Where a deck foam system is installed, an approved

inert gas, steam or other system may also be installed for the purposes of fire prevention or inerting of cargo tanks. For vessels under 100 feet in length, the semiportable equipment required by footnote 1 of table 34.05–5(a) will be considered as meeting the requirements of this subparagraph.

(3) *Lamp and paint lockers and similar spaces.* A carbon dioxide or clean agent system as described in 46 CFR subpart 95.16 or a water spray system must be installed in all lamp and paint lockers, oil rooms, and similar spaces.

(4) *Pump rooms.* A carbon dioxide or clean agent system as described in 46 CFR subpart 95.16, a foam spray system, or a water spray system must be installed for the protection of all pump rooms. If a clean agent system is installed for the pump room of a tank ship carrying chemical cargos, the amount of extinguishing agent must be determined by using the agent design concentration determined by the cup burner method, described in NFPA 2001 (incorporated by reference; see § 34.01–15) for the cargo requiring the greatest amount of agent.

(5) *Boiler rooms.* On tankships contracted for on or after November 19, 1952, a carbon dioxide or clean agent system as described in 46 CFR subpart 95.16 or a foam system must be installed to protect any space containing a main or auxiliary oil fired boiler, the boiler fuel oil service pump, or any fuel oil units such as heaters, strainers, valves, manifolds, etc., that are subject to the discharge pressure of the fuel oil service pumps.

(6) *Machinery spaces.* A carbon dioxide or clean agent system as described in 46 CFR subpart 95.16 must be installed to protect any machinery space containing an internal combustion-propelling engine that uses fuel having a flashpoint of less than 110 degrees Fahrenheit.

(7) *Internal combustion installations.* A fire extinguishing system must be provided for an internal combustion installation and:

(i) The system must be a carbon dioxide or clean agent system as described in 46 CFR subpart 95.16;

(ii) 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 carbon dioxide or clean agent system as described in 46 CFR subpart 95.16 must be installed in any space containing internal combustion or gas turbine main propulsion machinery, auxiliaries with an aggregate power of 1,000 b.h.p. or greater, or their fuel oil units, including purifiers, valves, and manifolds; and

(iii) On vessels of 1,000 gross tons and over, the construction, conversion or automation of which is contracted for on or after January 1, 1968, a carbon dioxide or clean agent system as described in 46 CFR subpart 95.16 must be installed in any space containing internal combustion or gas turbine main propulsion machinery, auxiliaries with an aggregate power of 1,000 b.h.p. or greater, or their fuel oil units, including purifiers, valves and manifolds.

(8) *Enclosed ventilating system.* On tankships contracted for on or after January 1, 1962, where an enclosed ventilating system is installed for electric propulsion motors or generators, a carbon dioxide extinguishing system shall be installed in such system.

(b) The arrangements and details of the fire-extinguishing systems shall be as set forth in subparts 34.10 through 34.20.

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGFR 67–90, 33 FR 1015, Jan. 26, 1968; CGD 77–057a, 44 FR 66502, Nov. 19, 1979; CGD 95–027, 61 FR 25998, May 23, 1996; USCG–2006–24797, 77 FR 33873, June 7, 2012]

§ 34.05–10 Portable and semiportable extinguishers—TB/ALL.

(a) All portable and semiportable extinguishers on board tank vessels shall be of an approved type.

(b) The type, size, location and arrangement of portable and semiportable extinguishers shall be as set forth in subpart 34.50.

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGFR 70–143, 35 FR 19905, Dec. 30, 1970]

§ 34.05–20 Fire axes—T/ALL.

(a) Fire axes shall be provided on all tankships.

(b) The location and arrangement of fire axes shall be as set forth in subpart 34.60.

Subpart 34.10—Fire Main System, Details

§ 34.10–1 Application—TB/ALL.

(a) On all tankships the provisions of this subpart, with the exception of § 34.10–90, 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 § 34.10–90.

(b) If a fire main system is installed on a tank barge, the system shall meet the intent of this subpart insofar as reasonable and practicable.

§ 34.10–5 Fire pumps—T/ALL.

(a) Tankships shall be equipped with independently driven fire pumps in accordance with table 34.10–5(a).

TABLE 34.10–5(a)—FIRE PUMPS

Size vessel, L.O.A. (feet)		Minimum number of pumps	Powerful streams of water per pump	Minimum hydrant and hose size (inches)	
Over—	Not over—			Exterior stations	Interior stations
	100	[1]	.....	.....	.....
100	250	[2] 1	[3] 2	1½	1½
250	400	2	[3] 2	1½	1½
400	650	2	[3] 2	[4] 2½	1½
650	.....	2	[3] 3	[4] 2½	1½

[1] Vessels of 65 feet and not over 100 feet shall be equipped with 2 B-V extinguishers. (Refer to table 34.50–5(c).) Vessels under 65 feet shall be equipped with 1 B-V extinguisher. (Refer to table 34.50–5(c).)

[2] Vessels of 1,000 gross tons and over on an international voyage shall have at least 2 fire pumps.

[3] From hydrants having greatest pressure drop between fire-pump(s) and nozzles.

[4] Where 2½-inch hydrant size is required, two 1½-inch outlets may be substituted therefor with two 1½-inch hoses.

(b) Each pump shall be capable of delivering simultaneously the number of streams of water required by table 34.10–5(a) from the outlets having the greatest pressure drop between fire pump(s) and nozzles at a Pitot tube pressure of approximately 75 p.s.i. Where 1½-inch hose is permitted in lieu of 2½-inch hose by footnote 3 of table 34.10–5(a), the pump capacity shall be determined on the basis that both hoses are used.

(c) On tankships of 1,000 gross tons and over on an international voyage, each required fire pump, while delivering water through the fire main system at a pressure corresponding to that required by § 34.10–15(e), shall have a minimum capacity of at least two-thirds of that required for an independent bilge pump if no length correction is taken for the cargo tank space. However, in no case shall the capacity of each fire pump be less than that otherwise required by this section.

(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 (b) of this section.

(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 arranged so that the requirements of paragraph (b) of this section and any other services installed on the fire main can be met simultaneously.

(g) On all vessels where two 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 16694, Dec. 30, 1965, as amended by CGD 95–028, 62 FR 51199, Sept. 30, 1997]

§ 34.10–10 Fire station hydrants, hose and nozzles—T/ALL.

(a) The size of fire station hydrants and hose required shall be as noted in table 34.10–5(a).

(b) Fire hydrants shall be of sufficient number and so located that any part of living quarters, storerooms, working spaces and weather decks accessible to crew while at sea may be

reached with two effective spray patterns of water, one of which shall be from a single 50-foot length of hose. In main machinery spaces all portions of such spaces shall be capable of being reached by at least 2 effective spray patterns of water, each of which shall be from a single 50-foot length of hose from separate outlets.

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

(d) All fire station hydrants shall be equipped with spanners suitable for use on the hose at that station.

(e) Each fire station hydrant must have at least 1 length of firehose. Each firehose on the hydrant must have a combination solid stream and water spray firehose nozzle that meets the requirements in 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. A suitable hose rack or other device must be provided. Hose racks on weather decks must be located to afford protection from heavy seas. The hose must be stored in a location that is readily visible.

TABLE 34.10–10(e) HYDRANTS WITH COAST GUARD APPROVED LOW-VELOCITY WATER SPRAY APPLICATORS

Location	Number of hydrants with approved applicators	Approved applicator length (feet)
Living space	1	4
Weather deck	4	10 or 12
Machinery space	2	4

(f) Each combination firehose nozzle previously approved under subpart 162.027 of this chapter in the locations listed in table 34.10–10(E) must have a low-velocity water spray applicator also previously approved under subpart 162.027 of this chapter that is of the length listed in that table.

(g) The pipes and fire station hydrants shall be so placed that the fire hose may be easily coupled to them. All hydrants shall be so located as to be readily accessible. If deck cargo is carried, it shall not interfere with access to the fire station hydrants, and the pipes shall be arranged as far as practicable to avoid risk of damage by such cargo.

(h) Each fire station hydrant or ''y'' branch shall be equipped with a valve so that the hose may be removed while there is pressure on the fire main.

(i) 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.

(j) Fire hose shall be 50 feet in length except on weather decks the hose shall be increased in length if necessary to enable a single length to be goose-necked over each side of the vessel. If two fire mains are installed on the weather decks, the length of hose shall be such that it may be goose-necked over the side from the nearest fire main.

(k) Fire hose when part of the fire equipment shall not be used for any other purpose than fire extinguishing, fire drills, and testing.

(l) Fire hose shall be connected to outlets at all times. However, in heavy weather on open decks where no protection is afforded the hose may be removed temporarily from the hydrant and stowed in an accessible location nearby. While in port, fire hose in way of cargo area shall be kept ready for immediate use. The fire hose may be temporarily removed when it will interfere with the handling of cargo.

(m) Each section of fire hose used after January 1, 1980 must be lined commercial fire hose 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 fire hose is accepted as conforming to this requirement. Each section of replacement fire hose or any section of new fire hose placed aboard a vessel after January 1, 1977 must also conform to the specification required by this paragraph.

(n) Coupling shall conform to the requirements of paragraph (h) of this section.

(o) Each low-velocity water spray applicator under paragraph (f) of this section must have fixed brackets, hooks, or other means for stowing next to the hydrant.

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGD 74–60, 41 FR 43151, Sept. 30, 1976; CGD 76–086, 44 FR 2391, Jan. 11, 1979; CGD 95–027, 61 FR 25999, May 23, 1996; CGD 95–028, 62 FR 51199, Sept. 30, 1997]

§ 34.10–15 Piping—T/ALL.

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

(b) An adequate number of valves shall be installed to isolate damaged sections of piping except on self-propelled vessels carrying bulk liquefied gases that must have stop valves:

(1) At cross connections;

(2) At the front of the after deck house; and

(3) In the cargo area spaced 40 m (131 ft.) or less between hydrants.

(c) All distribution valves shall be marked as required by § 35.40–10 of this subchapter.

(d) Tankships of 500 gross tons and over on an international voyage must be provided with at least one international shore connection which meets ASTM F 1121 (incorporated by reference, see § 34.01–15). Facilities must be available enabling such a connection to be used on either side of the vessel.

(e) For tankships 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 § 34.10–5(b). 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 71 pounds per square inch on self-propelled vessels that carry bulk liquefied gases and approximately 50 pounds per square inch on other tankships.

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGD 74–289, 44 FR 26006, May 3, 1979, CGD 88–032, 56 FR 35821, July 29, 1991; USCG–2000–7790, 65 FR 58459, Sept. 29, 2000]

§ 34.10–90 Installations contracted for prior to May 26, 1965—T/ALL.

(a) Installations contracted for prior to January 1, 1962, 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) Except as further modified by this paragraph, the details of the systems shall be in general agreement with §§ 34.10–5 through 34.10–15 insofar as is reasonable and practicable.

(3) Tankships of less than 500 gross tons shall be equipped with an efficient hand pump capable of delivering 50 gallons per minute or a power-driven pump of equivalent capacity. However, on tankships of 20 gross tons or under where it is impracticable to install a hand or power-operated fire pump, or on tankships with only one man in the crew, at least one additional B-II fire extinguisher may be accepted in lieu of a fire pump.

(4) Tankships of 500 gross tons and over but not over 1,000 gross tons shall be provided with one independently power-driven pump.

(5) Tankships of over 1,000 gross tons shall be provided with two independently power-driven pumps.

(6) On tankships of 500 gross tons and over, the capacity of the combined fire pump installation shall be one-fifth gallon per minute per gross ton of the ship. The maximum total fire pump capacity required for any tankship shall be 800 gallons per minute.

(7) Each fire pump on a tankship of 500 gross tons or more must deliver enough water to the fire main so that the topmost outlet on the fire main emits two jets of water at a Pitot tube pressure of 50 pounds per square inch

through two combination solid stream and water spray firehose nozzles meeting paragraph (10) of this section.

(8) On oil-burning tankships, provided with two fire pumps, where the engine and fire rooms are not entirely separated by iron or steel bulkheads, or if fuel can drain from fireroom bilges into the engineroom, one of the fire pumps shall be located in an accessible space separate from the machinery compartment. On all tankships contracted for on or after November 19, 1952, the requirements of paragraph (f) of § 34.10–5 shall be met.

(9) Fire hydrant outlets shall have a minimum diameter of 1½ inches.

(10) Each fire station hydrant on a tankship of 500 gross tons or more must have at least 1 length of firehose. Each firehose on the hydrant must have a combination solid stream and water spray firehose nozzle that meets the requirements of subpart 162.027. 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.

(11) On each tankship of 1000 gross tons or more, the firehose nozzle required by paragraph (a)(10) of this section on each of the following hydrants must have a low-velocity water-spray applicator that was previously approved under subpart 162.027 and that connects to that nozzle when the nozzle itself was previously approved under subpart 162.027—

(i) At least two hydrants in the Machinery and boiler spaces; and

(ii) At least 25 percent of other hydrants.

(12) Vessels contracted for on or after July 1, 1954, shall meet the requirements of § 34.10–10(h).

(b) Installations contracted for on or after January 1, 1962, but prior to May 26, 1965, shall meet the following requirements:

(1) Existing arrangements, materials, facilities, and equipment, except firehose nozzles, previously approved shall be considered satisfactory as long as they meet the minimum requirements of this paragraph and they are maintained in good conditions 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) Each fire station hydrant must have at least 1 length of firehose. Each firehose on the hydrant must have a combination solid stream and water spray firehose nozzle that meets the requirements of subpart 162.027. 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. If the firehose nozzles were previously approved under subpart 162.027, each of the number of hydrants in the locations listed in table 34.10–10(E) must have a low-velocity water spray applicator that—

(i) Was previously approved under subpart 162.027 of this chapter;

(ii) Is the length listed in table 34.10–10(E); and

(iii) Meets § 34.10–10(o).

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGD 76–086, 44 FR 2391, Jan. 11, 1979; CGD 95–027, 61 FR 25999, May 23, 1996]

Subpart 34.13—Steam Smothering Systems

SOURCE: CGD 95–027, 61 FR 25999, May 23, 1996, unless otherwise noted.

§ 34.13–1 Application—T/ALL.

Steam smothering fire extinguishing 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.

Subpart 34.15—Carbon Dioxide Extinguishing Systems, Details

§ 34.15–1 Application—T/ALL.

(a) Where a carbon dioxide extinguishing system is installed, the provisions of this subpart, with the exception of § 34.15–90, shall apply to all installations contracted for on or after January 1, 1962. Installations contracted for prior to January 1, 1962, shall meet the requirements of § 34.15–90.

(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.

§ 34.15–5 Quantity, pipe sizes, and discharge rates—T/ALL.

(a) *General.* (1) 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.* (1) 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) *Dry 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, pumprooms, paint lockers, and similar spaces.* (1) Except as provided in paragraph (d)(4) 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 34.15–5(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 34.15–5(d)(1)

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

(2) For the purpose of the above requirement of this paragraph, the volume of a machinery space shall be taken as exclusive of the normal machinery casing unless the boiler, internal combustion propelling machinery, or fuel oil installations subject to the discharge pressure of the fuel oil service pump 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. The terms ''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 the purpose of the above requirements of this paragraph, the volume of a pumproom shall include the pumproom and all associated trunks up to the deck at which access from the weather is provided.

(4) For tankships 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.

(5) Branch lines in the various spaces shall be noted in table 34.15–5(d)(5).

TABLE 34.15–5(d)(5)

Maximum quantity of carbon dioxide required, pounds	Minimum pipe sizes, 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	.....	.....

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

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

(8) 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.

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

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended at 45 FR 64188, Sept. 29, 1980; CGD 95–028, 62 FR 51199, Sept. 30, 1997; USCG-1999–6216, 64 FR 53223, Oct. 1, 1999]

§ 34.15–10 Controls—T/ALL.

(a) Except as noted in § 34.15–20(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 space, 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 space, a normally closed stop valve shall be installed between the cylinders and the space except for systems of the type indicated in § 34.15–5(d) which contain not more than 300 pounds of carbon dioxide.

(c) Distribution piping to the dry 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 § 35.40–10 of the subchapter.

(d) Systems of the type indicated in § 34.15–5(d) shall be actuated at each station 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. 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 § 34.15–5(d), 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 spaces which have a suitable horizontal escape.

(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 16694, Dec. 30, 1965, as amended by CGD 74–100R, 40 FR 6208, Feb. 10, 1975; USCG-1999–6216, 64 FR 53223, Oct. 1, 1999]

§ 34.15–15 Piping—T/ALL.

(a) The piping, valves, and fittings shall have a bursting pressure of not less than 6,000 pounds p.s.i.

(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 p.s.i. 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 deadend 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 p.s.i. 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 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 p.s.i. in lieu of 1,000 pounds p.s.i. 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 the preceding paragraphs in this section, small independent systems protecting spaces such as emergency generator rooms, lamp lockers, etc., may be tested by blowing out the piping with the air at a pressure of at least 100 pounds p.s.i.

§ 34.15–20 Carbon dioxide storage—T/ALL.

(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 § 34.15–5(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 16694, Dec. 30, 1965, as amended at 53 FR 7748, Mar. 10, 1988; USCG–1999–6216, 64 FR 53223, Oct. 1, 1999]

§ 34.15–25 Discharge outlets—T/ALL.

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

§ 34.15–30 Alarms—T/ALL.

(a) Spaces required to have a delayed discharge by § 34.15–10(f) 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 before the carbon dioxide is admitted to the space. The alarm shall be conspicuously and centrally located and shall be marked as required by § 35.40–7 of this subchapter. 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.

§ 34.15–35 Enclosure openings—T/ALL.

(a) Except for cargo spaces, the operation of the carbon dioxide system shall automatically shut down any mechanical ventilation to that space. This will not be required where the carbon dioxide system is a secondary system in addition to another approved primary system protecting the 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.

§ 34.15–40 Pressure relief—T/ALL.

(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.

§ 34.15–50 Lockout valves—T/ALL.

(a) A lockout valve must be provided on any carbon dioxide extinguishing system protecting a space over 6,000 cubic feet in volume and installed or altered after July 9, 2013. ''Altered'' means modified or refurbished beyond the maintenance required by the manufacturer's design, installation, operation and maintenance manual.

(b) The lockout valve must be a manually operated valve located in the discharge manifold prior to the stop valve or selector valves. When in the closed position, the lockout valve must provide complete isolation of the system from the protected space or spaces, making it impossible for carbon dioxide to discharge in the event of equipment failure during maintenance.

(c) The lockout valve design or locking mechanism must make it obvious whether the valve is open or closed.

(d) A valve is considered a lockout valve if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it.

(e) The master or person-in-charge must ensure that the valve is locked open at all times, except while maintenance is being performed on the extinguishing system, when the valve must be locked in the closed position.

(f) Lockout valves added to existing systems must be approved by the Commandant as part of the installed system.

[USCG–2006–24797, 77 FR 33873, June 7, 2012]

§ 34.15–60 Odorizing units—T/ALL.

Each carbon dioxide extinguishing system installed or altered after July 9, 2013, must have an approved odorizing unit to produce the scent of wintergreen, the detection of which will serve as an indication that carbon dioxide gas is present in a protected area and any other area into which the carbon dioxide may migrate. ''Altered'' means modified or refurbished beyond the maintenance required by the manufacturer's design, installation, operation and maintenance manual.

[USCG–2006–24797, 77 FR 33873, June 7, 2012]

§ 34.15–90 Installations contracted for prior to January 1, 1962—T/ALL.

(a) Installations contracted for prior to November 19, 1952, shall meet the requirements of this paragraph.

(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 §§ 34.15–5 through 34.15–40 insofar as is reasonable and practicable, with the exception of § 34.15–5(d)(1) through (3) covering spaces other than cargo spaces, which systems may be installed in accordance with paragraphs (a) (4) through (7) of this section.

(3) For cargo tanks at least one pound of carbon dioxide shall be available for each 30 cubic feet of the largest cargo tank. The discharge of the required amount of carbon dioxide shall be complete within 5 minutes.

(4) In boiler rooms, 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 boiler room 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.

(5) 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 underside of the deck forming the hatch opening divided by 22.

(6) 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.

(7) Branch lines to the various spaces other than cargo and similar spaces shall be as noted in table 34.15–90(a)(7). This table is based on cylinders having discharge outlets and siphon tubes of ⅜-inch diameter.

TABLE 34.15–90(a)(7)

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.

(b) Installations contracted for on or after November 19, 1952, but prior to

January 1, 1962, shall meet the requirements of this paragraph.

(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 §§ 34.15–5 through 34.15–40 insofar as is reasonable and practicable with the exception that delayed discharges need not be provided for installations made prior to July 1, 1957.

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGFR 66–33, 31 FR 15268, Dec. 6, 1966; USCG–1999–6216, 64 FR 53223, Oct. 1, 1999]

Subpart 34.17—Fixed Foam Extinguishing Systems, Details

§ 34.17–1 Application—T/ALL.

(a) Where a fixed foam extinguishing system is installed, the provisions of this subpart with the exception of § 34.17–90, shall apply to all installations contracted for on or after January 1, 1962.

(b) Installations contracted for prior to January 1, 1962, shall meet the requirements of § 34.17–90.

§ 34.17–5 Quantity of foam required—T/ALL.

(a) *Area protected.* (1) For machinery spaces and pumprooms, 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 relatively 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.

(b) *Rate of application.* (1) The rate of discharge to foam outlets protecting the hazard shall be at least as set forth in this paragraph.

(2) 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.

(3) 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.

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

(d) *Separate supply of foam-producing material.* (1) A separate supply of foam-producing material need not be provided for each space protected. This includes a deck foam system. The total available supply shall be at least sufficient for the space requiring the greatest amount.

(e) *Water supply for required pumps.* (1) The water supply shall be from outside and completely independent of the space protected.

§ 34.17–10 Controls—T/ALL.

(a) The foam agent, its container, measuring devices, and other items peculiar to the system shall be of an approved type.

(b) The foam-producing material 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 § 35.40–10 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 § 35.40–10 of this subchapter.

§ 34.17–15 Piping—T/ALL.

(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 not be used for any other purpose than firefighting, drills and testing.

§ 34.17–20 Discharge outlets—T/ALL.

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

§ 34.17–25 Additional protection required—T/ALL.

(a) In order that any residual fires above the floor plates may be extinguished when a foam system is installed for the protection of machinery spaces, at least 2 fire hydrants, in addition to those required for the machinery space by subpart 34.10, 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 and applicator.

§ 34.17–90 Installations contracted for prior to January 1, 1962—T/ALL.

(a) Installations contracted for prior to January 1, 1962, 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 §§ 34.17–5 through 34.17–20, insofar as is reasonable and practicable. Installations contracted for prior to November 19, 1952, need not comply with paragraph (a)(2) of § 34.17–5 and § 34.17–25. A 6-inch blanket of foam in 3 minutes for machinery spaces and pumprooms will be considered as meeting the requirements of § 34.17–5.

(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 relatively uniform distribution over the entire area protected.

(4) For tanks, the rate of discharge to foam outlets protecting the hazard shall be as set forth in § 34.17–5(b), except that the value of 1 gallon per minute shall be substituted in both cases for the value of 1.6 gallons per minute. The quantity of foam provided shall be sufficient to operate the equipment for 5 minutes.

(5) On installations installed prior to November 19, 1952, a semiportable foam generator using a dry-chemical mixture or mechanical foam in conjunction with the fire lines may be substituted for the fixed system subject to the following conditions:

(i) There shall be at least one fire pump of suitable capacity available which can be operated and controlled from outside the space protected.

(ii) Stop valves shall be installed in the line so that if any portion of the fire main is ruptured, the foam generator may still be operated. Connections for at least two fire hoses shall be provided between the pump and the stop valve.

(iii) If the foam system is of the portable or semiportable type, the apparatus and chemicals shall be stored in a readily accessible place protected from the weather.

Subpart 34.20—Deck Foam System, Details

§ 34.20–1 Application—T/ALL.

(a) Where a deck foam system is installed, the provisions of this subpart, except § 34.20–90, apply to all installations that are contracted for on or after January 1, 1970, unless otherwise indicated.

(b) Installations contracted for prior to January 1, 1970, shall meet the requirements of § 34.20–90.

(c) Foreign flag crude oil tankers and product carriers required to have fixed deck foam systems by this subpart must have systems that are designed and installed in accordance with Regulation 61 of Chapter II–2 of SOLAS 1974. (Senate Document, 57–1180, GPO, Washington, 1976; ''Message from the President of the United States transmitting, the International Convention for the Safety of Life at Sea, 1974, Done at LONDON, November 1, 1974'').

(46 U.S.C. 391a; 49 CFR 1.46(n)(4))

[CGFR 69–72, 34 FR 17481, Oct. 29, 1969, as amended by CGD 74–127, 41 FR 3846, Jan. 26, 1976; CGD 77–057a, 44 FR 66502, Nov. 19, 1979]

§ 34.20–3 Cargo area definition—T/ALL.

(a) For the purpose of this subpart, the term *cargo area* is defined as the maximum beam of the vessel times the total longitudinal extent of the cargo tank spaces.

§ 34.20–5 Quantity of foam required—T/ALL.

(a) *Area protected.* Systems of this type are designed to give primary protection to the spaces over the cargo tanks.

(b) *Rate of application.* The water rate of the foam production equipment shall be determined as follows:

(1) For usual petroleum products the rate of supply of foam solution shall be not less than the greatest of the following:

(i) 0.6 liters/min per square meter of cargo tanks deck area, where cargo tanks deck area means the maximum breadth of the ship multiplied by the total longitudinal extent of the cargo tank spaces;

(ii) 6 liters/min per square meter of the horizontal sectional area of the single tank having the largest such area; or

(iii) 3 liters/min per square meter of the area protected by the largest monitor, such area being entirely forward of the monitor, but not less than 1,250 liters/min.

(2) For polar solvent products (e.g. alcohols, ketones, etc.) the water rate shall be determined for each vessel. The rate will depend upon the vessel design, products to be carried and foam system to be used.

(c) *Supply of foam-producing material.* Each deck foam system must have a supply of foam-producing material sufficient to operate the system at its designed rate of foam production for the following periods:

(1) For installations contracted for on or after January 1, 1970, 15 minutes without recharging, except as required in paragraph (c)(2) of this section.

(2) For installations on ships that have a keel laying date on or after January 1, 1975, 20 minutes without recharging.

(d) *Separate supply of foam-producing material.* Where the same foam-producing material may be used for this system as well as a fixed foam system, separate supplies 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.* Suitable pumps shall be provided capable of producing the required water rate. The fire pumps required by subpart 34.10 may be used for this purpose; however, the operation of the deck foam system shall not interfere with the simultaneous use of the fire main system.

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGFR 69–72, 34 FR 17481, Oct. 29, 1969; CGD 74–127, 41 FR 3846, Jan. 26, 1976; CGD 95–028, 62 FR 51199, Sept. 30, 1997]

§ 34.20–10 Controls—T/ALL.

(a) The foam agent, its container, measuring devices, and other items peculiar to this system shall be of an approved type.

(b) The foam agent container and the main controls for operating the system shall be located in a protected space

not likely to be made inaccessible in the event of a fire in any portion of the cargo area.

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

(d) All valves shall be marked as required by § 35.40–17.

(e) The deck foam system on each tankship that has a keel laying date on or after January 1, 1975, must be capable of being actuated, including introduction of foam to the foam main, within three minutes of notification of a fire.

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGD 74–127, 41 FR 3846, Jan. 26, 1976]

§ 34.20–15 Piping—T/ALL.

(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) The piping and outlet arrangement shall allow the required rate of applications as contained in § 34.20–5(b), to any portion of the open deck of the cargo area through the use of the mounted and hand-held appliances that are provided. At least 50 percent of the required rate of application shall be from the mounted appliances. One or more hose outlets for hand-held appliances shall be provided at each foam station. For enclosed spaces, application of at least 1.6 gallons per minute water rate for each 10 square feet of the enclosed area for 5 minutes is acceptable. For the purpose of this paragraph, all piping is assumed to be damaged in way of the fire and an adequate number of valves shall be fitted to prevent loss of foam by closing valves to damaged piping.

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

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

(f) Piping shall not be used for any other purpose than firefighting, drills, and testing.

(g) Tankships of 100,000 or more DWT (metric) and combination carriers of 50,000 or more DWT (metric) that have a keel laying date on or after January 1, 1975, must have at least one foam station port and at least one foam station starboard that are separated from each other by a distance equal to at least one-half the beam of the vessel:

(1) At the housefront or aft of the cargo area in a location that is accessible to the crew for fighting a cargo and a pumproom fire; and

(2) If the tankship has a forward accommodations house, at the after boundary of that house.

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGD 72–138, 39 FR 7790, Feb. 28, 1974; CGD 74–127, 41 FR 3846, Jan. 26, 1976]

§ 34.20–20 Discharge outlets—T/ALL.

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

(b) At least one mounted foam appliance shall be provided for each station that is required in § 34.20–15(c).

(c) The number of hand-held appliances provided shall be at least equal to the number of hose outlets at the two foam stations having the most hose outlets. Hand-held appliances shall be stowed in a well marked, readily accessible position that cannot be isolated by a fire involving the cargo tanks.

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGD 72–138, 39 FR 7790, Feb. 28, 1974]

§ 34.20–25 Foam monitor capacity—T/ALL.

The capacity of each foam monitor on ships that have a keel laying date on or after January 1, 1975, must be at least 3 liters per minute per square meter (.073 gallons per minute per square foot) of cargo area protected by that monitor.

[CGD 74–127, 41 FR 3846, Jan. 26, 1976]

§ 34.20–90 Installations contracted for prior to January 1, 1970—T/ALL.

(a) Installations contracted for prior to January 1, 1970, 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) For installations contracted for prior to November 19, 1952, see § 34.17–90(a)(5).

(3) Installations contracted for on or after November 4, 1957, but prior to January 1, 1970, shall meet the requirements of §§ 34.20–5 through 34.20–20 insofar as is reasonable and practicable.

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGFR 69–72, 34 FR 17481, Oct. 29, 1969]

Subpart 34.25—Water Spray Extinguishing Systems, Details

§ 34.25–1 Application—T/ALL.

(a) Where a water spray extinguishing system is installed, the provisions of this subpart, with the exception of § 34.25–90, shall apply to all installations contracted for on or after January 1, 1964. Installations contracted for prior to January 1, 1964, shall meet the requirements of § 34.50–90.

§ 34.25–5 Capacity and arrangement—T/ALL.

(a) The capacity and arrangement shall be such as to effectively blanket the entire area of the space protected. The rate of discharge and the arrangement of piping and spray nozzles shall be such as to give a uniform distribution over the entire area protected.

(b) The spacing of the spray nozzles shall be on the basis of the spray pattern provided by the lowest pressure at any spray nozzle in the system. In no instance shall a system be designed for any spray nozzle to be operated at a pressure less than that for which it was approved. The maximum permissible height of the spray nozzle above the protected area shall not exceed that specified in its approval. Whenever there are obstructions to coverage by the spray patterns, additional spray nozzles shall be installed to provide full coverage.

(c) The water supply shall be from outside the space protected and shall in no way be dependent upon power from the space protected. The pump supplying water for the system shall either be reserved exclusively for the system or it may be one of the fire pumps, provided the capacity of the fire pump as set forth in subpart 34.10 is increased by the required capacity of the system, so that this system may be operated simultaneously with the fire main system.

§ 34.25–10 Controls—T/ALL.

(a) There shall be one control valve for the operation of the system located in an accessible position outside the space protected. The control shall be located as convenient as practicable to one of the main escapes from the space protected, and shall be marked as required by § 35.40–18 of this subchapter. It shall not be necessary to start the pumps from the control space.

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

(c) The valve to the space protected shall be marked as required by § 35.40–18 of this subchapter.

§ 34.25–15 Piping—T/ALL.

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

(b) Distribution piping shall be of materials resistant to corrosion, except that steel or iron pipe may be used if inside corrosion resistant coatings which will not flake off and clog the nozzles are applied. Materials readily rendered ineffective by heat of a fire shall not be used. The piping shall be subject to approval for each installation.

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

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

(e) Threaded joints shall be metal to metal, with no thread compound used.

(f) Distribution piping shall be used for no other purpose.

(g) All piping shall be thoroughly cleaned and flushed before installation of the water spray nozzles.

§ 34.25–20 Spray nozzles—T/ALL.

(a) Spray nozzles shall be of an approved type.

§ 34.25–90 Installations contracted for prior to January 1, 1964—T/ALL.

(a) Installations contracted for prior to January 1, 1964, 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 §§ 34.25–5 through 34.25–20 insofar as is reasonable and practicable.

Subpart 34.30—Automatic Sprinkler Systems, Details

§ 34.30–1 Application—TB/ALL.

Automatic sprinkler systems shall comply with NFPA 13–1996.

[CGD 95–028, 62 FR 51199, Sept. 30, 1997]

Subpart 34.50—Portable and Semiportable Extinguishers

§ 34.50–1 Application—TB/ALL.

(a) The provisions of this subpart, with the exception of § 34.50–90, shall apply to all vessels contracted for on or after January 1, 1962.

(b) All vessels contracted for prior to January 1, 1962, shall meet the requirements of § 34.50–90.

§ 34.50–5 Classification—TB/ALL.

(a) Portable and semiportable extinguishers 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 such as mattresses, piles of wood, shavings, canvas, etc., 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 combustible or flammable liquids such as gasoline, lubricating oil, diesel oil, greases, etc., where a blanketing or smothering effect is essential.

(3) ''C'' for fires in electrical equipment where the use of non-conducting extinguishing agent is of first importance so that electrical shock is not experienced by the firefighter.

(c) The number designations for size will start with ''I'' for the smallest to ''V'' for the largest. Extinguishers which have a gross weight of 55 pounds or less when fully charged are considered portable. Extinguishers which have a gross weight of more than 55 pounds when fully charged are considered semiportable and shall be fitted with suitable hose and nozzle or other practicable means so that all portions of the space concerned may be reached. Examples of size graduations for some of the typical portable and semiportable extinguishers are set forth in table 34.50–5(c).

TABLE 34.50–5(c)

Classification type (Size)	Soda-acid and water (Gallons)	Foam (Gallons)	Carbon dioxide (Pounds)	Dry chemical (Pounds)
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	[1] 100	[1] 50
C-I	.....	.....	4	2
CC-II	.....	.....	15	10

[1] For outside use, double the amount shall be carried.

§ 34.50–10 Location—TB/ALL.

(a) Approved portable and semiportable extinguishers shall be installed in accordance with table 34.50–10(a). The location of the equipment shall be such as in the opinion of the Officer in Charge, Marine Inspection, will be most convenient in case of emergency. Where special circumstances exist, not covered by table

34.50–10(a), the Officer in Charge, Marine Inspection, may require such additional equipment as he deems necessary for the proper protection of the vessel.

(b) For additional portable extinguishers as a substitute for sand, see § 34.55–10.

(c) Semiportable extinguishers shall be located in the open so as to be readily seen.

(d) If portable 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 § 35.40–25 of this subchapter.

(e) Portable extinguishers and their stations shall be numbered in accordance with § 35.40–25 of this subchapter.

(f) 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.

TABLE 34.50–10(a)—PORTABLE AND SEMIPORTABLE EXTINGUISHERS

Tank ships		Area	Tank barges	
Quantity and location	Classification (see § 34.50–5)		Classification (see § 34.50–5)	Quantity and location
		Safety Areas		
1 required	C-II	Wheelhouse and chartroom area.		None required.
1 required in vicinity of exit	C-II[1]	Radio room		None required.
		Accommodation Areas		
1 required in each main passageway on each deck, conveniently located, and so that no room is more than 75 feet from an extinguisher.	A-II or B-II	Staterooms, toilet spaces, public spaces, offices, etc., and associated lockers, storerooms, and pantries..	A-II or B-II	1 required in vicinity of exit
		Service Areas		
1 required for each 2,500 square feet or fraction thereof, suitable for hazard involved.	B-II or C-II	Galleys	B-II or C-II	1 required, suitable for hazard involved.
1 required for each 2,500 square feet or fraction thereof, suitable for hazard involved.	A-II or B-II	Stores areas, including paint and lamp rooms.		None required.
		Machinery Area[2]		
2 required[3]	B-II	Spaces containing oil fired boilers, either main or auxiliary, or any fuel oil units subject to the discharge pressure of the fuel oil service pump.	B-II	1 required.[12]
	and			
1 required	B-V[4].			
1 required for each 1,000 B.H.P., but not less than 2 nor more than 6[5].	B-II	Spaces containing internal combustion or gas turbine propulsion machinery.		None required.
	and			
1 required[6 7]	B-III.			
1 required in vicinity of exit[7].	B-II	Auxiliary spaces containing internal combustion or gas turbine units.	B-II	1 required in vicinity of exit.[7 9 12]
1 required in vicinity of exit[8].	C-II	Auxiliary spaces containing emergency generators.		None required.
		Cargo Areas		
1 required in lower pumproom.	B.II	Pumprooms	B-II	1 required in vicinity of exit.[9 12]
None required		Cargo tank area	B-II	2 required.[10 12]
			B-V	1 required.[9 11]

[1] Vessels not on an international voyage may substitute 2 C-I.

[2] A C-II shall be immediately available to the service generator and main switchboard areas, and further, a C-II shall be conveniently located not more than 50 feet walking distance from any point in all main machinery operating spaces. These extinguishers need *not* be in addition to other required extinguishers.
[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 vessels under 65 feet in length.
[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.
[9] Not required if fixed system installed.
[10] If no cargo pump on barge, only one B-II required.
[11] Manned barges of 100 gross tons and over only.
[12] Not required on unmanned barges except during transfer of cargo, or operation of barge machinery, or boilers. (See § 35.35–1(c) of this chapter.)

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGFR 70–143, 35 FR 19905, Dec. 30, 1970]

§ 34.50–15 Spare charges—TB/ALL.

(a) Spare charges shall be carried on all vessels for at least 50 percent of each size and each variety, i.e. foam, soda-acid, carbon dioxide, etc., of portable extinguisher required by § 34.50–10(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. This section does not apply to unmanned barges.

(b) Spare charges shall be so packaged as to minimize the hazards to personnel while recharging the units.

§ 34.50–20 Semiportable fire extinguishers—TB/ALL

(a) The frame or support of each size III, IV, and V fire extinguisher required by table 34.50–10(a) must be welded or otherwise permanently attached to a bulkhead or deck.

(b) If a size III, IV, or V fire extinguisher has wheels and is not required by table 34.50–10(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 34132, June 14, 1979]

§ 34.50–90 Vessels contracted for prior to January 1, 1962—TB/ALL.

(a) Vessels contracted for prior to January 1, 1962, shall meet the following requirements:

(1) The provisions of §§ 34.50–5 through 34.50–15 shall be met with the exception that existing installations 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 34.50–10(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 34.50–10(a) be permitted than presently exists.

(2) [Reserved]

(b) [Reserved]

Subpart 34.60—Fire Axes

§ 34.60–1 Application—T/ALL.

(a) The provisions of this subpart shall apply to all tankships.

(b) [Reserved]

§ 34.60–5 Number required—T/ALL.

(a) All tankships shall carry at least the minimum number of fire axes as set forth in table 34.60–5(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 tankship.

TABLE 34.60–5(a)

Gross tons		Number of axes
Over	Not over	
	50	1
50	200	2
200	500	3
500	1,000	4
1,000	.....	5

(b) [Reserved]

§ 34.60–10 Location—T/ALL.

(a) Fire axes shall be distributed throughout the spaces 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 readily be seen, they may be placed in enclosures together with the fire hose, provided such enclosures are marked as required by §35.40–15 of this subchapter.

PART 35—OPERATIONS

Subpart 35.01—General Provisions; Special Operating Requirements

Sec.

35.01–1 Inspection and testing required when making alterations, repairs, or other such operations involving riveting, welding, burning, or like fire-producing actions—TB/ALL.
35.01–2 Preemptive effect.
35.01–3 Incorporation by reference.
35.01–5 Sanitary condition and crew quarters—T/ALL.
35.01–10 Shipping papers—TB/ALL.
35.01–15 Carriage of persons other than crew—TB/ALL.
35.01–25 Sacrificial anode installations—TB/ALL.
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35.40–25 Fire extinguishers—TB/ALL.
35.40–30 Instructions for changing steering gear—TB/ALL.
35.40–35 Rudder orders—TB/ALL.
35.40–40 Marking and instructions for fire and emergency equipment—TB/ALL.

AUTHORITY: 33 U.S.C. 1225, 1231, 1321(j); 46 U.S.C. 3306, 3703, 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; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGFR 65–50, 30 FR 16704, Dec. 30, 1965, unless otherwise noted.

Subpart 35.01—General Provisions; Special Operating Requirements

§ 35.01–1 Inspection and testing required when making alterations, repairs, or other such operations involving riveting, welding, burning, or like fire-producing actions—TB/ALL.

(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 02269, 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 flammable or combustible liquid or chemicals in bulk, or within spaces adjacent to such cargo tanks; or,

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

(3) To pipe lines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel 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 16704, Dec. 30, 1965, as amended by CGD 95–072, 60 FR 50462, Sept. 29, 1995]

§ 35.01–2 Preemptive effect.

The regulations in this part have preemptive effect over State or local regulations in the same field.

[USCG–2006–24797, 77 FR 33874, June 7, 2012]

§ 35.01–3 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 Coast Guard Headquarters. Contact Commandant (CG–OES), Attn: Office of Operating and Environmental Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593–7509, and is available from the address indicated in paragraph (b), or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

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

American Society for Testing and Materials

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

ASTM F 1014–92 Standard Specification for Flashlights on Vessels.

Section affected—35.30–20(c)(3)

ASTM Adjunct F 1626, Symbols for Use in Accordance with Regulation II–2/20 of the 1974 SOLAS Convention, PCN 12–616260–01, © 1996–35.10–3

ASTM D 93–97, Standard Test Methods for Flash-Point by Pensky-Martens Closed Cup Tester–35.25–10

International Maritime Organization (IMO)

Publications Section, 4 Albert Embankment, London, SE1 7SR United Kingdom. Resolution A.654(16), Graphical Symbols for Fire Control Plans—35.10–3

NOTE: All other documents referenced in this part are still in effect.

[CGD 82–042, 53 FR 17704, May 18, 1988, as amended by CGD 96–041, 61 FR 50727, Sept. 27, 1996; CGD 97–057, 62 FR 51043, Sept. 30, 1997; CDG 95–028, 62 FR 51199, Sept. 30, 1997; USCG–1999–5151, 64 FR 67177, Dec. 1, 1999; USCG–2009–0702, 74 FR 49227, Sept. 25, 2009; USCG–2013–0671, 78 FR 60147, Sept. 30, 2013]

§ 35.01–5 Sanitary condition and crew quarters—T/ALL.

It shall be the duty of the master and chief engineer of every tankship to see that such vessel and crew's quarters are kept in a sanitary condition.

[CGFR 65–50, 30 FR 16704, Dec. 30, 1965, as amended by CGD 95–027, 61 FR 25999, May 23, 1996]

§ 35.01–10 Shipping papers—TB/ALL.

Each loaded tank vessel shall have on board a bill of lading, manifest, or shipping document giving the name of the

consignee and the location of the delivery point, the kind, grades, and approximate quantity of each kind and grade of cargo, and for whose account the cargo is being handled. The tank vessel shall not be delayed in order to secure exact quantities of cargo. Such manifests or bills of lading may be made out by the master, master of the towing vessel, owner, or agent of the owner: *Provided, however*, That in the case of unmanned barges where shipping papers are not available, an entry in the logbook of the towing vessel giving the name of the shipper and location of shipping point, the name of the consignee and location of delivery point, the approximate kind, grade, and quantity of cargo in each barge of the tow, and for whose account the cargo is being handled, shall be considered as complying with the requirements of this section.

§ 35.01–15 Carriage of persons other than crew—TB/ALL.

No person not connected with the operation of a tank ship or tank barge or not having legitimate business with said vessel, shall be permitted aboard while vessel is under way unless specifically allowed by its certificate.

§ 35.01–25 Sacrificial anode installations—TB/ALL.

(a) The installation of magnesium sacrificial anodes in cargo tanks utilized for the carriage of flammable or combustible liquids in bulk is prohibited.

(b) A sacrificial anode using an aluminum alloy will be permitted in cargo tanks under the following criteria:

(1) The maximum allowable energy that can be developed by a falling anode shall be 200 foot-pounds.

(2) No anode shall be installed more than 6 feet above the bottom of the tank. Special consideration will be given when structural design prevents the anodes from falling in event of failure of the attachments.

(3) Each anode shall have at least two welded or bolted connections to the supporting structure. Special consideration will be given to proprietary attachments which provide equally safe installations.

(4) The plans of the anode installation and a chemical analysis of the alloy composition shall be submitted for approval. The anode should be magnesium free and the silicon content limited to trace amounts.

(5) The recommended construction of the anode should utilize a mild steel core with necessary attachments. Other types may be used but will require special consideration.

(c) Sacrificial anodes using materials other than those having aluminum and/or magnesium in whole or in part are permitted.

[CGFR 69–72, 34 FR 17482, Oct. 29, 1969]

§ 35.01–35 Repairs and alterations to firefighting equipment—TB/ALL.

(a) No extensive repairs or alterations, except in emergency, shall be made to any fire-extinguishing apparatus, or other appliance subject to inspection, without advance notice to the Officer in Charge, Marine Inspection. Such repairs or alterations shall so far as is practicable be made with materials and tested in the manner specified within the regulations in this subchapter and subchapter Q (Specifications) of this chapter for new construction.

(b) Emergency repairs or alterations shall be reported as soon as practicable to the Officer in Charge, Marine Inspection, where the vessel may call after such repairs are made.

§ 35.01–45 Open hopper type barges—B/ALL.

(a) With the exception of those open hopper type barges constructed or modified in conformance with the requirements of subpart 32.63 of this subchapter, the special operating conditions in this section apply to all other open hopper type barges carrying those cargoes listed in table 30.25–1, of this chapter, which are defined as:

(1) Flammable liquids having a Reid vapor pressure in excess of 25 pounds per square inch, absolute, in independent tanks (part 32 of this subchapter).

(2) Liquefied flammable gases (part 38 of this subchapter).

(b) All open hopper type barges, while carrying in bulk any of the cargoes described in paragraph (a) of this section,

shall be operated in conformance with the provisions in this section. However, the provisions in this section are not applicable to such barges when empty (not necessarily cleaned or gas-freed).

(c)(1) Except as otherwise provided in this section, no such open hopper type barge shall be placed as a lead barge in any tow. Such barges shall be placed in protected positions within the tow so that the danger from diving or swamping will be minimized. Where, due to operating conditions, compliance with this paragraph is impossible, the provisions of paragraph (c)(3) of this section apply. The person in charge of the towing vessels shall be responsible for compliance with this paragraph.

(2) No such open hopper type barge shall be moved from a loading facility unless all void spaces and bilges are substantially free of water. Periodic inspections and necessary pumping shall be carried out to insure the maintenance of such water-free conditions, in order to minimize the free surface effect in both the longitudinal and transverse directions. Except when otherwise considered necessary for inspection or pumping, all hatch covers and other hull closure devices for void spaces and hull compartments shall be closed and secured at all times. In the case of unmanned barges, the person in charge of the towing vessel shall be deemed to be in charge of the barge, and all requirements to be carried out on the barge shall be carried out by or under the direction of such person.

(3) When an open hopper type barge is in an exposed position, such that protection from swamping provided by adjoining barges cannot be obtained from location within the two alone, it shall be the responsibility of the person in charge of the towing vessel to control speed so as to insure protection against diving and swamping of the barge, having due regard to its design and freeboard, and to the operating conditions.

(d) To show that special operating requirements apply to a specific open hopper type barge, additional placards or signs shall be displayed in at least four different locations on the barge when the cargoes described in paragraph (a) of this section are carried in any form in the cargo tanks. The placards or signs shall be posted on the barge approximately amidships on each side and near the centerline of each end, facing outboard. Racks, or other suitable means, for mounting such placards or signs shall be so arranged as to provide clear visibility and shall be protected from becoming readily damaged or obscured. The placards or signs shall be at least equal in dimensions to the DOT standard tank car ''Dangerous'' placard (10¾ inches square or larger), and shall display a circle (10 inches in diameter or larger) with alternating quadrants of white and red, and so mounted that the red quadrants are centered on the vertical axis. The shipper and/or owner of the barge shall be responsible for the installation of the required placards or signs, including maintenance of them while such barge is in temporary storage with cargo aboard. The person in charge of the towing vessel shall be responsible for the continued maintenance of the placards or signs while such barge is in transit.

[CGFR 65–50, 30 FR 16704, Dec. 30, 1965, as amended by CGFR 70–10, 35 FR 3709, Feb. 25, 1970; CGD 86–033, 53 FR 36024, Sept. 16, 1988]

§ 35.01–50 Special operating requirements for tank barges carrying certain dangerous bulk cargoes—B/ALL.

(a) The requirements of this section shall apply to all tank barges carrying those cargoes listed on table 30.25–1, of this chapter, which are defined as:

(1) Flammable liquids having a Reid vapor pressure in excess of 25 pounds per square inch, absolute, in independent tanks (part 32 of this subchapter).

(2) Liquefied flammable gases (part 38 of this subchapter).

(b) All tank barges constructed or modified in conformance with the requirements of subpart 32.63 of this subchapter are exempt from the provisions of § 35.01–45.

(c) When it is necessary to operate box or square-end barges as lead barges of tows, the person in charge of the towing vessel shall control the speed to insure protection against diving and swamping of such barges, having due regard to their design and freeboard, and to the operating conditions.

(d) All barges, while carrying in bulk any of the cargoes described in paragraph (a) of this section, shall be operated in conformance with the provisions of this section. However, the provisions of this section are not applicable to such barges when empty and gas-freed.

(e) Barges shall not be moved from a loading facility unless all bilges and void spaces (except those used for ballasting) are substantially free of water. Periodic inspections and necessary pumping shall be carried out to insure maintenance of such water-free condition in order to minimize the free surface effects, both in the longitudinal and transverse directions. Except when otherwise considered necessary for inspection or pumping, all hatch covers and other hull closure devices for void spaces and hull compartments other than cargo spaces shall be closed and secured at all times.

(f) During the time the cargo tanks contain dangerous cargoes described in paragraph (a) of this section in any amount, in the liquid or gaseous state, the barge shall be under constant surveillance.

(1) A strict watch of each unmanned barge in tow shall be maintained from the towing vessel while underway.

(2) A towing vessel engaged in transporting such unmanned barges shall not leave them unattended. When a barge is moored, but not gas free, it shall be under the observation of a watchman who may be a member of the complement of the towing vessel, or a terminal employee, or other person. Such person shall be responsible for the security of the barge and for keeping unauthorized persons off the barge.

(g) The owner, operator, master, or person in charge of any barge carrying dangerous cargoes described in paragraph (a) of this section shall insure that, while the barge is being towed and during cargo transfer operations, the persons as required by §31.15–5 of this subchapter and §35.35–1 are provided.

[CGFR 65–50, 30 FR 16704, Dec. 30, 1965, as amended by CGFR 70–10, 35 FR 3709, Feb. 25, 1970; CGD 73–243, 45 FR 18000, Mar. 20, 1980]

§35.01–55 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]

§35.01–60 Person 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]

Subpart 35.03—Work Vests

§ 35.03–1 Application—TB/ALL.

(a) Provisions of this subpart shall apply to all tank vessels.

§ 35.03–5 Approved types of work vests—TB/ALL.

(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]

§ 35.03–10 Use—TB/ALL.

(a) Approved buoyant work vests are considered to be items of safety apparel and may be carried aboard tank 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.

§ 35.03–15 Shipboard stowage—TB/ALL.

(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.

§ 35.03–20 Shipboard inspections—TB/ALL.

(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.

§ 35.03–25 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; 51 FR 15497, Apr. 24, 1986]

Subpart 35.05—Officers and Crews

§ 35.05–1 Officers and crews of tankships—T/ALL.

No tankship of the United States shall be navigated unless she shall have in her service and on board such complement of officers and crew, including lifeboatmen and tankermen where required by the regulations in this subchapter, separately stated, as called for in her certificate of inspection.

[CGFR 65–50, 30 FR 16704, Dec. 30, 1965, as amended by USCG–2006–24371, 74 FR 11265, Mar. 16, 2009]

§§ 35.05–5—35.05–10 [Reserved]

§ 35.05–15 Tank vessel security—TB/ALL.

(a) *Manned tank vessel.* At least one member of the crew of a manned tank vessel shall be on board at all times except when the vessel is gas free or is moored at a dock or terminal at which watchman service is provided.

(b) *Unmanned barge.* (1) The owner, managing operator, master, and person in charge of a vessel towing a tank barge that need not be manned, and each of them, shall be responsible for monitoring the security and integrity of the tank barge and for ensuring adherence to proper safety precautions.

These responsibilities include, but are not limited to—

(i) Ensuring that any tank barge added to the tow has all tank openings properly secured; has its freeing-ports and scuppers, if any, unobstructed; meets any loadline or freeboard requirements; and neither leaks cargo into the water, voids, or cofferdams nor leaks water into the tanks, voids, or cofferdams;

(ii) Ensuring that every tank barge in the tow is properly secured within the tow;

(iii) Ensuring that periodic checks are made of every tank barge in the tow for leakage of cargo into the water, voids, or cofferdams and for leakage of water into the tanks, voids, or cofferdams;

(iv) Knowing the cargo of every tank barge in the tow, any hazards associated with the cargo, and what to do on discovery of a leak;

(v) Ensuring that the crew of the vessel know the cargo of every tank barge in the tow, any hazards associated with the cargo, and what to do on discovery of a leak;

(vi) Reporting to the Coast Guard any leaks from a tank barge in the tow into the water, as required by 33 CFR 151.15; and

(vii) Ensuring that the crew of the vessel and other personnel in the vicinity of the tank barges in the tow follow the proper safety precautions for tank vessels, and that no activity takes place in the vicinity of the barges that could create a hazard.

(2) When a barge is moored and contains more oil than the normal clingage and unpumpable bilge or sump residues, the barge must be kept under surveillance by a person responsible for the security of the barge and for keeping unauthorized persons off the barge.

(3) When a barge is moored and contains no oil but is not gas free:

(i) It must be maintained under surveillance as required in paragraph (b)(2) of this section; or

(ii) All cargo tank hatches must be clearly marked in not less than three inch lettering ''Danger—Keep Out,'' and all hatch covers must be closed and dogged down in such a way that the hatch cannot be opened by the use of bare hands alone.

[CGFR 65–50, 30 FR 16704, Dec. 30, 1965, as amended by CGD 80–009,48 FR 36459, Aug. 11, 1983; CGD 79–116, 60 FR 17155, Apr. 4, 1995]

§ 35.05–20 Physical condition of crew—TB/ALL.

No person shall be engaged as a member of the crew on a tank vessel if he is known by the employer to be physically or mentally incapable of performing the duties assigned him.

§ 35.05–25 Illness, alcohol, drugs—TB/ALL.

(a) No person, known by the individual in charge of a tank vessel to be under the influence of liquor or other stimulant, or to be ill to such an extent as to unfit him for any particular service on the tank vessel, shall be allowed to perform such service while in such condition.

(b) When a member of the crew of a tank vessel which is loading bulk cargo of Grade A, B, or C arrives at the gangway and is observed to be in an intoxicated condition, he shall not be permitted to board the vessel without escort.

Subpart 35.07—Logbook Entries

§ 35.07–1 Application—TB/ALL.

(a) Except as specifically noted, the provisions of this subpart shall apply to all tank vessels.

§ 35.07–5 Logbooks and records—TB/ALL.

(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. The official logbook is available free to masters of U.S.-flag vessels from the officer in Charge, Marine Inspection, as form CG-706B or CG-706C, depending on the number of persons employed in the crew. 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 25999, May 23, 1996]

§ 35.07–10 Actions required to be logged—TB/ALL.

(a) *General—TB/ALL.* The actions and observations noted in this section shall be entered in the Official Logbook or in logs or records considered to take place of the Official Logbooks. This section contains no requirements which are not made in specific laws or in other regulations in this subchapter, the items being merely grouped together for convenience.

(b) *Entries—T/ALL.* Entries shall be made in the logs of tankships with respect to the following:

(1) Onboard training, musters, and drills: held in accordance with subchapter W (Lifesaving Appliances or Arrangements) of this chapter.

(2) Draft and load line marks. For tankships of 150 gross tons and over, prior to leaving port for ocean, coastwise, and Great Lakes voyages only. See § 35.20–5.

(3) 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 § 35.20–7.

(4) Steering gear tests. Prior to departure, or for tank ships on voyages of less than 48 hours duration or tankships operating on lakes, bays, sounds and rivers, once every week. See § 35.20–10.

(5) Fuel oil data. Upon receipt of fuel oil on board to be used as fuel. See § 35.25–10.

(6) Inspections and tests of fire-fighting equipment. Once every year. See § 31.10–18 of this subchapter.

(7) Operation and inspection of the emergency lighting and power systems. Once in each week that the vessel is navigated. See § 35.10–15.

(8) Cargo gear inspections: At least once a month. See § 31.37–70 of this subchapter.

(c) *Entries—B/ALL.* Entries shall be made in the records for tank barges with respect to the following:

(1) Inspections and tests of fire-fighting equipment. Once every year. See § 31.10–18 of this subchapter.

(2) Draft and load line marks. For tank barges of 150 gross tons and over, prior to leaving port for ocean, coastwise, and Great Lakes voyages only.

(3) Cargo gear inspections: At least once a month. See § 31.37–70 of this subchapter.

(4) 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 § 35.20–7.

[CGFR 65–50, 30 FR 16704, Dec. 30, 1965, as amended by CGD 89–037, 57 FR 41821, Sept. 11, 1992; CGD 84–069, 61 FR 25286, May 20, 1996, CGD 95–028, 62 FR 51199, Sept. 30, 1997]

Subpart 35.08—Stability Information

§ 35.08–1 Posting of stability letter.

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 51006, Nov. 4, 1983]

Subpart 35.10—Fire and Emergency Requirements

§ 35.10–1 Emergency training, musters, and drills—T/ALL.

Onboard training, musters, and drills must be in accordance with subchapter W (Lifesaving Appliances and Arrangements) of this chapter.

[CGD 84–069, 61 FR 25286, May 20, 1996]

§ 35.10–3 Display of plans—TB/ALL.

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 sprinkle 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 suited 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 § 35.01–3).

(b) Plans showing clearly for each deck 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 information contained in the plans shall be kept up-to-date, and any changes shall be recorded as soon as possible.

[CGD 95–028, 62 FR 51199, Sept. 30, 1997, as amended by USCG–2000–7790, 65 FR 58459, Sept. 29, 2000; USCG–2014–0688, 79 FR 58280, Sept. 29, 2014]

§ 35.10–5 Muster lists, emergency signals, and manning—T/ALL.

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 25287, May 20, 1996]

§ 35.10–15 Emergency lighting and power systems—T/ALL.

(a) Where fitted, it shall be the duty of the master to see that the emergency lighting and power systems are tested 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 tested 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 in 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 required by this section and the condition and performance of the apparatus shall be noted in the vessel's Official Logbook or in logs or records considered to take the place of the Official Logbook.

[CGFR 65–50, 30 FR 16709, Dec. 30, 1965, as amended by CGFR 70–143, 35 FR 19905, Dec. 30, 1970]

Subpart 35.15—Notice and Reporting of Casualty and Voyage Records

§ 35.15–1 Notice and reporting of casualty and voyage records—TB/ALL.

The requirements for providing notice and reporting of marine casualties and for retaining voyage records are contained in part 4 of this chapter.

[CGD 84–099, 52 FR 47535, Dec. 14, 1987; 53 FR 13117, Apr. 21, 1988]

Subpart 35.20—Navigation

§ 35.20–1 Notice to mariners; aids to navigation—T/OCLB.

(a) Licensed officers are required to acquaint themselves with the latest information published by the Coast Guard and the National Geospatial-Intelligence Agency regarding aids to

navigation, and neglect to do so is evidence of neglect of duty. It is desirable that vessels navigating oceans and coastwise and Great Lakes water shall have available in the pilothouse for convenient reference at all times a file of the applicable Notice to Mariners.

(b) Local Notices to Mariners, published by each U.S. Coast Guard District, contain announcements and information on changes in aids to navigation and other marine information affecting the safety of navigation on oceans and coastwise and the Great Lakes. These notices may be obtained free of charge from the U.S. Coast Guard Navigation Center Web site found at *http://www.navcen.uscg.gov/?pageName=lnmMain*.

(c) Weekly Notices to Mariners (worldwide coverage) are prepared jointly by the National Geospatial-Intelligence Agency, National Ocean Service, and the U.S. Coast Guard. They include changes in aids to navigation and other important navigation safety information in assembled form for U.S. waters. Foreign marine information is also included in these notices. These notices are available without charge from the National Geospatial-Intelligence Agency Web site found at *http://msi.nga.mil/NGAPortal/MSI.portal*.

(d) As appropriate for the intended voyage, all vessels must carry adequate and up-to-date:

(1) Charts;

(2) Sailing directions;

(3) Coast pilots;

(4) Light lists;

(5) Notices to mariners;

(6) Tide tables;

(7) Current tables; and

(8) All other nautical publications necessary.[1]

[CGFR 66–33, 31 FR 15268, Dec. 6, 1966, as amended by CGFR 68–32, 33 FR 5714, Apr. 12, 1968; CGD 75–074, 42 FR 5963, Jan. 31, 1977; CGD 88–070, 53 FR 34534, Sept. 7, 1988; USCG–2001–10224, 66 FR 48619, Sept. 21, 2001; USCG–2014–0688, 79 FR 58280, Sept. 29, 2014]

[1] For United States vessels in or on the navigable waters of the United States, see 33 CFR 164.33.

§ 35.20–5 Draft of tankships—T/OC.

The master of every tankship shall, whenever leaving port, enter the maximum draft of his vessel in the logbook.

§ 35.20–7 Verification of vessel compliance with applicable stability requirements—TB/ALL.

(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 § 35.07–5, 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 88–037, 57 FR 41821, Sept. 11, 1992, as amended by USCG–2014–0688, 79 FR 58280, Sept. 29, 2014]

§ 35.20–10 Steering gear test—T/ALL.

On all tankships making voyages of more than 48 hours' duration, the entire steering gear, the whistle, the means of communication, and the signaling appliances between the bridge or pilothouse and engineroom shall be examined and tested by a licensed officer of the vessel within a period of not more than 12 hours before leaving port. All such vessels making voyages of less than 48 hours' duration or operating on lakes, bays, sounds, and rivers shall be so examined and tested at least once in every week. The fact and time of such

examination and test shall be recorded in the ship's logbook.

§ 35.20–20 Master's and officer's responsibility—TB/ALL.

Nothing in this part shall exonerate any master or officer in command from the consequences of any neglect to keep a proper lookout or the neglect of any precaution which may be required by the ordinary practice of seamen or by the special circumstances of the case.

§ 35.20–30 Flashing the rays of a searchlight or other blinding light—T/ALL.

No person shall flash, or cause to be flashed, the rays of a search light or other blinding light onto the bridge or into the pilothouse of any vessel under way.

[CGD 95–027, 61 FR 26000, May 23, 1996]

§ 35.20–35 Whistling—T/ALL.

The unnecessary sounding of a vessel's whistle is prohibited within any harbor limits of the United States.

[CGD 95–027, 61 FR 26000, May 23, 1996]

§ 35.20–40 Maneuvering characteristics—T/OC.

For each ocean and coastwise tankship 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 for 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 for the normal load and normal ballast condition for:

(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]

§ 35.20–45 Use of Auto Pilot—T/ALL.

Except as provided in 33 CFR 164.13, 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; and

(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 5963, Jan. 31, 1977, as amended by CGD 91–204, 58 FR 27633, May 10, 1993]

Subpart 35.25—Engine Department

§ 35.25–1 Examination of boilers and machinery by engineer—T/ALL.

It shall be the duty of an engineer when assuming charge of the boilers to examine the same forthwith and thoroughly. If any part thereof is found in bad condition, the engineer shall immediately report the facts to the master, owner, or agent, and to the nearest Officer in Charge, Marine Inspection.

[CGD 95–027, 61 FR 26000, May 23, 1996]

§ 35.25–5 Repairs of boilers and unfired pressure vessels and reports of repairs or accidents by chief engineer—TB/ALL.

(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.

(b) In the event of an accident to a boiler, unfired pressure vessel, or machinery tending to render the further use of the item itself 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.

§ 35.25–10 Requirements for fuel oil—T/ALL.

(a) Oil to be used as fuel to be burned under boilers on tankships shall have a flashpoint of not less than 140°F. (Pensky-Martens Closed Cup Method, ASTM D 93) (incorporated by reference, see § 35.01–3).

(b) It shall be the duty of the chief engineer to make an entry in the log 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 § 35.01–3) for which it is certified by the producer.

(c) It shall be the further duty of the chief engineer to draw and seal at the time the supply is received on board, a half-pint sample of each lot of fuel oil, such sample to be preserved until that particular supply of oil is exhausted.

[CGFR 65–50, 30 FR 16704, Dec. 30, 1965, as amended by CGFR 68–82, 33 FR 18805, Dec. 18, 1968; CGD 73–254, 40 FR 40163, Sept. 2, 1975; USCG–2000–7790, 65 FR 58459, Sept. 29, 2000]

§ 35.25–15 Carrying of excess steam—TB/ALL.

It shall be the duty of the chief engineer of any tank vessel to see that a steam pressure is not carried in excess of that allowed by the certificate of inspection, and to see that the safety valves, once set by the inspector, are in no way tampered with or made inoperative.

[CGD 95–028, 62 FR 51199, Sept. 30, 1997]

Subpart 35.30—General Safety Rules

§ 35.30–1 Warning signals and signs—TB/ALL.

(a) *Red warning signals.* During transfer of bulk 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. While transferring bulk cargo at anchor, a red flag only shall be displayed.

(b) *Warning sign at gangway.* A sign shall be displayed to warn persons approaching the gangway, while a vessel is moored or anchored unless it is empty and gas-freed. The sign shall state in letters not less than 2 inches high substantially as follows:

Warning

No open lights.
No smoking.
No visitors.

(c) *Warning sign in radio room.* A sign shall be placed in radio room warning against the use of radio equipment during transfer of Grade A, B, or C liquids, except by permission of senior deck officer.

(d) [Reserved]

(e) Additional placards or signs required in connection with the movement of certain open hopper type barges are described in § 35.01–45.

[CGFR 65–50, 30 FR 16704, Dec. 30, 1965, as amended by CGFR 70–143, 35 FR 19905, Dec. 30, 1970; CGD 73–96, 42 FR 49024, Sept. 26, 1977; CGD 73–243, 45 FR 18000, Mar. 20, 1980]

§ 35.30–5 Fires, matches, and smoking—TB/ALL.

(a) *General.* In making the determinations required under paragraphs (b), (c), and (d) of this section the senior deck officer on duty, who shall be a licensed officer or certificated tankerman, shall exercise his skill and experience with due regard to attendant conditions and circumstances, including consideration for location of shore side facilities, maintenance of mobility, provision for fire protection, state or change of winds, tides, sea, weather conditions, forces of nature and other circumstances generally beyond human control.

(b) *Boiler fires.* Boiler fires are normally permitted during cargo transfer operations: *Provided,* That prior to loading Grades A, B, and C cargoes, the senior deck officer on duty, who shall be a licensed officer or certificated tankerman, shall make an inspection to determine whether in his judgment boiler fires may be maintained with reasonable safety during the loading operation.

(c) *Smoking.* Smoking is prohibited on the weather decks of tank vessels when they are not gas free or are alongside docks. At other times and places the senior deck officer on duty, who shall be a licensed officer or certificated tankerman, shall designate when and where the crew may smoke: *Provided,* That prior to loading Grade A, B, or C cargo the master or senior deck officer on duty shall make an inspection to determine if and where, in his judgment, smoking may be permitted with reasonable safety during the loading operation.

(d) *Matches.* The use of other than safety matches is forbidden aboard tank vessels at all times.

[CGFR 65–50, 30 FR 16704, Dec. 30, 1965, as amended by CGD 95–012, 60 FR 48049, Sept. 18, 1995]

§ 35.30–10 Cargo tank hatches, ullage holes, and Butterworth plates—TB/ALL.

No cargo tank hatches, ullage holes, or Butterworth plates shall be opened or shall remain open without flame screens, except under the supervision of the senior members of the crew on duty, unless the tank opened is gas free.

§ 35.30–15 Combustible gas indicator—TB/ALL.

(a) The provisions of this section shall apply only to United States flag vessels.

(b) Manned tank barges and tankships authorized to carry Grade A, B, C, or D liquids at any temperature, or Grade E liquids at elevated temperatures, shall be provided with a combustible gas indicator suitable for determining the presence of explosive concentrations of the cargo carried. An indicator which bears the label of Underwriters' Laboratories Inc., Factory Mutual Engineering Division, or other organizations acceptable to the Commandant will be accepted as meeting this requirement.

§ 35.30–20 Emergency equipment—TB/ALL

(a) Two emergency outfits, stored for use in widely separated, accessible locations, are required for the following:

(1) All tankships on international voyage.

(2) All tankships over 1,000 gross tons.

(3) All tankships having cargo tanks which exceed 15 feet in depth, measured from the deck to the lowest point at which cargo is carried.

(b) One emergency outfit is required for all manned tank barges having cargo tanks which exceed 15 feet in depth, measured from the deck to the lowest point at which cargo is carried.

(c) Each emergency outfit shall be equipped as follows:

(1) One 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.

(2) One lifeline with a belt or a suitable harness.

(3) One, Type II or Type III, flashlight constructed and marked in accordance with ASTM F 1014 incorporated by reference, see § 35.01–3).

(4) One fire ax.

(5) Boots and gloves of rubber or other electrically nonconducting material.

(6) A rigid helmet which provides effective protection against impact.

(7) Protective clothing of material that will protect the skin from the heat of fire and burns from scalding steam. The outer surface shall be water resistant.

(d) 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.

(e) 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 a throat opening which can be readily slipped over a 5/8-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.

[CGD 73–11R, 38 FR 27354, Oct. 3, 1973, as amended by CGD 75–074, 42 FR 5963, Jan. 31, 1977; CGD 82–042, 53 FR 17704, May 18, 1988; CGD 86–036, 57 FR 48324, Oct. 23, 1992; 57 FR 56406, Nov. 27, 1992; CGD 95–028, 62 FR 51199, Sept. 30, 1997; USCG–1999–5151, 64 FR 67177, Dec. 1, 1999]

§ 35.30–25 Explosives—TB/ALL.

Fulminates or other detonating compounds in bulk in dry condition; explosive compositions that ignite spontaneously or undergo marked decomposition when subjected for forty-eight consecutive hours to a temperature of 167 °F. or more; composition containing an ammonium salt and a chlorate; and other like explosives shall not be accepted, stored, stowed or transported on board tank vessels.

§ 35.30–30 Portable electric equipment—TB/ALL.

Portable electric equipment must not be used in a hazardous location described in subpart 111.105 of this chapter except:

(a) Self-contained, battery-fed, explosion-proof lamps approved by Underwriters Laboratories Inc., Factory Mutual Research Corporation, or other independent laboratory recognized by the Commandant, for use in a Class I, Division 1 location for the electrical group classification of the cargo;

(b) Intrinsically safe equipment approved by Underwriters Laboratories Inc., Factory Mutual Research Corporation, or other independent laboratory recognized by the Commandant, for use in a Class I, Division 1 location for the electrical group classification of the cargo; and

(c) Any electrical equipment, if:

(1) The hazardous location is:

(i) Enclosed; and

(ii) Gas free;

(2) The adjacent compartments are:

(i) Gas free;

(ii) Inerted;

(iii) Filled with water;

(iv) Filled with Grade E liquid; or

(v) Spaces where flammable gases are not expected to accumulate; and:

(3) Each compartment where flammable gas is expected to accumulate is:

(i) Closed; and
(ii) Secured.

[CGD 74–125A, 47 FR 15230, Apr. 8, 1982]

§ 35.30–35 Spark producing devices—TB/ALL.

(a) Where Grades A, B, C, and D liquid cargoes are involved, power driven or manually operated spark producing devices shall not be used in bulk cargo tanks, fuel oil tanks, cargo pumprooms, or enclosed spaces immediately above or adjacent to bulk cargo tanks unless all the following conditions are met:

(1) The compartment itself is gas-free;

(2) The compartments adjacent and the compartments diagonally adjacent are either:

(i) Gas-free;

(ii) Inerted;

(iii) Filled with water;

(iv) Contain Grade E liquid and are closed and secured; or

(v) Are spaces in which flammable vapors and gases normally are not expected to accumulate; and,

(3) All other compartments of the vessel in which flammable vapors and gases may normally be expected to accumulate are closed and secured.

(b) This section does not prohibit the use of small hand tools in such locations.

[CGFR 65–50, 30 FR 16704, Dec. 30, 1965, as amended by USCG–2004–18884, 69 FR 58345, Sept. 30, 2004]

§ 35.30–40 Flammable liquid and gas fuels as ship's stores—TB/ALL.

Flammable liquids and gases other than diesel fuel, to be used as fuel for approved equipment must satisfy the following:

(a) Stowage must be in containers approved by DOT or A.S.M.E. for the contents carried, or in a portable safety container approved by a recognized testing laboratory for the contents carried.

(b) The contents must be marked on the containers, and the containers must be labeled in accordance with DOT requirements for flammable liquids and gases.

(c) Containers must be stowed on or above the weather deck in locations designated by the master. Containers specified in paragraph (a)(1) of this section which do not exceed a capacity of five gallons may be stowed below the weather deck in a paint or lamp locker.

[CGD 80–009, 48 FR 36459, Aug. 11, 1983, as amended by CGD 86–033, 53 FR 36024, Sept. 16, 1988; CGD 95–028, 62 FR 51199, Sept. 30, 1997]

Subpart 35.35—Cargo Handling

§ 35.35–1 Persons on duty—TB/ALL.

(a) On each tankship required to be documented under the laws of the United States, the owner, managing operator, master, and person in charge of the vessel, and each of them, shall ensure that—

(1) Enough ''Tankerman-PICs'' or restricted ''Tankerman-PICs'', and ''Tankerman-Assistants'', authorized for the classification of cargo carried, are on duty to safely transfer liquid cargo in bulk or safely clean cargo tanks; and

(2) Each transfer of liquid cargo in bulk and each cleaning of a cargo tank is supervised by a person qualified to be the person in charge of the transfer or the cleaning under subpart C of 33 CFR part 155.

(b) On each United States tank barge subject to inspection—

(1) The owner, managing operator, master, and person in charge of the vessel, and each of them, shall ensure that no transfer of liquid cargo in bulk or cleaning of a cargo tank takes place unless under the supervision of a qualified person designated as the person in charge of the transfer or the cleaning under subpart C of 33 CFR part 155; and

(2) The person designated as the person in charge of the transfer shall ensure that—

(i) Enough qualified personnel are on duty to safely transfer liquid cargo in bulk or safely clean cargo tanks; and

(ii) The approved portable extinguishers required by table 34.50–10(a) of this chapter are aboard and readily available before any transfer of liquid cargo in bulk or any operation of barge machinery or boilers.

(c) On each foreign tankship, the owner, managing operator, master, and person in charge of the vessel, and each of them, shall ensure that—

(1) Enough personnel, qualified for the classification of cargo carried, are

on duty to safely transfer liquid cargo in bulk or safely clean cargo tanks; and

(2) Each transfer of liquid cargo in bulk and each cleaning of a cargo tank is supervised by a qualified person designated as a person in charge of the transfer or the cleaning under subpart C of 33 CFR part 155.

(d) On each foreign tank barge—

(1) The owner, managing operator, master, and person in charge of the vessel, and each of them, shall ensure that no transfer of liquid cargo in bulk or cleaning of a cargo tank takes place unless under the supervision of a qualified person designated as the person in charge of the transfer or the cleaning under subpart C of 33 CFR part 155.

(2) The person designated as the person in charge of the transfer shall ensure that enough qualified personnel are on duty to safely transfer liquid cargo in bulk or safely clean cargo tanks.

(e) The person in charge of the transfer of liquid cargo in bulk on the tank vessel shall be responsible for the safe loading and discharge of the liquid cargo in bulk.

(f) The person in charge of the transfer of liquid cargo in bulk on each United States tank vessel, when lightering to or from a foreign tank vessel, shall ensure that the person in charge on the foreign tank vessel, or his or her interpreter, is capable of reading, speaking, and understanding the English language well enough to allow a safe transfer.

[CGD 79–116, 60 FR 17155, Apr. 4, 1995]

§ 35.35–4 Insulating flange joint or nonconductive hose—TB/ALL.

(a) A vessel's cargo hose string or vapor recovery hose must use an insulating flange or one continuous length of nonconductive hose between the vessel and the shore transfer facility. For each vapor recovery hose or cargo hose string, only one insulating flange or non-conductive hose must be provided. See 33 CFR 154.2101(g).

(b) The insulating flange must be inserted at the jetty end and take all reasonable measures to ensure the connection will not be disturbed. The hose must be suspended to ensure the hose-to-hose connection flanges do not rest on the jetty deck or other structure that may render the insulating flange ineffective or short circuited by contact with external metal or through the hose handling equipment.

(c) The insulating flange must be inspected and tested at least annually, or more frequently if necessary due to deterioration caused by environmental exposure, usage, and damage from handling. After installation, the insulation reading between the metal pipe on the shore side of the flange and the end of the hose or metal arm when freely suspended must not be less than 1,000 ohms. A suitable DC insulation tester must be used.

[USCG–1999–5150, 78 FR 42641, July 16, 2013]

§ 35.35–5 Electrical bonding—TB/ALL.

The use of a vessel/shore bonding cable or wire is permissible only if operationally necessary and only in compliance with the requirements of paragraphs (a) and (b) of this section.

(a) A switch on the jetty that is in series with the bonding cable must be provided. The switch must be listed or certified by a Coast Guard accepted independent laboratory and approved for use in a Class I Zone 1 or Class I, Division 1 location, and the appropriate Gas Group of the cargo authorized for the vessel.

(b) The connection point for the bonding cable system must be at least 20 feet from the cargo manifold area, the cargo hose string, or the vapor recovery connection. The switch must be in the off position before connecting or disconnecting the bonding cable. The bonding cable must be attached before the cargo hoses or arms, or the vapor recovery connections are connected. The bonding cable must be removed only after the cargo hoses or arms, or the vapor recovery connections have been disconnected.

[USCG–1999–5150, 78 FR 42642, July 16, 2013]

§ 35.35–10 Closing of freeing-ports, scuppers, and sea valves—TB/ALL.

The person in charge of each transfer of liquid cargo in bulk shall ensure that all freeing-ports and scuppers are properly plugged during the transfer except on tank vessels using water for cooling decks. Although under no circumstances may sea valves be secured

by locks, the valves must be closed, and lashed or sealed, to indicate that they should not be opened during the transfer.

[CGD 79–116, 60 FR 17156, Apr. 4, 1995]

§ 35.35–15 Connecting for cargo transfer—TB/ALL.

(a) Movement of the vessel must be considered to insure safe cargo transfer. Suitable material must be used in joints and in couplings to insure that connections are tight. A bolted flanged coupling must not have less than four bolts, under any circumstances.

(b) When cargo connections are supported by ship's tackle, the person in charge of the transfer of liquid cargo in bulk shall determine the weights involved to ensure that adequate tackle is used.

(c) Pans or buckets shall be placed under cargo hose connections on the tank vessel.

[CGFR 65–50, 30 FR 16704, Dec. 30, 1965, as amended by CGD 80–009, 48 FR 36459, Aug. 11, 1983; CGD 79–116, 60 FR 17156, Apr. 4, 1995]

§ 35.35–20 Inspection before transfer of cargo—TB/ALL.

Before the transfer of liquid cargo in bulk, the person in charge of the transfer shall inspect the vessel to ensure the following:

(a) Warnings are displayed as required.

(b) No repair work in way of cargo spaces is being carried on without his permission.

(c) Cargo connections have been made as described in § 35.35–15 and cargo valves are set.

(d) All cargo connections have been made to the vessel's pipeline, and not through an open end hose led through a hatch.

(e) In loading Grades A, B, and C cargoes, there are no fires or open flames present on the deck, or in any compartment which is located on, facing, open, and adjacent to that part of the deck on which cargo connections have been made.

(f) The shore terminal or the other tank vessel concerned has reported itself in readiness for transfer of cargo.

(g) All sea valves connected to the cargo piping system are closed.

(h) In loading Grades A, B, and C cargoes, that an inspection has been made to determine whether boiler fires can be maintained with reasonable safety.

(i) In loading Grades A, B, and C cargoes, that an inspection has been made to determine whether galley fires can be maintained with reasonable safety.

(j) In loading Grades A, B, or C cargoes, that an inspection has been made to determine whether smoking may be permitted with reasonable safety in areas other than the weather deck.

(k) On tankships the construction or conversion of which is started on or after July 1, 1951, which are to load or discharge Grade A cargo, all openings in the top of the tanks, except the branch vent lines and covers to ullage hole sounding pipes, are tightly closed. (See §§ 32.20–20 and 32.55–20 of this subchapter.)

(l) On tankships the construction or conversion of which is started on or after July 1, 1951, which are to load or discharge Grade A cargo, the method for determining the liquid level in the tank without opening ullage holes, cargo hatches or Butterworth plates is in proper order. (See § 32.20–20 of this subchapter.)

(m) When a transfer operation includes collection of cargo vapor to or from a vessel's cargo tanks through a vapor control system not located on the vessel:

(1) Each part of the vapor collection system is aligned to allow vapor to flow to or from a facility vapor control system, or if lightering, to the other vessel;

(2) Vapor collection hoses or arms are connected to the vessel vapor collection connection;

(3) The electrical insulation requirements of 33 CFR 154.810(g) or § 39.40–3(c) of this subchapter are provided between the vessel vapor connection and the facility or service vessel vapor connection;

(4) The maximum cargo transfer rate is determined in accordance with § 39.30–1(d) of this subchapter;

(5) The maximum and minimum operating pressures at the facility vapor connection, or vessel vapor connection if lightering, are determined;

(6) The overfill control system on a tank barge, if fitted in accordance with

§ 39.20–9(b) of this subchapter, is connected to the facility, tested and operating properly;

(7) Each alarm required by §§ 39.20–7, 39.20–9 and 39.40–3(a) of this subchapter has been tested not more than 24 hours prior to the start of the transfer operation and is operating properly;

(8) Each vapor recovery hose has no unrepaired loose covers, kinks, bulges, soft spots, or any other defect which would permit the discharge of vapors through the hose material, and no gouges, cuts, or slashes that penetrate the first layer of hose reinforcement; and

(9) The oxygen content in the vapor space of each of the vessel's inerted cargo tanks connected to the vapor collection system is—

(i) At or below 60 percent by volume of the cargo's minimum oxygen concentration for combustion at the start of cargo transfer; or

(ii) At or below 8 percent by volume, at the start of cargo transfer, for vapor of crude oil, gasoline blends, or benzene.

[CGFR 65–50, 30 FR 16704, Dec. 30, 1965, as amended by CGD 80–009, 48 FR 36459, Aug. 11, 1983; CGD 88–102, 55 FR 25446, June 21, 1990; CGD 79–116, 60 FR 17156, Apr. 4, 1995; USCG–1999–5150, 78 FR 42642, July 16, 2013]

§ 35.35–25 Approval to start transfer of cargo—TB/ALL.

When the person in charge of the transfer of liquid cargo in bulk has ensured that the requirements of §§ 35.35–20 and 35.35–30 have been met, he or she may give approval to start the transfer.

[CGD 79–116, 60 FR 17156, Apr. 4, 1995]

§ 35.35–30 "Declaration of Inspection" for tank vessels—TB/ALL.

(a) After an inspection under § 35.35–20, but before a transfer of cargo, fuel oil, or bunkers may commence as described in this section and 33 CFR 156.120 and 156.150, the person in charge of the transfer shall prepare, in duplicate, a Declaration of Inspection. The original must be kept aboard the vessel, and the duplicate provided to the terminal supervisor or that person's representative. The supervisor or the representative may, upon demand, inspect the vessel to determine whether its condition is as stated on the Declaration of Inspection.

(b) The Declaration of Inspection may be in any form, but must contain at least:

Declaration of Inspection Before Transfer of Liquid Cargo in Bulk

Date _____

Vessel _____

Port of _____

Product[s] being transferred—(Classification[s] and Kind[s])

_____

_____

I, _____, the person in charge of the transfer of liquid cargo in bulk about to begin, do certify that I have personally inspected this vessel with reference to the following requirements set forth in 46 CFR 35.35–20, and that opposite each of the applicable items listed below I have indicated whether the vessel complies with all pertinent regulations.

(1) Are warnings displayed as required?

(2) Is there any repair work in way of cargo spaces being carried on for which permission has not been given?

(3) Have cargo connections been made as described in 46 CFR 35.35–15 and are cargo valves set?

(4) Have all cargo connections been made to the vessel's pipeline and not through an open-end hose led through a hatch?

(5) Are there any fires or open flames present on the deck or in any compartment which is located on, open or adjacent to or facing the main deck of the vessels on which the cargo connections have been made?

(6) Has the shore terminal or other tank vessel concerned reported itself in readiness for transfer of cargo?

(7) Are sea valves connected to the cargo piping system closed?

(8) If Grades, A, B, or C cargoes are to be loaded and boiler fires are lighted, has an inspection been made to determine whether these fires may be maintained with reasonable safety?

(9) If Grades A, B, or C cargoes are to be loaded and galley fires are lighted, has an inspection been made to determine whether the galley fires may be maintained with reasonable safety?

(10) If Grades A, B, or C cargoes are to be loaded, has an inspection been made to determine whether smoking is to be permitted in areas not on the weather decks?

(11) If smoking is to be permitted in areas not on the weather decks, have those areas been designated?

(12) Is the inert gas system being operated as necessary to maintain an inert atmosphere in the cargo tanks in compliance with 46 CFR 32.53–5?

(13) Have the applicable sections of the vessel response plan been reviewed before commencing transfer, and arrangements or contingencies made for implementation of the Plan should the need arise?

(c) In addition to the requirements in paragraph (b) of this section, if a transfer operation includes the collection of cargo vapor to or from a vessel's cargo tanks through a vapor control system not located on the vessel, the Declaration of Inspection must include the following as an appendix:

(1) Is each part of the vapor collection system aligned to allow vapor to flow to or from the facility vapor connection or, if lightering, to the other vessel?

(2) Are the vapor collection hoses or arms connected to the vessel's vapor collection connection?

(3) Are the vessel and facility vapor connections electrically isolated?

(4) Have the initial transfer rate and the maximum transfer rate been determined?

(5) Have the maximum and minimum operating pressures at the facility vapor connection, or the vessel vapor connection if lightering, been determined?

(6) Have all alarms required by §§ 39.20–7, 39.20–9 and 39.40–3(a) of this subchapter been tested within 24 hours prior to the start of the transfer operation and found to be operating properly?

(7) Is each vapor recovery hose free of unrepaired loose covers, kinks, bulges, soft spots, or any other defect which would permit the discharge of vapors through the hose material, and gouges, cuts, or slashes that penetrate the first layer of hose reinforcement?

(8) Has the oxygen content in the vapor space of each of the vessel's inerted cargo tanks connected to the vapor collection system been verified to be—

(i) At or below 60 percent by volume, at the start of cargo transfer, of the cargo's minimum oxygen concentration for combustion; or

(ii) At or below 8 percent by volume, at the start of cargo transfer, for vapor of crude oil, gasoline blends, or benzene.

[CGD 80–009, 48 FR 36459, Aug. 11, 1983, as amended by CGD 88–102, 55 FR 25446, June 21, 1990; CGD 79–116, 60 FR 17156, Apr. 4, 1995; CGD 79–116, 62 FR 25135, May 8, 1997; USCG–1999–5150, 78 FR 42642, July 16, 2013]

§ 35.35–35 Duties of person in charge of transfer—TB/ALL.

The person in charge of the transfer of liquid cargo in bulk, fuel oil in bulk, or bunkers in bulk shall control the transfer as follows:

(a) Supervise the operations of cargo-system valves.

(b) Commence transfer of cargo at slow rate of cargo flow.

(c) Observe cargo connections for leakage.

(d) Observe pressure on cargo system.

(e) If transfer is loading (rather than discharging), observe rate of loading to avoid overflow of tanks.

(f) Comply with 33 CFR 156.120 and 156.150.

[CGD 79–116, 60 FR 17156, Apr. 4, 1995, as amended by CGD 79–116, 62 FR 25135, May 8, 1997]

§ 35.35–40 Conditions under which transfer operations shall not be commenced or if started shall be discontinued—TB/ALL.

Cargo transfer operations shall not be started or, if started, shall be discontinued under the following conditions:

(a) During severe electrical storms.

(b) If a fire occurs on the wharf or on the tanker or in the vicinity.

§ 35.35–42 Restrictions on vessels alongside a tank vessel loading or unloading cargo of Grade A, B, or C—TB/ALL.

(a) No vessel may come alongside or remain alongside a tank vessel in way of its cargo tanks while it is loading or unloading cargo of Grade A, B, or C without permission of the person in charge of the transfer on the tank vessel.

(b) No vessel may come alongside or remain alongside a tank vessel in way of its cargo tanks while it is loading or unloading cargo of Grade A, B, or C unless the conditions then prevailing are acceptable to the persons in charge of cargo-handling on both vessels.

[CGD 79–116, 60 FR 17156, Apr. 4, 1995]

§ 35.35–45 Auxiliary steam, air, or electric current—B/ALL.

When discharging cargo from one or more barges, the towing vessel may furnish steam, air, or electric current for pumps on barges or dock, but in no case shall the cargo pass through or over the towing vessel.

§ 35.35–50 Termination of transfer operations—TB/ALL.

(a) When transfer operations are completed the valves on cargo connections on the vessel shall be closed. The cargo connections shall be drained of cargo.

(b) [Reserved]

§ 35.35–55 Transfer of other cargo or stores on tank vessels—TB/ALL.

(a) No packaged goods, freight, or ship's stores may be loaded or unloaded during the loading or unloading of cargo of Grade A, B, or C except by permission of the person in charge of the transfer of liquid cargo in bulk. No explosives may be loaded, unloaded, or carried as cargo on any tank vessel containing cargo of Grade A, B, or C.

(b) Where package and general cargo is carried directly over bulk cargo tanks, it shall be properly dunnaged to prevent chafing of metal parts and securely lashed or stowed.

[CGFR 65–50, 30 FR 16704, Dec. 30, 1965, as amended by CGD 79–116, 60 FR 17157, Apr. 4, 1995]

§ 35.35–60 Transportation of other cargo or stores on tank barges—B/ALL.

(a) Tank barges may be permitted to transport deck cargoes directly over bulk cargo spaces when the nature of such deck cargoes and the methods of loading and unloading same do not create an undue hazard. Such tank barges shall have their decks properly dunnaged to prevent chafing between the steel parts of the vessel and the deck cargo.

(b) [Reserved]

§ 35.35–70 Maintenance of cargo handling equipment—TB/ALL.

The cargo handling equipment shall be maintained by the tank vessel's personnel in accordance with the regulations in this subchapter, including the following:

(a) Cargo hose shall not be used in transfer operations in which the pressures are such that leakage of cargo occurs through the body of the hose.

(b) Cargo pump relief valves shall be tested at least once each year to determine that they function satisfactorily at the pressure at which they are set to open.

(c) Cargo pump pressure gage shall be tested at least once a year for accuracy.

(d) The cargo discharge piping of all tank vessels shall be tested at least once each year for tightness, at the maximum working pressure.

§ 35.35–75 Emergencies—TB/ALL.

In case of emergencies nothing in the regulations in this subchapter shall be construed as preventing the senior officer present from pursuing the most effective action in his judgment for rectifying the conditions causing the emergency.

§ 35.35–85 Air compressors—TB/ALL.

No person may operate, install, or reinstall an air compressor in a cargo area described in § 32.35–15 of this subchapter.

[CGD 95–028, 62 FR 51200, Sept. 30, 1997]

Subpart 35.40—Posting and Marking Requirements—TB/ALL

§ 35.40–1 General alarm contact maker—TB/ALL.

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 15231, Apr. 8, 1982]

§ 35.40–5 General alarm bells—TB/ALL.

General alarm bells must be marked in accordance with requirements in subchapter J (Electrical Engineering Regulations) of this chapter.

[CGD 74–125A, 47 FR 15231, Apr. 8, 1982]

§ 35.40–6 Emergency lights—TB/ALL.

Emergency lights must be marked in accordance with requirements in subchapter J (Electrical Engineering Regulations) of this chapter.

[CGD 74–125A, 47 FR 15231, Apr. 8, 1982]

§ 35.40–7 Carbon dioxide and clean agent alarms—T/ALL.

Each carbon dioxide or clean agent fire extinguishing alarm installed after

November 19, 1952, must be conspicuously marked: ''WHEN ALARM SOUNDS VACATE AT ONCE. [CARBON DIOXIDE/CLEAN AGENT—as appropriate] BEING RELEASED.''

[USCG–2006–24797, 77 FR 33874, June 7, 2012]

§ 35.40–8 Carbon dioxide warning signs—T/ALL.

Each entrance to a space storing carbon dioxide cylinders, a space protected by carbon dioxide systems, or any space into which carbon dioxide might migrate must be conspicuously marked as follows:

(a) Spaces storing carbon dioxide—''CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. VENTILATE THE AREA BEFORE ENTERING. A HIGH CONCENTRATION CAN OCCUR IN THIS AREA AND CAN CAUSE SUFFOCATION.''.

(b) Spaces protected by carbon dioxide—''CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED, DO NOT ENTER UNTIL VENTILATED. LOCK OUT SYSTEM WHEN SERVICING.'' The reference to wintergreen scent may be omitted for carbon dioxide systems not required to have odorizing units and not equipped with such units.

(c) Spaces into which carbon dioxide might migrate—''CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. DISCHARGE INTO NEARBY SPACE CAN COLLECT HERE. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED VACATE IMMEDIATELY.'' The reference to wintergreen scent may be omitted for carbon dioxide systems not required to have odorizing units and not equipped with such units.

[USCG–2006–24797, 77 FR 33874, June 7, 2012]

§ 35.40–10 Steam, foam, carbon dioxide, or clean agent fire smothering apparatus—TB/ALL.

Each steam, foam, carbon dioxide, or clean agent fire fighting apparatus must be marked ''[CARBON DIOXIDE/STEAM/FOAM/CLEAN AGENT—as appropriate] FIRE APPARATUS'' in red letters at least 2 inches high. Branch pipe valves leading to the several compartments must be distinctly marked to indicate the compartments or parts of the vessel to which they lead.

[USCG–2006–24797, 77 FR 33874, June 7, 2012]

§ 35.40–15 Fire hose stations—TB/ALL.

At each fire hose valve there shall be marked in not less than 2-inch red letters and figures: ''FIRE STATION 1,'' 2, 3, etc.

§ 35.40–17 Foam hose/monitor stations—T/ALL.

(a) At each required foam hose/monitor valve there shall be marked in not less than 2-inch red letters and figures: ''FOAM STATION 1,'' 2, 3, etc.

(b) [Reserved]

§ 35.40–18 Water spray systems—TB/ALL.

(a) Water spray system apparatus shall be marked: ''WATER SPRAY SYSTEM,'' as appropriate, in not less than 2-inch red letters.

(b) The control valve, and its control if located remotely, shall be distinctly marked to indicate the compartment protected.

§ 35.40–20 Emergency equipment—TB/ALL.

Each locker and space where emergency equipment is stowed must be marked ''EMERGENCY EQUIPMENT'' or ''SELF-CONTAINED BREATHING APPARATUS'', as appropriate.

[CGD 86–036, 57 FR 43824, Oct. 23, 1992]

§ 35.40–25 Fire extinguishers—TB/ALL.

Each fire extinguisher shall be marked with a number and the location where stowed shall be marked in corresponding numbers in at least ½ inch figures.

§ 35.40–30 Instructions for changing steering gear—TB/ALL.

Instructions in at least ½ inch letters and figures shall be posted in the steering engineroom, 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 brass 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.

§ 35.40–35 Rudder orders—TB/ALL.

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'' or ''left rudder.''

§ 35.40–40 Marking and instructions for fire and emergency equipment—TB/ALL.

Lifesaving appliances, instructions to passengers, and stowage locations for all tank vessels must be in accordance with subchapter W (Lifesaving Appliances and Arrangements) of this chapter.

[CGD 84–069, 61 FR 25287, May 20, 1996]

PART 36—ELEVATED TEMPERATURE CARGOES

Subpart 36.01—General

Sec.

36.01–1 Scope of regulations—TB/ALL.
36.01–5 Certificate of inspection—TB/ALL.

Subpart 36.05—Cargo Tanks

36.05–1 Installation of cargo tanks—TB/ALL.
36.05–10 Protection of personnel—TB/ALL.

Subpart 36.10—Piping, Valves, Fittings, and Accessory Equipment

36.10–1 Cargo pump relief valves—TB/ALL.

Subpart 36.20—Vents and Ventilation

36.20–1 Flame screens—TB/ALL.
36.20–5 Ventilation of pumproom—TB/ALL.

Subpart 36.30—Periodic Inspections

36.30–1 Lagged tanks—TB/ALL.

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

SOURCE: CGFR 65–50, 30 FR 16716, Dec. 30, 1965, unless otherwise noted.

Subpart 36.01—General

§ 36.01–1 Scope of regulations—TB/ALL.

(a) The regulations in this part contain requirements for the transportation in bulk of materials considered to be Grade E liquids when shipped in molten form at elevated temperatures.

(b) The materials covered by this part shall meet the applicable regulations of this subchapter, except that materials having a flash point of 300 °F. or above, shall be exempt from the requirements prescribed in the following sections of this subchapter:

(1) Inspection prior to making repairs—§ 35.01–1(b).

(2) Watchman for a tank vessel—§ 35.05–15.

(3) Warning sign at gangway—§ 35.30–1(b).

(4) Cargo tank hatches, ullage holes and Butterworth plates—§ 35.30–10.

(5) Men on duty—§ 35.35–1.

(6) Inspection prior to transfer of cargo—§ 35.35–20.

(7) Approval to start transfer of cargo—§ 35.35–25.

(8) ''Declaration of inspection'' for tank ships—§ 35.35–30.

(9) Transportation of other cargo or stores on tank barges—§ 35.35–60.

(c) The regulations governing the transportation in the solid state of materials referred to in § 36.01–1(a) are contained in part 148 of subchapter N (Dangerous Cargoes) of this chapter.

[CGFR 65–50, 30 FR 16716, Dec. 30, 1965, as amended by CGD 97–057, 62 FR 51043, Sept. 30, 1997]

§ 36.01–5 Certificate of inspection—TB/ALL.

(a) The certificate of inspection shall be endorsed for the carriage of elevated temperature cargoes as follows: ''Inspected and approved for the carriage of Grade E combustible liquids when transported in molten form at elevated temperatures.''

(b) [Reserved]

Subpart 36.05—Cargo Tanks

§ 36.05–1 Installation of cargo tanks—TB/ALL.

(a) All cargo tanks carrying liquids at elevated temperatures for the purpose of maintaining the material in the molten form shall be installed with the access openings located above the weather deck.

(b) [Reserved]

§ 36.05–10 Protection of personnel—TB/ALL.

(a) Decks, bulkheads, or other structures shall be insulated with an approved incombustible material, or other suitable means of protection shall be employed where practicable and necessary for the protection of personnel.

(b) [Reserved]

Subpart 36.10—Piping, Valves, Fittings, and Accessory Equipment

§ 36.10–1 Cargo pump relief valves—TB/ALL.

(a) Cargo pump relief valves and pressure gages may be omitted, however, a suitable device shall be fitted to stop the pumping before the designed pressure of the piping is exceeded.

(b) [Reserved]

Subpart 36.20—Vents and Ventilation

§ 36.20–1 Flame screens—TB/ALL.

(a) Flame screens may be omitted in the vent lines on cargo tanks.

(b) [Reserved]

§ 36.20–5 Ventilation of pumproom—TB/ALL.

(a) Where personnel are required to enter pumprooms located below the weather deck under normal circumstances of handling cargo, such pumprooms shall be equipped with power ventilation.

(b) [Reserved]

Subpart 36.30—Periodic Inspections

§ 36.30–1 Lagged tanks—TB/ALL.

(a) Lagged tanks shall have part of the lagging removed on the lower portion of the cargo tanks as directed by the marine inspector, at least once every eight years for external examination.

(b) [Reserved]

PART 38—LIQUEFIED FLAMMABLE GASES

Subpart 38.01—General

Sec.

38.01–1 Scope of regulations—TB/ALL.
38.01–2 Transportation of portable cylinders or portable tanks containing or having previously contained liquefied flammable gases in dry cargo spaces—TB/ALL.
38.01–3 Incorporation by reference.
38.01–5 Certificate of inspection—TB/ALL.

Subpart 38.05—Design and Installation

38.05–1 Design and construction of vessels—general—TB/ALL.
38.05–2 Design and construction of cargo tanks—general—TB/ALL.
38.05–3 Design and construction of pressure vessel type cargo tanks—TB/ALL.
38.05–4 Design and construction of nonpressure vessel type cargo tanks—TB/ALL.
38.05–5 Markings—TB/ALL.
38.05–10 Installation of cargo tanks—general—TB/ALL.
38.05–20 Insulation—TB/ALL.
38.05–25 Refrigerated systems—TB/ALL.

Subpart 38.10—Piping, Valves, Fittings, and Accessory Equipment

38.10–1 Valves, fittings, and accessories—TB/ALL.
38.10–5 Filling and discharge pipes—TB/ALL.
38.10–10 Cargo piping—TB/ALL.
38.10–15 Safety relief valves—TB/ALL.
38.10–20 Liquid level gaging devices—TB/ALL.

Subpart 38.15—Special Requirements

38.15–1 Filling of tanks—TB/ALL.
38.15–5 Cargo hose—TB/ALL.
38.15–10 Leak detection systems—T/ALL.
38.15–15 Electrical installations—TB/ALL.
38.15–20 Remote shutdowns—TB/ALL.

Subpart 38.20—Venting and Ventilation

38.20–1 Venting—T/ALL.

38.20–5 Venting—T/ALL.
38.20–10 Ventilation—T/ALL.

Subpart 38.25—Periodic Tests and Inspections

38.25–1 Tests and inspections—TB/ALL.
38.25–3 Nondestructive testing—TB/ALL.
38.25–5 Removal of defective tanks—TB/ALL.
38.25–10 Safety relief valves—TB/ALL.

AUTHORITY: 46 U.S.C. 2103, 3306, 3703; 49 U.S.C. 5101, 5106; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGFR 66–33, 31 FR 15269, Dec. 6, 1966, unless otherwise noted.

Subpart 38.01—General

§ 38.01–1 Scope of regulations—TB/ALL.

(a) The regulations in this part contain requirements for the transportation of liquefied or compressed gases, whose primary hazard is one of flammability.

(b) The transportation *on deck* of liquefied flammable gases in portable cylinders and tanks and the transportation of empty cylinders and portable tanks previously used shall be in accordance with the requirements of 49 CFR parts 171–179. The transportation of such containers *under deck* shall be in accordance with the requirements of § 38.01–2.

[CGFR 66–33, 31 FR 15269, Dec. 6, 1966, as amended by CGD 86–033, 53 FR 36024, Sept. 16, 1988]

§ 38.01–2 Transportation of portable cylinders or portable tanks containing or having previously contained liquefied flammable gases in dry cargo spaces—TB/ALL.

(a) DOT cylinders, DOT Specification portable tanks or other approved portable tanks containing liquefied flammable gases may be transported under deck, provided the following requirements are met:

(1) The cargo space shall be provided with efficient means of ventilation, be protected from artificial heat, and be readily accessible from hatches.

(2) Containers shall be stored in such a position that the safety relief device is in communication with the vapor space of the container. They shall be properly stowed, dunnaged, and secured to prevent movement in any direction.

(3) Unless a method acceptable to the Commandant is used, the containers shall not be overstowed in the same dry cargo space with other liquefied flammable gas containers, nor with other cargo.

(4) The containers shall be suitably protected against physical damage from other cargo, ship's stores, or equipment in such spaces.

(5) Cylinders shall have their valves protected at all times by one of the following methods:

(i) By metal caps securely attached to the cylinders and of sufficient strength to protect the valves from injury.

(ii) By having the valves recessed into the cylinders or otherwise protected so that they will not be subject to a blow if the cylinder is dropped on a flat surface.

(6) Portable tanks shall have their valves protected at all times by a housing in accordance with the requirements under which they were manufactured.

(7) Electrical circuits in the cargo spaces must meet the hazardous area requirements in subchapter J (Electrical Engineering Regulations) of this chapter. If an electrical circuit does not meet those requirements, it must be deenergized by a positive means and not reenergized until the cargo has been removed and the space has been tested and found free of flammable vapor.

(8) During the stowage of portable cylinders or portable tanks in a hold or compartment that is not fitted with electrical fixtures meeting the hazardous area requirements of subchapter J (Electrical Engineering Regulations) of this chapter, portable lights must not be used within the space unless the portable lights are explosion-proof. Electrical connections for portable lights must be made from outlets on the weather deck. Hand flashlights used in the stowage area must be explosion-proof.

(9) The following dangerous cargoes shall not be stowed in the same hold or compartment with liquefied flammable gas containers:

(i) Division 1.1, 1.2, 1.3, or 1.4 (explosive) materials, as defined in 49 CFR 173.50.
(ii) Flammable solids.
(iii) Oxidizing materials.
(iv) Corrosive liquids.
(v) Poisonous articles.
(vi) Cotton and similar fibrous materials.

[CGFR 66–33, 31 FR 15269, Dec. 6, 1966, as amended by CGFR 68–32, 33 FR 5714, Apr. 12, 1968; CGD 74–125A, 47 FR 15231, Apr. 8, 1982; CGD 92–050, 59 FR 39666, Aug. 5, 1994]

§ 38.01–3 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 on file at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.* All material 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''.....38.25–3(c)(2)

American Society of Mechanical Engineers (ASME) International

Three Park Avenue, New York, NY 10016–5990

ASME Boiler and Pressure Vessel Code Section V, Nondestructive Examination (1986) .....38.25–3(a)(1)

American Society for Testing and Materials (ASTM)

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

ASTM D 4986–98, Standard Test Method for Horizontal Burning Characteristics of Cellular Polymeric Materials.....38.05–20

[CGD 85–061, 54 FR 50962, Dec. 11, 1989, as amended by USCG–1999–6216, 64 FR 53224, Oct. 1, 1999; USCG–1999–5151, 64 FR 67177, Dec. 1, 1999]

§ 38.01–5 Certificate of inspection—TB/ALL.

(a) The certificate of inspection shall be endorsed for the carriage of liquefied flammable gases as follows:

Inspected and approved for the carriage of liquefied flammable gases (1) at a pressure not to exceed _____ p.s.i., and (2) at temperatures not less than ____ °F.

(b) Tanks approved to carry cargoes at below ambient temperatures shall have the applicable limiting temperatures indicated on the certificate. Tanks designed to carry cargoes only at ambient temperatures should have the word ''ambient'' entered in these spaces.

Subpart 38.05—Design and Installation

§ 38.05–1 Design and construction of vessels—general—TB/ALL.

(a) Vessels designed for the carriage of liquefied gases shall comply with the applicable requirements of this subchapter.

(b) Access and ventilation intakes to the machinery, accommodation and working spaces should be so arranged as to prevent the flow of cargo vapor from the weather deck into such spaces. In this respect openings in the forward or after ends of poops, forecastles, and deckhouses adjacent the cargo area shall be at least 24 inches above the cargo handling deck.

(c) Materials used in the fabrication of cargo tanks and piping shall have adequate notch toughness at the service temperature. Where a secondary barrier is required, the material of that barrier and of contiguous hull structure shall have sufficient notch toughness at the lowest temperature which may result during the containment of leakage cargo within the secondary

barrier. Materials used in the fabrication of the cargo containment and handling system shall satisfy the requirements for toughness specified in subchapter F (Marine Engineering) of this chapter.

(d) Cargo tank spaces are to be isolated from the remainder of the vessel by cofferdams in accordance with § 32.60–10 of this subchapter. In a nonpressure vessel configuration, the void between the primary and secondary barriers shall not be acceptable as the required cofferdam between the tank spaces and the main machinery spaces.

(e) Compartments containing cargo tanks or pipes shall be accessible from the weather deck only. No openings from these compartments to other parts of the vessel are permitted.

(f) Barges utilized for the carriage of liquefied gases shall be of Type II barge hull as defined in § 32.63–5(b)(2) of this subchapter. The Commandant may, based on the properties of the liquefied gas to be carried, require a Type I barge hull, as defined in § 32.63–5(b)(1) of this subchapter, to ensure the hull is consistent with the degree and nature of the hazard of the liquefied gas to be carried.

[CGFR 66–33, 31 FR 15269, Dec. 6, 1966, as amended by CGFR 68–82, 33 FR 18806, Dec. 18, 1968; CGFR 68–65, 33 FR 19985, Dec. 28, 1968; CGFR 70–10, 35 FR 3709, Feb. 25, 1970]

§ 38.05–2 Design and construction of cargo tanks—general—TB/ALL.

(a) The maximum allowable temperature of the cargo is defined as the boiling temperature of the liquid at a pressure equal to the setting of the relief valve.

(b) The service temperature is the minimum temperature at which cargo is loaded and/or transported in the cargo tank. However, the service temperature shall in no case be taken higher than given by the following formula:

$$t_s = t_w - 0.25(t_w - t_b) \qquad (1)$$

where:

t_s=Service temperature.

t_w=Boiling temperature of gas at normal working pressure of tank but not higher than +32 °F.

t_b=Boiling temperature of gas at atmospheric pressure.

(c) Heat transmission studies, where required, shall assume the minimum ambient temperatures of 0 °F. still air and 32 °F. still water, and maximum ambient temperatures of 115 °F. still air and 90 °F. still water.

(d) Cargo tanks in vessels in ocean; Great Lakes; lakes, bays, and sounds; or coastwise service shall be designed to withstand, simultaneously, the following dynamic loadings:

(1) Rolling 30° each side (120°) in 10 seconds.

(2) Pitching 6° half amplitude (24°) in 7 seconds.

(3) Heaving $L/80'$ half amplitude ($L/20'$) in 8 seconds.

(e) Cargo tanks on barges shall be designed in accordance with § 32.63–25 of this subchapter.

(f) Each liquefied flammable gas tank shall be provided with not less than a 15-inch by 23-inch or an 18-inch nominal diameter manhole fitted with a cover located above the maximum liquid level and as close to the top of the tank as possible. Where access trunks are fitted to the tanks, the nominal diameter of the trunks shall be not less than 30 inches.

(g) Cargo tanks vented above 10 pounds per square inch gage shall be of the pressure vessel type.

§ 38.05–3 Design and construction of pressure vessel type cargo tanks—TB/ALL.

(a) Cargo tanks of pressure vessel configuration (e.g. cylindrical, spherical, etc.) shall be designed, fabricated, inspected, and tested in accordance with the applicable requirements of part 54 of subchapter F (Marine Engineering) of this chapter, except as otherwise provided for in this part.

(b) The requirements of this section anticipate that cargo tanks constructed as pressure vessels will, by themselves, constitute the cargo containment system and usually will not require a secondary barrier.

(c) In the design of the tank, consideration shall be given to the possibility of the tank being subjected to external loads. Consideration shall also be given to excessive loads that can be imposed on the tanks by their support due to static and dynamic forces under operating conditions or during testing. The

design shall show the manner in which the tanks are to be installed, supported, and secured, and shall be approved prior to tank installation.

(d) Tanks with a service temperature of minus 20 °F. or lower and fabricated of ferritic materials shall be stress relieved.

(e) Unlagged cargo tanks, where the cargo is transported, at or near ambient temperatures, shall be designed for the vapor pressure of the gas at 115 °F. The design shall also be based on the minimum internal pressure (maximum vacuum), plus the maximum external static head to which the tank may be subjected. Whenever surrounding cargo is at a greater temperature than the maximum allowable temperature of the liquefied flammable gas tanks, the liquefied flammable gas cargo is to be such that the design pressure of the liquefied flammable gas tank is not exceeded.

(f) Where cargo tanks, in which the cargo is transported at or near ambient temperature, are lagged with an insulation material of a thickness to provide a thermal conductance of not more than 0.075 B.t.u. per square foot per degree Fahrenheit differential in temperature per hour, the tanks shall be designed for a pressure of not less than the vapor pressure of the gas at 105 °F. The insulation material shall conform to the requirements of §38.05–20. The design shall also be based on the minimum internal pressure (maximum vacuum) plus the maximum external static head to which the tank may be subjected.

(g) Cargo tanks in which the temperature is maintained below the normal atmospheric temperature by refrigeration or other acceptable means shall be designed for a pressure of not less than 110 percent of the vapor pressure corresponding to the temperature of the liquid at which the system is maintained, or the pressure corresponding to the greatest dynamic and static loads expected to be encountered either in service or during testing. For mechanically stress relieved cargo tanks, additional factors relating design pressure and maximum allowable pressure shall be as specified by the Commandant. The material of the tank shall satisfy the requirements of subchapter F (Marine Engineering) of this chapter for the service temperature, and this temperature shall be permanently marked on the tank as prescribed in §38.05–5.

(h) Where applicable, the design shall investigate the thermal stresses induced in the cargo tank at the service temperature.

(i) The shell and head thickness of liquefied gas cargo tanks shall not be less than five-sixteenths inch.

[CGFR 66–33, 31 FR 15269, Dec. 6, 1966, as amended by CGFR 68–82, 33 FR 18806, Dec. 18, 1968]

§38.05–4 Design and construction of nonpressure vessel type cargo tanks—TB/ALL.

(a) The requirements in this section anticipate a cargo containment system consisting of a primary tank which is structurally self-supporting and, where required, a secondary barrier. Other vessel or cargo tank configurations, such as membrane type liners externally supported, will be considered upon submission of substantiating data, and based upon such additional tests as the Commandant may direct.

(b) A secondary barrier is an arrangement or structure designed to contain the cargo temporarily if leakage develops in the primary container. A secondary barrier shall be provided where leakage from the primary container may cause lowering of the temperature of the ship's structure to an unsafe level. The secondary barrier shall be constructed of material suitable to contain the cargo at the service temperature.

(c) The design of the cargo containment systems shall be such that under normal service conditions, or upon failure of the primary tank, the hull structure shall not be cooled down to a temperature which is unsafe for the materials involved. Structural members not suitable for the service temperatures of the cargo shall be protected by a secondary barrier consisting of suitable structural containment together with necessary associated insulation. Heat transmission studies and tests may be required to demonstrate that the arrangement is feasible and that the final material temperatures are acceptable.

(d) The design and construction of the cargo tanks shall be at least equivalent to the standards established by the American Bureau of Shipping or other recognized classification society. For special tanks, or designs not contemplated by standards of the classification society, a detailed analysis of the entire tank, or designated parts thereof, shall be made and submitted to the Commandant for approval.

(e) The cargo tank shall be designed for a head of cargo at least equal to the highest level the liquid cargo may attain plus the maximum venting pressure. In no case shall a head of cargo less than 4 feet above the cargo hatch or expansion trunk be used.

(f) The design shall investigate the thermal stresses induced in the cargo tank during loading. Where necessary, devices for spray loading or other methods of precooling or cooling during loading shall be included in the design.

(g) All weld intersections or crossings in joints of primary tank shells shall be radiographed for a distance of 10 thicknesses from the intersection. All other welding in the primary tank and in the secondary barrier shall be spot radiographed in accordance with the requirements of part 54 of subchapter F (Marine Engineering) of this chapter.

[CGFR 66–33, 31 FR 15269, Dec. 6, 1966, as amended by CGFR 68–82, 33 FR 18807, Dec. 18, 1968]

§ 38.05–5 Markings—TB/ALL.

(a)(1) Upon satisfactory completion of tests and inspection, pressure vessel and nonpressure vessel type cargo tanks, shall have markings as required by § 54.10–20 of subchapter F (Marine Engineering) of this chapter except that for nonpressure vessel type tanks, the Coast Guard number and pressure vessel class shall be omitted.

(2) Hydrostatic test for pressure vessel type tanks shall be that specified in § 38.25–1(b). In the case of nonpressure vessel type tanks, the hydrostatic test pressure shall mean the pressure specified in § 38.25–1(d), while the maximum allowable pressure shall mean the maximum venting pressure as used in § 38.05–4(e). Where it is not feasible to attach the nameplate to the tank, it shall be conspicuously displayed nearby.

(b) 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 corrosion-resistant material may be attached to valves.

(c) All tank markings shall be permanently and legibly stamped in a readily visible position, and shall not be obscured by painting. 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 66–33, 31 FR 15269, Dec. 6, 1966, as amended by CGFR 68–82, 33 FR 18807, Dec. 18, 1968]

§ 38.05–10 Installation of cargo tanks—general—TB/ALL.

(a)(1) Cargo tanks shall be supported on foundations of steel or other suitable material and securely anchored in place to prevent the tanks from shifting when subjected to external forces. Each tank shall be so supported as to prevent the concentration of excessive loads on the supporting portions of the shell or head as prescribed under § 38.05–2(d).

(2) Cargo tanks installed in barges shall comply with the requirements of § 32.63–25 of this subchapter.

(b) Foundations, and stays where required, shall be designed for support and constraint of the weight of the full tank, and the dynamic loads imposed thereon. Thermal movement shall also be considered.

(c) Foundations and stays which may be exposed to the cargo shall be suitable for the temperatures involved and be impervious to the cargo.

(d) The design of the foundations and stays shall consider the resonance of the cargo tank, or parts thereof, and the vibratory forces, found in the tank vessel. If necessary, effective damping arrangements shall be provided.

(e) Independent containment systems shall be so arranged 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 to provide access for inspection

of the hull. Clearances for collision protection, where required by other parts of the regulations in this subchapter, may increase the clearances specified here.

(1) For pressure vessel type tanks the distance between adjacent tanks and between tanks and vessel's structure shall be adequate to permit access for inspection and maintenance of all tank surfaces and hull structure as approved by the Commandant. Alternate provisions may be made for inspection and maintenance of the vessel's structure and tanks by moving such tanks or by providing equivalent acceptable means for remote inspection.

(2) For nonpressure vessel type containment systems, access shall be arranged to permit inspection of one side each of the primary tank and secondary barrier, under normal shipyard conditions. Containment systems which, because of their peculiar design, cannot be visually inspected to this degree, may be specially considered provided an equivalent degree of safety is attained.

(f) Cargo tanks may be installed *on deck, under deck,* or with the tanks protruding through the deck. All tanks shall be installed with the manhole openings located in the open above the weather deck. Provided an equivalent degree of safety is attained, the Commandant may approve cargo tanks installed with manhole openings located below the weather deck.

(g) For pressure vessel type cargo tanks, the following conditions apply:

(1) Liquefied flammable gas cargo tanks may be located in cargo tanks or in spaces which meet the requirements for cofferdams as defined in §30.10–13 of this subchapter. When liquefied flammable gas cargo tanks are installed in cargo tanks, such cargo tanks may be used simultaneously or separately for the carriage of flammable or combustible liquids up to and including the grade for which the cargo tanks are otherwise certified in accordance with the requirements of this subchapter.

(2) Where the liquefied flammable gas tanks are installed in cargo tanks and a portion of the liquefied flammable gas tanks extend above the weather deck, the penetration shall be made gastight and watertight, and shall be such as to provide full compliance with the structural requirements including testing for the hull and integral tanks. In the application of the requirements for the hydrostatic test of the cargo tanks, the hydrostatic test shall in no case be less severe than the worst anticipated service condition of the cargo loading. In the design and testing of independent cargo tanks and integral cargo tanks consideration shall be given to the possibility of the independent tanks being subjected to external loads.

(3) Where the liquefied flammable gas tanks are installed in nontank hull spaces and a portion of the tank extends above the weather deck, provision shall be made to maintain the weathertightness of the deck, except that the weathertightness of the upper deck need not be maintained on:

(i) Vessels operating on restricted routes which are sufficiently protected; or,

(ii) Open hopper type barges of acceptable design.

(h) No strength welding employed in the attachment of supports, lugs, fittings, etc., shall be done on tanks that require and have been stress relieved, unless authorized by the Commandant.

§38.05–20 Insulation—TB/ALL.

(a) Where used, tank insulation shall satisfy the following requirements for combustibility, installation, and arrangement:

(1) Insulation in a location exposed to possible high temperature or source of ignition shall be either:

(i) Incombustible, complying with the requirements of subpart 164.009 of subchapter Q (Specifications) of this chapter; or,

(ii) Self-extinguishing, as determined by ASTM D 4986, ''Standard Test Method for Horizontal Burning Characteristics of Cellular Polymeric Materials,'' (incorporated by reference, see §38.01–3) and covered by a suitable steel cover.

(2) Insulation in a location protected against possible ignition by enclosure in a tight steel envelope in which inert conditions are maintained need satisfy no requirement for combustibility except chemical stability.

(3) Insulation in a location protected against possible high temperature or

source of ignition by continuous surrounding structural voids or ballast tanks need satisfy no requirement for combustibility except chemical stability.

(b) All insulation shall be of a vapor-proof construction, or have a vapor-proof coating of a fire-retardant material acceptable to the Commandant. Unless the vapor barrier is inherently weather resistant, tanks exposed to the weather shall be fitted with a removable sheet metal jacket of not less than 0.083-inch thick over the vapor-proof coating and flashed around all openings so as to be weathertight. Weather resistant coatings shall have sheet metal over areas subject to mechanical damage.

(c) The insulation shall be adequately protected in areas of probable mechanical damage.

(d) Insulation which forms an integral part of the secondary barrier shall meet the following additional requirements:

(1) When the secondary barrier is called upon to contain the cargo, insulating material which is contacted shall not be affected by the cargo. Samples of the insulating material shall be tested in the cargo for solubility, absorption and shrinkage. The samples shall be checked for the above effects at intervals not exceeding 1 week, for a total test period of 6 weeks.

(2) Any adhesives, sealers, coatings, or vapor barrier compounds used in conjunction with the insulating material shall be similarly tested to insure suitable cargo resistive properties.

(3) The insulation shall have sufficient mechanical strength for the proposed design. Additionally, the thermal expansion of the insulation relative to the material to which it is affixed shall be considered in the design.

(e) The insulation for the piping systems shall be at least of the ''self-extinguishing'' type described in paragraph (a) of this section, and comply with the requirements contained in paragraphs (b) and (c) of this section.

[CGFR 66–33, 31 FR 15269, Dec. 6, 1966, as amended by USCG-1999–5151, 64 FR 67177, Dec. 1, 1999]

§ 38.05–25 Refrigerated systems—TB/ALL.

(a) When a liquefied flammable gas is carried below atmospheric temperature under the requirements of § 38.05–3(f) or § 38.05–4, maintenance of the tank pressure below the maximum allowable pressure shall be provided by one or more of the following means:

(1) A refrigeration or liquefication system which regulates the pressure in the tanks. A standby compressor or equivalent equipment, of a capacity equal to one of the working units shall be provided.

(2) A system whereby the vapors are utilized as fuel for shipboard use.

(3) A system allowing the liquefied flammable gas to warm up and increase in pressure. The insulation and tank design pressure shall be adequate to provide for a suitable margin for the operating time and temperatures involved.

(4) Other systems acceptable to the Commandant.

(b) A system whereby the vapors are vented to the atmosphere at sea only may be employed in conjunction with paragraph (a)(1) of this section. The pressure control valves shall be independent of the safety relief valves. See § 38.20–1(j).

Subpart 38.10—Piping, Valves, Fittings, and Accessory Equipment

§ 38.10–1 Valves, fittings, and accessories—TB/ALL.

(a) All valves, flanges, fittings, and accessory equipment shall be of a type suitable for use with liquefied flammable gases, and shall be made of steel or grade A malleable iron, acceptable for the service temperature and pressure according to the requirements of part 56 of subchapter F (Marine Engineering) of this chapter. Other materials may be specially considered and approved by the Commandant.

(b) All valves, flanges, fittings, and accessory equipment shall have a pressure rating at operating temperatures not less than the maximum allowable pressure to which they may be subjected. Piping which is not protected by a relief valve or which can be isolated from its relief valve by other

valves shall be designed for the greatest of the cargo vapor pressure at 115 °F., or the maximum allowable pressure of the cargo tank, or the requirements of § 38.10–10(a). Cargo liquid piping which may be subject to liquid full conditions shall be fitted with relief valves. The escape from piping systems relief valves shall be piped to a venting system or to a suitable vapor recovery system. Provision shall be made for the proper venting of all valves, fittings, etc., in which pressure buildup may occur, especially in refrigerated systems, because of an increase in product temperature.

(c) Welded connections shall be used wherever possible with the number of flanged joints kept to the minimum necessary for assembly and cleaning. Sockets in sizes 3 inches and smaller and slipon flanges in sizes 4 inches and smaller may be used. Threaded joints may be used in sizes of 1 inch and smaller. Where threaded joints are used, they shall be visible and accessible for inspection under all service conditions, and limited to instrument and control lines properly valved from the main lines. Where threaded joints are sealed by brazing or welding, they need not be exposed.

(d) Valve seat material, packing, gaskets, etc., shall be resistant to the action of the liquefied flammable gas. All flange and manhole cover gaskets shall be compressed asbestos, spiral-wound metal asbestos, metal jacketed asbestos, solid aluminum, corrugated steel, solid steel, or iron, or other materials with equal or better resistance to fire exposure.

(e) Provisions shall be made by the use of offsets, loops, bands, expansion joints, etc., to protect the piping and tank from excessive stress due to thermal movement and/or movements of the tank and hull structure. Expansion joints shall be held to a minimum and where used shall be of the bellows type and subject to special approval by the Commandant.

(f) Low temperature piping shall be thermally isolated from the hull structure. Arrangements should provide for the protection of the hull structure from leaks in way of pumps, flanges, joints, etc.

(g) Each tank shall be provided with the necessary fill and discharge liquid and vapor shutoff valves, safety relief valve connections, refrigeration connections where necessary, liquid level gaging devices, thermometer well and pressure gage, and shall be provided with suitable access for convenient operation. Piping shall enter the cargo tanks above weather deck and as close to the top of the tank or dome as possible, except as otherwise permitted in this section. Connections to the tanks shall be protected against mechanical damage and tampering. No underdeck cargo piping shall be installed between the outboard side of the cargo containment system and the shell of the vessel, unless provision is made to maintain the minimum inspection and collision protection clearances of § 38.05–10(e) between the piping and the shell. Other openings in the tanks, except as specifically permitted by the Commandant, are prohibited.

(h) Cargo loading and discharge piping may be connected to the tanks below the weather deck or below the liquid level subject to approval by the Commandant, provided:

(1) A remotely controlled quick-closing shutoff valve is flanged to the tank outlet connection. The control mechanism for this valve shall meet the requirements of § 38.10–5.

(2) The piping which is below the weather deck or liquid level shall be joined by welding except for a flanged connection to the quick-closing shutoff valve and a flanged connection to the cargo pump.

(3) The design and arrangement of this piping, including the flange bolting shall be such that excessive stresses will not be transmitted to the cargo tank outlet connection or the quick-closing valve, even in the event of abnormal displacement of the piping.

(4) Except for those vessels, the design of which permits the exclusion of a weathertight deck over the tanks, the space in which such piping is located shall be accessible only from the weather deck and shall be vented to a safe location above the weather deck.

(i) All connections to tanks, except safety relief valves and liquid level gaging devices, shall have manually

operated shutoff valves located as close to the tank as possible. In addition, all liquid and vapor connections on pressure vessel type tanks except safety relief valves, liquid level gaging devices, and filling and discharge lines, shall be equipped with either an automatic excess flow valve or a remotely controlled quick-closing shutoff valve of the fail closed type. These valves, except when necessary for the operation of the system, shall remain closed. For pressure vessel type tanks operating at low pressure and with service temperature near the cargo atmospheric boiling point, the Commandant may approve individual installations where the liquid and vapor connections normally requiring automatic excess flow valves or remotely controlled quick-closing shutoff valves are fitted with manually operated shutoff valves only.

(j) The control system for quick-closing shutoff valves shall be provided with a remote control in at least two locations and be of a type acceptable to the Commandant. The control system shall also be provided with a fusible element designed to melt between 208 °F. and 220 °F., which will cause the quick-closing shutoff valves to close in case of fire. The quick-closing shutoff valves shall be capable of local manual operation.

(k) Excess flow valves, where required by this subchapter, 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.

(l) 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 (0.055-inch diameter) opening, need not be equipped with excess flow valves.

(m) Pressure gage connections need not be equipped with excess flow valves if the openings are not larger than No. 54 drill size (0.055-inch diameter).

(n) Excess flow valves may be designed with a bypass not to exceed a No. 60 drill size (0.040-inch diameter) opening to allow equalization of pressure.

(o) Suitable valves shall be installed on the cargo headers to relieve the pressure on the liquid and vapor lines to a safe location prior to disconnecting shore lines.

(p) A pressure gage shall be located at the highest practicable point. A thermometer well where installed on the tank proper shall be attached to the tank by welding.

(q) For nonpressure vessel type tanks, the following additional fittings are required:

(1) A liquid level gaging device shall be provided to determine the level of the liquid cargo without opening the tank. The gage shall be readable from the open deck, or from a control room or station when the loading or discharging is controlled from such a room or station. Tables shall be readily available for direct determination of volume of liquid in the tanks, with necessary corrections for trim, temperature, and density.

(2) An independent high level alarm shall be provided for each tank. The alarm indication shall register at the station where loading is controlled.

(3) Each tank shall be provided with remote reading temperature sensors located near both the cargo liquid level and the bottom of the tank. The temperature shall be read at the control station for loading and unloading cargo, if provided, otherwise near the cargo control valves.

(4) Each tank shall be fitted with a pressure and a vacuum gage which shall be read at the control station for loading and unloading cargo, is provided, otherwise near the cargo control valves. In addition, the liquid loading and discharge headers at the ship's shore connection station shall be fitted with pressure gages.

(r) Spaces surrounding cargo tanks shall be provided with suitable means for pumping out.

(1) Where pressure vessel type tanks are installed or in other cases where no secondary containment is required, this may consist of a bilge system independent of the bilge system for the rest of the vessel, and having no pipe connections between the cargo tank spaces and the engineroom or boilerroom, except that educators may be supplied from engineroom pumps.

(2) Secondary containment spaces of structurally self-supporting tanks shall be provided with suitable means for pumping out leaked cargo. These should be arranged so as to provide the following alternatives:

(i) Return of the cargo to the same primary tank or other tank.

(ii) Pumping the cargo off the ship either in port through a regular shore unloading connection or at sea overboard in a safe manner.

[CGFR 66–33, 31 FR 15269, Dec. 6, 1966, as amended by CGFR 68–82, 33 FR 18807, Dec. 18, 1968]

§ 38.10–5 Filling and discharge pipes—TB/ALL.

(a) Filling and discharge connections shall be provided with the manually operated valve required by § 38.10–1(i) and with a positive acting remote controlled quick-closing valve. The remote controlled quick-closing valve shall satisfy the requirements of § 38.10–1(j).

(b) For pressure vessel type tanks the remote controlled quick-closing valves shall be located on the inside of the tank or on the outside where the piping enters the tank. For pressure vessel type tanks operating at low pressure and with service temperature near the cargo atmospheric boiling point, the Commandant may approve individual installations where these valves are located at the loading and discharge headers.

(c) For nonpressure vessel type tanks the remote controlled quick-closing valves may be located at the loading and discharge headers.

§ 38.10–10 Cargo piping—TB/ALL.

(a) The piping shall be designed for a working pressure of not less than the maximum pressure to which it may be subjected but in no case less than the design pressure of the cargo tanks. In the case of piping on the discharge side of the liquid pumps or vapor compressors, the design pressure shall not be less than the pump or compressor discharge relief valve setting; or, provided the piping is not protected by relief valves, the design pressure shall not be less than the total discharge head of the pump or compressor.

(b) Piping subject to tank pressure shall be seamless drawn steel or electric resistance welded steel. Pipe used in refrigerated tank systems shall be of a material which is suitable for the minimum service temperature to which it may be subjected, according to the requirements of part 56 of subchapter F (Marine Engineering) of this chapter.

(c) Piping shall be provided with adequate support to take the weight of the piping off valves and fittings and to prevent excessive vibration and stresses on tank connections.

(d) For nonpressure vessel type tanks, the cargo handling arrangements and piping shall provide for emptying of a damaged tank, including cargo contained by a secondary barrier.

[CGFR 66–33, 31 FR 15269, Dec. 6, 1966, as amended by CGFR 68–82, 33 FR 18807, Dec. 18, 1968]

§ 38.10–15 Safety relief valves—TB/ALL.

(a) Each tank shall be fitted with or (subject to approval by the Commandant) connected to one or more safety relief valves designed, constructed and flow tested for capacity in conformance with subpart 162.017 or 162.018 of subchapter Q (Specifications) of this chapter.

(b) Safety relief valves conforming to subpart 162.017 of subchapter Q (Specifications) of this chapter may be used on tanks for a maximum pressure of 10 pounds per square inch gage. Safety relief valves conforming to subpart 162.018 of subchapter Q (Specifications) of this chapter may be used for any pressure.

(c) The safety relief valves shall have a combined relieving capacity to discharge the greater of the following with not more than 20 percent rise in pressure (in the tank) above the maximum allowable pressure:

(1) The vapors evaporated by an ambient air temperature of 115 °F. plus the maximum flow rate of the cargo filling pipes or,

(2) The vapors generated under fire exposure computed using the formulas of § 54.15–25(c) of subchapter F (Marine Engineering) of this chapter.

(d) The safety relief valves shall meet the arrangement and inspection requirements of § 54.15–25 of subchapter F (Marine Engineering) of this chapter.

(e) Means shall be provided to protect nonpressure vessel tanks from excessive external pressure.

(f) Void spaces between the primary and secondary barriers of nonpressure vessel type tanks shall be protected by relief devices. The relief setting shall not be higher than the void test pressure, and shall not exceed 90 percent of the setting of the safety relief valve protecting the primary tank.

[CGFR 68–82, 33 FR 18807, Dec. 18, 1968, as amended by USCG–2014–0688, 79 FR 58280, Sept. 29, 2014]

§ 38.10–20 Liquid level gaging devices—TB/ALL.

(a) Each tank shall be fitted with a liquid level gaging device of approved design to indicate the maximum level to which the tank may be filled with liquid:

(1) Between −20 °F. and 130 °F. for unrefrigerated service; or,

(2) Within the operating temperature range for tanks operating below atmospheric temperature.

(b) Liquid level gaging devices may be of the following types: Rotary tube, slip tube, magnetic, automatic float, or similar types approved by the Commandant. Except as otherwise provided in this section, fixed tube devices are not acceptable as the primary gaging device.

(c) All gaging devices shall be arranged so that the maximum liquid level for product being carried, to which the tank may be filled is readily determinable. The maximum gallonage capacity as required by § 38.15–1 shall be:

(1) Marked on the tank system nameplate or gaging device; or,

(2) Shown in the ullage tables.

(d) Gaging devices that require bleeding of the product to the atmosphere, such as the 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 (0.055-inch diameter), unless provided with an excess flow valve.

(e) For pressure vessel type tanks each automatic float, continuous reading tape or similar type gage not mounted directly on the tank or dome shall be fitted with a shutoff device located as close to the tank as practicable. When an automatic float gaging device, which gages the entire height of the tank is used, a fixed tube gage set in the range of 85 percent to 90 percent of the water capacity of the tank shall be provided in addition as a means of checking the accuracy of the automatic float, gage, or other alternate means acceptable to the Commandant may be used.

(f) A gaging device shall be designed for a pressure at least equal to the maximum allowable pressure of the tank on which it is installed.

(g) Gage glasses of the columnar type are prohibited.

(h) Flat sight glasses may be used in the design of automatic float continuous reading tape gages: *Provided*, That such glasses shall be made of high strength material suitable for the operating temperatures of not less than one-half inch in thickness and adequately protected by a metal cover.

Subpart 38.15—Special Requirements

§ 38.15–1 Filling of tanks—TB/ALL.

(a) Refrigerated and semirefrigerated tanks shall be filled so that there is an outage of at least 2 percent of the volume of the tank at the temperature corresponding to the vapor pressure of the cargo at the safety relief valve setting. A reduction in the required outage may be permitted by the Commandant when warranted by special design considerations. Normally then, the maximum volume to which a tank may be loaded is:

$$V_L = 0.98 d_r \, V/d_L$$

where:

V_L=maximum volume to which tank may be loaded.

V=volume of tank.

d_r=density of cargo at the temperature required for a cargo vapor pressure equal to the relief valve setting.

d_L=density of cargo at the loading temperature and pressure.

(b) Nonrefrigerated tanks shall be filled so that their filling densities shall not exceed the ratios indicated in table 38.15–1(b).

(c) The ''filling density'' is defined as the percent ratio of the weight of the

gas in a tank to the weight of water the tank will hold at 60 °F.

TABLE 38.15–1(b)—MAXIMUM PERMISSIBLE FILLING DENSITIES FOR TANKS OPERATING AT OR NEAR AMBIENT TEMPERATURE

Specific gravity at 60 °F.	Maximum permitted filling density		
	Unlagged tanks—water capacity		Lagged tanks—all capacities
	1,200 gal. and under	Over 1,200 gal.	
0.473–0.480	38	41	42
0.481–0.488	39	42	43
0.489–0.495	40	43	44
0.496–0.503	41	44	45
0.504–0.510	42	45	46
0.511–0.519	43	46	47
0.520–0.527	44	47	48
0.528–0.536	45	48	49
0.537–0.544	46	49	50
0.545–0.552	47	50	51
0.553–0.560	48	51	52
0.561–0.568	49	52	53
0.569–0.576	50	53	54
0.577–0.584	51	54	55
0.585–0.592	52	55	56
0.593–0.600	53	56	57
0.601–0.608	54	57	58
0.609–0.617	55	58	59
0.618–0.626	56	59	60
0.627–0.634	57	60	61

NOTE: Increase in filling densities to provide for seasonal changes may be considered by the Commandant upon presentation of factual evidence that safe operation can be effected.

§ 38.15–5 Cargo hose—TB/ALL.

(a) When the liquid and vapor line hoses used for loading and discharging the cargo are carried on board the vessel, they shall be of flexible metal and fabricated of seamless steel pipe and flexible joints of steel or bronze, or of other suitable material resistant to the action of the cargo. Hose used in refrigerated systems shall be suitable for the minimum temperature to which it may be subjected and shall be acceptable to the Commandant.

(b) Hose subject to tank pressure, or the discharge pressure of pumps or vapor compressors, shall be designed for a bursting pressure of not less than five times the maximum safety relief valve setting of the tank, pump, or compressor.

(c) Before being placed in service each new cargo hose, with all necessary fittings attached, shall be hydrostatically tested by its manufacturer to a pressure not less than twice its maximum working pressure nor more than two-fifth its bursting pressure. The hose shall be marked with its maximum working pressure, and if used in refrigerated service, its minimum temperature.

§ 38.15–10 Leak detection systems—T/ALL.

(a) A detection system shall be permanently installed to sense cargo leaks. The detectors shall be located within the space so as to permit the sensing of an initial leak and prevent an undetected gas accumulation. The sensitivity shall be in accordance with paragraph (b) of this section. The detectors shall be fitted in the following compartments:

(1) Between the primary and secondary barriers for nonpressure vessel type tanks.

(2) Cargo handling rooms and spaces containing cargo piping or cargo handling systems.

(3) All enclosed spaces, except tanks and cofferdams, which are separated from the cargo tanks by only the secondary barrier.

(4) Other spaces where gas concentrations might be expected.

(5) Cargo holds, containing pressure vessel type tanks and no cargo piping, are exempt from the requirements of this paragraph.

(b) The indicating instruments for the detection system shall be located on the bridge or at the cargo control station. An audio and visual warning shall be given before any gas concentration reaches 30 percent of the lower explosive limit. The alarm shall indicate both on the bridge and at the cargo control station. Sampling of each detector shall be at least once every half hour.

(c) Means shall be provided to measure the full range of cargo gas concentration in the spaces.

[CGFR 66–33, 31 FR 15269, Dec. 6, 1966, as amended by CGFR 68–65, 33 FR 19985, Dec. 28, 1968]

§ 38.15–15 Electrical installations—TB/ALL.

(a) All electrical installations shall comply with the requirements contained in this subchapter and in subchapter J (Electrical Engineering) of this chapter for tank vessels, except as otherwise specified in this part.

(b) Spaces containing cargo pumps, compressors, and piping are considered as equivalent to a tank vessel pumproom, and no electrical devices, except Coast Guard approved intrinsically safe devices, shall be installed in these spaces. Electric motors shall be segregated from these spaces by a gastight bulkhead. Electric lighting of the explosion-proof type may be installed in these spaces provided all switching is done from outside the space.

(c) All cargo tanks, piping, valves, etc., shall be effectively grounded to the vessel's hull. Tanks with an insulated inner shell (primary barrier) shall have an effective grounding bond to the outer shell (secondary barrier) or to the vessel's hull.

(d) Electric submerged motor cargo pumps may be used, when in compliance with the following requirements and subject to approval by the Commandant.

(1) Design details of the submerged motor pump, with an evaluation of the cooling efficiency of the product being pumped, shall be submitted.

(2) Provisions shall be made to exclude air from the tanks containing cargo in either vapor or liquid phase. The pump motor shall be deenergized when this condition is not satisfied.

(3) A liquid level sensing device shall automatically shut down the motor and sound an alarm at a predetermined low liquid level. The alarm location may be the station from which cargo handling is controlled or such other location outside the cargo area as is acceptable to the Commandant.

(4) Details of the power cable, tank penetrations and pump connections shall be submitted.

(5) An auxiliary means of emptying the cargo tanks shall be provided in accordance with § 38.10–10(d).

(6) Means for positively disconnecting the power supply between the switchboard and the pump power panel shall be provided, i.e., disconnect links, lockable breakers, etc.

(7) All materials used in the fabrication of the submerged motor cargo pumps shall be suitable for use with the liquid cargo at the design pressures and temperatures.

§ 38.15–20 Remote shutdowns—TB/ALL.

(a) All machinery associated with cargo loading, unloading, or cooling shall be capable of being shut down from a remote location. This location may be the station from which the cargo handling is controlled or such other location outside the cargo area as is acceptable to the Commandant.

(b) [Reserved]

Subpart 38.20—Venting and Ventilation

§ 38.20–1 Venting—T/ALL.

(a) Each safety relief 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 which shall extend to a height above the weather deck equal to at least one-third the beam of the vessel and to a minimum of at least 10 feet, and shall terminate at a comparable distance from any other living or working space, ventilator inlet, or source of vapor ignition. When special conditions will prevent the vent line header outlets being permanently installed at a height above the deck of one-third the beam of the vessel, then an adjustable system shall be provided which, when extended vertically, shall be capable of reaching a height of one-third the beam of the vessel.

(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 for in the table 38.20–1(b), and upon the total safety relief valve discharge capacity.

TABLE 38.20–1(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 requirements specified in paragraphs (a) and (b) of this section, the size of the branch vents or vent headers, shall be such

that the back pressure in the relief valve discharge lines shall not be more than 10 percent of the safety relief valve setting. In nonpressure vessel vent systems, however, where the maximum back pressure of 10 percent of the relief valve setting is insufficient to move the gases through any but an extremely large diameter vent pipe, the back pressure may exceed 10 percent provided:

(1) The pressure in the tank during venting does not exceed 120 percent of the tank maximum allowable pressure; and,

(2) The safety relief valve is sized to discharge the required capacity with the tank pressure and vent back pressure actually used.

(d) Return bends and restrictive pipe fittings are not permitted.

(e) Vents and headers shall be so installed as to prevent excessive stresses on safety relief valve mountings.

(f) The vent discharge riser shall be so located as to provide protection against mechanical injury and such discharge pipes shall be fitted with loose raincaps or other suitable means to prevent entrance of rain or snow.

(g) No valve of any type shall be fitted in the vent pipe between the safety relief valve and the vent outlets.

(h) Provisions shall be made to drain condensate from the vent header piping. Special precautions shall insure that condensate does not accumulate at or near the relief valves.

(i) Relief valves discharging liquid cargo shall not be connected to the branch vent or vent header lines from the cargo tanks. They may, however, be connected to an accumulator, the vapor space of which, may in turn, be connected to the vent header system. Relief valves in the cargo piping system may discharge back to the cargo tanks.

(j) Vapor discharged to the atmosphere in accordance with § 38.05–25(b) shall utilize valves separate from the safety relief valves.

§ 38.20–5 Venting—T/ALL.

(a) Safety relief valves on cargo tanks in barges may be connected to individual or common risers which shall extend to a reasonable height above the deck. An alternate arrangement consisting of a branch vent header system as required by § 38.20–1 may be installed. In any case, the provisions of § 38.20–1 (d) through (j) shall apply.

(b) Arrangements providing for venting cargo tanks at sea on unmanned barges will be considered by the Commandant upon presentation of plans.

§ 38.20–10 Ventilation—T/ALL.

(a) A power ventilation system shall be provided for compartments containing pumps, compressors, pipes, control spaces, etc. connected with the cargo handling facilities. These compartments shall be ventilated in such a way as to remove vapors from points near the floor level or bilges, or other areas where vapor concentrations may be expected. The compartments shall be equipped with power ventilation of the exhaust type having capacity sufficient to effect a complete change of air in not more than 3 minutes equal to the volume of the compartment and associated trunks.

(b) The power ventilation units shall not produce a source of vapor ignition in either the compartment or the ventilation system associated with the compartment. Inlets to exhaust ducts shall be provided and located at points where concentrations of vapors may be expected. Ventilation from the weather deck shall be provided. Ventilation outlets shall terminate away from any openings to the interior part of the vessel a lateral distance at least equal to that specified in § 38.20–1(a). These outlets shall be so located as to minimize the possibility of recirculating contaminated air through the compartment.

(c) Means shall be provided for purging the following spaces of cargo vapors:

(1) The space surrounding nonpressure vessel type tanks, i.e., within the secondary barrier.

(2) The space surrounding pressure-vessel type tanks whose piping connections are below the weather deck in accordance with § 38.10–1(h).

(3) The space surrounding tanks whose manhole openings are below the weather deck in accordance with § 38.05–10(f).

(d) Power ventilation shall be provided for each auxiliary machinery or

working space located on and accessible from the cargo handling deck. Such ventilation systems shall be designed to preclude the entry of cargo vapors into the space via the open access or the ventilation system itself.

[CGFR 66–33, 31 FR 15269, Dec. 6, 1966, as amended by CGFR 68–65, 33 FR 19985, Dec. 28, 1968]

Subpart 38.25—Periodic Tests and Inspections

§ 38.25–1 Tests and inspections—TB/ALL.

(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 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 shall be made at each inspection for certification and at such other times as considered necessary.

(3) 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.

(4) If required by the Officer in Charge, Marine Inspection, the owner shall conduct nondestructive testing of each tank in accordance with § 38.25–3.

(5) If the tank is a pressure vessel type cargo tank with an internal inspection interval of 10 years, is 30 years old or older, determined from the date it was built, the owner shall conduct nondestructive testing of that tank, in accordance with § 38.25–3, during each internal inspection.

(b) If the marine inspector considers a hydrostatic test necessary to determine the condition of the tank, the owner shall perform the test at a pressure of 1½ times the tank's—

(1) Maximum allowable pressure, as determined by the safety relief valve setting; or

(2) Design pressure, when cargo tanks operate at maximum allowable pressures reduced below the design pressure in order to satisfy special mechanical stress relief requirements.

NOTE: See the ASME Code, section VIII, appendix 3 for information on design pressure.

(c) For pressure vessels designed and/or supported such that they cannot safely be filled with water, the Commandant will consider a pneumatic test in lieu of the hydrostatic test. A leak test shall be performed in conjunction with the pneumatic test. Pneumatic testing shall be in accordance with subchapter F (Marine Engineering) of this chapter.

(d) Nonpressure vessel type tanks shall be tested to a pressure equal to the pressure on the bottom of the tank under the design conditions listed in § 38.05–4(e).

(e) In the application of the requirements for testing of the cargo tanks, the test shall in no case be less severe than the worst anticipated service condition of the cargo loading.

(f) In the design and testing of the independent cargo tanks, consideration shall be given to the possibility of the independent tanks being subjected to external loads.

[CGFR 66–33, 31 FR 15269, Dec. 6, 1966, as amended by CGD 85–061, 54 FR 50962, Dec. 11, 1989; USCG–2014–0688, 79 FR 58280, Sept. 29, 2014]

§ 38.25–3 Nondestructive testing—TB/ALL.

(a) Before nondestructive testing may be conducted to meet § 38.25–1 (a)(4) and (a)(5), the owner shall submit a proposal to the Officer in Charge, Marine Inspection for acceptance 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 Qualification 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 50963, Dec. 11, 1989]

§ 38.25–5 Removal of defective tanks—TB/ALL.

If a tank fails to pass the tests prescribed in this subpart, it shall be removed from service unless otherwise authorized by the Commandant.

§ 38.25–10 Safety relief valves—TB/ALL.

(a) The cargo tank safety relief valves shall be inspected at least once in every 2 years.

(b) The safety relief valve discs must be lifted from their seats in the presence of a marine inspector by either liquid, gas, or vapor pressure at least once every 5 years to determine the accuracy of adjustment and, if necessary, must be reset.

[CGFR 66–33, 31 FR 15269, Dec. 6, 1966, as amended by CGD 95–027, 61 FR 26000, May 23, 1996]

PART 39—VAPOR CONTROL SYSTEMS

Subpart 39.1000—General

Sec.

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39.2007 Tankship liquid overfill protection—T/ALL.
39.2009 Tank barge liquid overfill protection—B/ALL.
39.2011 Vapor overpressure and vacuum protection—TB/ALL.
39.2013 High and low vapor pressure protection for tankships—T/ALL.
39.2014 Polymerizing cargoes safety—TB/ALL.
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Subpart 39.3000—Vapor Collection Operations During Cargo Transfer

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39.4001 General requirements for vapor balancing—TB/ALL.
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Subpart 39.5000—Multi-breasted Loading Using a Single Facility Vapor Connection

39.5001 General requirements for multi-breasted loading—B/CLBR.
39.5003 Additional requirements for multi-breasted loading using inboard barge vapor collection system—B/CLBR.
39.5005 Additional requirements for multi-breasted loading using a ''dummy'' vapor header—B/CLBR.

Subpart 39.6000—Tank Barge Cleaning Operations with Vapor Collection

39.6001 Design and equipment of vapor collection and stripping systems—B/ALL.
39.6003 Overpressure and underpressure protection during stripping and gas-freeing operations—B/ALL.
39.6005 Inspection prior to conducting gas-freeing operations—B/ALL.
39.6007 Operational requirements for tank barge cleaning—B/ALL.
39.6009 Barge person in charge: Designation and qualifications—B/ALL.

AUTHORITY: 33 U.S.C. 1225, 1231; 42 U.S.C. 7511b(f)(2); 46 U.S.C. 3306, 3703, 3715(b); E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: USCG–1999–5150, 78 FR 42642, July 16, 2013, unless otherwise noted.

Subpart 39.1000—General

§ 39.1001 Applicability—TB/ALL.

(a) This part applies to tank vessels that use a vapor control system (VCS) to collect vapors emitted to or from a vessel's cargo tanks while operating in the navigable waters of the United States, except—

(1) Tank vessels with an operating vapor collection system approved by the Coast Guard prior to July 23, 1990, for the collection and transfer of cargo vapor to specific facilities. Such tank vessels are only subject to 46 CFR 39.1013, 39.3001, and 39.4005; and

(2) A tank barge that collects vapors emitted from its cargo tanks during gas-freeing or cleaning operations at a cleaning facility. This type of tank barge is only subject to 46 CFR part 39, subparts 39.1000 and 39.6000, and must comply with requirements of these two subparts at the time of its next inspection for certification required by 46 CFR 31.10–15, but no later than August 15, 2018.

(b) This part does not apply to the collection of vapors of liquefied flammable gases as defined in 46 CFR 30.10–39.

(c) In this part, regulatory measurements, whether in the metric or English system, are sometimes followed by approximate equivalent measurements in parentheses, which are given solely for the reader's convenience. Regulatory compliance with the regulatory measurement is required.

§ 39.1003 Definitions—TB/ALL.

As used in this part only:

Barge vapor connection means the point in a barge's piping system where it connects to a vapor collection hose or arm. This may be the same as the barge's cargo connection while controlling vapors during tank barge cargo tank-cleaning operations.

Cargo deck area means that part of the weather deck that is directly over the cargo tanks.

Cargo tank venting system means the venting system required by 46 CFR 32.55.

Certifying entity means a certifying entity accepted by the Coast Guard as such pursuant to 33 CFR part 154, subpart P.

Cleaning facility means a facility used or capable of being used to conduct cleaning operations on a tank barge.

Cleaning operation means any stripping, gas-freeing, or tank-washing operation of a barge's cargo tanks conducted at a cleaning facility.

Commandant means the Commandant (CG–ENG), U.S. Coast Guard, 2100 2nd St. SW., Stop 7126, Washington, DC 20593–7126.

Facility vapor connection means the point in a facility's fixed vapor collection system where the system connects with the vapor collection hose or the base of the vapor collection arm.

Fixed stripping line means a pipe extending to the low point of each cargo tank, which is welded through the deck and terminated above deck with a valve, and plugged at the open end.

Flammable liquid means a liquid as defined in 46 CFR 30.10–22.

Fluid displacement system means a system that removes vapors from a barge's cargo tanks during gas freeing through the addition of an inert gas or other medium into the cargo tank.

Fluid injection connection means the point in a fluid displacement system at which the fixed piping or hose that supplies the inert gas or other medium connects to a barge's cargo tanks or fixed piping system.

Gas freeing means the removal of vapors from a tank barge.

Independent as applied to two systems means that one system will operate when there is a failure of any part of the other system.

Inerted means the oxygen content of the vapor space in a cargo tank is reduced in accordance with the inert gas requirements of 46 CFR 32.53 or 33 CFR 153.500. If a cargo vapor in a cargo tank that is connected to the vapor collection system is defined as inerted at the start of cargo transfer, the oxygen content in the vapor space of the cargo tank must not exceed 60 percent by volume of the cargo's minimum oxygen concentration for combustion, or 8 percent by volume for vapor of crude oil, gasoline blends, or benzene.

Marine Safety Center (MSC) means Commanding Officer, Marine Safety Center, U.S. Coast Guard, 4200 Wilson Boulevard Suite 400, Arlington, VA 22203 for visitors. Send all mail to Commanding Officer (MSC), Attn: Marine Safety Center, U.S. Coast Guard Stop 7410, 4200 Wilson Boulevard Suite 400, Arlington, VA 20598–7410.

Maximum allowable gas-freeing rate means the maximum volumetric rate at which a barge may be gas-freed during cleaning operations.

Maximum allowable stripping rate means the maximum volumetric rate at which a barge may be stripped during cleaning operations prior to the opening of any hatch and/or fitting on the cargo tank being stripped.

Maximum allowable transfer rate means the maximum volumetric rate at which a vessel may receive cargo or ballast.

Minimum oxygen concentration for combustion (MOCC) means the lowest level of oxygen in a vapor or vapor mixture that will support combustion.

New vapor collection system means a vapor collection system that is not an existing vapor collection system.

Service vessel means a vessel that transports bulk liquid cargo between a facility and another vessel.

Set pressure means the pressure at which the pressure or vacuum valve begins to open and the flow starts through the valve.

Stripping means the removal, to the maximum extent practicable, of cargo residue remaining in the barge's cargo tanks and associated fixed piping system after cargo transfer or during cleaning operations.

Vacuum displacement system means a system that removes vapors from a barge's cargo tanks during gas-freeing by sweeping air through the cargo tank hatch openings.

Vapor balancing means the transfer of vapor displaced by incoming cargo from the tank of a vessel or facility receiving cargo into a tank of the vessel or facility delivering cargo via a vapor collection system.

Vapor collection system means an arrangement of piping and hoses used to collect vapor emitted to or from a vessel's cargo tanks and to transport the vapor to a vapor processing unit or a tank.

Vapor control system (VCS) means an arrangement of piping and equipment used to control vapor emissions collected to or from a vessel. It includes the vapor collection system and vapor processing unit or a tank.

Vapor processing unit means the components of a VCS that recover, destroy, or disperse vapor collected from a vessel.

Vessel-to-vessel transfer (direct or through a shore loop) means either—

(1) The transfer of a bulk liquid cargo from a tank vessel to a service vessel; or

(2) The transfer of a bulk liquid cargo from a service vessel to another vessel in order to load the receiving vessel to a deeper draft.

Vessel vapor connection means the point in a vessel's fixed vapor collection system where the system connects with the vapor collection hose or arm.

[USCG–1999–5150, 78 FR 42642, July 16, 2013, as amended by USCG–2013–0671, 78 FR 60147, Sept. 30, 2013]

§ 39.1005 Incorporation by reference—TB/ALL.

(a) Certain material is incorporated by reference (IBR) into this part with the approval of the Director of the FEDERAL REGISTER under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish 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

Coast Guard, Office of Design and Engineering Standards (CG–ENG) 2100 2nd Street SW., Stop 7126, Washington, DC 20593–7126, telephone 202–372–1418 and at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030 or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*. Also, it is available from the sources indicated in this section.

(b) American National Standards Institute (ANSI), 25 West 43rd Street, 4th floor, New York, NY 10036.

(1) ANSI B16.5, Steel Pipe Flanges and Flanged Fittings, 1981, IBR approved for §§ 39.2001(i) and 39.6001(k).

(2) [Reserved]

(c) American Petroleum Institute (API), 1220 L Street NW., Washington, DC 20005.

(1) API Standard 2000, Venting Atmospheric and Low-Pressure Storage Tanks (Non-refrigerated and Refrigerated), Third Edition, January 1982 (reaffirmed December 1987)(''API 2000''), IBR approved for § 39.2011(b).

(2) [Reserved]

(d) ASTM International (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959.

(1) ASTM F1122–87 (Reapproved1992)—Standard Specification for Quick Disconnect Couplings (''ASTM F1122''), IBR approved for § 39.2001(k).

(2) ASTM F1271—Standard Specification for Spill Valves for Use in Marine Tank Liquid Overpressure Protection Applications (''ASTM F1271''), December 29, 1989, IBR approved for § 39.2009(a).

(e) International Electrotechnical Commission (IEC), Bureau Central de la Commission Electrotechnique Internationale, 3, rue de Varembé, P.O. Box 131, CH—1211 Geneva 20, Switzerland.

(1) IEC 60309–1 Plugs, Socket-Outlets and Couplers for Industrial Purposes—Part 1: General Requirements, Edition 4.2 2012–06, IBR approved for § 39.2009(a).

(2) IEC 60309–2 Plugs, Socket-Outlets and Couplers for Industrial Purposes—Part 2: Dimensional Interchangeability Requirements for Pin and Contact-tube Accessories, Edition 4.2 2012–05, IBR approved for § 39.2009(a).

(f) International Maritime Organization (IMO), 4 Albert Embankment, London SE1 7SR, United Kingdom.

(1) International Convention for the Safety of Life at Sea, Consolidated Text of the 1974 SOLAS Convention, the 1978 SOLAS Protocol, the 1981 and 1983 SOLAS Amendments (1986) (''SOLAS''), IBR approved for § 39.2001(e).

(2) [Reserved]

(g) National Electrical Manufacturers Association (NEMA), 1300 North 17th Street, Suite 1752, Rosslyn, VA 22209.

(1) ANSI NEMA WD–6—Wiring Devices, Dimensional Requirements, 1988 (''NEMA WD–6''), IBR approved for § 39.2009(a)

(2) [Reserved]

(h) National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169–7471.

(1) NFPA 70—National Electrical Code, 2011, IBR approved for § 39.2009(a).

(2) [Reserved]

(i) Oil Companies International Marine Forum (OCIMF), 29 Queen Anne's Gate, London SWIH 9BU, England.

(1) International Safety Guide for Oil Tankers and Terminals, Fifth Edition, 2006 (''ISGOTT''), IBR approved for §§ 39.3001(g), 39.5001(c), 39.6001(g), and 39.6005(a).

(2) [Reserved]

EDITORIAL NOTE: At 78 FR 60147, Sept. 30, 2013, § 39.1005 was amended; however, the amendment could not be incorporated due to inaccurate amendatory instruction.

§ 39.1009 Additional tank vessel vapor processing unit requirements—TB/ALL.

(a) Vapor piping, fitting, valves, flanges, and pressure vessels comprising the construction and installation of a permanent or portable vapor processing unit onboard a tank vessel must meet the marine engineering requirements of 46 CFR chapter I, subchapter F.

(b) Electrical equipment comprising the construction and installation of a permanent or portable vapor processing unit onboard a tank vessel must meet the electrical engineering requirements of 46 CFR chapter I, subchapter J.

(c) In addition to complying with the rules of this part, tank vessels with a permanent or portable vapor processing unit must comply with applicable requirements of 33 CFR part 154, subpart P.

(d) When differences between the requirements for vessels contained in 46 CFR chapter I, subchapters F and J and requirements for facilities contained in 33 CFR part 154, subpart P need to be resolved, the requirements of 46 CFR chapter I, subchapters F and J apply, unless specifically authorized by the Marine Safety Center.

§ 39.1011 Personnel training requirements—TB/ALL.

Personnel responsible for operating the vapor control system (VCS) must complete a training program prior to the operation of the system installed onboard the tank vessel. As part of the training program, personnel must be able to demonstrate, through drills and practical knowledge, the proper VCS operation procedures for normal and emergency conditions. The training program must cover the following subjects:

(a) Purpose of a VCS;

(b) Principles of the VCS;

(c) Components of the VCS;

(d) Hazards associated with the VCS;

(e) Coast Guard regulations in this part;

(f) Vapor control operation procedures during cargo transfer or tank barge cleaning, including:

(1) Testing and inspection requirements;

(2) Pre-transfer or pre-cleaning procedures;

(3) Connection sequence;

(4) Startup procedures; and

(5) Normal operations; and

(g) Emergency procedures.

§ 39.1013 U.S.-flagged tank vessel certification procedures for vapor control system designs—TB/ALL.

(a) For an existing Coast Guard-approved vapor control system (VCS) that has been operating before July 23, 1990, the tank vessel owner or operator must submit detailed engineering drawings, calculations, and specifications to the Marine Safety Center (MSC) for review and approval before modifying the system or transferring vapor to a facility that was not approved by the Coast Guard for that kind of vapor transfer.

(b) For a Coast Guard-approved vessel VCS that began operating on or after July 23, 1990, the tank vessel owner or operator must submit plans, calculations, and specifications to the MSC for review and approval before modifying the system.

(c) A tank vessel owner or operator must submit plans, calculations, and specifications for a new tank vessel VCS to the MSC for review and approval before installing the system. A permanent or portable vapor processing unit onboard a tank vessel will be reviewed, together with the tank vessel, as a complete and integrated system.

(d) Once the plan review and inspection of the tank vessel VCS satisfy the requirements of this part, the Officer in Charge, Marine Inspection (OCMI) will endorse the Certificate of Inspection for the U.S.-flagged tank vessel.

§ 39.1015 Foreign-flagged tank vessel certification procedures for vapor control system designs—TB/ALL.

As an alternative to meeting the requirements in 33 CFR 39.1013(a), (b), and (c), the owner or operator of a foreign-flagged tank vessel may submit certification by the classification society that classifies vessels under their foreign flags to the Marine Safety Center. Upon receipt of the certification stating that the vapor control system (VCS) meets the requirements of this part, the Officer in Charge, Marine Inspection (OCMI) will endorse the vessel's Certificate of Compliance for foreign-flagged tank vessels.

§ 39.1017 Additional certification procedures for a tank barge vapor collection system design—B/ALL.

(a) For a tank barge vapor collection system intended for operation in multi-breasted loading using a single facility vapor connection, the tank barge owner or operator must submit plans, calculations, and specifications to the Marine Safety Center (MSC) for review and approval before beginning a multi-breasted loading operation.

(b) For a tank barge intended for collecting vapors emitted from its cargo tanks during gas-freeing or cleaning operations at a cleaning facility, the barge owner or operator must submit the following items to the MSC for review and approval:

(1) Stripping system plans and specifications, except those approved by the MSC on or before the August 15, 2013; and

(2) Stripping and/or gas-freeing rate calculations, except those approved by the MSC on or before the August 15, 2013.

(c) Once the vapor collection system satisfies the requirements of this part, the Officer in Charge, Marine Inspection (OCMI) will endorse the Certificate of Inspection that the tank barge is acceptable for collecting vapors during cleaning operations.

Subpart 39.2000—Equipment and Installation

§ 39.2001 Vapor collection system—TB/ALL.

(a) Vapor collection piping must be fixed piping and the vessel's vapor connection must be located as close as practicable to the loading manifold, except—

(1) As allowed by the Commandant; and

(2) A vessel certificated to carry cargo listed in 46 CFR, part 151, Table 151.05 or part 153, Table 1 may use flexible hoses no longer than three meters (9.84 feet) for interconnection between fixed piping onboard the vessel to preserve segregation of cargo systems. These flexible hoses must also meet the requirements in paragraph (i) of this section, excluding paragraph (i)(5), and meet the following additional requirements:

(i) The installation of flexible hoses must include an isolation valve mounted on the tank side of the connection; and

(ii) Hose connections permitted under paragraph (a)(2) of this section are exempt from the requirements of paragraph (h) of this section.

(b) When collecting incompatible vapors simultaneously, vapors must be kept separate throughout the entire vapor collection system.

(c) Vapor collection piping must be electrically bonded to the hull and must be electrically continuous.

(d) The vapor collection system must have a mechanism to eliminate liquid condensation, such as draining and collecting liquid from each low point in the line.

(e) For a tankship that has an inert gas system, a mechanism must be in place to isolate the inert gas supply from the vapor control system (VCS). The inert gas main isolation valve required by chapter II–2, Regulation 62.10.8 of SOLAS (incorporated by reference, see 46 CFR 39.1005), may be used to satisfy this requirement.

(f) The vapor collection system must not interfere with the proper operation of the cargo tank venting system.

(g) The tank vessel owner or operator must install an isolation valve capable of manual operation. It must be located at the vessel vapor connection and must clearly show whether the valve is in the open or closed position via an indicator, valve handle, or valve stem.

(h) The last 1.0 meter (3.3 feet) of vapor piping upstream of the vessel vapor connection and each end of a vapor hose must be—

(1) Painted in the sequence of red/yellow/red. The width of the red bands must be 0.1 meter (0.33 foot) and the width of the middle yellow band must be 0.8 meter (2.64 feet); and

(2) Labeled with the word ''VAPOR'' painted in black letters at least 50.8 millimeters (2 inches) high.

(i) Hoses that transfer vapors must meet the following requirements:

(1) Have a design burst pressure of at least 25 pounds per square inch gauge (psig);

(2) Have a maximum allowable working pressure no less than 5 psig;

(3) Be capable of withstanding at least a 2.0 pounds per square inch (psi) vacuum without collapsing or constricting;

(4) Be electrically continuous with a maximum resistance of 10,000 ohms;

(5) Have flanges with—

(i) A bolthole arrangement complying with the requirements for 150 pound class ANSI B16.5 flanges (incorporated by reference, see 46 CFR 39.1005); and

(ii) One or more 15.9 millimeter (0.625 inch) diameter hole(s) located midway between boltholes and in line with the bolthole pattern; and

(6) Be abrasion and kinking resistant.

(j) Each vessel vapor connection flange face must have a permanent stud projecting outward that has a 12.7 millimeter (0.5 inch) diameter and is at least 25.4 millimeters (1 inch) long. It must be located at the top of the flange face, midway between boltholes, and in line with the bolthole pattern.

(k) Quick disconnect couplings (QDCs) may be used instead of flanges at the flexible hose connection and fixed piping on tankships provided they meet ASTM F1122 (incorporated by reference, see 46 CFR 39.1005) and are designed as ''Standard Class QDC.''

(l) Hose saddles that provide adequate support to prevent kinking or collapse of hoses must accompany vapor hose handling equipment.

(m) For cargoes that have toxic properties, listed in 46 CFR Table 151.05 with the ''Special requirements'' column referring to 46 CFR 151.50–5, an overfill alarm and shutdown system that meet the requirements of 46 CFR 39.2007(a), 39.2009(a), or 39.2009(b) must be used for primary overfill protection. If the vessel is also equipped with spill valves or rupture disks, their setpoints must be set higher than the vessel's pressure relief valve setting as required by 46 CFR 39.2009(a)(3).

§ 39.2003 Cargo gauging system—TB/ALL.

(a) A cargo tank of the tank vessel connected to a vapor collection system must be equipped with a permanent or portable cargo gauging device that—

(1) Is a closed type as defined in 46 CFR 151.15.10(c) that does not require opening the tank to the atmosphere during cargo transfer;

(2) Allows the operator to determine the level of liquid in the tank for the full range of liquid levels in the tank;

(3) Has an indicator for the level of liquid in the tank that is located where cargo transfer is controlled; and

(4) If portable, is installed on the tank during the entire transfer operation.

(b) Each cargo tank of a tank barge must have a high-level indicating device, unless the barge complies with 46 CFR 39.2009(a). The high-level indicating device must—

(1) Indicate visually the level of liquid in the cargo tank when the liquid level is within a range of 1 meter (3.28 feet) of the top of the tank;

(2) Show a permanent mark to indicate the maximum liquid level permitted under 46 CFR 39.3001(e) at even keel conditions; and

(3) Be visible from all cargo control areas.

§ 39.2007 Tankship liquid overfill protection—T/ALL.

(a) Each cargo tank of a tankship must be equipped with an intrinsically safe high-level alarm and a tank overfill alarm.

(b) If installed after July 23, 1990, the high-level alarm and tank overfill alarm required by paragraph (a) of this section must—

(1) Be independent of each other;

(2) Activate an alarm in the event of loss of power to the alarm system;

(3) Activate an alarm during the failure of electrical circuitry to the tank level sensor; and

(4) Be able to be verified at the tank for proper operation prior to each transfer. This procedure may be achieved with the use of an electronic self-testing feature that monitors the condition of the alarm circuitry and sensor.

(c) The high-level alarm required by paragraph (a) of this section must—

(1) Activate an alarm once the cargo level reaches 95 percent of the tank capacity or higher, but before the tank overfill alarm;

(2) Be identified with the legend ''High-level Alarm'' in black letters at least 50.8 millimeters (2 inches) high on a white background; and

(3) Activate a visible and audible alarm so that it can be seen and heard on the vessel where cargo transfer is controlled.

(d) The tank overfill alarm required by paragraph (a) of this section must—

(1) Be independent of the cargo gauging system;

(2) Be identified with the legend ''TANK OVERFILL ALARM'' in black letters at least 50.8 millimeters (2 inches) high on a white background;

(3) Activate a visible and audible alarm so that it can be seen and heard on the vessel where cargo transfer is controlled and in the cargo deck area; and

(4) Activate an alarm early enough to allow the person in charge of transfer operations to stop the cargo transfer before the tank overflows.

(e) If a spill valve is installed on a cargo tank fitted with a vapor collection system, it must meet the requirements of 46 CFR 39.2009(c).

(f) If a rupture disk is installed on a cargo tank fitted with a vapor collection system, it must meet the requirements of 46 CFR 39.2009(d).

§ 39.2009 Tank barge liquid overfill protection—B/ALL.

(a) Each cargo tank of a tank barge must have one of the following liquid overfill protection arrangements:

(1) A system meeting the requirements of 46 CFR 39.2007 that—

(i) Includes a self-contained power supply;

(ii) Is powered by generators on the barge; or

(iii) Receives power from a facility and is fitted with a shore tie cable and a 120-volt, 20-ampere explosion-proof plug that meets—

(A) ANSI NEMA WD–6 (incorporated by reference, see 46 CFR 39.1005);

(B) NFPA 70, Articles 406.9 and 501–145 (incorporated by reference, see 46 CFR 39.1005); and

(C) 46 CFR 111.105–9;

(2) An intrinsically safe overfill control system that—

(i) Is independent of the cargo-gauging device required by 46 CFR 39.2003(a);

(ii) Activates an alarm and automatic shutdown system at the facility overfill control panel 60 seconds before the tank is 100 percent liquid-full during a facility-to-vessel cargo transfer;

(iii) Activates an alarm and automatic shutdown system on the vessel discharging cargo 60 seconds before the tank is 100 percent liquid-full during a vessel-to-vessel cargo transfer;

(iv) Can be inspected at the tank for proper operation prior to each loading;

(v) Consists of components that, individually or in series, will not generate or store a total of more than 1.2 volts (V), 0.1 amperes (A), 25 megawatts (MW), or 20 microJoules (μJ);

(vi) Has at least one tank overfill sensor switch per cargo tank that is designed to activate an alarm when its normally closed contacts are open;

(vii) Has all tank overfill sensor switches connected in series;

(viii) Has interconnecting cabling that meets 46 CFR 111.105–11(b) and (d), and 46 CFR 111.105–17(a); and

(ix) Has a male plug with a five-wire, 16–A connector body meeting IEC 60309–1 and IEC 60309–2 (both incorporated by reference, see 46 CFR 39.1005), that is—

(A) Configured with pins S2 and R1 for the tank overfill sensor circuit, pin G connected to the cabling shield, and pins N and T3 reserved for an optional high-level alarm circuit meeting the requirements of this paragraph; and

(B) Labeled ''Connector for Barge Overflow Control System'' and labeled with the total inductance and capacitance of the connected switches and cabling;

(3) A spill valve that meets ASTM F1271 requirements (incorporated by reference, see 46 CFR 39.1005), and—

(i) Relieves at a predetermined pressure higher than the pressure at which the pressure relief valves meeting the requirements of 46 CFR 39.2011 operate;

(ii) Limits the maximum pressure at the top of the cargo tank during liquid overfill to not more than the maximum design working pressure for the tank when at the maximum loading rate for the tank; and

(iii) Has a means to prevent opening due to cargo sloshing while the vessel is in ocean or coastwise service; or

(4) A rupture disk arrangement that meets paragraphs (a)(3)(i), (ii), and (iii) of this section and is approved by the Commandant.

(b) A tank barge authorized to carry a cargo having toxic properties, meaning they are listed in 46 CFR Table 151.05 with the ''Special requirements'' column referring to 46 CFR 151.50–5, must comply with the requirements of 46 CFR 39.2001(m).

§ 39.2011 Vapor overpressure and vacuum protection—TB/ALL.

(a) The cargo tank venting system required by 46 CFR 32.55 must—

(1) Be capable of discharging cargo vapor at the maximum transfer rate plus the vapor growth for the cargo such that the pressure in the vapor space of each tank connected to the vapor control system (VCS) does not exceed—

(i) The maximum design working pressure for the tank; or

(ii) If a spill valve or rupture disk is fitted, the pressure at which the device operates;

(2) Relieve at a pressure corresponding to a pressure in the cargo tank vapor space not less than 1.0 pounds per square inch gauge (psig);

(3) Prevent a vacuum, which generates in any tank connected to the vapor collection system during the withdrawal of cargo or vapor at maximum rates, in a cargo tank vapor space from exceeding the maximum design vacuum; and

(4) Not relieve at a vacuum corresponding to a vacuum in the cargo tank vapor space between 14.7 pounds per square inch absolute (psia) (0 psig) and 14.2 psia (−0.5 psig).

(b) Each pressure-vacuum relief valve must—

(1) Be of a type approved under 46 CFR 162.017, for the pressure and vacuum relief setting desired;

(2) Be tested for venting capacity in accordance with paragraph 1.5.1.3 of API 2000 (incorporated by reference, see 46 CFR 39.1005). The test must be carried out with a flame screen fitted at the vacuum relief opening and at the discharge opening if the pressure-vacuum relief valve is not designed to ensure a minimum vapor discharge velocity of 30 meters (98.4 feet) per second; and

(3) If installed after July 23, 1991, have a mechanism to check that it operates freely and does not remain in the open position.

(c) A liquid filled pressure-vacuum breaker may be used for vapor overpressure and vacuum protection if the vessel owner or operator obtains the prior written approval of the Commandant.

(d) Vapor growth must be calculated following the Marine Safety Center guidelines available in Coast Guard VCS guidance at *http://homeport.uscg.mil,* or as specifically approved in writing by the Commandant after consultation with the Marine Safety Center.

§ 39.2013 High and low vapor pressure protection for tankships—T/ALL.

Each tankship with a vapor collection system must be fitted with a pressure-sensing device, located as close as practicable to the vessel vapor connection, that measures the pressure in the main vapor collection line, which—

(a) Has a pressure indicator located on the tankship where the cargo transfer is controlled; and

(b) Has a high-pressure and a low-pressure alarm that—

(1) Gives an audible and a visible warning on the vessel where the cargo transfer is controlled;

(2) Activates an alarm when the pressure-sensing device measures a high pressure of not more than 90 percent of the lowest pressure relief valve setting in the cargo tank venting system; and

(3) Activates an alarm when the pressure-sensing device measures a low pressure of not less than 0.144 pounds per square inch gauge (psig) for an inerted tankship, or the lowest vacuum relief valve setting in the cargo tank venting system for a non-inerted tankship.

§ 39.2014 Polymerizing cargoes safety—TB/ALL.

(a) Common vapor headers for polymerizing cargoes must be constructed with adequate means to permit internal examination of vent headers.

(b) Vapor piping systems and pressure-vacuum valves that are used for polymerizing cargoes must be inspected internally at least annually.

(c) Pressure-vacuum valves and spill valves which are used for polymerizing cargoes must be tested for proper movement prior to each transfer.

§ 39.2015 Tank barge pressure-vacuum indicating device—B/ALL.

A fixed pressure-sensing device must be installed as close as practicable to the vessel vapor connection on a tank barge with a vapor collection system. The pressure-sensing device must measure the pressure vacuum in the main vapor collection line and have a

pressure indicator located where the cargo transfer is controlled.

Subpart 39.3000—Vapor Collection Operations During Cargo Transfer

§ 39.3001 Operational requirements for vapor control systems during cargo transfer—TB/ALL.

(a) Vapor from a tank vessel may not be transferred to a facility in the United States, or vapor from a facility storage tank may not be transferred to a tank vessel, unless the facility's marine vapor control system (VCS) is certified by a certifying entity as meeting the requirements of 33 CFR part 154, subpart P and the facility's facility operations manual is marked by the local Coast Guard Captain of the Port (COTP) as required by 33 CFR 154.325(d).

(b) Vapor from a tank vessel may not be transferred to a vessel that does not have its certificate of inspection or certificate of compliance endorsed as meeting the requirements of this part and for controlling vapor of the cargo being transferred.

(c) For each cargo transferred using a vapor collection system, the pressure drop through the vapor collection system from the most remote cargo tank to the vessel vapor connection, including vapor hoses if used by the vessel, must be—

(1) Calculated at the maximum transfer rate and at lesser transfer rates;

(2) Calculated using a density estimate for the cargo vapor and air mixture, or vapor and inert gas mixture, based on a partial pressure (partial molar volumes) method for the mixture, assuming ideal gas law conditions;

(3) Calculated using a vapor growth rate as stated in 46 CFR 39.2011(d) for the cargo being transferred; and

(4) Included in the vessel's transfer procedures as a table or graph, showing the liquid transfer rate versus the pressure drop.

(d) The rate of cargo transfer must not exceed the maximum allowable transfer rate as determined by the lesser of the following:

(1) Eighty percent of the total venting capacity of the pressure relief valves in the cargo tank venting system when relieving at the set pressure.

(2) The total vacuum relieving capacity of the vacuum relief valves in the cargo tank venting system when relieving at the set pressure.

(3) For a given pressure at the facility vapor connection, or if vessel-to-vessel transfer at the vapor connection of the service vessel, then the rate based on pressure drop calculations at which the pressure in any cargo tank connected to the vapor collection system exceeds 80 percent of the setting of any pressure relief valve in the cargo tank venting system.

(e) Cargo tanks must not be filled higher than—

(1) 98.5 percent of the cargo tank volume; or

(2) The level at which an overfill alarm complying with 46 CFR 39.2007 or 39.2009(a)(2) is set.

(f) A cargo tank should remain sealed from the atmosphere during cargo transfer operations. The cargo tank may only be opened temporarily for gauging or sampling while the tank vessel is connected to a VCS as long as the following conditions are met:

(1) The cargo tank is not being filled or no vapor is being transferred into the cargo tank;

(2) For cargo loading, any pressure in the cargo tank vapor space is first reduced to atmospheric pressure by the VCS, except when the tank is inerted;

(3) The cargo is not required to be closed or restricted gauged by 46 CFR part 151, Table 151.05 or part 153, Table 1; and

(4) For static accumulating cargo, all metallic equipment used in sampling or gauging must be electrically bonded to the vessel and remain bonded to the vessel until it is removed from the tank, and if the tank is not inerted, 30 minutes must have elapsed after any cargo transfer to the tank is stopped, before the equipment is put into the tank.

(g) For static accumulating cargo, the initial transfer rate must be controlled in accordance with OCIMF ISGOTT Section 11.1.7 (incorporated by reference, see 46 CFR 39.1005), in order to minimize the development of a static electrical charge.

(h) If cargo vapor is collected by a facility that requires the vapor from the vessel to be inerted in accordance with 33 CFR 154.2105, the oxygen content in the vapor space of each cargo tank connected to the vapor collection system must not exceed 60 percent by volume of the cargo's minimum oxygen concentration for combustion (MOCC), or 8 percent by volume for vapor of crude oil, gasoline blends, or benzene, at the start of cargo transfer. The oxygen content of each tank, or each area of a tank formed by each partial bulkhead, must be measured at a point 1.0 meter (3.28 feet) below the tank top and at a point equal to one-half of the ullage.

(i) If the vessel is equipped with an inert gas system, the isolation valve required by 46 CFR 39.2001(e) must remain closed during vapor transfer.

(j) Unless equipped with an automatic self-test and circuit-monitoring feature, each high-level alarm and tank overfill alarm on a cargo tank being loaded, required by 46 CFR 39.2007 or 39.2009, must be tested at the tank for proper operation within 24 hours prior to the start of cargo transfer.

Subpart 39.4000—Vessel-to-Vessel Transfers Using Vapor Balancing

§ 39.4001 General requirements for vapor balancing—TB/ALL.

(a) Vessels using vapor balancing while conducting a vessel-to-vessel transfer operation, directly or through a shore loop, must meet the requirements of this subpart in addition to the requirements of 46 CFR part 39, subparts 39.1000, 39.2000, and 39.3000. Arrangements other than vapor balancing used to control vapor emissions during a vessel-to-vessel transfer operation must receive approval from the Commandant.

(b) A vapor balancing operation must receive approval from the Commandant to use a compressor or blower to assist vapor transfer.

(c) Vapor balancing is prohibited when the cargo tanks on a vessel discharging cargo are inerted and the cargo tanks on a vessel receiving cargo are not inerted.

(d) A vessel that intends to collect vapors (during a vessel-to-vessel transfer operation) from cargoes not previously approved must receive specific approval from the Commandant before beginning transfer operations.

§ 39.4003 Design and equipment for vapor balancing—TB/ALL.

(a) During transfer operations, if the cargo tanks are inerted on a vessel discharging cargo to a receiving vessel with inerted cargo tanks, the service vessel must—

(1) Inert the vapor transfer hose prior to transferring cargo vapor; and

(2) Have an oxygen analyzer with a sensor or sampling connection fitted within 3 meters (9.74 feet) of the vessel vapor connection that—

(i) Activates a visible and an audible alarm on the service vessel where cargo transfer is controlled when the oxygen content in the vapor collection system exceeds 60 percent by volume of the cargo's minimum oxygen concentration for combustion (MOCC), or 8 percent by volume for vapor of crude oil, gasoline blends, or benzene;

(ii) Has an oxygen concentration indicator located on the service vessel where the cargo transfer is controlled; and

(iii) Has a connection for injecting a span gas of known concentration for calibration and testing of the oxygen analyzer.

(b) If the cargo tanks are not inerted on a vessel discharging cargo during transfer operations, and the cargo is flammable or combustible, the vapor collection line on the service vessel must be fitted with a detonation arrester that meets the requirements of 33 CFR 154.2106, and be located within 3 meters (9.74 feet) of the vessel vapor connection.

(c) An electrical insulating flange or one length of non-conductive hose must be provided between the vessel vapor connection on each vessel operating a vessel-to-vessel cargo transfer.

§ 39.4005 Operational requirements for vapor balancing—TB/ALL.

(a) During a vessel-to-vessel transfer operation, each cargo tank being loaded must be connected by the vapor collection system to a cargo tank that is being discharged.

(b) If the cargo tanks on both the vessel discharging cargo and the vessel

receiving cargo are inerted, the following requirements must be met:

(1) Each tank on a vessel receiving cargo, which is connected to the vapor collection system, must be tested prior to cargo transfer to ensure that the oxygen content in the vapor space does not exceed 60 percent by volume of the cargo's minimum oxygen concentration for combustion (MOCC), or 8 percent by volume for vapor of crude oil, gasoline blends, or benzene. The oxygen content of each tank, or each area of a tank formed by each partial bulkhead, must be measured at a point 1 meter (3.28 feet) below the tank top and at a point equal to one-half of the ullage;

(2) Prior to starting transfer operations, the oxygen analyzer required by 46 CFR 39.4003(a) must be tested for proper operation;

(3) During transfer operations the oxygen content of vapors being transferred must be continuously monitored;

(4) Cargo transfer must be terminated if the oxygen content exceeds 60 percent by volume of the cargo's MOCC, or 8 percent by volume for vapor of crude oil, gasoline blends, or benzene;

(5) Transfer operations may resume once the oxygen content in the tanks of the vessel receiving cargo is reduced to 60 percent by volume or less of the cargo's MOCC, or 8 percent by volume or less for vapor of crude oil, gasoline blends, or benzene; and

(6) Prior to starting vapor transfer operations, the vapor transfer hose must be purged of air and inerted.

(c) The isolation valve located on the service vessel required by 46 CFR 39.2001(g) must not be opened until the pressure in the vapor collection system on the vessel receiving cargo exceeds the pressure in the vapor collection system on the vessel discharging cargo.

(d) The vessel discharging cargo must control the cargo transfer rate so that the transfer rate does not exceed—

(1) The authorized maximum discharge rate of the vessel discharging cargo;

(2) The authorized maximum loading rate of the vessel receiving cargo; or

(3) The processing rate of the approved vessel vapor processing system, if one is used to process the vapor collected during the transfer operations.

(e) The pressure in the vapor space of any cargo tank connected to the vapor collection line on either the vessel receiving cargo or the vessel discharging cargo must not exceed 80 percent of the lowest setting of any pressure relief valve during ballasting or cargo transfer.

(f) Impressed current cathodic protection systems must be de-energized during cargo transfer operations.

(g) Tank washing is prohibited unless the cargo tanks on both the vessel discharging cargo and the vessel receiving cargo are inerted, or the tank is isolated from the vapor collection line.

Subpart 39.5000—Multi-breasted Loading Using a Single Facility Vapor Connection

§ 39.5001 General requirements for multi-breasted loading—B/CLBR.

(a) Each barge must be owned or operated by the same entity and must have an approved vapor control system (VCS).

(b) There must be only one crossover vapor hose and it must—

(1) Comply with 46 CFR 39.2001(h) and (i);

(2) Have a diameter at least as that of the largest pipe in the outboard barge's VCS, and

(3) If it extends more than 25 feet (7.62 meters) between the two barges during the transfer operation, it must be as short as is practicable, safe for the conditions, supported off the vessels' decks, and its pressure drop calculations must be approved for its length by the Marine Safety Center (MSC), or reapproved by the MSC if existing approval was based on a 25-foot hose.

(c) The hazards associated with barge-to-barge or barge-to-shore electric currents must be controlled in accordance with sections 11.9 or 17.5 of OCIMF ISGOTT (incorporated by reference, see 46 CFR 39.1005).

(d) The cargo transfer procedures must reflect the procedures to align and disconnect a facility VCS to and from an inboard barge, and alternately, to and from an outboard barge through

the vapor cross-over hose and the inboard barge's vapor header, or ''dummy'' header. This must include proper connections for the facility VCS's alarm/shutdown system to the alarm/shutdown system of the barge being loaded at the time.

(e) Calculations for multi-breasted loading must consider additional pressure drops across the barges' vapor collection systems and the cross vapor hose and must be reviewed and approved by the MSC per 46 CFR 39.1017(a).

(f) Barge owners and operators must comply with any additional operational requirements imposed by the local Captain of the Port (COTP) in whose zone the shore facility is located. These facilities' VCSs must be certified for conducting such an operation.

§ 39.5003 Additional requirements for multi-breasted loading using an inboard barge vapor collection system—B/CLBR.

(a) Each barge must have at least one liquid overfill protection system that fulfills the requirements of 46 CFR 39.2009.

(b) The vapor header of an inboard barge that is used during outboard barge loading must—

(1) Be aligned with the vapor header of the outboard barge;

(2) Have a diameter at least as large as the diameter of the largest pipe in the vapor collection system of the outboard barge; and

(3) Be marked in accordance with 46 CFR 39.2001(h).

(c) A licensed tankerman, trained in and familiar with multi-breasted loading operations, must be onboard each barge during transfer operations. The tankerman serves as the barge person-in-charge (PIC). During transfer operations, the barge PICs must maintain constant communication with each other as well as with the facility PIC.

(d) If multi-breasted loading will be conducted using more than one liquid transfer hose from the shore facility, the facility must be capable of activating the emergency shutdown system required by 33 CFR 154.550. This will automatically stop the cargo flow to each transfer hose simultaneously, in the event an upset condition occurs that closes the remotely operated cargo vapor shutoff valve in the facility's vapor control system. Multi-breasted loading is prohibited unless the shore facility can comply with this requirement.

§ 39.5005 Additional requirements for multi-breasted loading using a "dummy" vapor header—B/CLBR.

(a) Each inboard barge ''dummy'' header used during outboard barge loading must—

(1) Be aligned with the vapor header of the outboard barge;

(2) Have a diameter at least as large as the diameter of the largest pipe in the vapor collection system of the outboard barge;

(3) Be marked in accordance with 46 CFR 39.2001(h); and

(4) Meet the same design and installation requirements for the vapor collection piping onboard the same barge.

(b) Flanges must meet the same design and installation requirements for flanges in the vapor collection system onboard the same barge.

(c) A stud must be permanently attached, as required in 46 CFR 39.2001(j), to the vapor connection flange on the ''dummy'' header.

Subpart 39.6000—Tank Barge Cleaning Operations with Vapor Collection

§ 39.6001 Design and equipment of vapor collection and stripping systems—B/ALL.

(a) Each barge engaged in cleaning operations at an approved cleaning facility must have a conductive fixed stripping line installed in each cargo tank. The line must extend to the low point of each cargo tank, extend through and be welded to the top of the cargo tank, and terminate above deck with a full port valve plugged at the open end.

(b) An existing fixed stripping system may be used instead of the stripping line required in paragraph (a) of this section.

(c) Each stripping line must be labeled at an on-deck location with the words ''Stripping Line-Tank'' followed

by the tank's number, name, or location.

(d) Vapors may be collected from the barge's cargo tanks through a common fixed vapor header, through the fixed liquid cargo header, or through flanged flexible hoses located at the top of each cargo tank.

(e) The vapor collection system must not interfere with the proper operation of the cargo tank venting system.

(f) A barge being gas-freed by a fluid displacement system must fulfill the following requirements:

(1) If the fluid medium is a compressible fluid, such as inert gas, it must be injected into the barge's cargo tanks through a common fixed vapor header, through the fixed liquid cargo header, or through a flexible hoses flanged to a connection located at the top of each cargo tank;

(2) If the fluid medium is a non-compressible fluid, such as water, it must be injected into the barge's cargo tanks through the fixed liquid cargo header only; and

(3) If the fluid medium is a non-compressible fluid, such as water, the barge must be equipped with a liquid overfill protection arrangement and fulfill the requirements for tank barge liquid overfill protection contained in 46 CFR 39.2009.

(g) The barge vapor connection must be electrically insulated from the facility vapor connection and the fluid injection connection must be electrically insulated from the fluid injection source, if fitted, in accordance with OCIMF ISGOTT section 17.5 (incorporated by reference, see 46 CFR 39.1005).

(h) Vapor collection piping must be electrically bonded to the barge hull and must be electrically continuous.

(i) All equipment used on the barge during cleaning operations must be electrically bonded to the barge and tested to ensure electrical continuity prior to each use.

(j) Hoses used for the transfer of vapors during cleaning operations must meet the requirements of 46 CFR 39.2001(i) and have markings as required in 46 CFR 39.2001(h).

(k) Hoses used for the transfer of liquids during cleaning operations must—

(1) Have a designed burst pressure of at least 600 pounds per square inch gauge (psig);

(2) Have a maximum allowable working pressure of at least 150 psig;

(3) Be capable of withstanding at least the maximum vacuum rating of the cleaning facility's vapor-moving device without collapsing or constricting;

(4) Be electrically continuous with a maximum resistance of 10,000 ohms;

(5) Have flanges with a bolthole arrangement complying with the requirements for 150 pound class ANSI B16.5 flanges (incorporated by reference, see 46 CFR 39.1005); and

(6) Be abrasion and kinking resistant and compatible with the liquids being transferred.

(l) If a hose is used to transfer either vapor or liquid from the barge during cleaning operations, hose saddles that provide adequate support to prevent the collapse or kinking of hoses must accompany hose handling equipment.

§ 39.6003 Overpressure and underpressure protection during stripping or gas-freeing operations—B/ALL.

(a) The volumetric flow rates during stripping or gas-freeing operations must be limited within a range such that the cargo tank venting system required by 46 CFR 32.55 will keep the cargo tank within its maximum design working pressure or the maximum design vacuum.

(b) Each barge must be fitted with a means for connecting the pressure-sensing and pressure-indicating devices required by 33 CFR 154.2203(g) and (o) on each cargo tank top, or on the common vapor header provided that pressures measured by the devices are adjusted to compensate for the pressure drop across the vapor piping from the cargo tank to the devices. The valve for the connection point must be labeled ''Pressure Sensor/indicator Connection.''

(c) For stripping operations with closed cargo tanks, the maximum stripping rate must not exceed the volumetric flow capacity of the vacuum relief valve protecting the cargo tank.

§ 39.6005 Inspection prior to conducting gas-freeing operations—B/ALL.

(a) The following inspections must be conducted by the barge person in charge prior to commencing gas-freeing operations, and show that—

(1) Each part of the barge's vapor collection system is aligned to allow vapor to flow to a cleaning facility's vapor control system (VCS);

(2) If a fluid displacement system is used to conduct gas-freeing operations—

(i) The fluid supply line is connected to the fluid injection connection; and

(ii) The maximum fluid injection rate is determined in accordance with 46 CFR 39.6007(c)(2);

(3) The maximum stripping or gas-freeing rate is determined in accordance with 46 CFR 39.6003(c) or 39.6007(c), respectively, and adequate openings required by 46 CFR 39.6007(c)(1) are available and identified;

(4) The pressure-sensing and pressure-indicating devices required by 33 CFR 154.2203 are connected as required by 46 CFR 39.6003(b);

(5) The maximum and minimum operating pressures of the barge being cleaned are determined;

(6) Unrepaired loose covers, kinks, bulges, gouges, cuts, slashes, soft spots, or any other defects which would permit the discharge of vapors through the vapor recovery hose material must be detected during inspection and repaired prior to operation;

(7) The facility vapor connection is electrically insulated from the barge vapor connection and the fluid injection connection is electrically insulated from the fluid injection source, if fitted, in accordance with OCIMF ISGOTT section 17.5 (incorporated by reference, see 46 CFR 39.1005); and

(8) All equipment is bonded in accordance with 46 CFR 39.6001(h).

§ 39.6007 Operational requirements for tank barge cleaning—B/ALL.

(a) During cleaning operations, vapors from a tank barge cannot be transferred to a cleaning facility which does not have a marine vapor control system (VCS) certified by a certifying entity, and its facility operations manual endorsed by the Captain of the Port (COTP) as meeting the requirements of 33 CFR part 154, subpart P.

(b) Prior to commencing stripping operations, the maximum allowable stripping rate must be determined. The maximum allowable stripping rate must not exceed the volumetric flow capacity of the vacuum relief valve protecting the cargo tank.

(c) The maximum gas-freeing rate is determined by the following:

(1) For a vacuum displacement system—

(i) The maximum allowable gas-freeing rate is a function of the area open to the atmosphere for the cargo tank being gas-freed. The area open to the atmosphere must be large enough to maintain the pressure in the cargo tank being gas-freed at or above 14.5 pounds per square inch absolute (psia) (−0.2 pounds per square inch gauge (psig));

(ii) The maximum allowable gas-freeing rate must be calculated from Table 1 of this section, using the area open to the atmosphere for the cargo tank being gas-freed as the entering determination;

(2) For a fluid displacement system, the maximum allowable gas-freeing rate is determined by the lesser of the following:

(i) Eighty percent of the total venting capacity of the pressure relief valve in the cargo tank venting system when relieving at its set pressure;

(ii) Eighty percent of the total vacuum relieving capacity of the vacuum relief valve in the cargo tank venting system when relieving at its set pressure; or

(iii) The rate based on pressure drop calculations at which, for a given pressure at the facility vapor connection, the pressure in the cargo tank being gas-freed exceeds 80 percent of the setting of any pressure relief valve in the cargo tank venting system.

(d) Any hatch and/or fitting used to calculate the minimum area required to be open to the atmosphere must be opened and secured in such a manner as to prevent accidental closure during gas freeing. All flame screens for the hatch and/or fitting opened must be removed in order to allow for maximum airflow. The hatch and/or fitting must be secured open before the pressure in

the cargo tank falls below 10 percent of the highest setting of any of the barge's vacuum relief valves.

(e) ''Do Not Close Hatch/Fitting'' signs must be conspicuously posted near the hatch and/or fitting opened during gas-freeing operations.

(f) To minimize the dangers of static electricity, all equipment used on the barge during gas-freeing and cleaning operations must be electrically bonded to the barge and tested to ensure electrical continuity before each use.

(g) If the barge is equipped with an inert gas system, the inert gas main isolation valve must remain closed during cleaning operations.

(h) Vapors from incompatible cargoes that are collected simultaneously must be kept separated throughout the barge's entire vapor collection system. Chemical compatibility must be determined in accordance with the procedures contained in 46 CFR part 150, part A.

TABLE 1—MINIMUM OPEN AREA FOR BARGE CLEANING HATCHES

Air flow (CFM) (cubic feet/minute)	Air flow (CFS) (cubic feet/second)	Open area (square inches)	Diameter opening (inches)	Square opening (inches)
500	8.3	10.7	3.7	3.3
600	10.0	12.8	4.0	3.6
700	11.7	15.0	4.4	3.9
800	13.3	17.1	4.7	4.1
900	15.0	19.3	5.0	4.4
1000	16.7	21.4	5.2	4.6
1100	18.3	23.6	5.5	4.9
1200	20.0	25.7	5.7	5.1
1300	21.7	27.8	6.0	5.3
1400	23.3	30.0	6.2	5.5
1500	25.0	32.1	6.4	5.7
1600	26.7	34.3	6.6	5.9
1700	28.3	36.4	6.8	6.0
1800	30.0	38.5	7.0	6.2
1900	31.7	40.7	7.2	6.4
2000	33.3	42.8	7.4	6.5
2100	35.0	45.0	7.6	6.7
2200	36.7	47.1	7.7	6.9
2300	38.3	49.3	7.9	7.0
2400	40.0	51.4	8.1	7.2
2500	41.7	53.5	8.3	7.3
2600	43.3	55.7	8.4	7.5
2700	45.0	57.8	8.6	7.6
2800	46.7	60.0	8.7	7.7
2900	48.3	62.1	8.9	7.9
3000	50.0	64.2	9.0	8.0
3100	51.7	66.4	9.2	8.1
3200	53.3	68.5	9.3	8.3
3300	55.0	70.7	9.5	8.4
3400	56.7	72.8	9.6	8.5
3500	58.3	75.0	9.8	8.7
3600	60.0	77.1	9.9	8.8
3700	61.7	79.2	10.0	8.9
3800	63.3	81.4	10.2	9.0
3900	65.0	83.5	10.3	9.1
4000	66.7	85.7	10.4	9.3

§ 39.6009 Barge person in charge: Designation and qualifications—B/ALL.

The designation and qualification requirements contained in 33 CFR 155.700 and 33 CFR 155.710(a)(2) apply to the barge person in charge.

PART 40 [RESERVED]