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(4) When a cargo tank contains Grades B or C liquids, the vent lines shall be terminated with an approved pressure vacuum relief valve not less than 3 feet above the weather deck. When a cargo tank contains Grades D or E liquids the vent line may be terminated with a gooseneck fitted with flame screen at a reasonable height above the weather deck.

(d) *Hydrostatic tests.* All tanks vented to the atmosphere shall be hydrostatically tested to a pressure of 5 pounds per square inch or 1½ times the maximum head to which they may be subjected in service. A standpipe of 11½ feet in length attached to the tanks may be filled with water to accomplish the 5 pounds per square inch test.

[CGFR 69-53, 34 FR 11265, July 4, 1969, as amended by CGD 72-206R, 38 FR 17229, June 29, 1973; CGD 76-061, 41 FR 23401, June 10, 1976]

§ 105.20-5 Piping systems.

(a) Piping shall be copper, nickel copper, or copper nickel having a minimum wall thickness of 0.035"; except that seamless steel pipe or tubing which provides equivalent safety may be used for diesel cargo systems.

(b) Valves shall be of a suitable non-ferrous metallic Union Bonnet type with ground seats except that steel or nodular iron may be used in cargo systems utilizing steel pipe or tubing.

(c) Aluminium or aluminum alloy valves and fittings are prohibited for use in cargo lines.

§ 105.20-10 Pumps.

(a) Pumps for cargo dispensing shall be of a type satisfactory for the purpose.

(b) A relief valve shall be provided on the discharge side of pump if the pressure under shutoff conditions exceeds 60 pounds. When a relief valve is installed, it shall discharge back to the suction of the pump.

(c) Where electric motors are installed with dispensing pumps they shall be explosion proof and shall be labeled as explosion proof by Underwriter's Laboratories, Inc., or other recognized laboratory, as suitable for Class I, Group D atmospheres.

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§ 105.20-15 Grounding.

(a) All tanks and associated lines shall be electrically grounded to the vessel's common ground.

(b) A grounded type hose and nozzle shall be used for dispensing fuels.

Subpart 105.25—Additional Requirements—When Cargo Tanks Are Installed Below Decks

§ 105.25-1 General requirements.

(a) Cargo tank and piping systems shall be as described in Subpart 105.20.

§ 105.25-5 Compartments or areas containing cargo tanks or pumping systems.

(a) Compartments or areas containing tanks or pumping systems shall be closed off from the remainder of the vessel by gastight bulkheads. Such gastight bulkheads may be pierced for a drive shaft and pump engine control rods if such openings are fitted with stuffing boxes or other acceptable gland arrangements.

§ 105.25-7 Ventilation systems for cargo tank or pumping system compartment.

(a) Each compartment shall be provided with a mechanical exhaust system capable of ventilating such compartment with a complete change of air once in every 3 minutes. The intake duct or ducts shall be of sufficient size to permit the required air change. The exhaust duct or ducts shall be located so as to remove vapors from the lower portion of the space or bilges.

(b) The ventilation outlets shall terminate more than 10 feet from any opening to the interior of the vessel which normally contains sources of vapor ignition. The ventilation fan shall be explosion proof and unable to act as a source of ignition.

§ 105.25-10 Cargo pumping installation.

(a) Cargo pumps shall not be installed in the cargo tank compartment unless the drive system is outside the compartment.

(b) Suction pipelines from cargo tanks shall be run directly to the

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pump, but not through working or crew spaces of vessel.

§ 105.25-15 Spacings around tanks.

(a) Tanks shall be located so as to provide at least 15" space around tank, including top and bottom to permit external examination.

§ 105.25-20 Shutoff valves required.

(a) Shutoff valves shall be provided in the suction lines as close to the tanks as possible. The valves shall be installed so as to shut off against the flow.

(b) Remote control of this shutoff valve shall be provided where deemed necessary by the marine inspector.

Subpart 105.30—Electrical Requirements

§ 105.30-1 Electrical fittings and fixtures.

(a) In compartments or areas containing tanks or pumps handling other than Grade E petroleum products, no electrical fittings, fixtures, nor electrical equipment shall be installed or used unless approved for a Class I, Group D hazardous location and so labeled by Underwriter's Laboratories, Inc., or other recognized laboratories. (See subpart 110.10 of subchapter J (Electrical Engineering) of this chapter for listings of standards.)

(b) All electrical equipment, fixtures and fittings within 10 feet of a vent outlet or a dispensing outlet shall be explosion proof and shall be labeled as explosion proof by Underwriter's Laboratories, Inc., or other recognized laboratory, as suitable for Class I, Group D atmospheres.

§ 105.30-5 Grounding of electrical equipment.

(a) All electrical equipment shall be grounded to the vessel's common ground.

Subpart 105.35—Fire Extinguishing Equipment

§ 105.35-1 General.

(a) In addition to the requirements in § 28.160 of subchapter C of this chapter, at least two B-II dry chemical or foam

portable fire extinguishers bearing the marine type label of the Underwriter's Laboratories, Inc., shall be located at or near each dispensing area.

(b) This equipment shall be inspected prior to issuing a letter of compliance.

[CGFR 69-53, 34 FR 11265, July 4, 1969, as amended by CGD 95-028, 62 FR 51208, Sept. 30, 1997]

§ 105.35-5 Fire pumps.

(a) All vessels shall be provided with a hand operated portable fire pump having a capacity of at least 5 gallons per minute. This fire pump shall be equipped with suction and discharge hose suitable for use in firefighting. This pump may also serve as a bilge pump.

(b) A power-driven fire pump shall be installed on each vessel of more than 65 feet in length overall.

(1) The power fire pump shall be self-priming and of such size as to discharge an effective stream from a hose connected to the highest outlet.

(2) The minimum capacity of the power fire pump shall be 50 gallons per minute at a pressure of not less than 60 pounds per square inch at the pump outlet. The pump outlet shall be fitted with a pressure gage.

(3) The power fire pump may be driven off a propulsion engine or other source of power and shall be connected to the fire main. This pump may also be connected to the bilge system so that it can serve as either a fire pump or a bilge pump.

§ 105.35-10 Fire main system.

(a) All vessels required to be provided with a power-driven fire pump shall also be provided with a fire main system including fire main, hydrants, hose, and nozzles.

(b) Fire hydrants, when required, shall be of sufficient number and so located that any part of the vessel may be reached with an effective stream of water from a single length of hose.

(c) All piping, valves, and fittings shall be in accordance with good marine practice and suitable for the purpose intended.

§ 105.35-15 Fire hose.

(a) One length of fire hose shall be provided for each fire hydrant required.