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°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]

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**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, gas-tight 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 all 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,

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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).

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(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.