

(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. 391a(2)) 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 the following:

(1) Vessels under subsections (4) and (5) of Sec. 5, Port and Tanker Safety Act of 1978 (Pub. L. 95-474, 92 Stat. 1480, 46 U.S.C. 391a).

(2) Any foreign vessel not destined for, or departing from, a port or place subject to the jurisdiction of the United States, that is in innocent passage through the territorial seas of the United States or is in transit through the navigable waters of the United States which form a part of an international strait.

[CGD 77-057a, 44 FR 66501, Nov. 19, 1979]

§32.53-3 Exemptions.

(a) The Chief, Marine Safety and Environmental Protection 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

(G-MSO), U.S. Coast Guard, Washington, DC 20593-0001.

(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 Chief, Office of Marine Safety and Environmental Protection.

(e) The Chief, Office of Marine Safety and Environmental Protection 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]

§ 32.53-5 Operation—T/ALL.

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 at the pressure required under § 32.53-30, except when the cargo tanks are gas free.

§ 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 to supply the cargo tanks a gas or a mixture of gases that has an oxygen content of 5% or less by volume.

(c) Each inert gas system must be designed to eliminate the need for fresh air in the cargo tanks during normal operations except during gas freeing.

(d) Each cargo and cargo slop tank must be capable of being purged with inert gas.

(e) Each inert gas system that is designed to purge the tanks with fresh air must have blank flanges for installation on all fresh air inlets when they are not in use.

(f) Each inert gas system must be designed to minimize the risk of ignition from the generation of static electricity.

§ 32.53-15 Approval—T/ALL.

(a) The installer of each inert gas system must submit a description and specifications of the supply and distribution systems, including all control and monitoring devices, to the appropriate Coast Guard technical office in accordance with 46 CFR 50.20 for approval.

(b) Each inert gas system must meet the requirements of 46 CFR part 56, except:

(1) The 50 p.s.i. minimum design pressure does not apply, but valves, fittings, and vessels such as scrubbers must be designed for the maximum pressure and temperature they may encounter in service; and

(2) The only initial service test the system is required to pass is an initial service leak test.

§ 32.53-20 Inert gas generators—T/ALL.

Systems employing inert gas generators must meet the requirements of 46 CFR 63.05-20 for control of the generator. Plans for each inert gas generator must be submitted for approval in accordance with 46 CFR 63.05-5.

§ 32.53-25 Gas supply—T/ALL.

Each inert gas system must be capable of supplying inert gas at a capacity of 125 percent of the combined maximum rated capacities of all cargo pumps which can be simultaneously operated.

§ 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.

§ 32.53-35 Gas scrubber—T/ALL.

If the inert gas production process uses heated gas or introduces contaminants into the system, the system must have a scrubber or other device that reduces solid and sulphur combustion products and cools the inert gas.

§ 32.53-40 Scrubber: Cooling water supply—T/ALL.

(a) The cooling water system of each inert gas system that uses a scrubber must furnish an adequate supply of water to each scrubber without interfering with the water supply to the firefighting system.

(b) An alternate water supply must be available to each scrubber.

§ 32.53-45 Blowers—T/ALL.

(a) Each inert gas system must have at least two independent blowers that together are capable of delivering the amount of gas required by § 32.53-25 of this subpart.

(b) Each inert gas system must be designed to prevent the pressure exerted on the tanks from exceeding their maximum design pressure.

§ 32.53-50 Gas distribution lines: Non-return devices—T/ALL.

(a) Two non-return devices, one of which is a water seal, must be fitted in the inert gas main.

(b) The water supply system must be designed to ensure that an adequate supply of water to the water seal can be maintained manually or automatically at all times.

§ 32.53-55 Stop valves—T/ALL.

(a) Stop valves or other means of closure such as spectacle flanges must be fitted in each branch pipe at each tank.

(b) Each stop valve or other device must be a type that provides visible indication of whether it is open or closed.

§ 32.53-60 Instrumentation—T/ALL.

(a) Each inert gas system must be equipped with the following instruments with sensors fitted downstream of the blowers:

(1) Oxygen concentration indicator and permanent recorder.

(2) Pressure indicator and permanent recorder.

(3) Temperature indicator.

(b) Each instrument listed in paragraph (a) of this section must operate continuously when inert gas is being supplied to the tanks.

(c) Each inert gas system must have readouts of oxygen concentration, pressure, and temperature provided at the cargo control station and the location of the person in charge of the main propulsion machinery.

§ 32.53-65 Portable instruments—T/ALL.

(a) Each ship that has an inert gas system must have portable instruments for measuring concentrations of oxygen and hydrocarbon vapor in an inert atmosphere.

(b) Each tank must have fittings which allow the use of portable instruments.

§ 32.53-70 Alarms and controls—T/ALL.

(a) Alarms must sound at the location of the controls for the main propulsion machinery.

(b) Each inert gas system must have the following:

(1) An alarm that gives an audible and visual warning when the oxygen content of the inert gas exceeds 8 percent by volume.

(2) An alarm that gives an audible and visual warning when the gas pressure in the inert gas main downstream of all non-return devices is less than 100 millimeters (4 inches) of water.

(3) An alarm that gives an audible and visual warning and a control that automatically shuts off the system's blowers upon loss of normal water supply at the water seal.

(4) An alarm that gives an audible and visual warning and a control that automatically shuts off the system's blowers when the temperature of the inert gas that is being delivered to the cargo tanks is more than 65.6° C (150° F).

(5) An alarm that gives an audible and visual warning and a control that automatically shuts off the system's blowers upon loss of normal cooling water supply to any scrubber.

§ 32.53-75 Gas main: Automatic shut-down valve—T/ALL.

(a) The gas main of each inert gas system must have an automatic shut-down valve that is fitted where the gas main leaves the production plant.

(b) Each shut-down valve must be designed to close automatically upon blower failure.

§ 32.53-80 Tank cleaning—T/ALL.

Each inert gas system must be capable of maintaining an inert atmosphere within tanks that are being mechanically washed.

§ 32.53-85 Instruction manual—T/ALL.

(a) The master of each ship that has an inert gas system must have on board the ship an instruction manual that contains instructions for the safe operation and maintenance of the inert gas system.

(b) 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 paragraph (a) of this section must include procedures relating to vapor collection operations.

[CGD 74-127, 41 FR 3843, Jan. 26, 1976, as amended by CGD 88-102, 55 FR 25446, June 21, 1990]

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 pur-

pose. 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.