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§154.1015 Lighting in gas-dangerous space.

(a) Each gas-dangerous space that has lighting fixtures must have at least two branch circuits for lighting.

(b) Each switch and each overcurrent protective device for any lighting circuit that is in a gas-dangerous space must open each conductor of the circuit simultaneously.

(c) Each switch and each overcurrent protective device for lighting in a gas-dangerous space must be in a gas-safe space.

§154.1020 Emergency power.

The emergency generator must be designed to allow operation at the final angle of heel under §154.230(a).

FIREFIGHTING

Firefighting System: Exterior Water Spray

§154.1105 Exterior water spray system: General.

Each liquefied flammable gas vessel and each liquefied toxic gas vessel must have an exterior water spray system that meets §§154.1110 through 154.1135.

§154.1110 Areas protected by system.

Each water spray system must protect:

(a) All cargo tank surfaces that are not covered by the vessel's hull structure or a steel cover;

(b) Each cargo tank dome;

(c) Each on-deck storage vessel for flammable or toxic liquefied gases;

(d) Each cargo discharge and loading manifold;

(e) Each quick-closing valve under §§154.530, 154.532, and 154.538, and other control valves essential to cargo flow;

(f) Each boundary facing the cargo area of each superstructure that contains accommodation, service, or control spaces;

(g) Each boundary facing the cargo area of each deckhouse that contains accommodation, service, or control spaces; and

(h) Each boundary of each deckhouse that is within the cargo area and that is manned during navigation of the vessel or during cargo transfer operations, except the deckhouse roof if it is 2.4 m (8 ft.) or higher above the cargo containing structure.

[CGD 74–289, 44 FR 26009, May 3, 1979; 44 FR 59234, Oct. 15, 1979]

§154.1115 Discharge.

(a) The discharge density of each water spray system must be at least:

(1) 10000 $cm^3/m^2/min.$ (0.25 $gpm/ft.^2$) over each horizontal surface; and

(2) 4000 $cm^3/m^2/min.$ (0.10 $gpm/ft.^2$) against vertical surface, including the water rundown.

(b) The water spray protection under §154.1110 (d) and (e) must cover an area in a horizontal plane extending at least 0.5 m (19 in.) in each direction from the pipes, fittings, and valves, or the area of the drip tray, whichever is greater.

§154.1120 Nozzles.

(a) Nozzles for the water spray system must be spaced to provide the minimum discharge density under §154.1115 in each part of the protected area.

(b) The vertical distance between water spray nozzles for the protection of vertical surfaces must be 3.7 m (12 ft.) or less.

§154.1125 Pipes, fittings, and valves.

(a) Each pipe, fitting, and valve for each water spray system must meet Part 56 of this chapter.

(b) Each water spray main that protects more than one area listed in §154.1110 must have at least one isolation valve at each branch connection and at least one isolation valve downstream of each branch connection to isolate damaged sections.

(c) Each valved cross-connection from the water spray system to the fire main must be outside of the cargo area.

(d) Each pipe, fitting, and valve for the water spray system must be made of fire resistant and corrosion resistant materials, such as galvanized steel or galvanized iron pipe.

(e) Each water spray system must have a means of drainage to prevent corrosion of the system and freezing of accumulated water in subfreezing temperatures.

(f) Each water spray system must have a dirt strainer that is located at the water spray system manifold or pump.