point in the cargo tank, except collection wells, to 100 percent full.

§ 154.1310 Closed gauge shut-off valve.

Each closed gauge that is not mounted directly on the cargo tank must have a shut-off valve that is as close to the tank as practical.

§ 154.1315 Restricted gauge excess flow valve.

Each restricted gauge that penetrates a cargo tank must have an excess flow valve unless the gauge meets § 154.536.

§ 154.1320 Sighting ports, tubular gauge glasses, and flat plate type gauge glasses.

(a) Cargo tanks may have sighting ports as a secondary means of liquid level gauging in addition to the gauges under § 154.1305, if:

(1) The tank has a MARVS that is less than 69 kPa gauge (10 psig);

(2) The port has a protective cover and an internal scale; and

(3) The port is above the liquid level.

(b) Tubular gauge glasses must not be liquid level gauges for cargo tanks.

(c) Plate type gauge glasses must not be liquid level gauges for cargo tanks, except deck tanks if the gauge connections have excess flow valves.

§ 154.1325 Liquid level alarm system: All cargo tanks.

Except as allowed under § 154.1330, each cargo tank must have a high liquid level alarm system that:

(a) Is independent of the liquid level gauging system under § 154.1305;

(b) Actuates quick-closing valves under §§ 154.530, 154.532, and 154,538 or a stop valve in the cargo tank loading line to prevent the tank from becoming 100 percent liquid full and without causing the pressure in the loading lines to exceed the design pressure; and

(c) Actuates an audible and visual alarm at the cargo control station at the liquid level at which the valves under paragraph (b) of this section are actuated or at some lower liquid level.

§ 154.1330 Liquid level alarm system: Independent tank type C.

Independent tanks type C need not have the high liquid level alarm system under § 154.1325 if:

(a) The tank volume is less than 200 m^3 (7,060 $ft.^3$); or

(b) The tank can withstand the maximum possible pressure during loading, that pressure is below the relief valve setting, and overflow of the tank cannot occur.

§ 154.1335 Pressure and vacuum protection.

(a) Each cargo tank must have the following:

(1) A pressure gauge that:

(i) Monitors the vapor space;

(ii) Is readable at the tank; and

(iii) Has remote readouts at the cargo control station.

(2) If vacuum protection is required under § 154.804, a vacuum gauge meeting paragraphs (a)(1)(i), (a)(1)(ii), and (a)(1)(iii) of this section.

(b) The vessel must have at least one high pressure alarm that:

(1) Actuates before the pressure in any cargo tank exceeds the maximum pressure specially approved by the Commandant (G-MSO); and

(2) Actuates an audible and visual alarm at the cargo control station, and a remote group alarm in the wheelhouse.

(c) If vacuum protection is required under § 154.804, the vessel must have at least one low pressure alarm that:

(1) Actuates before the pressure in any cargo tank falls below the minimum pressure specially approved by the Commandant (G-MSO); and

(2) Actuates an audible and visual alarm at the cargo control station, and a remote group alarm in the wheelhouse.

(d) At least one pressure gauge must be fitted on each:

(1) Enclosed hold;

(2) Enclosed interbarrier space;

(3) Cargo pump discharge line;

(4) Liquid cargo manifold; and

(5) Vapor cargo manifold.

(e) There must be a local manifold pressure gauge between each manifold