Coast Guard, DHS

§ 153.368 Pressure-vacuum valves.
(a) The pressure side of a required pressure-vacuum relief valve must begin to open only at a pressure exceeding 3.5 kPa gauge (approx. 0.5 psig).
(b) A pressure-vacuum relief valve must meet the requirements of Subpart 162.017 of this chapter.

§ 153.370 Minimum relief valve setting for ambient temperature cargo tanks.
The relief valve setting for a containment system that carries a cargo at ambient temperature must at least equal the cargo’s vapor pressure at 46 °C (approx. 115 °F).

§ 153.371 Minimum relief valve setting for refrigerated cargo tanks.
The relief valve setting for a containment system that carries a refrigerated cargo must at least equal the lesser of:
(a) That in §153.370; or
(b) 110 percent of the cargo’s vapor pressure at the steady state temperature obtained by a full tank of cargo with the refrigeration system operating under ambient conditions described within the definition of a refrigerated tank in §153.2.

§ 153.372 Gauges and vapor return for cargo vapor pressures exceeding 100 kPa (approx. 14.7 psia).
When table 1 references this section, the containment system must have a:
(a) Tank pressure gauge at the point where cargo flow is controlled during transfer; and
(b) Vapor return connection.

§ 153.374 Gauges and vapor return for cargo vapor pressures not exceeding 100 kPa (approx. 14.7 psia).
When table 1 references this section, the containment system must have a:
(a) Tank pressure gauge at the point where cargo flow is controlled during transfer; and
(b) Vapor return connection.

§ 153.376 Special requirements for sounding tube gauges.
(a) A sounding tube installed as a restricted gauge must extend to within one meter (approx. 39.4 in.) of the bottom of the tank.

Cargo Gauging Systems

§ 153.400 General requirements for gauges.
(a) Columnar gauge glasses must not be installed on a cargo containment system.
(b) Flat sight glasses must meet §38.10–20(h) of this chapter.

§ 153.404 Standards for containment systems having required closed gauges.
When Table 1 requires a cargo’s containment system to have a closed gauge, the containment system must have the following:
(a) A permanently installed closed gauging system.
(b) A vapor return connection.
(c) The high level alarm described in §153.409.
(d) Either a closed cargo sampling system or a cargo sampling arrangement allowing the retrieval of a sample through an orifice not exceeding:
(1) 0.635 cm (approx. 0.25 in.) diameter when the cargo’s vapor pressure is 28 kPa gauge (approx. 4 psig) or less; or
(2) 0.140 cm (approx. 0.055 in.) diameter when the cargo’s vapor pressure exceeds 28 kPa (approx. 4 psig).

§ 153.406 Standards for containment systems having required restricted gauges.
When Table 1 requires a cargo’s containment system to have a restricted gauge, the containment system must have:
(a) A closed gauging system; or
(b) A system that has:
(1) A restricted gauge (e.g., a sounding tube) with an orifice diameter not exceeding 20 cm (approx. 7.8 in.);
(2) A permanently attached gauge cover that is vapor tight when in place; and
(3) A venting system that has either:
(i) Lock open PV valves; or
(ii) Valved bypasses around the PV valves.

§ 153.407 Special requirements for sounding tube gauges.
(a) A sounding tube installed as a restricted gauge must extend to within one meter (approx. 39.4 in.) of the bottom of the tank.