

## § 154.808

## 33 CFR Ch. I (7–1–13 Edition)

20593–7363) if the entity fails to properly review, inspect, or test a system in accordance with this subpart.

NOTE: A list of entities accepted to certify facility vapor control system installations is available from the Commandant (Stop 7363, Washington, DC 20593–7363).

(Approved by the Office of Management and Budget under control number 1625–0060)

[CGD 88–102, 55 FR 25429, June 21, 1990, as amended by CGD 96–026, 61 FR 33666, June 28, 1996; USCG–2006–25150, 71 FR 39210, July 12, 2006; USCG–2010–0351, 75 FR 36284, June 25, 2010]

### § 154.808 Vapor control system, general.

(a) A vapor control system design and installation must eliminate potential overfill hazards, overpressure and vacuum hazards, and sources of ignition to the maximum practical extent. Each remaining hazard source which is not eliminated must be specifically addressed in the protection system design and operational requirements.

(b) Vapor collection system piping and fittings must be in accordance with ANSI B31.3 (incorporated by reference; see §154.106) and designed for a maximum allowable working pressure of at least 150 psig. Valves and flanges must be in accordance with ANSI B16.5 or B16.24 (both incorporated by reference; see §154.106), 150 pound class.

(c) All electrical equipment used in a vapor control system must comply with NFPA 70.

(d) Any pressure, flow, or concentration indication required by this part must provide a remote indicator on the facility where the cargo transfer and vapor control systems are controlled.

(e) Any alarm condition specified in this part must activate an audible and visible alarm where the cargo transfer and vapor control systems are controlled.

(f) The vapor control system must be separated or insulated from external heat sources to limit vapor control system piping surface temperature to not more than 177 °C. (350 °F.) during normal operation.

(g) A means must be provided to eliminate any liquid condensate from the vapor collection system which carries over from the vessel or condenses as a result of an enrichment process.

(h) If a liquid knockout vessel is installed it must have:

(1) A means to indicate the level of liquid in the device;

(2) A high liquid level sensor that activates an alarm; and

(3) A high high level sensor that closes the remotely operated cargo vapor shutoff valve required by §154.810(a) of this subpart and shuts down any compressors or blowers prior to liquid carrying over from the vessel to the compressor or blower.

(i) Vapor collection piping must be electrically grounded and electrically continuous.

(j) If the facility handles inerted vapors of cargoes containing sulfur, provisions must be made to control heating from pyrophoric iron sulfide deposits in the vapor collection line.

[CGD 88–102, 55 FR 25429, June 21, 1990, as amended by USCG–2001–8661, 74 FR 45023, Aug. 31, 2009]

### § 154.810 Vapor line connections.

(a) A remotely operated cargo vapor shutoff valve must be installed in the vapor collection line between the facility vapor connection and the nearest point where any inerting, enriching, or diluting gas is introduced into the vapor collection line or where a detonation arrester is fitted. The valve must:

(1) Close within thirty (30) seconds after detection of a shutdown condition by a component required by this subpart;

(2) Close automatically if the control signal is lost;

(3) Activate an alarm when a signal to shut down is received;

(4) Be capable of manual operation or manual activation;

(5) Have a local valve position indicator or be designed so that the valve position can be readily determined from the valve handle or valve stem position; and

(6) If the valve seat is fitted with resilient material, not allow appreciable leakage when the resilient material is damaged or destroyed.

(b) Except when a vapor collection arm is used, the last 1.0 meter (3.3 feet) of vapor piping before the facility vapor connection must be:

(1) Painted red/yellow/red with:

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(i) The red bands 0.1 meter (0.33 feet) wide, and

(ii) The middle yellow band 0.8 meter (2.64 feet) wide; and

(2) Labeled “VAPOR” in black letters at least 50 millimeters (2 inches) high.

(c) Each facility vapor connection flange must have a permanently attached 0.5 inch diameter stud at least 1.0 inch long projecting outward from the flange face. The stud must be located at the top of the flange, midway between bolt holes, and in line with the bolt hole pattern.

(d) Each hose used for transferring vapors must:

(1) Have a design burst pressure of at least 25 psig;

(2) Have a maximum allowable working pressure of at least 5 psig;

(3) Be capable of withstanding at least 2.0 psi vacuum without collapsing or constricting;

(4) Be electrically continuous with a maximum resistance of ten thousand (10,000) ohms;

(5) Have flanges with:

(i) A bolt hole arrangement complying with the requirements for 150 pound class ANSI B16.5 (incorporated by reference; *see* § 154.106) flanges, and

(ii) One or more 0.625 inch diameter holes in the flange located midway between bolt holes and in line with the bolt hole pattern;

(6) Be abrasion resistant and resistant to kinking; and

(7) Have the last 1.0 meter (3.3 feet) of each end of the vapor hose marked in accordance with paragraph (b) of this section.

(e) Vapor hose handling equipment must be provided with hose saddles which provide adequate support to prevent kinking or collapse of hoses.

(f) Fixed vapor collection arms must:

(1) Meet the requirements of paragraphs (d)(1) through (d)(5) of this section;

(2) Have the last 1.0 meter (3.3 feet) of the arm marked in accordance with paragraph (b) of this section.

(g) The facility vapor connection must be electrically insulated from the vessel vapor connection in accordance with section 6.10 of the OCIMF International Safety Guide for Oil Tankers and Terminals (incorporated by reference; *see* § 154.106).

(h) A vapor collection system fitted with an enriching system that operates at a positive gauge pressure at the facility vapor connection must be fitted with:

(1) A manual isolation valve between each facility vapor connection and the remotely operated cargo vapor shutoff valve required by paragraph (a) of this section; and

(2) A means to prevent backflow of enriched vapor to the vessel's vapor collection system.

[CGD 88-102, 55 FR 25429, June 21, 1990, as amended by USCG-2001-8661, 74 FR 45023, Aug. 31, 2009]

### § 154.812 Facility requirements for vessel liquid overfill protection.

(a) Each facility which receives cargo vapor from a tank barge which is fitted with overfill protection in accordance with 46 CFR 39.20-9(a) as its only means of overfill protection must provide a 120 volt, 20 amp explosion proof receptacle which meets:

(1) ANSI/NEMA WD6 (incorporated by reference; *see* § 154.106);

(2) NFPA 70, National Electrical Code, Articles 410-57 and 501-12; incorporated by reference; *see* § 154.106); and

(3) 46 CFR 111.105-9.

(b) Each facility that receives cargo vapor from a tank barge fitted with an intrinsically safe cargo tank level sensor system complying with 46 CFR 39.20-9(b) as its only means of overfill protection must have an overfill control panel on the dock capable of powering and receiving an alarm and shutdown signal from the cargo tank level sensor system that:

(1) Closes the remotely operated cargo vapor shutoff valve required by § 154.810(a) of this subpart and activates the emergency shutdown system required by § 154.550 of this part when:

(i) A tank overfill signal is received from the barge, or

(ii) Electrical continuity of the cargo tank level sensor system is lost;

(2) Activates an alarm which is audible and visible to barge personnel and facility personnel when a tank overfill signal, or an optional high level signal corresponding to a liquid level lower than the tank overfill sensor setting, is received from the barge;