§ 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 knockout vessel 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.

§ 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)
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§ 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.