

**§ 39.40-3**

**46 CFR Ch. I (10-1-04 Edition)**

must meet the requirements of this subpart in addition to the requirements of subparts 39.10, 39.20, and 39.30 of this part.

(b) An arrangement to control vapor emissions during a lightering or topping-off operation which does not use vapor balancing must receive approval from the Commandant (G-MSO).

(c) A vapor balancing operation must not use a compressor or blower to assist vapor transfer without approval from the Commandant (G-MSO).

(d) Vapor balancing is prohibited when the cargo tanks on a vessel discharging cargo are inerted and the cargo tanks on a vessel receiving cargo are not inerted.

(e) A vessel which intends to engage in a lightering or topping-off operation while collecting cargo vapor from other than crude oil, gasoline, or benzene must receive specific approval from the Commandant (G-MSO).

[CGD 88-102, 55 FR 25446, June 21, 1990; 55 FR 39270, Sept. 26, 1990, as amended by CGD 95-072, 60 FR 50462, Sept. 29, 1995; CGD 96-041, 61 FR 50727, Sept. 27, 1996]

**§ 39.40-3 Design and equipment for vapor balancing—TB/ALL.**

(a) If the cargo tanks on a vessel discharging cargo and a vessel receiving cargo are inerted, the service vessel must:

(1) Have a means to inert the vapor transfer hose prior to transferring cargo vapor; and

(2) Have an oxygen analyzer with a sensor or sampling connection fitted within 3 meters (9.74 ft.) of the vessel vapor connection which:

(i) Activates an audible and visible alarm at a location on the service vessel where cargo transfer is controlled when the oxygen content in the vapor collection system exceeds 8 percent by volume;

(ii) Has an oxygen concentration indicator located on the service vessel where the cargo transfer is controlled; and

(iii) Has a connection for injecting a span gas of known concentration for calibration and testing of the oxygen analyzer.

(b) If the cargo tanks on a vessel discharging cargo are not inerted, the vapor collection line on the service

vessel must be fitted with a detonation arrester that meets the requirements of 33 CFR 154.822(a) located within 3 meters (9.74 ft.) of the vessel vapor connection.

(c) An electrical insulating flange or one length of non-conductive hose must be provided between the vessel vapor connection on the service vessel and the vapor connection on the vessel being lightered or topped-off.

**§ 39.40-5 Operational requirements for vapor balancing—TB/ALL.**

(a) During a lightering or topping-off operation each cargo tank being loaded must be connected by the vapor collection system to a cargo tank which is being discharged.

(b) If the cargo tanks on both the vessel discharging cargo and the vessel receiving cargo are inerted, the following requirements must be met:

(1) Each tank on a vessel receiving cargo which is connected to the vapor collection system must be tested prior to cargo transfer to ensure that the oxygen content in the vapor space does not exceed 8 percent by volume. The oxygen content of each tank must be measured at a point one meter (3.28 feet) below the tanktop and at a point equal to one-half of the ullage. Where tanks have partial bulkheads, the oxygen content of each area of that tank formed by each partial bulkhead must be measured at a point one meter (3.28 feet) below the tanktop and at a point equal to one-half of the ullage;

(2) The oxygen analyzer required by § 39.40-3(a) must be tested for proper operation prior to the start of each transfer operation;

(3) The oxygen content of vapors being transferred must be continuously monitored during the transfer operation;

(4) Cargo transfer must be terminated if the oxygen content exceeds 8 percent by volume and must not be restarted until the oxygen content in the tanks of the vessel receiving cargo is reduced to 8 percent by volume or less; and

(5) The vapor transfer hose must be purged of air and inerted prior to starting vapor transfer.

(c) The isolation valve, required by § 39.20-1(c) of this part, located on the