

(e) The sample system bias (SSB) test required by 33 CFR 154.2180 must be performed once every quarter and documented, to establish that the system has no additional influence on the measurement being made by the analyzer.

(1) Conduct a close CE test in accordance with paragraph (b) of this section, by injecting calibration gas as close as possible to the analyzer, eliminating as much of the sample system components as possible, while still simulating the normal source operating conditions.

(2) If system integrity is maintained, and it has not become contaminated, the difference between the close and standard CE tests should be the same.

(f) For CE and CD tests, analyzers and pressure sensors must meet the following minimum compliance requirements:

(1) Oxygen analyzers must not deviate from the reference value of the zero- or high-level calibration gas by more than 0.5 percent of full scale;

(2) Total hydrocarbon analyzers must not deviate from the reference value of the zero- or high-level calibration gas by more than 1 percent of full scale; and

(3) Pressure sensors/switches must not deviate from the reference value of the zero- or high-level calibration gas by more than 1.5 percent of full range.

(g) For RT tests, each oxygen or hydrocarbon analyzer must respond, in less than 1 minute, to 95 percent of the final stable value of a test span gas.

(h) For SSB tests, the analyzer system bias must be less than 5 percent of the average difference between the standard CE test and the close CE test, divided by the individual analyzer span.

TANK BARGE CLEANING FACILITIES— VCS DESIGN AND INSTALLATION

§ 154.2200 Applicable transfer facility design and installation requirements.

A tank barge cleaning facility's (TBCF's) vapor control system (VCS) must meet the following design and installation requirements of this subpart for a transfer facility's VCS:

(a) 33 CFR 154.2100(b), (c), (f), (g), (i), (j), and (k): general design and installation requirements;

(b) 33 CFR 154.2102: facility requirements for vessel liquid overfill protection, if a TBCF receives vapor from a tank barge that is required by 46 CFR 39.6001(f)(3) to be equipped with a liquid overfill protection arrangement and meet 46 CFR 39.2009;

(c) 33 CFR 154.2106: detonation arrester installation;

(d) 33 CFR 154.2107: inerting, enriching, and diluting systems;

(e) 33 CFR 154.2108: vapor-moving devices;

(f) 33 CFR 154.2109: vapor recovery and vapor destruction units;

(g) 33 CFR 154.2111: VCS connected to a facility's main VCS;

(h) 33 CFR 154.2112: special requirements for vapors with the potential to polymerize or freeze; and

(i) 33 CFR 154.2113: special requirements for alkylene oxides.

§ 154.2201 Vapor control system—general requirements.

(a) Vapor control system (VCS) design and installation must eliminate potential overpressure and vacuum hazards, sources of ignition, and mechanical damage to the maximum practicable extent. Each remaining hazard source that is not eliminated must be specifically addressed in the protection system design and system operational requirements.

(b) Any pressure, flow, or concentration indication required by this part must provide a remote indicator on the facility where the VCS is controlled, unless the local indicator is clearly visible and readable from the operator's normal position at the VCS control station.

(c) Any condition requiring an alarm as specified in this part must activate an audible and visible alarm where the VCS is controlled.

(d) A mechanism must be developed and used to eliminate any liquid from the VCS.

(e) A liquid knockout vessel must be installed between the facility vapor connection and any vapor-moving device in systems that have the potential for two-phase (vapor/liquid) flow from the barge or the potential for liquid

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condensate to form as a result of the enrichment process. The liquid knockout vessel must have—

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

(2) A high liquid level sensor that activates an alarm that satisfies the requirements of 33 CFR 154.2100(e); and

(3) A high-high liquid level sensor that closes the remotely operated cargo vapor shutoff valve required by 33 CFR 154.2101(a) and shuts down any vapor-moving device before liquid is carried over to the vapor-moving device. One sensor with two stages may be used to meet this requirement as well as paragraph (e)(2) of this section.

§ 154.2202 Vapor line connections.

(a) 33 CFR 154.2101(a), (e), and (g) apply to a tank barge cleaning facility's (TBCF's) vapor control system (VCS).

(b) The remotely operated cargo vapor shutoff valve required by 33 CFR 154.2101(a) must be located upstream of the liquid knockout vessel required by 33 CFR 154.2201(e).

(c) A fluid displacement system must have a remotely operated shutoff valve installed in the fluid injection supply line between the point where the inert gas or other medium is generated and the fluid injection connection. The valve must comply with 33 CFR 154.2101(a)(1) through (6).

(d) Each hose used for transferring vapors must—

(1) Have a design burst pressure of at least 25 pounds per square inch gauge (psig);

(2) Have a maximum allowable working pressure (MAWP) no less than 5 psig;

(3) Be capable of withstanding at least the maximum vacuum rating of the vapor-moving device without collapsing or constricting;

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

(5) Have flanges with a bolthole arrangement complying with the requirements for Class 150 ANSI B16.5 flanges (incorporated by reference, see 33 CFR 154.106);

(6) Be abrasion and kinking resistant; and

(7) Be compatible with vapors being transferred.

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(e) Fixed vapor collection arms must meet the requirements of paragraph (d) of this section.

§ 154.2203 Facility requirements for barge vapor overpressure and vacuum protection.

In this section, the requirements of having a flame arrester or a flame screen at the opening of a pressure relief valve or a vacuum relief valve apply only to facilities collecting vapors of flammable, combustible, or non-high flash point liquid cargoes.

(a) A facility vapor collection system must have a capacity for collecting cleaning facility vapors at a rate of no less than 1.1 times the facility's maximum allowable gas-freeing rate, plus any inerting, diluting, or enriching gas that may be added to the system.

(b) A facility vapor control system (VCS) must be designed to prevent the pressure in a vessel's cargo tanks from going below 80 percent of the highest setting of any of the barge's vacuum relief valves or exceeding 80 percent of the lowest setting of any of the barge's pressure relief valves. The VCS must be capable of maintaining the pressure in the barge's cargo tanks within this range at any gas-freeing rate less than or equal to the maximum gas-freeing rate determined by the requirements in 46 CFR 39.6007(c).

(c) A fluid displacement system must provide a pressure-sensing device that activates an alarm that satisfies the requirements of 33 CFR 154.2100(e) when the pressure at the fluid injection connection exceeds either the pressure corresponding to the upper pressure determined in paragraph (b) of this section or a lower pressure agreed upon by the facility and barge persons in charge. The pressure-sensing device must be located in the fluid displacement system's piping downstream of any devices that could potentially isolate the barge's vapor collection system from the pressure-sensing device. The pressure measured by the sensing device must be corrected for pressure drops across any barge piping, hoses, or arms that are used to inject the fluid.

(d) A fluid displacement system must provide a pressure-sensing device that is independent of the device required by paragraph (c) of this section. This