

(i) Each LHG for which it is suitable;
(ii) Its MAWP at the corresponding service temperature; and

(iii) If used for service at other than ambient temperature, its minimum service temperature.

(b) Each loading arm used for the transfer of LHG or its vapor must—

(1) Be made of materials resistant to each LHG transferred, in both the liquid and vapor state;

(2) Be constructed to withstand the temperature and pressure foreseeable during transfer;

(3) Be adequately supported against the weight of its constituent parts, the LHG, and any ice formed on it;

(4) Be provided with an alarm to indicate when it is approaching the limits of its extension, unless the examined Operations Manual requires a person to perform the same function; and

(5) Have a permanently attached nameplate that indicates, or otherwise be permanently marked to indicate—

(i) Each LHG it may handle;

(ii) Its MAWP at the corresponding service temperature; and,

(iii) If it is used for service at other than ambient temperature, its minimum service temperature.

§ 127.1103 Piers and wharves.

(a) Each new waterfront facility handling LHG, and all new construction in the marine transfer area for LHG of each existing facility, must comply with the standards for seismic design and construction in 49 CFR part 41.

(b) Each substructure on a new waterfront facility handling LHG, and all new construction in the marine transfer area for LHG of each existing facility, except moorings and breasting dolphins, that supports or is within 4.5 meters (14.8 feet) of any pipe or equipment containing a flammable LHG, or that is within 15 meters (49.2 feet) of a loading flange used to transfer a flammable LHG, must have a fire-endurance rating of not less than two hours.

§ 127.1105 Layout and spacing of marine transfer area for LHG.

Each new waterfront facility handling LHG, and all new construction in the marine transfer area for LHG of each existing facility, must comply with the following:

(a) Each building, shed, and other structure within each marine transfer area for LHG must be located, constructed, or ventilated to prevent the accumulation of flammable or toxic gases within the structure.

(b) Each impounding space for flammable LHGs located within the area

must be designed and located so that the heat flux from a fire over the impounding space does not cause, to a vessel, damage that could prevent the vessel's movement.

(c) Each manifold, loading arm, or independent mating flange must be located at least 60 meters (197 feet) from each of the following structures, if that structure is intended primarily for the use of the general public or of railways:

(1) A bridge crossing a navigable waterway.

(2) The entrance to, or the superstructure of, a tunnel under a navigable waterway.

(d) Each manifold, loading arm, or independent mating flange must be located at least 30 meters (98.5 feet) from each public roadway or railway.

§ 127.1107 Electrical systems.

Electrical equipment and wiring must be of the kind specified by, and must be installed in accordance with, NFPA 70.

§ 127.1109 Lighting systems.

(a) Each waterfront facility handling LHG, at which transfers of LHG take place between sunset and sunrise, must have outdoor lighting that illuminates the marine transfer area for LHG.

(b) All outdoor lighting must be located or shielded so that it cannot be mistaken for any aids to navigation and does not interfere with navigation on the adjacent waterways.

(c) The outdoor lighting must provide a minimum average illumination on a horizontal plane 1 meter (3.3 feet) above the walking surface of the marine transfer area that is—

(1) 54 lux (5 foot-candles) at any loading flange; and

(2) 11 lux (1 foot-candle) for the remainder of the marine transfer area for LHG.

§ 127.1111 Communication systems.

(a) The marine transfer area for LHG must possess a communication system that enables continuous two way voice communication between the person in charge of transfer aboard the vessel and the person in charge of transfer for the facility.

(b) The communication system required by paragraph (a) of this section may consist either of fixed or portable telephones or of portable radios. The system must be usable and effective in all phases of the transfer and all weather at the facility.

(c) Devices used to comply with paragraph (a) of this section during the transfer of a flammable LHG must be listed as intrinsically safe by Underwriters Laboratories, Inc., Factory Mutual Research Corporation, or other

independent laboratory recognized by NFPA, for use in the hazardous location in which it is used.

§ 127.113 Warning signs.

(a) The marine transfer area for LHG must have warning signs that—

(1) Meet paragraph (b) of this section;

(2) Can be seen from the shore and the water; and,

(3) Except as provided in paragraph (c) of this section, bear the following text:

Warning
Dangerous Cargo
No visitors
No Smoking
No Open Lights

(b) Each letter on the sign must be—

(1) In block style;

(2) Black on a white background; and

(3) At least 7.6 centimeters (3 inches) high.

(c) The words "No Smoking" and "No Open Lights" may be omitted when the product being transferred is not flammable.

Equipment

§ 127.1203 Gas detection.

(a) Each waterfront facility handling LHG that transfers a flammable LHG must have at least two portable gas detectors, or a fixed gas detector, in the marine transfer area for LHG. Each detector must be capable of indicating whether the concentration of flammable vapors exceeds 30% of the Lower Flammable Limit for each flammable product being transferred and must meet ANSI S12.13, Part 1.

(b) Each waterfront facility handling LHG that transfers a toxic LHG, other than anhydrous ammonia, must have at least two portable gas detectors, or a fixed gas detector, available in the area. The detectors must be capable of showing whether the concentration of each toxic LHG being transferred is above, at, or below any Permissible Exposure Limit listed in 29 CFR 1910.1000, Table Z-1 or Z-2.

(c) Each gas detector required by paragraph (a) or (b) of this section must serve to detect leaks, check structures for gas accumulations, and indicate workers' exposure to toxic gases in the area.

§ 127.1205 Emergency shutdown.

(a) Each piping system used to transfer LHG or its vapors to or from a vessel must have a quick-closing shutoff valve to stop the flow of liquid and vapor from the waterfront facility handling LHG if a transfer hose or loading arm fails. This valve may be the isolation valve with a bleed connection required by § 127.1101(c).