

are within 15 meters (49.2 feet) of a loading flange, must—

- (1) Be made of concrete or steel; and
 - (2) Have a fire endurance rating of not less than two hours.
- (c) LNG or LPG storage tanks must have the minimum volume necessary for—
- (1) Surge protection;
 - (2) Pump suction supply; or
 - (3) Other process needs.

[CGD 78-038, 53 FR 3376, Feb. 7, 1988, as amended at CGD 88-049, 60 FR 39796, Aug. 3, 1995]

§ 127.105 Layout and spacing of marine transfer area for LNG.

(a) LNG impounding spaces must be located so that the heat flux from a fire over the impounding spaces does not cause structural damage to an LNG vessel moored or berthed at the waterfront facility handling LNG.

(b) Each LNG loading flange must be located at least 300 meters (984.3 feet) from the following which are primarily intended for the use of the general public or railways:

- (1) Each bridge crossing a navigable waterway.
- (2) Each entrance to any tunnel under a navigable waterway.

[CGD 78-038, 53 FR 3376, Feb. 7, 1988, as amended by CGD 88-049, 60 FR 39796, Aug. 3, 1995]

§ 127.107 Electrical power systems.

(a) The electrical power system must have a power source and a separate emergency power source, so that failure of one source does not affect the capability of the other source. The system must meet the National Electrical Code, NFPA 70.

(b) The emergency power source must provide enough power for the operation of the—

- (1) Emergency shutdown system;
- (2) Communications equipment;
- (3) Firefighting equipment; and
- (4) Emergency lighting.

(c) If an auxiliary generator is used as an emergency power source, it must meet Section 700-12 of NFPA 70.

§ 127.109 Lighting systems.

(a) The marine transfer area for LNG must have a lighting system and separate emergency lighting.

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

(c) The lighting system must provide an average illumination on a horizontal plane one meter (3.3 feet) above the deck that is—

- (1) 54 lux (five foot-candles) at any loading flange; and
- (2) 11 lux (one foot-candle) at each work area.

(d) The emergency lighting must provide lighting for the operation of the—

- (1) Emergency shutdown system;
- (2) Communications equipment; and
- (3) Firefighting equipment.

[CGD 78-038, 53 FR 3376, Feb. 7, 1988, as amended by CGD 88-049, 60 FR 39795, Aug. 3, 1995]

§ 127.111 Communications systems.

(a) The marine transfer area for LNG must have a ship-to-shore communication system and a separate emergency ship-to-shore communication system.

(b) Each ship-to-shore communication system must be a dedicated system that allows voice communication between the person in charge of transfer operations on the vessel, the person in charge of shoreside transfer operations, and personnel in the control room.

[CGD 78-038, 53 FR 3376, Feb. 7, 1988, as amended by CGD 88-049, 60 FR 39795, Aug. 3, 1995]

§ 127.113 Warning signs.

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

- (1) Meet paragraph (b) of this section;
- (2) Can be seen from the shore and the water; and
- (3) Have the following text:

Warning
Dangerous Cargo
No Visitors
No Smoking
No Open Lights

(b) Each letter in the words on the sign must be—

- (1) Block style;
- (2) Black on a white background; and

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(3) 7.6 centimeters (3 inches) high.

[CGD 78-038, 53 FR 3376, Feb. 7, 1988, as amended by CGD 88-049, 60 FR 39796, Aug. 3, 1995]

EQUIPMENT

§ 127.201 Sensing and alarm systems.

(a) Fixed sensors must have audio and visual alarms in the control room and audio alarms nearby.

(b) Fixed sensors that continuously monitor for LNG vapors must—

(1) Be in each enclosed area where vapor or gas may accumulate; and

(2) Meet Section 9-4 of NFPA 59A.

(c) Fixed sensors that continuously monitor for flame, heat, or products of combustion must—

(1) Be in each enclosed or covered Class I, Division 1, hazardous location defined in Section 500-5(a) of NFPA 70 and each area in which flammable or combustible material is stored; and

(2) Meet Section 9-4 of NFPA 59A.

§ 127.203 Portable gas detectors.

The marine transfer area for LNG must have at least two portable gas detectors capable of measuring 0-100% of the lower flammable limit of methane.

[CGD 78-038, 53 FR 3376, Feb. 7, 1988, as amended by CGD 88-049, 60 FR 39796, Aug. 3, 1995]

§ 127.205 Emergency shutdown.

Each transfer system must have an emergency shutdown system that—

(a) Can be activated manually; and

(b) Is activated automatically when the fixed sensors under §127.201(b) measure LNG concentrations exceeding 40% of the lower flammable limit.

§ 127.207 Warning alarms.

(a) The marine transfer area for LNG must have a rotating or flashing amber light with a minimum effective flash intensity, in the horizontal plane, of 5000 candelas. At least 50% of the required effective flash intensity must be maintained in all directions from 1.0 degree above to 1.0 degree below the horizontal plane.

(b) The marine transfer area for LNG must have a siren with a minimum 1/3-octave band sound pressure level at 1 meter of 125 decibels referenced to 0.0002 microbars. The siren must be lo-

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cated so that the sound signal produced is audible over 360 degrees in a horizontal plane.

(c) Each light and siren must be located so that the warning alarm is not obstructed for a distance of 1.6 km (1 mile) in all directions.

[CGD 78-038, 53 FR 3376, Feb. 7, 1988, as amended by CGD 88-049, 60 FR 39796, Aug. 3, 1995]

OPERATIONS

§ 127.301 Persons in charge of shore-side transfer operations: Qualifications and certification.

(a) No person may serve, and the operator of the waterfront facility handling LNG may not use the services of any person, as a person in charge of shoreside transfer operations, unless that person—

(1) Has at least 48 hours of LNG transfer experience;

(2) Knows the hazards of LNG;

(3) Knows the rules of this subpart; and

(4) Knows the procedures in the examined *Operations Manual* and the examined *Emergency Manual*.

(b) Before a person in charge of shoreside transfer operations supervises a transfer, the operator shall certify in writing that the criteria in paragraph (a) of this section are met. The operator shall maintain a copy of each current certification available for inspection at the waterfront facility handling LNG.

[CGD 78-038, 53 FR 3376, Feb. 7, 1988, as amended by CGD 88-049, 60 FR 39796, Aug. 3, 1995]

§ 127.303 Compliance with suspension order.

If an order to suspend is given to the operator or owner of the waterfront facility handling LNG, no LNG transfer operations may be conducted at the facility until the order is withdrawn by the COTP.

[CGD 78-038, 53 FR 3376, Feb. 7, 1988, as amended by CGD 88-049, 60 FR 39796, Aug. 3, 1995]

§ 127.305 Operations Manual.

Each *Operations Manual* must contain—