

(1) The terms “gas-safe” and “gas-dangerous” spaces are used as defined in §154.7 of this chapter.

(2) The term “gas-dangerous” does not include the weather deck of an ammonia carrier.

(c) Each submerged cargo pump motor design must receive concept approval by the Commandant (CG-ENG) and its installation must receive plan approval by the Commanding Officer, Marine Safety Center.

(d) Electrical equipment must not be installed in a gas-dangerous space or zone, except:

(1) Intrinsically safe electrical equipment and wiring, and

(2) Other equipment as allowed in this section.

(e) A submerged cargo pump motor, if installed in a cargo tank, must meet §111.105-31(d).

(f) Electrical equipment must not be installed in a hold space that has a tank that is not required to have a secondary barrier under §154.459 of this chapter, except:

(1) Through runs of marine shipboard cable;

(2) Explosionproof lighting fixtures;

(3) Depth sounding devices in gas-tight enclosures;

(4) Log devices in gastight enclosures;

(5) Impressed current cathodic protection system electrodes in gastight enclosures; and

(6) Armored or MI type cable for a submerged cargo pump motor.

(g) Electrical equipment must not be installed in a space that is separated by a gastight steel boundary from a hold space that has a tank that must have a secondary barrier under the requirements of §154.459 of this chapter, except:

(1) Through runs of marine shipboard cable;

(2) Explosionproof lighting fixtures;

(3) Depth sounding devices in gas-tight enclosures;

(4) Log devices in gastight enclosures;

(5) Impressed current cathodic protection system electrodes in gastight enclosures;

(6) Explosionproof motors that operate cargo system valves or ballast system valves;

(7) Explosionproof bells for general alarm systems; and

(8) Armored or MI type cable for a submerged cargo pump motor.

(h) A cargo-handling room must not have any installed electrical equipment, except explosionproof lighting fixtures.

(i) A space for cargo hose storage or a space that has cargo piping must not have any installed electrical equipment, except:

(1) Explosionproof lighting fixtures; and

(2) Through runs of marine shipboard cable.

(j) A gas dangerous zone on the open deck must not have any installed electrical equipment, except:

(1) Explosionproof equipment that is necessary for the operation of the vessel; and

(2) Through runs of marine shipboard cable.

(k) A space, except those named in paragraphs (f) through (i) of this section, that has a direct opening to gas-dangerous spaces or zones must have no electrical equipment except as allowed in the gas-dangerous space or zone.

(l) Each gas-dangerous space that has lighting fixtures must have at least two branch circuits for lighting.

(m) Each switch and each overcurrent protective device for any lighting circuit that is in a gas-dangerous space must open all conductors of the circuit simultaneously.

(n) Each switch and each overcurrent protective device for lighting in a gas-dangerous space must be in a gas-safe space.

[CGD 74-125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 77-069, 52 FR 31626, Aug. 21, 1987; CGD 94-108, 61 FR 28285, June 4, 1996; 62 FR 23909, May 1, 1997; USCG-2009-0702, 74 FR 49234, Sept. 25, 2009; USCG-2012-0832, 77 FR 59781, Oct. 1, 2012]

§111.105-33 Mobile offshore drilling units.

(a) *Applicability.* This section applies to each mobile offshore drilling unit.

(b) *Definitions.* As used in this section:

(1) “Enclosed spaces” are locations delineated by floors, bulkheads, or

decks which may have doors or windows.

(2) "Semi-enclosed spaces" are locations where natural conditions of ventilation are notably different from those on open deck due to the presence of structures such as roofs, windbreaks, and bulkheads which are so arranged that dispersion of gas may not occur.

(c) The internal space of each pressure vessel, tank, and pipe for drilling mud and for gas venting must have only intrinsically safe electric equipment.

(d) The following are Class I, Division 1 locations:

(1) An enclosed space that contains any part of the mud circulating system that has an opening into the space and is between the well and final degassing discharge.

(2) An enclosed or semi-enclosed location that is below the drill floor and contains a possible source of gas release such as the top of a drilling nipple.

(3) An enclosed space that is on the drill floor and is not separated by a solid, gas-tight floor from the spaces specified in paragraph (d)(2) of this section.

(4) A space that would normally be considered a Division 2 location under paragraph (e) of this section but where combustible or flammable gases might accumulate. This could include pits, ducts, and similar structures downstream of the final degassing discharge.

(5) A location in the weather or a semi-enclosed location, except as provided in paragraph (d)(2) of this section, that is within 5 feet (1.5 m) of the boundary of any:

(i) Equipment or opening specified in paragraph (d)(1) of this section;

(ii) Ventilation outlet, access, or other opening to a Class I, Division 1 space; or

(iii) Gas vent outlet.

(6) Except as provided in paragraph (f) of this section, an enclosed space that has an opening into a Class I, Division 1 location.

(e) The following are Class I, Division 2 locations:

(1) An enclosed space that has any open portion of the mud circulating system from the final degassing dis-

charge to the mud suction connection at the mud pit.

(2) A location in the weather that is:

(i) Within the boundaries of the drilling derrick up to a height of 10 feet (3m) above the drill floor;

(ii) Below the drill floor and within a radius of 10 feet (3m) of a possible source of release, such as the top of a drilling nipple; or

(iii) Within 5 feet (1.5m) of the boundaries of any ventilation outlet, access, or other opening to a Class I, Division 2 space.

(3) A location that is:

(i) Within 5 feet (1.5m) of a semi-enclosed Class I, Division 1 location indicated in paragraph (d)(2) of this section; or

(ii) Within 5 feet (1.5m) of a Class I, Division 1 space indicated in paragraph (d)(5).

(4) A semi-enclosed area that is below and contiguous with the drill floor to the boundaries of the derrick or to the extent of any enclosure which is liable to trap gases.

(5) A semi-enclosed derrick to the extent of its enclosure above the drill floor, or to a height of 10 feet (3m) above the drill floor, whichever is greater.

(6) Except as provided in paragraph (f) of this section, an enclosed space that has an opening into a Class I, Division 2 location.

(f) An enclosed space that has direct access to a Division 1 or Division 2 location is the same division as that location, except:

(1) An enclosed space that has direct access to a Division 1 location is not a hazardous location if:

(i) The access has self-closing gas-tight doors that form an air lock;

(ii) The ventilation causes greater pressure in the space than in the Division 1 location; and

(iii) Loss of ventilation overpressure is alarmed at a manned station;

(2) An enclosed space that has direct access to a Division 1 location can be considered as a Division 2 location if:

(i) The access has a self-closing, gas-tight door that opens into the space and that has no hold-back device;

(ii) Ventilation causes the air to flow with the door open from the space into the Division 1 location; and

(iii) Loss of ventilation is alarmed at a manned control station; and

(3) An enclosed space that has direct access to a Division 2 location is not a hazardous location if:

(i) The access has a self-closing, gas-tight door that opens into the space and that has no hold-back device;

(ii) Ventilation causes the air to flow with the door open from the space into the Division 2 location; and

(iii) Loss of ventilation actuates an alarm at a manned control station.

(g) Electrical equipment and devices installed in spaces made non-hazardous by the methods indicated in paragraph (f) of this section must be limited to essential equipment.

§ 111.105-35 Vessels carrying coal.

(a) The following are Class II, Division 1, (Zone 10 or Z) locations on a vessel that carries coal:

(1) The interior of each coal bin and hold.

(2) Each compartment that has a coal transfer point where coal is transferred, dropped, or dumped.

(3) Each open area within 3 meters (10 ft) of a coal transfer point where coal is dropped or dumped.

(b) Each space that has a coal conveyor on a vessel that carries coal is a Class II, Division 2, (Zone 11 or Y) space.

(c) A space that has a coal conveyor on a vessel that carries coal must have electrical equipment approved for Class II, Division 2, (Zone 11 or Y) hazardous locations, except watertight general emergency alarm signals.

[CGD 94-108, 61 FR 28285, June 4, 1996]

§ 111.105-37 Flammable anesthetics.

Each electric installation where a flammable anesthetic is used or stored must meet NFPA 99 (incorporated by reference, see 46 CFR 110.10-1).

[USCG-2003-16630, 73 FR 65200, Oct. 31, 2008]

§ 111.105-39 Additional requirements for vessels carrying vehicles with fuel in their tanks.

Each vessel that carries a vehicle with fuel in its tank must meet the requirements of ABS Steel Vessel Rules (incorporated by reference; see 46 CFR

110.10-1), section 5-10-4/3, except as follows:

(a) If the ventilation requirements of ABS Steel Vessel Rules section 5-10-4/3 are not met, all installed electrical equipment must be suitable for a Class I, Division 1; Zone 0; or Zone 1 hazardous location.

(b) If the vessel is fitted with an approved fixed gas detection system set at 25 percent the LEL, each item of the installed electrical equipment must meet the requirements for a Class I, Division 1; Class I, Division 2; Zone 0; Zone 1; or Zone 2 hazardous location.

[CGD 94-108, 61 FR 28285, June 4, 1996, as amended at 62 FR 23909, May 1, 1997; USCG-2003-16630, 73 FR 65200, Oct. 31, 2008]

§ 111.105-40 Additional requirements for RO/RO vessels.

(a) Each RO/RO vessel must meet ABS Steel Vessel Rules (incorporated by reference; see 46 CFR 110.10-1), section 4-8-4/27.3.2.

(b) Each item of installed electrical equipment must meet the requirements for a Class I, Division 1; Class I, Division 2; Zone 0; Zone 1; or Zone 2 hazardous location when installed 460 mm (18 inches) or more above the deck of closed cargo spaces. Electrical equipment installed within 460 mm (18 inches) of the deck must be suitable for either a Class I, Division 1; Zone 0; or Zone 1 hazardous location.

(c) Where the ventilation requirement of ABS Steel Vessel Rules section 4-8-4/27.3.2 is not met—

(1) All installed electrical equipment must be suitable for a Class I, Division 1; Zone 0; or Zone 1 hazardous location; or

(2) If fitted with an approved fixed gas detection system (set at 25 percent of the LEL), each item of installed electrical equipment must meet the requirements for either a Class I, Division 1; Class I, Division 2; Zone 0; Zone 1; or Zone 2 hazardous location.

[CGD 94-108, 61 FR 28285, June 4, 1996; 61 FR 33045, June 26, 1996, as amended at 62 FR 23909, May 1, 1997; USCG-2003-16630, 73 FR 65200, Oct. 31, 2008]

§ 111.105-41 Battery rooms.

Each electrical installation in a battery room must meet 46 CFR subpart