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Subpart A—General

SOURCE: CGD 77–069, 52 FR 31626, Aug. 21, 1987, unless otherwise noted.

§ 154.1 Incorporation by reference.

(a) Certain materials are incorporated by reference into this part with approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a). The Office of the Federal Register publishes a list ''Material Approved for Incorporation by Reference,'' which appears in the Finding Aids section of this volume. To enforce any edition other than the one listed in paragraph (b) of this section, notice of change must be published in the FEDERAL REGISTER and the material made available. All approved material is on file at the Office of the Federal Register, Washington, DC 20408, and at the Commandant (G–MSO), U.S. Coast Guard, 2100 Second Street SW. Washington, DC 20593–0001.

(b) The materials approved for incorporation by reference in this part are:

AMERICAN BUREAU OF SHIPPING

Two World Trade Center, 106th Floor, New York, NY 10048
Rules for Building and Classing Steel Vessels, 1981

AMERICAN NATIONAL STANDARDS INSTITUTE

11 West 42nd Street, New York, NY 10036
ANSI Z89.1–69 Safety Requirements for Industrial Head Protection, 1969
ANSI Z87.1–79 Practice for Occupational and Educational Eye and Face Protection, 1979

AMERICAN SOCIETY FOR TESTING AND MATERIALS

100 Barr Harbor Drive, West Conshohocken, PA 19428–2959
ASTM A20–1978 Steel Plates for Pressure Vessels.
ASTM F1014–1986 Standard Specification for Flashlights on Vessels.
Sections effected—154.1400(a)(4), 154.1400(b)(4), 154.1400(c)(4).

NOTE: All other documents referenced in this part are still in effect.

INTERNATIONAL MARITIME ORGANIZATION

Publications Section, 4 Albert Embankment, London SE1 7SR, United Kingdom
Resolution A.328(IX), Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, 1976
Code For Existing Ships Carrying Liquefied Gases in Bulk, 1976
Medical First Aid Guide for Use in Accidents Involving Dangerous Goods

UNDERWRITERS LABORATORIES, INC.

12 Laboratory Drive, Research Triangle Park, NC 27709–3995
UL No. 783–79 Standard for Safety, Electric Flashlights for Use in Hazardous Locations, Class 1, Groups C and D, 1979.

[CGD 77–069, 52 FR 31626, Aug. 21, 1987, as amended by CGD 82–042, 53 FR 17705, May 18, 1988; CGD 82–042, 53 FR 18949, May 25, 1988; CGD 88–070, 53 FR 34535, Sept. 7, 1988; CGD 96–041, 61 FR 50732, Sept. 27, 1996; CGD 97–057, 62 FR 51048, Sept. 30, 1997]

§ 154.3 Purpose.

The purpose of this part is to prescribe rules for new and existing gas vessels.

§ 154.5 Applicability.

This part applies to each self-propelled vessel that has on board bulk liquefied gases as cargo, cargo residue or vapor, except subpart C does not apply if the vessel meets § 154.12 (b), (c), or (d).

§ 154.7 Definitions, acronyms, and terms.

As used in this part:

''A'' Class Division means a division as defined in Regulation 3 of Chapter II–2 of the 1974 Safety Convention.

Accommodation spaces means public spaces, corridors, lavatories, cabins, offices, hospitals, cinemas, game and hobby rooms, pantries containing no cooking appliances, and spaces used in a similar fashion.

Boiling point means the temperature at which a substance's vapor pressure is equal to the atmospheric barometric pressure.

Breadth (B) means the maximum width of the vessel in meters measured amidships to the molded line of the frame in a ship with a metal shell and to the outer surface of the hull in a ship with a shell of any other material.

Cargo area means that part of the vessel that contains the cargo containment system, cargo pump rooms, cargo compressor rooms, and the deck areas over the full beam and the length of the vessel above them, but does not include the cofferdams, ballast spaces, or

void spaces at the after end of the aftermost hold space or the forward end of the forwardmost hold space.

Cargo containment system means the arrangement for containment of the cargo including a primary and secondary barrier, associated insulation and any intervening spaces, and adjacent structure that is necessary for the support of these elements.

Cargo service space means space within the cargo area that is more than 2 m^2 (21.5 $ft.^2$) in deck area and used for work shops, lockers, or store rooms.

Cargo tank means the liquid tight shell that is the primary container of the cargo.

Certificate of Compliance means a certificate issued by the Coast Guard to a foreign flag vessel after it is examined and found to comply with regulations in this chapter.

Cofferdam means the isolating space between two adjacent steel bulkheads or decks, which could be a void space or a ballast space.

Contiguous hull structure includes the inner deck, the inner bottom plating, longitudinal bulkhead plating, transverse bulkhead plating, floors, webs, stringers, and attached stiffeners.

Control space means those spaces in which the vessel's radio, main navigating equipment, or the emergency source of power is located or in which the fire control equipment, other than firefighting control equipment under § 154.1140 to § 154.1170, is centralized.

Design temperature means the minimum cargo temperature the Coast Guard allows for loading, unloading, or carriage.

Design vapor pressure (P_o) means the maximum gauge pressure at the top of the cargo tank for the design of the cargo tank.

Document means a Certificate of Inspection for a U.S. flag vessel or a Certificate of Compliance for a foreign flag vessel.

Existing gas vessel means a self-propelled vessel that—

(a) Is delivered on or before October 31, 1976; or

(b) Is delivered between October 31, 1976 and June 30, 1980, and is not a new gas vessel.

Flammable cargoes includes the following liquefied gases from Table 4 (follows § 154.1872):

Acetaldehyde
Butadiene
Butane
Butylene
Dimethylamine
Ethane
Ethylamine
Ethyl chloride
Ethylene
Ethylene oxide
Methane (LNG)
Methyl acetylene-propadiene mixture
Methyl bromide
Methyl chloride
Propane
Propylene
Vinyl chloride

Gas-dangerous space includes the following spaces:

(a) A space in the cargo area without arrangements to provide a safe atmosphere at all times.

(b) An enclosed space outside the cargo area through which any piping that may contain liquid or gaseous cargo passes, or within which that piping terminates, without arrangements to prevent gas from escaping into the space.

(c) A cargo containment system and cargo piping.

(d) A hold space where cargo is carried in a cargo containment system:

(1) With a secondary barrier; or

(2) Without a secondary barrier.

(e) A space separated from a hold space under paragraph (d)(1) of this definition by a single gastight boundary.

(f) A cargo pumproom and a cargo compressor room.

(g) A zone on the weather deck or a semi-enclosed space on the weather deck within 3.05 m (10 ft) of any cargo tank outlet, gas or vapor outlet, cargo pipe flange, cargo valve, or of entrances and ventilation openings to a cargo pump room or a cargo compressor room.

(h) Except for existing gas vessels, the weather deck over the cargo area and 3.05 m (10 ft) forward and aft of the cargo area on the weather deck to 2.4 m (8 ft) above the weather deck.

(i) A zone within 2.4 m (8 ft) of the outer surface of a cargo containment system where the surface is exposed to the weather.

(j) An enclosed or semi-enclosed space in which there is piping containing cargo, except those—

(1) With gas sampling lines for gas detection equipment under § 154.1350(n); or

(2) In which boil-off gas is used as fuel under § 154.703.

(k) A space for storage of cargo hoses.

(l) An enclosed or semi-enclosed space having an opening into any gas-dangerous space or zone.

Gas-safe space means a space that is not a gas-dangerous space.

Hold space means the space enclosed by the vessel's structure in which there is a cargo containment system.

IMO stands for the lnternational Maritime Organization.

IMO Certificate means a Certificate of Fitness for the Carriage of Liquefied Gases in Bulk issued under the IMO—

(a) ''Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk'', adopted November 12, 1975 by Assembly Resolution A.328(IX), as amended;

(b) ''Code for Existing Ships Carrying Liquefied Gases in Bulk'', adopted November 12, 1975, as amended; or

(c) ''Recommendations Concerning Ships Not Covered by the Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk'', (Resolution A.328(IX)), adopted November 12, 1975 by Assembly Resolution A.329(IX).

Independent tank is a cargo tank that is permanently affixed to the vessel, is self-supporting, and is not part of the hull or essential to the strength or integrity of the hull.

Independent tank type A is an independent cargo tank designed primarily using classification society classical ship structural analysis procedures.

Independent tank type B is an independent cargo tank designed from model tests, refined analytical tools, and analysis methods to determine stress levels, fatigue life, and crack propagation characteristics.

Independent tank type C (pressure tank) is an independent cargo tank meeting pressure vessel criteria where the dominant stress producing load is design vapor pressure.

Insulation space means a space, that could be an interbarrier space, occupied wholly or in part by insulation.

Integral tank means a cargo tank that is a structural part of the vessel's hull and is influenced in the same manner and by the same loads that stress the adjacent hull structure.

Interbarrier space means the space between a primary and a secondary barrier, with or without insulation or other material.

Length (L) is ninety-six percent of the total length in meters on a waterline at eighty-five percent of the least molded depth measured from the top of the keel or the length from the foreside of the stem to the axis of the rudder stock on the waterline, whichever is greater. In vessels having a rake of keel, the waterline is parallel to the design waterline.

Liquefied gas means a cargo having a vapor pressure of 172 kPa (25 psia) or more at 37.8 °C (100 °F).

MARVS stands for the Maximum Allowable Relief Valve Setting.

Membrane tank is a cargo tank that is not self-supporting and consists of a thin layer (membrane) supported through insulation by the adjacent hull structure.

New gas vessel means a self-propelled vessel that—

(a) Is constructed under a building contract awarded after October 31, 1976;

(b) In the absence of a building contract, has a keel laid or is at a similar stage of construction after December 31, 1976;

(c) Is delivered after June 30, 1980; or

(d) Has undergone a major conversion for which—

(1) The building contract is awarded after October 31, 1976;

(2) In the absence of a building contract, conversion is begun after December 31, 1976; or

(3) Conversion is completed after June 30, 1980.

Primary barrier means the inner boundary that contains the cargo when the cargo containment system includes two boundaries.

Process pressure vessel means a pressure vessel that is used in a reliquefaction, cargo heating, or other system that processes cargo.

Remote group alarm means an audible and visual alarm that alerts when an alarm condition exists but does not identify that condition.

Secondary barrier means the liquid resisting outer boundary of a cargo containment system when the cargo containment system includes two boundaries.

Semi-membrane tank is a cargo tank that is not self-supporting and that can expand and contract due to thermal, hydrostatic, and pressure loadings. It consists of flat surfaces, supported through insulation by the adjacent hull structure, and shaped corners that connect the flat surfaces.

Service space means a space outside the cargo area that is used for a galley, pantry containing cooking appliances, locker or store room, workshop except those in machinery spaces, and similar spaces and trunks to those spaces.

Shut-off valve is a valve that closes a pipeline and provides nominal metal to metal contact between the valve operating parts, including the disc and gate, and the valve body.

Specific gravity (p) means the ratio of the density of the cargo at the design temperature to the density of water at 4 °C (39 °F).

Tank cover is the structure protecting those parts of the cargo containment system that protrude through the weather deck and providing continuity to the deck structure.

Tank dome means the uppermost portion of the cargo tank. For below deck cargo containment systems, it means the uppermost portion of the cargo tank that protrudes through the weather deck or through the tank cover.

Toxic cargoes includes the following liquefied gases from Table 4 (follows § 154.1872):

Acetaldehyde
Ammonia, anhydrous
Dimethylamine
Ethylamine
Ethyl chloride
Ethylene oxide
Methyl bromide
Methyl chloride
Sulfur dioxide
Vinyl chloride

Vapor pressure means the absolute equilibrium pressure of the saturated vapor above the liquid, expressed in kPa (psia), at a specific temperature.

Void space means an enclosed space in the cargo area outside of the cargo containment system, except a hold space, ballast space, fuel oil tank, cargo pump or compressor room, or any space used by personnel.

1974 Safety Convention stands for the International Convention on Safety of Life at Sea, 1974, done at London, November 1, 1974.

§ 154.9 Issuance of documents.

The Coast Guard issues an endorsed Certificate of Inspection to a U.S. flag vessel or an endorsed Certificate of Compliance to a foreign flag vessel that meets this part.

§ 154.12 Existing gas vessel: Endorsements and requirements.

(a) Except an existing gas vessel under paragraph (b), (c), or (d) of this section, an existing gas vessel must meet subpart C of this part if the owner desires a document endorsed for the carriage of a cargo listed in Table 4 (follows § 154.1872).

(b) If an existing gas vessel is issued a document by the Coast Guard before November 1, 1987 that is endorsed for the carriage of a cargo listed in Table 4 (follows § 154.1872), and the owner desires the same endorsement on a reissued document, the vessel must—

(1) Continue to meet the same design and construction standards under which the Coast Guard issued the original document; and

(2) Meet paragraph (e) of this section.

(c) If an existing gas vessel is issued a document by the Coast Guard before November 1, 1987 that is endorsed for the carriage of a cargo listed in Table 4 (follows § 154.1872), and the owner desires an endorsement for a different cargo listed in that table, the vessel must—

(1) Continue to meet the same design and construction standards under which the Coast Guard issued the original document;

(2) Meet paragraph (e) of this section;

(3) Meet subpart D for the different cargo; and

(4) Meet any additional requirements of this part that the Commandant (G–