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will be visible on all sides. When at anchor, a vessel during transfer of bulk cargo shall display a red flag by day, placed so that it will be visible on all sides. This flag may be metallic.

Subpart 151.50—Special Requirements

EDITORIAL NOTE: Nomenclature changes to Subpart 151.50 appear at 60 FR 50465, Sept. 29, 1995 and at 61 FR 50732, Sept. 27, 1996.

§ 151.50–1 General.

Special requirements found in this subpart pertain to specific cargoes and to similar groups of cargoes. These requirements are in addition to and take precedence over any other requirements found in these regulations.

§ 151.50–5 Cargoes having toxic properties.

When table 151.05 refers to this section, the following apply:

(a) [Reserved]

(b) Independent tanks shall be designed and tested for a head of at least 8 feet above the top of the tank using the specific gravity of the product to be carried. In addition, tank design calculations shall demonstrate that the tank can withstand, without rupture, a single loading to the highest level to which the product may rise, if that exceeds 8 feet. In general, plate less than five-sixteenths inch in thickness shall not be used in the fabrication of independent tanks unless otherwise approved.

(c)(1) Cargo tanks transporting liquids having a Reid vapor pressure exceeding 14 pounds per square inch absolute or vented at a gauge pressure exceeding 4 pounds per square inch, or where air or water pressure is used to discharge the cargo, shall be fabricated as arc-welded unfired pressure vessels.

(2) Unfired pressure vessel cargo tanks shall be designed for a pressure not less than the vapor pressure, in pounds per square inch gauge, of the lading at 115°F., or the maximum air or water pressure used to discharge the cargo, whichever is greater, but in no case shall the design pressure of such tanks be less than 30 pounds per square inch gauge.

(d) *Piping.* (1) The pumps and piping used for cargo transfer shall be independent of all other piping.

(2) Where multiple cargoes are carried, and the cargo piping conveying cargoes covered under this section are led through cargo tanks containing other products, the piping shall be encased in a tunnel.

(3) Where cargo lines handling other products, or bilge and ballast piping are led through tanks containing cargoes covered by this section, the piping shall be enclosed in a tunnel.

(e) Gravity type cargo tanks shall be fitted with an approved pressure-vacuum relief valve of not less than 2½-inch size, which shall be set at a pressure of not less than 3 pounds per square inch gauge, but not in excess of the design pressure of the tank.

(f) The discharge fittings from each safety relief or pressure vacuum relief valve shall be directed in such a manner as to not impinge on another tank, piping or any other equipment which would increase the fire hazard should burning products be discharged from the safety or pressure vacuum relief valve as a result of a fire or other casualty. In addition, the discharges shall be directed away from areas where it is likely that persons might be working and as remote as practicable from ventilation inlets and ignition sources. A common discharge header may be employed if desired. The area near the discharge fittings shall be clearly marked as a hazardous area.

(g) A means shall be provided for either the reclamation or safe venting of vapors during the loading and unloading operations. For this purpose the safety relief or pressure vacuum relief valve shall be provided with a valved bypass to a vapor return line shore connection which shall be used whenever vapor return shore facilities are available. In the event vapors must be vented to the atmosphere, a vent riser shall extend at least 12 feet above the highest level accessible to personnel. The vent riser may be collapsible for ease of stowage when not in use. Vapor return lines or vent risers for tanks carrying the same class product may be connected to a common header system if desired. Tanks carrying cargoes covered by this section shall be vented

independent of tanks carrying other products.

(h) The pump room ventilation outlet duct exhausts shall terminate at a distance of at least 6 feet above the enclosed space or pump room and at least 6 feet from any entrance to the interior part of the vessel. The discharge end of the exhaust ducts shall be located so as to preclude the possibility of recirculating contaminated air through the pump room, or other spaces where personnel may be present.

[CGFR 70–10, 35 FR 3714, Feb. 25, 1970, as amended by CGD 88–100, 54 FR 40040, Sept. 29, 1989]

§151.50–6 Motor fuel antiknock compounds.

When transporting motor fuel antiknock compounds containing tetraethyl lead and tetramethyl lead the requirements listed in this section shall be observed.

(a) Tanks used for these cargoes shall not be used for the transportation of any other cargo except those commodities to be used in the manufacture of tetraethyl lead and tetramethyl lead.

(b) Pump rooms shall be equipped with forced ventilation with complete air change every 2 minutes. Air analysis shall be run for lead content to determine if the atmosphere is satisfactory prior to personnel entering the pump room.

(c) Entry into cargo tanks used for the transportation of these cargoes is not permitted.

(d) No internal tank inspection is required. If it is desired to internally inspect tanks used for these cargoes, the Commandant must be notified in advance before such inspection is made.

(e) The provisions of §151.50–5 shall also be met as a requirement for shipping antiknock compounds containing tetraethyl lead and tetramethyl lead.

§151.50–10 Alkylene oxides.

(a) For the purpose of this part, alkylene oxides are considered to be ethylene oxide and propylene oxide.

(b) Alkylene oxides transported under the provisions of this part shall be acetylene free.

(c)(1) No other product may be transported in tanks certified for an alkylene oxide except that the Commandant may approve subsequent transportation of other products and return to alkylene oxide service if tanks, piping and auxiliary equipment are adequately cleaned to the satisfaction of the Marine Inspector.

(2) Unless authorized by the Commandant, no other kind of cargo except methane, ethane, propane, butane and pentane shall be on board a tank vessel certificated for the carriage of an alkylene oxide at the same time an alkylene oxide in either the liquid or vapor state is present in any cargo tank. Alkylene oxide tanks shall not be installed in tanks intended for any other cargo.

(d) All valves, flanges, fittings, and accessory equipment shall be of a type suitable for use with the alkylene oxides and shall be made of steel or stainless steel, or other materials acceptable to the Commandant. Impurities of copper, magnesium and other acetylide-forming metals shall be kept to a minimum. The chemical composition of all material used shall be submitted to the Commandant for approval prior to fabrication. Disks or disk faces, seats and other wearing parts of valves shall be made of stainless steel containing not less than 11 percent chromium. Mercury, silver, aluminum, magnesium, copper, and their alloys shall not be used for any valves, gauges, thermometers, or any similar devices. Gaskets shall be constructed of spirally wound stainless steel with ''Teflon'' or other suitable material. All packing and gaskets shall be constructed of materials which do not react spontaneously with or lower the autoignition temperature of the alkylene oxides.

(e) The pressure rating of valves, fittings, and accessories shall be not less than the maximum pressure for which the cargo tank is designed, or the shutoff head of the cargo pump, whichever is greater, but in no case less than 150 pounds per square inch. Welded fittings manufactured in accordance with A.N.S.I. Standards shall be used wherever possible, and the number of pipe joints shall be held to a minimum. Threaded joints in the cargo liquid and vapor lines are prohibited.