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(vi) Cargo tank or compressor relief system and blocked liquid or gas relief system.

(vii) Inerting system.

(viii) Boil-off gas compressor or reliquefaction system.

(ix) Gas detection systems.

(x) Alarm or safety indication systems.

(xi) Cargo jettisoning system.

(xii) The system for using boil-off gas as fuel.

(10) A description of cargo loading and discharge operations, including simultaneous handling of multigrades of cargo and ballast.

(11) A description of cargo operations during the voyage.

(12) A description of cargo tank cooldown and warm-up operations including purging with inert gas and air.

(13) A description of hull and cargo tank temperature monitoring systems.

(14) A description of gas detection systems and alarm or safety systems.

(15) A description of the following conditions and their symptoms, including emergency measures and corrective actions:

(i) Cargo or ballast valve malfunction.

(ii) Low cargo tank gas pressure.

(iii) High fill level shutdown.

(iv) Gas compressor shutdown.

(v) Hull cold spots.

(vi) Cargo piping leaks.

(vii) Primary or secondary barrier failure.

(viii) Hold boundary structural failure.

(ix) Fire in vent mast head.

(x) Reliquefaction plant failure.

(xi) Vaporizer malfunction or failure.

(xii) Piping or cargo valve freeze-up.

(16) Any other matters relating to operation of the cargo systems.

(17) The operational means to maintain the vessel in a condition of positive stability in accordance with the loading and stability manual under § 154.1809 through all conditions of:

(i) Loading and deballasting; and

(ii) Unloading and ballasting.

(b) The master shall ensure that the cargo manual is kept up-to-date.

§ 154.1812 Operational information for terminal personnel.

The master shall ensure that terminal personnel are told the operational information required by § 154.1810(a)(17).

§ 154.1814 Cargo information cards.

(a) No person may operate a vessel unless a cargo information card for each cargo being transported is carried either in the wheelhouse, in the ship's office, or in another location easily accessible to the person in charge of the watch.

(b) When a vessel is moored at a terminal, the master shall ensure that a set of information cards is in the possession of the terminal's person in charge of cargo transfer operations.

(c) Each card must be at least 17 cm × 24 cm (6¾ in. × 9½ in.), have printing on one side only, and must contain the following information about the cargo:

(1) Name as listed in Table 4.

(2) Appearance.

(3) Odor.

(4) Safe handling procedures, including special handling instructions, and handling hazards.

(5) Procedures to follow in the event of spills, leaks, or uncontrolled cargo release.

(6) Procedures to be followed if a person is exposed to the cargo.

(7) Firefighting procedures and materials.

§ 154.1816 Cargo location plan.

The master shall ensure that:

(a) A cargo location plan is prepared that gives:

(1) The location and number of each cargo tank; and

(2) The name of the cargo in each tank;

(b) One cargo location plan is kept with the sets of cargo information cards required under § 154.1814; and

(c) The cargo names in the cargo location plan do not differ from the names of the cargoes listed in Table 4.

§ 154.1818 Certification of inhibition.

(a) Except as provided in § 154.1740(b), no person may operate a vessel carrying butadiene or vinyl chloride without

carrying in the wheelhouse written certification from the shipper that the product is inhibited.

(b) The certification required by this section must contain the following information:

(1) The name and concentration of the inhibitor.

(2) The date the inhibitor was added.

(3) The expected duration of the inhibitor's effectiveness.

(4) Any temperature limitations qualifying the inhibitor's effective lifetime.

(5) The action to be taken if the time of the voyage exceeds the inhibitor's lifetime.

§154.1820 Shipping document.

No person may operate a vessel without carrying a shipping document in the wheelhouse that lists for each cargo on board:

(a) The cargo tank in which the cargo is stowed;

(b) The name of the shipper;

(c) The location of the loading terminal;

(d) The cargo name as listed in Table 4; and

(e) The approximate quantity of the cargo.

§154.1822 Shipping document: Copy for transfer terminal.

While a vessel is moored at a transfer terminal, the master shall ensure that at least one copy of the shipping document is given to the terminal's person in charge of cargo transfer.

§154.1824 Obstruction of pumproom ladderways.

The master shall ensure that each cargo pumproom access is unobstructed.

§154.1826 Opening of cargo tanks and cargo sampling.

(a) The master shall ensure that each cargo tank opening is fully closed at all times.

(b) The master may authorize the opening of a cargo tank:

(1) During tank cleaning; and

(2) To sample a cargo that Table 4 allows to be carried in a containment system having a restricted gauging system if:

(i) The cargo tank is not being filled during sampling;

(ii) The vent system has relieved any pressure in the tank; and

(iii) The person sampling the cargo wears protective clothing.

(c) The master shall ensure that cargoes requiring closed gauging as listed in Table 4 are sampled only through the controlled sampling arrangement of the cargo tank.

§154.1828 Spaces containing cargo vapor: Entry.

(a) No person may enter a cargo handling space without the permission of the master or without following a safety procedure established by the master.

(b) Before allowing anyone to enter a cargo handling space, the master shall ensure that:

(1) The space is free of toxic vapors and has an oxygen concentration of at least 19.5 percent oxygen by volume; or

(2) Those entering the space wear protective equipment with breathing apparatus and an officer closely supervises the entire operation in the space.

§154.1830 Warning sign.

(a) The master shall ensure that a vessel transferring cargo, while fast to a dock or while at anchor in port, displays a warning sign:

(1) At the gangway facing the shore so that the sign may be seen from the shore; and

(2) Facing outboard towards the water so that the sign may be seen from the water.

(b) Except as provided in paragraph (e) of this section, each warning sign must have the following words:

(1) Warning.

(2) Dangerous Cargo.

(3) No Visitors.

(4) No Smoking.

(5) No Open Lights.

(c) Each letter in the words on the sign must:

(1) Be block style;

(2) Be black on a white background;

(3) Be 7.6 cm (3 in.) high;

(4) Be 5.1 cm (2 in.) wide, except for ''M'' and ''W'' which must be 7.6 cm (3 in.) wide, and the letter ''I'' which may be 1.3 cm (½ in.) wide; and

(5) Have 1.3 cm (½ in.) stroke width.