

source to the secondary source being either manual or automatic;

(f) The system serves no other purpose, unless it is an engine-room-monitoring system (with fire-detection capability) installed on a vessel whose construction was contracted for before January 18, 2000; and

(g) The system is certified by a Registered Professional Engineer, or by a recognized classification society (under 46 CFR part 8), to comply with paragraphs (a) through (f) of this section.

§ 27.205 What are the requirements for internal communication systems on towing vessels?

(a) You must ensure that your vessel is fitted with a communication system between the engine room and the operating station that—

(1) Consists of either fixed or portable equipment, such as a sound-powered telephone, portable radios, or other reliable method of voice communication, with a main or reserve power supply that is independent of the electrical system on your towing vessel; and

(2) Provides two-way voice communication and calling between the operating station and either—

(i) The engine room; or

(ii) A location immediately adjacent to an exit from the engine room.

(b) Twin-screw vessels with operating-station control for both engines are not required to have internal communication systems.

(c) When the operating-station's engine controls and the access to the engine room are within 3 meters (10 feet) of each other and allow unobstructed visual contact between them, direct voice communication is acceptable instead of a communication system.

§ 27.207 What are the requirements for fuel shut-offs on towing vessels?

To stop the flow of fuel in the event of a break in the fuel line, you must have a positive, remote fuel-shut-off valve fitted on any fuel line that supplies fuel directly to an engine or generator. The valve must be near the source of supply (for instance, at the day tank, storage tank, or fuel-distribution manifold). Furthermore, it must be operable from a safe place outside the space where the valve is in-

stalled. Each remote valve control should be marked in clearly legible letters, at least 25 millimeters (1 inch) high, indicating the purpose of the valve and the way to operate it.

§ 27.209 What are the requirements for training crews to respond to fires?

(a) *Drills and instruction.* The master or person in charge of a vessel must ensure that each crewmember participates in drills and receives instruction at least once each month. The instruction may coincide with the drills, but need not. You must ensure that all crewmembers are familiar with their fire-fighting duties, and, specifically, with the following contingencies:

(1) Fighting a fire in the engine room and elsewhere on board the vessel, including how to—

(i) Operate all of the fire-extinguishing equipment on board the vessel;

(ii) Stop any mechanical ventilation system for the engine room and effectively seal all natural openings to the space to prevent leakage of the extinguishing agent; and

(iii) Operate the fuel shut-off for the engine room.

(2) Activating the general alarm.

(3) Reporting inoperative alarm systems and fire-detection systems.

(4) Putting on a fireman's outfit and a self-contained breathing apparatus, if the vessel is so equipped.

(b) *Alternative form of instruction.* The master or person in charge of a vessel may substitute, for the instruction required in paragraph (a) of this section, the viewing of video training materials concerning at least the contingencies listed in paragraph (a), followed by a discussion led by someone familiar with these contingencies. This instruction may occur either on board or off the vessel.

(c) *Participation in drills.* Drills must take place on board the vessel, as if there were an actual emergency. They must include—

(1) Participation by all crewmembers;

(2) Breaking out and using, or simulating the use of, emergency equipment;

(3) Testing of all alarm and detection systems; and

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(4) Putting on protective clothing (by at least one person), if the vessel is so equipped.

(d) *Safety orientation.* The master or person in charge of a vessel must ensure that each crewmember who has not (i) participated in the drills required by paragraph (a) of this section, and (ii) received the instruction required by that paragraph, receives a safety orientation within 24 hours of reporting for duty.

(e) The safety orientation must cover the particular contingencies listed in paragraph (a) of this section.

§27.211 What are the specifications for fuel systems on towing vessels whose construction was contracted for on or after January 18, 2000?

(a) You must ensure that, except for the components of an outboard engine or of a portable bilge pump or fire pump, each fuel system installed on board the vessel complies with this section.

(b) *Portable fuel systems.* The vessel must not incorporate or carry portable fuel systems, including portable tanks and related fuel lines and accessories, except when used for outboard engines or when permanently attached to portable equipment such as portable bilge pumps or fire pumps. The design, construction, and stowage of portable tanks and related fuel lines and accessories must comply with ABYC H-25 (incorporated by reference in §27.102).

(c) *Fuel restrictions.* Neither you nor the master or person in charge may use fuel other than bunker C or diesel, except for outboard engines, or where otherwise accepted by the Commandant (CG-521). An installation that uses bunker C, heavy fuel oil (HFO), or any fuel that requires pre-heating, must comply with subchapter F of this chapter.

(d) *Vent pipes for integral fuel tanks.* Each integral fuel tank must meet the requirements of this paragraph as follows:

(1) Each tank must have a vent that connects to the highest point of the tank, discharges on a weather deck through a bend of 180 degrees (3.14 radians), and is fitted with a 30-by-30-mesh corrosion-resistant flame screen. Vents from two or more tanks may combine

in a system that discharges on a weather deck.

(2) The net cross-sectional area of the vent pipe for the tank must be—

(i) Not less than 312.3 square millimeters (0.484 square inches) for any tank filled by gravity; or

(ii) Not less than that of the fill pipe for any tank filled under pressure.

(e) *Fuel piping.* Except as permitted in paragraphs (e)(1), (2), and (3) of this section, each fuel line must be seamless and made of steel, annealed copper, nickel-copper, or copper-nickel. Each fuel line must have a wall thickness of not less than 0.9 millimeters (0.035 inch) except that—

(1) Aluminum piping is acceptable on an aluminum-hull vessel if it is installed outside the engine room and is at least Schedule 80 in thickness; and

(2) Nonmetallic flexible hose is acceptable if it—

(i) Is used in lengths of not more than 0.76 meters (30 inches);

(ii) Is visible and easily accessible;

(iii) Does not penetrate a watertight bulkhead;

(iv) Is fabricated with an inner tube and a cover of synthetic rubber or other suitable material reinforced with wire braid; and

(v) Either,—

(A) If it is designed for use with compression fittings, is fitted with suitable, corrosion-resistant, compression fittings, or fittings compliant with SAE J1475 (incorporated by reference in §27.102); or,

(B) If it is designed for use with clamps, is installed with two clamps at each end of the hose. Clamps must not rely on spring tension and must be installed beyond the bead or flare or over the serrations of the mating spud, pipe, or hose fitting. Hose complying with SAE J1475 is also acceptable.

(3) Nonmetallic flexible hose complying with SAE J1942 (incorporated by reference in §27.102) is also acceptable.

(f) A towing vessel of less than 24 meters (79 feet) in length may comply with any of the following standards for fuel systems rather than with those of paragraph (e) of this section:

(1) ABYC H-33 (incorporated by reference in §27.102).

(2) Chapter 5 of NFPA 302 (incorporated by reference in §27.102).