

have not eliminated this exemption from the final rule.

Another comment urged us to require dedicated VHF radios for the internal-communication system. It argued that relying on the same radios used for day-to-day operation of the vessel would leave the availability and operability of the radios questionable. We do not agree. On the contrary, we expect radios used daily to be more likely to be fully charged and ready for use when needed.

6. Fuel Shut-off Valves

A number of comments requested that we change the requirement for fuel shut-off valves set forth in 46 CFR 27.340(f). That requirement, derived from the interim rule, states that any fuel line subject to internal head pressure from the fuel in a tank must be provided with a remotely operable fuel shut-off valve. It was our intent to require a means to stop the main supply of fuel to the engine room during a fire, because our casualty data showed that failures of fuel lines and flexible hoses are among the leading causes of fires in engine rooms of towing vessels. Fuel leaking and spraying from gravity tanks significantly increases the magnitude of these fires and makes these fires almost impossible to extinguish without outside assistance. It was our further intent, therefore, to require a single shut-off valve located at the outlet of the day tank. The comments from the towing industry, however, pointed out that many towing vessels are configured with day tanks and multiple fuel tanks capable of pressurizing fuel lines by gravity flow, and thus would need multiple shut-off valves. They argued that there is no valid safety benefit to installing shut-off valves on all of these tanks. They reported not only that engineers often transfer fuel among tanks to adjust vessels' trim but that they transfer it manually with valves on fuel-transfer manifolds in the engine rooms. The valves open solely during transfers. The fuel ultimately enters a day tank, which then supplies the engines and generators. As written, the interim rule is interpreted by some to require a separate shut-off valve for each tank connected to the manifold. Our review of casualty reports showed that, while failure of fuel lines and fittings on diesel engines occurred in a significant number of cases, failure of piping connected directly to tanks and manifolds did not significantly contribute to the fire hazard. We conclude from the reports and the public comments that the measures required in the interim rule need not apply to all tanks. Only a fuel line directly supplying an engine (or

generator) needs a remotely operable positive shut-off valve. We agree with the comments. We have therefore framed the final rule to clearly explain that we require a shut-off valve only on a line from the day tank, a storage tank, or a manifold that supplies fuel directly to an engine or generator. We expect you to install remote shut-off valves as follows:

- If you have a day tank supplying fuel, install the shut-off valve at the day tank;
- If you have a fuel-distribution manifold only (no day tank), install the shut-off valve in the single fuel-supply line after (downstream of) the manifold; or
- If you have a fuel tank directly supplying an engine or a generator, without the use of a day tank, a storage tank, or a fuel-distribution manifold, install the shut-off valve at the fuel tank.

7. Fuel Systems

One comment noted that a reader could misinterpret 46 CFR 27.340(d) to require the fitting of each fuel tank with a vent pipe connected to the highest point of the tank and venting on the weather deck. The commenter argued that this would prevent the operator of a towing vessel from leading a common vent pipe from two or more fuel tanks. This was not the intent. The individual vent pipes from several fuel tanks containing liquids in the same class of hazards may connect to a header venting on the weather deck, as long as the piping arrangements and diameters are adequate to prevent damage to the tanks from over- and under-pressurization. We have added a new sentence to this paragraph to clarify this.

Another comment insisted that subparagraphs 27.340(d)(2)(i) and 27.340(d)(2)(ii) fail to clarify which of their two standards for vent pipes applies, and suggested that we add the words "whichever is greater". We do not agree. The two standards apply to two different situations. 46 CFR 27.340(d)(2)(i) contains the standard for a tank filled under gravity head, as from a marine fuel station with a dispensing nozzle. Section 27.340(d)(2)(ii) contains the standard for a tank filled with fuel pumped aboard (under pressure) through a connected length of fuel-transfer hose. The commenter also suggested that we adopt the rules of the American Bureau of Shipping (ABS) for sizing tank vents. We have not adopted these rules, as they exceed what we consider acceptable. Of course, an operator may choose to adopt the ABS rules or apply another higher standard.

8. Training and Drills

A number of comments requested a reduction in the frequency of required training and drills. We disagree, for the reasons that follow. Commercial vessels, if they require fire drills at all, adhere to a monthly schedule. We have required such drills monthly to familiarize crewmembers with the hazards, and with the safety equipment installed, onboard their vessels. In the towing industry, it is not uncommon to have a high rate of crew transfers. Crewmembers may be aboard vessels just for brief periods, or may rotate assignments among several vessels. They must receive training and drills in fire safety fairly often.

We received comments that indicate some in the industry may have misinterpreted the interim rule on training and drills. Our intent was never to require such formal fire-fighting training as would be necessary for licensing. The required monthly training is for response to emergencies that might occur aboard crewmembers' particular vessels. The training should familiarize them with the safety equipment installed aboard their vessels, and with the locations of the vessels' controls for fuel and ventilation systems. It should also provide instructions on how to operate all of the installed fire-fighting equipment.

Another group of comments noted that monthly drills would be pointlessly burdensome to the industry if they entailed the discharge of portable and semi-portable fire extinguishers. This was not our intent. 46 CFR 27.355(c)(2) specifies that the drills must include "breaking out and using emergency equipment." It aims at crewmembers' mustering the equipment and bringing it to the site of the drill. We do not require the actual release of extinguishing agents during the drills: The drill instructor can demonstrate the proper operation of the equipment without discharging the extinguishers. The drills should familiarize the crewmembers with the location of the emergency equipment and the difficulties that they may encounter in employing it.

9. Safety Orientation

One commenter made the point that not all crew transfers take place while the vessel is docked. The requirement in 46 CFR 27.355(d) to provide safety orientation to new crewmembers "before the vessel gets underway" therefore cannot be met in all cases. We agree with this comment and have framed the paragraph to require, instead, the safety orientation for new crewmembers within 24 hours.