



MARINE SAFETY ALERT
Inspections and Compliance Directorate

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CHAFING ON FUEL HOSES CAN CAUSE CATASTROPHIC FIRES

A recent fire onboard an inspected towing vessel has highlighted a critical safety concern involving fuel hoses on main engines. While it is standard marine practice to install protective chafing gear on areas prone to wear, there are currently no statutory requirements for inspected towing vessels to install such protections on fuel lines. Failure to prevent chafing on these hoses can lead to fuel leaks, which may spray onto the engine and ignite, causing a fire.

The U.S. Coast Guard has noted that while many inspected towing vessels include fuel hose inspections in their maintenance routines, crew members may not be adequately trained to recognize substandard conditions. The location of the fuel hoses on main engines can also make thorough inspections challenging. It is essential that companies provide proper training to ensure crew members can effectively inspect fuel hoses during routine checks. Additionally, installing fire-retardant hose coverings on critical fuel system hoses is recommended. These coverings not only protect against chafing but also help prevent fuel from spraying onto the engine by directing it into the bilge.



Figure 1 – Main Engine Dry Exhaust

Although these measures may seem minor, compromised fuel hoses can pose significant risks to the vessel's crew, the environment, and the vessel's seaworthiness. In the incident cited, the vessel was underway when the port main engine's fuel hose sprayed fuel onto the exhaust, resulting in a fire that caused over \$100,000 in damages and injured a crew member due to smoke inhalation.

To mitigate the fire risks on inspected towing vessels, the Coast Guard **strongly recommends** that vessel owners and operators:

- **Install fire-retardant hose coverings and chafing protection:** Consider standardizing installed equipment across fleets to ensure consistent protection and crew member familiarity.

- **Conduct thorough inspections:** Inspect fuel hoses regularly as part of a standard maintenance routine. This should include visual inspections for signs of wear, such as cracks, abrasions, or any other indicators of deterioration.
- **Install flange spray shields:** Where pressurized fuel piping is flanged or threaded, spray shields or anti-spray tape should be installed to prevent leaks from contacting hot surfaces or other ignition sources. The document [*IMO MSC.1/Circ. 1321*](#), published by the International Maritime Organization (IMO), provides detailed guidelines on installation of spray shields, proper hose installation, and other measures to prevent engine room fires.
- **Maintain detailed inspection records:** Document hose conditions, maintenance performed, and the next scheduled inspection date to track conditions and identify recurring issues that need to be addressed.
- **Implement comprehensive crew training programs:** Ensure crew members, particularly those involved in vessel maintenance and engine operation, receive thorough training on the importance of fuel hose integrity. This training should be part of both initial onboarding and ongoing professional development. Training should include detailed instructions on how to identify signs of chafing, wear, and other early warning signs of hose failure, as well as potential consequences of ignoring these signs.

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