



UNITED STATES COAST GUARD
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MARINE SAFETY ALERT

Inspections and Compliance Directorate

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IMPORTANCE OF HAZARDOUS ZONE MARKINGS AND SAFETY PROTOCOL AWARENESS

A recent marine incident involving a tri-fueled vessel (liquefied natural gas (LNG), diesel, battery) that resulted in a fire and severe injuries to crewmembers highlights the dangers of working in hazardous zones. Despite being aware of nearby crankcase and LNG purge vents in their work area, the crew did not know that the vessel was actively using methane as a fuel source. As a result, the work was being conducted in a hazardous zone (see Figure 1). Although marked as a hazardous zone on the vessel's plans, the zones were not physically or otherwise marked as hazardous on the deck, providing no visual indication to the crew of the potential hazards present.

While crew performed assigned work on top of the pilothouse a failed engine purge valve actuator released LNG vapors through the vents located in the crew's work area. Believing the area was gas-free, a crewmember struck a lighter, igniting the LNG fumes and causing severe injury to both crewmembers in the area. This incident shows the critical importance of hazard awareness, proper marking of hazardous zones, and strict adherence to safety protocols.

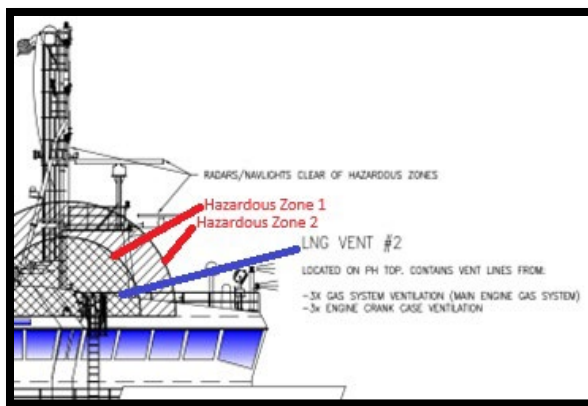


Figure 1 - Hazardous zone on air castle deck above pilothouse



Figure 2 - Image of methane vent post casualty.

The Coast Guard **strongly recommends** that vessel owners, operators, and other stakeholders:

- Review hazardous zone requirements and ensure crewmembers are fully aware of the circumstances and dangers that define hazardous areas.
- Ensure all hazardous zones are clearly marked and crewmembers are aware of the locations and associated hazards.

Marine inspectors, investigators, and surveyors should remain vigilant about these issues and take corrective actions as needed.

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