



# UNITED STATES COAST GUARD

U.S. Department of Homeland Security

## **MARINE SAFETY ALERT**

### ***Inspections and Compliance Directorate***

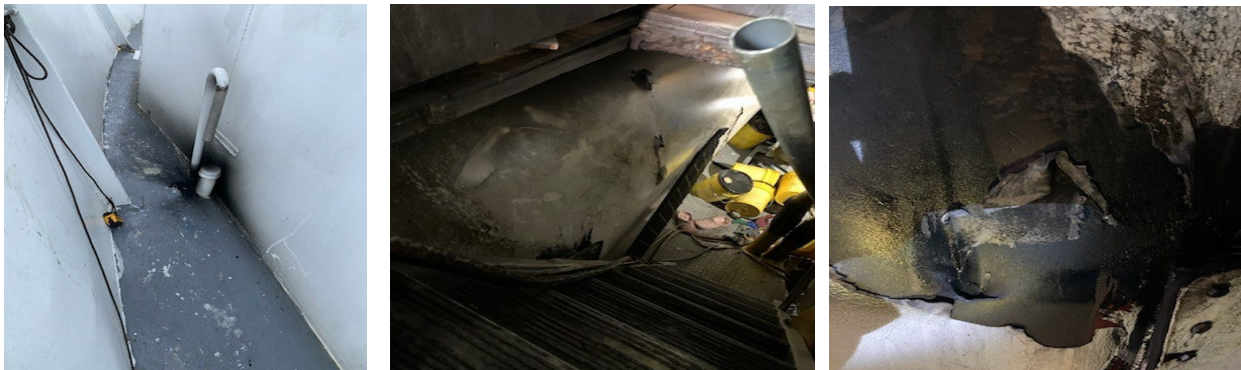
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Washington D.C.

Safety Alert 03-24

## **WARNING: ENSURE A GAS-FREE ENVIRONMENT PRIOR TO CONDUCTING HOT WORK**

Coast Guard Sector Honolulu and Hawaii State Fire Investigators are examining a recent marine diesel fuel tank explosion on an uninspected commercial fishing vessel (CFV) moored for maintenance at a state-regulated facility. The explosion injured five individuals and resulted in one fatality.

Preliminary findings reveal that the vessel did not adhere to the “Hot Works” permit guidelines issued by the State Department of Transportation (DOT), which authorized work on a water tank hatch, engine room stairs, and spotlights. Witnesses confirmed welding was performed on a fuel tank vent pipe that was neither certified gas-free nor “Safe for Hot Work” by a certified marine chemist, as required by the permit. Consequently, diesel fuel vapors ignited, causing the explosion.



*Figure 1-Left: Fuel tank vent pipe (soot residual from explosion), Center: Bulkhead between fuel tank and engine room (ballooned/exploded), Right: Ruptured bulkhead (fractured from explosion).*

Uninspected CFVs, regulated under 46 Code of Federal Regulations (CFR) Subchapter C, are subject to limited oversight by the U.S. Coast Guard (USCG) or recognized class societies. Therefore, CFV owners and operators play a critical role in ensuring that safe marine practices are adhered to during repairs.

The following industry standards and regulations are critical for ensuring safety during hot work operations:

- Occupational Safety and Health Administration (OSHA). OSHA regulations under 29 CFR 1915 Subpart B require personnel conducting hot work on or around fuel tanks to comply

with safety measures, including certification of spaces as “Safe for Hot Work” and issuance of a “Gas Free” certificate.

- National Fire Protection Agency (NFPA). NFPA standard 51B covers fire prevention during welding, cutting, and other hot work, providing critical safety standards to prevent injury, loss of life, and property damage. Guidance in the standard includes, but is not limited to hot work permits, fire watches, fire suppression, and safety measures for hot work in confined spaces where explosion risks may be elevated.

To prevent similar incidents, the Coast Guard **strongly recommends** the following actions for the CFV industry:

- Verify that personnel conducting hot work are familiar with and adhere to 29 CFR 1915 Subpart B regulations, including proper atmospheric testing and certification for safe hot work conditions.
- Ensure in-depth understanding and compliance with NFPA standard 51B to prevent fire or explosion risks during hot work. The NFPA has this document available for purchase at [NFPA 51B](#).
- Fully comply with the “Hot Works” permit requirements, ensuring no unauthorized deviations from the approved scope of work. Obtain prior approval for any changes from the relevant authority.
- Employ welders qualified by entities such as the USCG, American Society of Mechanical Engineers (ASME), American Bureau of Shipping (ABS), or certified by the American Welding Society (AWS).

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