

US Coast Guard: Addressing hazardous area electrical issues

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The United States Coast Guard (USCG) has published Safety Alert 05/20 entitled **Electrical Issues Spark Major Concern – Addressing Hazardous Area Electrical Installations Knowledge Gaps**

The Safety Alert emphasises the importance of properly installed and maintained listed or certified safe electrical equipment in hazardous areas in order to reduce the risk of fire or explosion onboard vessels.

The USCG has seen a number of instances where there was a lack of knowledge in the marine industry with regard to the installation, training, maintenance and inspection of these certified systems.



Properly Installed Certified Safe Junction Box



Improperly Modified & Maintained Certified Safe Junction Box



Improper Cable Gland Installation/Modification



Standing Water in a Certified Safe Flameproof Light Enclosure Indicating Failed Ingress Protection

- Port State Control Officers (PSCOs) have found certified safe equipment improperly installed or identified missing components, which compromises the certification of the system and nullifies this critical protection in a flammable environment.
- In other cases, PSCOs found degraded components and evidence of equipment not being maintained or inspected.
- Additionally, USCG personnel have discovered instances where individuals responsible for the installation, maintenance, and oversight of this equipment onboard foreign and domestic vessels were unfamiliar with the appropriate standards to follow.
- The USCG notes that *“the attribution of fires caused by electrical faults cannot be overstated”*, and the safety alert goes on to say that *“Fire and explosion protection standards for electrical equipment in the oil and gas industry worldwide is a substantial part of the industry’s safety barrier.”*

Actions taken and lessons learned

In the alert, the US Coast Guard strongly recommends that owners, operators, shipboard personnel and service providers:

- Familiarise themselves with the appropriate International Electrotechnical Commission [IEC] standards as related to the proper training, inspection, maintenance, and documentation of electrical equipment installed in hazardous areas, to ensure that no potential ignition source is present in hazardous areas aboard tank vessels, gas carriers and vessels using gases or other low flashpoint fuels.
- Ensure proper training for operators and persons with executive functions conducted to a standard not inferior to the IEC at all appropriate levels.
- Implement an appropriate periodic inspection and maintenance program by competent personnel.
- Ensure that any repairs are made by a competent technician or repair facility. When in doubt, a representative of the equipment manufacturer should be consulted. Any modifications to existing systems must be discussed with and approved by the appropriate regulatory authority.
- Whilst this safety alert was developed for USCG by the Liquefied Gas Carrier National Center of Expertise in Port Arthur, TX, the underlying principles are applicable to IMCA members' operations.

Related resources

Members may wish to refer to:

- Explosion and fire on-board the chemical tanker Stolt Groenland
- Dangers Of Battery Charging

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