



UNITED STATES COAST GUARD

U.S. Department of Homeland Security

MARINE SAFETY ALERT

Inspections and Compliance Directorate

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Safety Alert 02-16

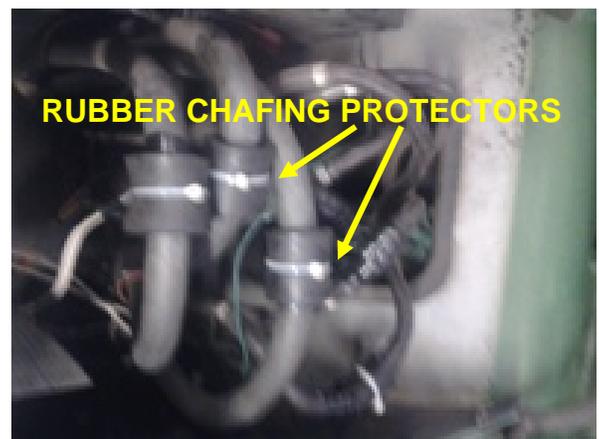
Worn Thin **Vibration Abrasion, a “Short” Summation**

This Safety Alert addresses causal factors related to a temporary loss of electrical power that occurred onboard a tow boat with a tow. In this case, electrical power was restored quickly by a standby generator, and the vessel and tow remained under control throughout the event. Furthermore, the crew quickly identified the problem and took appropriate steps to prevent recurrence.

The casualty involved a diesel-driven generator, which grounded out and tripped off line when one of the primary leads exiting the generator housing chafed against its steel enclosure. Investigators determined that other vessels operated by the same company had similar generators and wiring arrangements. Inspection of those generators showed similar signs of chafing and abrasion, but the wiring had not yet reached the point of failure.



Corrective action and repairs were quickly taken on the worn areas. The simple fix involved wrapping the worn areas with friction or electrical tape. Additional rubber protectors were also installed and held in place with tie wraps.



Vibrational loosening of diesel engine components is a well known causal factor in fuel oil spray fires. While this situation is different than a failed fuel line, the unsafe condition leading to the failure is similar. Both circumstances serve as a reminder for personnel to consider what could occur as a result of vibration. Inspect at-risk areas such as piping systems connected to the engine, engine mounts, pipe clamps, wire bundles, brackets, and areas where connected components pass through decks or overheads. Areas that house the generator's larger leads should only be inspected for insulation wear by qualified personnel.

As a result of this casualty the Coast Guard strongly recommends that vessel operators with similar generators on board consider having a qualified individual inspect the casing area where the winding leads exit the generator frame for similar wear. All electrical safety precautions including lock out / tag out procedures should be taken prior to beginning work.

This safety alert was developed by the Coast Guard Headquarters Office of Investigations and Casualty Analysis with assistance from Prevention personnel of Coast Guard Sector Lower Mississippi River and the Eighth Coast Guard District. Questions and comments may be sent to: HQS-PF-flr-CG-INV@uscg.mil.