Marine Safety Flash

A16-03 (11th January 2016)

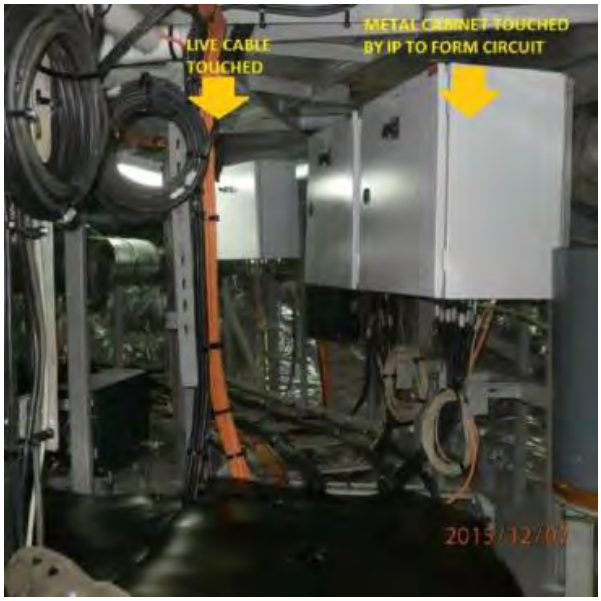
Marine Vessel Electrical Incident

Incident Overview

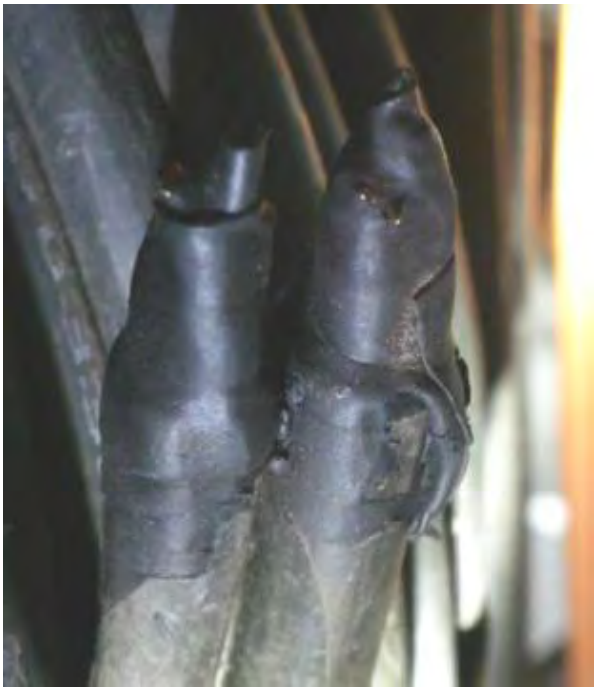
The second mate of a vessel entered the bridge mezzanine, located underneath the bridge of the vessel to inspect the status of a component associated with one of the vessels radars.

The second mate (IP) and chief officer were undertaking troubleshooting of a fault with the vessel radar system. The space is entered on a regular basis by bridge officers in the course of their normal duties to undertake checks on critical equipment.

On approaching the power supply for the radar, the second mate used their left hand to stabilise themselves in the vicinity of a surplus coiled cable. The second mate then placed their right hand on a nearby metal cabinet and received a minor electric shock. No injury resulted, however investigations determined that there was no Residual Current Device (RCD) or earth leakage on the power source, therefore there was potential for a fatal injury.



IP place hand on live cable and metal cabinet, forming a circuit


Copper wires were protruding from electrical tape terminations

Key Findings

- The surplus coiled cable had been connected at the circuit breaker/board end and had not been isolated correctly at the time of construction.
- The live end of the surplus cable had not been correctly terminated and was not double insulated. Bare wires were exposed.
- It was discovered that it was common practice to install surplus cables in this manner in the country that the vessel was built.
- Class approval and acceptance testing of the vessel did not verify that electrical terminations were in accordance with classification rules/standards.

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- Company contracts for new marine vessels do not require suppliers to undertake detailed electrical inspections prior to the vessel coming under Company operational control.

Lessons Learned

- All marine vessels coming under Company operational control currently do not have suppliers undertake a detailed electrical inspection prior to mobilising onto the project.
- New build vessels which do not have supplier supervision in shipyard during the building phase are prone to have quality issues.
- It should not be assumed that surplus/spare cables have been isolated and tagged out at the circuit breaker/board.
- Class society approval and acceptance testing did not identify that electrical terminations were not in accordance with Classification Rules/Standards.

Recommendations

- All marine vessels coming under Company Operational Control should have suppliers undertake a detailed electrical inspection prior to mobilising onto the project.
- New Build Vessels which do not have supplier supervision in shipyards should have suppliers undertake a detailed electrical inspection prior to mobilising onto the project.
- All surplus/spare cables should be isolated and tagged out at the circuit breaker/board.
- Submit a notification to class regarding this incident and the findings of the investigation.