

Near-miss: 220v cable not isolated during work

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A member has reported an incident in which a 220 volt mains cable was left live and exposed in situ during repair works.

What happened?

During the 'routine' maintenance task of outfitting a control room it was necessary to remove a light fitting to allow the removal of some fire retardant panels. The light was presumed to be isolated by a member of the work party, who tested this by use of a digital multi-meter and also by placing the tube back into the fitting to verify that it did not operate. The work party member then disconnected the fitting and left the exposed wires in situ.

When an instrument technician passed through the area on another task, he queried the status of the exposed wires. A further check was made on the wires and these were found to be live with 220v. The electrician was contacted and requested to isolate the circuit.

An investigation was conducted and the following conclusions were drawn:

- On identifying that the light fitting required to be removed as part of the outfitting, the work party member took it upon himself to do this task, without checking
 - the isolation status of the circuit with the supervisor
 - if an isolation confirmation certificate was in place
 - if a valid permit to work was in place for the task
- No consultation was made with the vessel electrician, who would be deemed responsible for the lighting circuits.
- The work party member attempted to check the voltage of the circuit with a digital multi-meter, but did not operate this correctly and hence obtained a false reading, which led him to disconnect the fitting on a live circuit.
- An immediate cause of this incident was that a digital multi-meter was used incorrectly to verify that the wires were not live ('proving dead'). As there is the potential to have the digital multi-meter on the incorrect setting, it should never be used for proving dead. On this occasion, it is considered that the hold button had been inadvertently pressed on the unit which prevented a voltage from showing when proving dead.

Our member noted the following:

There have been a number of other potentially fatal electrical incidents within its fleet since this incident:

- A hard-wired, temporary 220v three phase cable was found hanging on a nitrogen quad, which had been disconnected at one end with the breaker only tripped, not isolated.
- A near electrocution occurred due to the failure to apply a robust isolation.

The following actions were taken:

In light of these recent near miss electrical incidents, the following preventative actions were taken:

- Ensure all vessel departments were aware that any isolations carried out are done so in consultation with the appropriate electrical authority, and carried out by an approved isolator.
- Ensure all vessel departments comply fully with company procedures for applying and controlling isolations -personal isolations or trips are not to be considered an acceptable means of isolating.
- All 'proving dead' should be done with an approved unit which is designed for this purpose only. A recommended example of this would be the Martindale V1137002 voltage indicator and the PD440 proving unit.
- Isolators should be familiar with the correct process of proving circuits are dead, including testing the device immediately before and after proving dead to ensure that the device is working correctly.

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