



# Safety Alert

**INCIDENT TITLE:** Electric Shock From Disconnected Neutral Wire

**TIME AND DATE OF INCIDENT:** 20 January 2017

## INCIDENT DETAIL

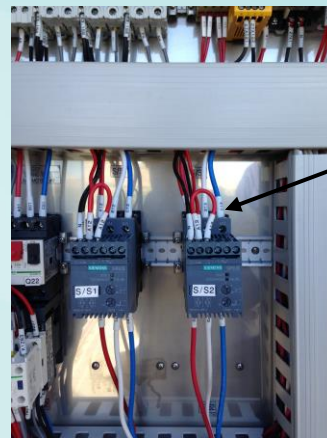
A contractor was working to replace a 3 phase motor starter within an existing control panel. He isolated and tested the motor starter supply prior to the work then disconnected the motor starter. Upon touching the neutral cable he received an electric shock.

On inspection it was found that the neutral wire was looped from the main neutral bar to the motor starters then around the rest of the control panel.

By disconnecting the neutral the electrician was actually disconnecting the neutral to the entire control circuit. This took away the return path from the rest of the control equipment. When he touched the disconnected neutral wire he completed the circuit and received an electric shock of 67 volts AC.

## IMPORTANT INFORMATION

This could not have been found during initial testing - the voltage would have been zero until the two neutral wires were removed from the terminal and split from each other.



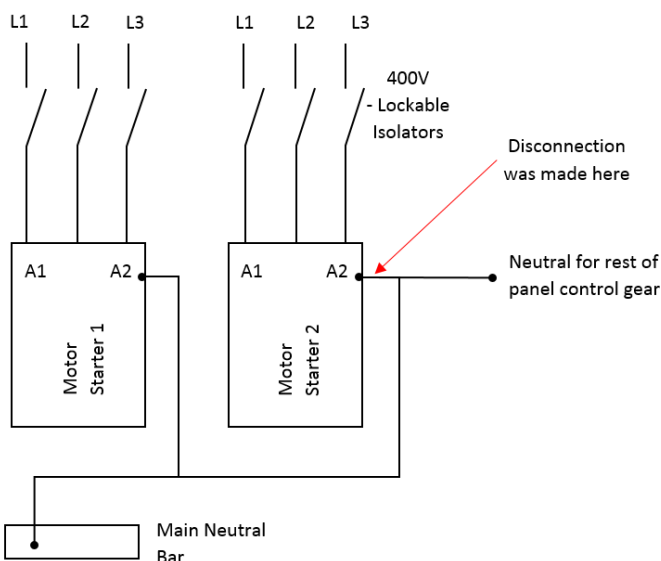
Terminals that were disconnected

## BEST PRACTICE

Where common neutrals are found in control panels they should be separated back to the incoming neutral bar.

When disconnecting 3 phase motor starters neutral cables should be checked for voltage immediately following disconnection.

## PHOTOGRAPHS



## IMMEDIATE INTERIM ACTIONS

Ensure electrical staff are aware of the risk of a common neutral feeding multiple devices.

When working on motor starters consider this risk and if a common neutral is found, rewire the panel so neutrals are separated back to the control panel's neutral bar.

This Safety Alert is issued by the Corporate Safety & Health Team. For further information please contact:

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meridian