

Motor Heater circuit electric shock

What happened?

During routine maintenance on a gas turbine, the gearbox was to be removed along with the DC and AC lube oil pump motors, to service the gearbox. The tasks were covered under Access Permit, including a Job Safety Analysis. Isolations for the lube oil pump motors had been applied for, with circuit breakers isolated and checked.

The IP electrically disconnected the DC lube oil pump motor and then disconnected the 415VAC lube oil pump motor. The IP discovered a second smaller terminal block and assumed it was a low voltage thermistor for the motor. He disconnected this terminal block without checking it was de-energised. The IP received an electric shock and burn to the palm of his left hand, when he touched a live conductor on what was an un-isolated 230VAC motor heater circuit

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What did we learn?

Stop work and reassess the hazards and controls should the work scope change.

Always check a circuit is deenergised before working on it and never assume.

When applying isolations ensure that you understand if there could be more than a single power source, such as motors.

To help with confirming the power sources ensure

- Electrical drawings for motors with heaters or other circuits carry a warning and drawing reference to the heater or other circuit.

All motors with heaters or other circuits carry a label stating this at the terminal box.

Motor terminal block showing the live conductor that was disconnected and touched

