

MSHA Accident
Prevention
Alert!

ELECTRICAL

Know the Difference!
Slow Down!
Don't Take Short Cuts!
Never Assume!

TROUBLESHOOTING OR WORK



A maintenance supervisor was killed when he contacted a 600 VAC phase conductor inside an explosion proof enclosure. The victim had not opened, locked-out, or tagged-out the visual disconnecting device before he reached inside the enclosure without wearing any gloves. He was troubleshooting or performing electrical work on a roof bolting machine when he was electrocuted.

TROUBLESHOOTING BEST PRACTICES

1. **REMEMBER**, troubleshooting or testing is locating electrical problems and verifying that proper repairs have been made.
2. Develop, communicate, ensure understanding, and execute a plan before performing electrical troubleshooting or electrical work to ensure that safety is maximized for all miners involved in the task.
3. **When troubleshooting can be performed without power, ALWAYS deenergize the circuit!**
4. Never troubleshoot energized high voltage circuits (over 1,000 volts)!
5. Wear properly rated and well maintained electrical gloves when troubleshooting or testing energized low and medium voltage circuits.
6. Ensure electrical meters and non-contact voltage testers are properly rated and in good operating condition.
7. After determining the electrical problem, and before performing electrical work, open the circuit breaker, disconnect and lock-out and tag-out the visual disconnecting device. High voltage circuits must also be grounded.



An electrician and his assistant were shocked while testing lid switches to troubleshoot the ground monitor pilot circuit. The electrician fell into an energized high voltage enclosure and his head contacted a 4,160 VAC transformer terminal. The victim assumed the circuit was deenergized and did not open, lock-out, or tag-out the visual disconnecting device. His assistant was shocked when he removed the electrician from the high voltage circuit.

ELECTRICAL WORK BEST PRACTICES

1. **REMEMBER**, electrical work is installing, repairing, replacing, or maintaining electrical equipment, components, or conductors.
2. After determining the electrical problem, and before performing electrical work, open the circuit breaker, disconnect and lock-out and tag-out the visual disconnecting device. High voltage circuits must also be grounded.
3. Perform your own lock-out and tag-out procedure and NEVER rely on others to do this for you. **Multiple locks for multiple workers!**
4. Use electrical meters and non-contact voltage testers to ensure electrical circuits are deenergized prior to performing electrical work.
5. Prior to energizing equipment that has not been in service for an extended period of time, take great care to examine and test components, especially safety devices, to ensure that the equipment is in safe operating condition. Consider the service life of each component.
6. **REMEMBER**, when you break the plane of an open enclosure, compartment, or panel, you **ARE DOING** electrical troubleshooting **OR** electrical work! **Before taking gloves off, turn the power off!**