

# MNMM Fatal 2010-16

- Electrical Accident
- October 10, 2010 (Oklahoma)
- Granite Operation
- Contract Apprentice Electrician
- 42 years old
- 5 years of experience

# Overview

The victim and two co-workers were seriously injured when an arc flash occurred. They were performing maintenance work on an electrical circuit breaker. The circuit breaker was in the "OFF" position but remained energized on the input side. They were all hospitalized. The victim died on October 12, 2010, as a result of his injuries.

The accident occurred because contractor management procedures failed to ensure that the electrical circuit breaker was de-energized prior to performing work on it.



# Root Cause

**Root Cause:** Management procedures failed to ensure that the electrical circuit breaker was de-energized prior to performing work on it.

**Corrective Action:** Mine management conducted training classes for all employees at the mine regarding lock-out and tag-out policies and procedures. All "bottom feed" circuit breakers were identified. All electrical contractors will be trained in the future about proper lock-out and tag-out and "bottom feed" circuit breakers. The main electrical circuit breaker was replaced with a "top feed" circuit breaker.

# Best Practices

## Before YOU perform electrical work:

- Be trained on all the electrical tests and safety equipment necessary to safely test and ground the circuit being worked on.
- Conduct a risk assessment.
- Use properly rated Personal Protective Equipment (PPE) including Arc Flash Protection such as a hood, gloves, shirt, and pants.
- Positively identify the circuit on which work is to be conducted.
- De-energize power and ensure that the circuit is visibly open.
- Place YOUR lock and tag on the disconnecting device.
- Verify the circuit is de-energized by testing for voltage using properly rated test equipment.
- Ensure ALL electrical components in the enclosure are de-energized.
- Ground ALL phase conductors to the equipment grounding medium with grounding equipment that is properly rated.
- Install warning labels on the terminal covers of bottom feed circuit breakers stating the "Bottom terminal lugs remain energized when the circuit breaker is open."