

Case 130. 57-year-old master electrician was electrocuted after contacting 12,447 volts when working in a switchgear cubicle installing the control wiring for the new generator building.

A 57-year-old male master electrician was electrocuted after contacting 12,447 volts when working in a switchgear cubicle installing the control wiring for the new generator building. Company A was the owner of the equipment involved and is the controlling employer over this project. An electrician of Company A was shutting down the electrical power to the overall worksite. Company B personnel were in the process of shutting down a substation to de-energize the feeders to Company A switchgear thus allowing Company C (decedent's employer) to install the control wiring in seven switchgear cubicles for a new generator building.

Company A had scheduled a company-wide outage with Company B. That morning, Company C employees (the decedent and his coworker) waited for Company A's electrician to arrive and open the door at the Company A's primary switchgear building. Company A's employee contacted the building attendants affected by the outage by radio that the outage was beginning. Company A employee opened the switchgear and shut down power for the outage. Company B employees walked into the switch house to check that the Company A #1, #2, and #3 switchgears were open. Following the switch order, Company B verified that they were open. Company B employees then left the switch house to continue following the switching order to shut down the substation. Meanwhile, someone opened all the doors and screen doors to all the switchgear (Company A #1, #2, #3, Tie breaker and generator breaker). The decedent was not wearing lineman gloves and was wearing a baseball cap. No testing was performed to ensure that the electricity was shut off to the switchgear where the decedent was performing work. Another worker from Company C mentioned to the decedent that he was going to start removing the cable raceway cover in the Tie breaker switchgear. The decedent began work on Company A's #1 switchgear. He removed the bolts from the raceway cover and then contacted the energized phase of the transformer in the bottom of the Company A #1 switchgear. The Company C coworker and the Company A electrician heard the explosion and saw the arc flash. Both individuals ran to the decedent and saw him slouched over the A phase transformer. The decedent was on fire and his coworker and an employee of Company B who came from the substation to the switchgear building patted him down to put the fire out and then pulled the decedent out of the cubicle. Emergency response arrived and he was declared dead at the scene.

MIOSHA Construction Safety and Health Division issued the following Serious citations to the employer.

SERIOUS:

GENERAL RULES, PART 1, RULE 114(2)(c).

An accident prevention program shall, as a minimum, provide for the following:

Inspections of the construction site, tools, materials, and equipment to assure that unsafe conditions which could create a hazard are eliminated.

Employees lack of inspection and/or observation of the work site failed to identify unsafe conditions that could create a hazard such as but not limited to:

1. Open inner screen door on Company B's #1 switchgear cubicle allowing energized (live) parts to be exposed.
2. Employee performing work activity prior to testing and grounding of the equipment.

SERIOUS:

PERSONAL PROTECTIVE EQUIPMENT, PART 6, RULE 622(1).

A helmet, as prescribed in R408.40621, shall be used to protect the employee where a hazard or risk of injury exists from falling or flying objects or particles or from other harmful contacts or exposures.

Employees were not wearing appropriate head protection exposed to 12,447 volts of electricity (shock, arc flash and arc blast hazards) while walking and working the Company A's switch house in performance of duties (installing the control wiring for the new generator building in the seven Company A switchgear cubicles).

SERIOUS:

ELECTRICAL INSTALLATIONS, PART 17, RULE 1724(3).

An employee shall not be permitted to be in proximity to any part of an electric power circuit that he may contact unless the employee is protected against electric shock by de-energizing the circuit and locking out and tagging it, or unless the employee working on an energized circuit is guarded by insulation, insulated tools, or insulating matting or blankets sufficient to protect against the voltage involved.

Employees exposed to 12,447 volts of electricity (shock, arc flash and arc blast hazards) while walking and working the Company A's switch house in performance of duties (installing the control wiring for the new generator building in the seven Company A switchgear cubicles).