

Case 79. 47-year-old male commercial tech electrician died when he contacted an electrical cable energized with 240 volts, 50 amps.

On July 21, 2004, a 47-year-old male commercial tech electrician died when he contacted an electrical cable energized with 240 volts, 50 amps. He and his partner were testing for a short in the cable, which was part of a tower light system near the intersection of two major expressways. A nearby tower light was not working. Both were wearing rubber gloves with leather liners. They were kneeling on damp ground without mats or insulating blankets. It had recently rained, humidity was high, and both were men sweating. Their procedure consisted of pulling the two 240-volt energized electrical tower light system cables up from a manhole. They would cut and test one cable at a time for a short. The testing was conducted by placing a 20-amp circuit breaker instrument that had been prepared in the shop for this purpose between the two ends of the cable. They had not found a short. Finding no short, they spliced the cable to prepare it for reinsulation by crimping a sleeve over it. The decedent was holding the ends of the cable while his partner spliced it. As the decedent's partner looked away momentarily, he heard a noise. When he looked back, he saw the decedent on the ground. He started CPR immediately. In the meantime, two county workers driving past on the expressway noticed that something was wrong and joined the worker. The police were contacted, and responded to the site. The police arrived and called for assistance. The victim was transported to a local hospital where he was pronounced dead.

MIOSHA issued the following Serious citations to the employer.

Serious:

GENERAL RULES, PART, 1, RULE 114(2)(b)

An accident prevention program shall, at a minimum, provide for the following:
Instruction to each employee regarding the operation procedures, hazards, and safeguards of tools and equipment when necessary to perform the job.

The employer failed to develop and instruct employees in proper procedure to use when working outside on energized 240-volt conductors to prevent contact with energized parts where there is the potential for failure of conductors. Such procedures would include, but not be limited to:

1. Suitability, consistency (for the conditions under which the work is to be performed) and for the voltage level of the live parts.
2. Identification of the principles on which it is based.
3. Be part of an Electrical Safety Program.
4. Designate if housekeeping (draining of standing water) will/can be conducted while circuits in the manhole are energized.
5. Identify the controls by which it is measured and monitored.

Two employees were working on 240-volt energized electrical circuit for highway tower lighting while all circuits fed by the load center were energized.

Serious:

GENERAL RULES, PART, 1, RULE 114(2)(d)

An accident prevention program shall, as a minimum, provide for the following: Instruction to each employee in the recognition and avoidance of hazards and the regulations applicable to his or her work environment to control or eliminate any hazards or other exposure to illness or injury.

The employer failed to adequately train employees in the recognition and avoidance of hazards associated with working outside on energized 240 volt power lines for highway tower lighting. Such training would include participation in a specified training module the employer currently has and recognition of working under conditions of high humidity. Additionally it would alert the employees to the fact that the primary purpose of an insulating blanket is to isolate the employee or equipment against accidental contact with/from energized equipment.

Serious:

ELECTRICAL INSTALLATIONS, PART 17, RULE 1724(1).

Electrical apparatuses and equipment used for construction operations shall bear an approved label or marking.

A non-weatherproof 20-amp circuit breaker was being used as a testing device for locating faults outdoors. The company's Safety program states that to prevent needless injury, tools cannot be used for anything other than the intended (designed) use. Lengths of electrical wire with alligator-type clips (installed on one end) were installed on screws meant to secure the breaker into a covered panel. The breaker, as modified, is installed across a break in the energized 50-amp highway light tower.

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.

Under humid conditions, two employees are kneeling on the ground cutting/working on energized 240-volt, 50-amp electrical circuits.