



The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces
through safety and health research



Lineman Electrocuted in Maryland

FACE 8735

Introduction

The National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR) is currently conducting the Fatal Accident Circumstances and Epidemiology (FACE) Project, which is focusing primarily upon selected electrical-related and confined space-related fatalities. The purpose of the FACE program is to identify and rank factors that influence the risk of fatal injuries for selected employees.

On January 16, 1987, a journeyman lineman with 31 years' experience was electrocuted when he contacted a 34.5 kV power source while replacing a switch jumper.

Contacts/Activities

Officials of the Occupational Safety and Health Program for the State of Maryland notified DSR concerning this fatality and requested technical assistance. This case has been included in the FACE Project. On March 19, 1987, the DSR research team met with employer representatives, interviewed a comparison worker, and discussed the incident with the OSHA compliance officer. Photographic documentation of the accident site was provided by the employer.

Overview of Employer's Safety Program

The victim was employed by an integrated electrical contracting company that performed residential and commercial wiring and underground low voltage work for the public utility company. The company employed 100 full-time workers. Additional people were hired from the local union roster as the work load demanded. The company did not have its own safety program or written safety policy. The local union provided all members with written safety rules and yearly training. The company provided on-the-job training and the supervisor was responsible for safety at the job site.

Synopsis of Events

A local chemical plant had an infrared study performed on three of its distribution substations. The results of this study indicated "hot spots" (bad connections) that needed repaired or replaced. The electrical contractor was hired by the chemical plant to perform this work. The day before the accident the crew assigned to perform this task was briefed on the infrared study by chemical plant representatives. Two areas were identified as urgent; these areas involved the switch

jumper wires for three parallel power lines on two of the substations. The parallel lines were 33 inches apart and there were three switch jumper wires at each substation. It was decided that the switch jumper wires which were attached from each parallel line to its switch hardware, would be replaced.

On the morning of the accident a journeyman lineman (the victim), an apprentice lineman (his stepson), and another worker were replacing the jumper wires at the first substation. The victim and his stepson raised themselves in the two-man aerial bucket. The disconnect switches located on the substation were opened but the victim did not place grounds on either side of the switches or cover the line (live) side of the switch with insulated line blankets as the safety rules required. The voltage on these lines was 2400 volts. The victim climbed out of the aerial bucket and laid down on the substation structure to perform the work while his stepson handed him the materials he needed from the aerial bucket.

After lunch the crew began preparing to change the switch jumper wires on the 34.5 kV lines at the second substation. The victim was told by his supervisor to ground the lines and test them with a light-emitting diode-type tester before beginning work on the jumper wires. Witnesses stated that the victim refused to use the tester or to connect the grounds and that the victim mentioned several times during the morning that he was in a hurry and had to leave work early. The disconnect switches located on the substation were opened and the victim raised himself and his stepson in the aerial bucket up to the first line and replaced the jumper wire. The victim then positioned the aerial bucket underneath the first and second lines which were 33 inches apart. The victim decided to change the second jumper wire while standing on the substation structure. The stepson stated the victim pulled himself from the bucket onto the substation structure and was cleaning the switch with a wire brush when a flash occurred. (The wire brush could not be found after the accident.) The victim then fell approximately 25 feet to the ground.

The victim, who was conscious, was flown by life flight helicopter to a nearby hospital where he died four hours later. He received electrical entry wounds on his left elbow and forearm and exit wounds to his right knee and both feet.

Cause of Death

At the time of the investigation the medical examiner's report was not available.

Recommendations/Discussion

Recommendation #1: Employees must follow safe work procedures.

Discussion: The victim chose not to follow safe work procedures even after being told to do so by supervisory personnel. Employees must understand that safe work procedures must be followed at all times.

Recommendation #2: Employers should assure adherence to established safe work practices.

Discussion: The local union distributed written safety rules to all of its members. These rules were to be the minimum safety requirements on all jobs unless the customer's safety rules were more comprehensive. Though the employer in this instance accepted these written union safety rules as company policy, they were not enforced by the supervisor. When the victim refused to ground and test the lines before he began the repair work at the second substation or when his earlier unsafe work practices were observed, corrective supervisory action should have been taken immediately; however, the victim was allowed to proceed with his unsafe work habits. Had the victim been made to work safely, the accident might have been prevented.

Recommendation #3: The employer should develop and implement comprehensive safety rules and training to assure that its workers are afforded the safest possible work environment .

Discussion: The employer should develop comprehensive written safety rules and training to assure that employees follow safe work procedures while performing their assigned tasks. The employer should establish a safety program and assure strict adherence to this program once it is established.

[Return to In-house FACE reports](#)

Last Reviewed: November 18, 2015

How helpful was this page?



Not helpful

Very helpful