



The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces
through safety and health research



Lineman Dies from Fall from Utility Pole

NIOSH In-house FACE Report 88-39

Introduction

The National Institute for Occupational Safety and Health (NIOSH) Division of Safety Research (DSR), performs Fatal Accident Circumstances and Epidemiology (FACE) investigations when a participating state reports an occupational fatality and requests technical assistance. The goal of these evaluations is to prevent fatal work injuries in the future by studying: the working environment, the worker, the task the worker was performing, the tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact.

On July 26, 1988, a 33-year-old male lineman died after falling 23 feet from a utility pole.

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Contacts/Activities

State officials notified DSR of this fatality and requested technical assistance. On September 6, 1988, a research safety specialist met with company officials and photographed the incident site.

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Overview of Employer's Safety Program

The employer in this case was a large municipal power company with 2500 employees. The company has written safety policies and procedures but there is no designated safety officer. The responsibility for safety compliance rests with area managers. The victim had been employed by the company for 9 years; however, he had only 1 year's experience performing the work task during which he was killed. He was considered a "trainee" and was only allowed to perform his job when accompanied by a supervisor.

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Synopsis of Events

The victim was an automatic switchman involved in maintenance and troubleshooting work. On the day of the incident the victim and his supervisor were engaged in routine maintenance on an electrical distribution system. This work involved performing “load tests” on transformers to determine if the overload conditions had damaged the transformers. A period of extended high temperatures in the weeks preceding this incident had resulted in high demands for electrical power for residential air conditioning units. These periods of high demand had caused numerous “surges” resulting in the temporary overloading of many pole-mounted transformers. Company policy calls for inspection of all units which show a “red light” indicating that they have experienced an overload. The victim had checked three similar units from a bucket truck the week prior to the incident.

At the time of the incident the transformer on the pole where the fall occurred was in a “red light” condition. Because of the location of this pole it was impossible to gain access to the transformer by a bucket truck. The victim, wearing leather gloves, a standard lineman’s tool belt and safety strap, ascended the pole. The transformer was located 26 feet above the ground, and 3 feet above a cable television line. The victim could not climb to the transformer with the safety strap around the pole because of this television line. Accordingly, he climbed up the pole with his safety strap over his left shoulder (a standard practice for lineman) with the intention of securing the strap around the pole after he was above the cable.

When the victim’s feet were just below the cable, he grasped a neutral guy wire with his left hand while reaching around the pole with his right hand to remove his safety strap from his left shoulder and secure it around the pole. In the process of reaching around the pole the victim’s right hand contacted an energized 120-volt secondary line on the transformer. The supervisor, standing on the ground below, observed the victim in contact with the energized line. As the victim struggled to pull away from this line he fell backwards, falling and striking the ground head first. The supervisor, who was trained in cardiopulmonary resuscitation (CPR), immediately summoned help on his two-way radio and began CPR on the victim. Emergency medical personnel responded in approximately 5 minutes. Neither the supervisor nor the responding emergency medical personnel were able to detect any vital signs following the incident. The victim was transferred to a local medical center where he was pronounced dead on arrival.

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Cause of Death

The coroner’s office listed the cause of death as a broken neck.

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Recommendations/Discussion

Recommendation #1: Personal protective equipment must be utilized whenever the potential for a serious or fatal fall exists.

Discussion: The belt and safety strap worn by the victim would have been adequate to prevent a fall if used, but these were not utilized due to the difficulty in passing the television cable. A second strap, to provide protection until the climber had the primary strap in place above the lower cable, could have prevented this fall.

Recommendation #2: Insulated personal protective equipment should be utilized whenever work is performed near energized power lines.

Discussion: In this incident the victim was only wearing leather (non-insulated) gloves when he contacted the energized line. If insulated gloves and sleeves had been worn, the victim would not have received the electrical shock which contributed to the fatal fall.

Recommendation #3 Employers should establish and enforce safe work practices for all employees.

Discussion: The procedure of not using the safety strap during the climb, as in this incident, exposes the employee to the potential for a serious or fatal fall. Since this is a common type of situation encountered by linemen, the employer should develop and implement a modified work practice which would abate this hazard.

Recommendation #4: The work environment should be modified to prevent hazards.

Discussion: In this incident, the cable television lines introduced a hazard to the lineman. Had the lines not been on the same pole, the lineman would not have been exposed to this hazard. Alternatively, the power pole should have been placed so that it could have been accessed by a bucket truck—this would have decreased the probability of a fall.

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