



The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces
through safety and health research **NIOSH**

Apprentice Lineman Electrocuted

FACE 88-25

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 June 20, 1988, a 23-year-old male apprentice lineman was fatally injured when he contacted a 13.2-kilovolt (kV) line

Contacts/Activities:

On June 21, 1988, a state Occupational Safety and Health Program official notified DSR of this fatality and requested technical assistance. On June 22, 1988, NIOSH met with a co-owner of the company, discussed the incident with the OSHA compliance officer, photographed the incident site, and interviewed a witness who was working with the victim at the time of the incident.

Overview of Employer's Safety Program:

The victim was an apprentice lineman working for an electric utility construction company. The company has been in business for 11 years and currently employs 54 employees, including 12 linemen. The company uses a state-approved electrical safety plan and provides on-the-job training to employees. The company owners and crew foremen are responsible for administering the safety plan. The victim had been in training as an apprentice lineman for approximately 3 weeks. Two other company employees had been killed on the job during the past 6 years.

Synopsis of Events:

The electric utility construction company was contracted to relocate power lines prior to the widening of a highway. On June 20, 1988, a crew of five employees (a foreman, a lineman, an apprentice lineman, a groundman, and an operator) were given instructions to relocate power lines on a number of utility poles. The crew foreman held a morning tailgate meeting during which work details, including safety procedures, were discussed.

The crew divided into three work groups. One group consisted of the foreman and operator. Another group consisted of the groundman and apprentice lineman (the victim). The lineman worked by himself. The first task was to de-energize the power lines leading to the intersect pole from both sides to allow the apprentice lineman to work on the pole.

The lineman climbed and positioned himself on an adjacent utility pole approximately 150 feet from the intersect pole. He then began de-energizing power lines leading to the intersect pole. The foreman and operator positioned themselves approximately 150 feet on the other side of the intersect pole and also began de-energizing power lines leading to the intersect pole. The apprentice lineman, who had been verbally instructed to stay on the ground until the lines were de-energized, climbed the intersect pole. The groundman asked the victim why he was climbing the pole. The victim replied that he “wasn’t going up the pole too far.”

The victim either assumed the power lines had been de-energized or didn’t realize his position relative to the lines. Although wearing personal protective equipment (a hard hat, insulated gloves and sleeves, climbers, and a safety belt), he contacted a power line with the back of his neck as he climbed. A path to ground was created through his neck, torso, leg and knee, which was in contact with the pole.

The groundman saw the victim slump and ran to get the foreman. The foreman immediately climbed the pole and lowered the victim to the ground. He administered cardiopulmonary resuscitation (CPR) until the emergency medical service (EMS) personnel arrived approximately 8 minutes later. The victim was transported to the local hospital (approximately 5 minutes away) where he was pronounced dead on arrival.

Cause of Death:

The coroner reported the cause of death as electrocution.

Recommendations/Discussion

Recommendation #1: The employer should evaluate all components of the safety plan now being used and ensure that employees understand fully the nature of electrical hazards, and the methods for controlling them.

Discussion: Even though the employer uses a state-approved safety plan and the victim had been instructed on safety procedures the day before the incident, the fatality still occurred. Additionally, the employer experienced two other electrical-related fatalities in the previous 6 years. This suggests that passive communication of hazard awareness and safe working procedures may be ineffective. The apprentice lineman violated standard operating procedures when he climbed the intersect pole before being notified that the power lines were de-energized. If established safe work procedures had been followed, this incident would have been prevented. The employer should evaluate the safety plan currently used, modify the plan where necessary, instruct employees in the proper procedures outlined in the plan, and enforce the requirements strictly.

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