



The National Institute for Occupational Safety and Health (NIOSH)

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through safety and health research **NIOSH**

# Deputy Sheriff Electrocuted

FACE 88-19

## 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 the fatal injury, and the role of management in controlling how these factors interact.

On February 7, 1988, a 39-year-old male deputy sheriff was electrocuted while attempting to move a 7,200-volt power line which was down across a highway due to a motor vehicle crash.

## Contacts/Activities:

Officials of the State Occupational Safety and Health Administration notified DSR of this fatality and requested technical assistance. On April 19, 1988, a DSR research team met with the employer's representative to review this incident.

## Overview of Employer's Safety Program:

The victim was employed by a county sheriff's department as a full-time deputy sheriff. The sheriff's department employs 40 full-time and 6 part-time deputies. Each new deputy receives 8 weeks of on-the-job training, as well as 2 weeks of classroom training in law enforcement. The classroom training includes instruction in safety procedures regarding power lines.

## Synopsis of Events:

At approximately 1:00 a.m. on February 7, 1988, a car struck a utility pole at a curve on a U.S. highway. The insulator attaching the primary (hot) wire to the pole snapped allowing the primary wire to fall. The energized power line, still attached to the utility poles on both sides of the severed pole, drooped to within a few inches of the surface of the highway. A portion of the broken insulator was still attached to the drooping wire.

A state trooper dispatched to the scene arrested the driver of the vehicle for driving under the influence of alcohol, then secured the area and began to direct traffic with the assistance of a male civilian who had stopped. The state trooper was informed by his dispatcher that the local utility company had been notified of the car crash and the downed line.

As the traffic load increased, the trooper called the local sheriff's department for assistance. A deputy sheriff (the victim) arrived to assist the state trooper and was informed by the state trooper that the utility company was on the way. During subsequent discussion the victim assured the trooper that the downed power line was a ground wire because it was not wrapped with insulation, and therefore, could be safely moved. The deputy grasped the power line and began to carry it to the side of the road. The state trooper was returning to his vehicle when he saw a flash behind him. When he turned around he did not see the deputy and asked the civilian what happened. The civilian stated that when the deputy stepped off the road onto the wet berm the "line got him." He informed the trooper that the deputy had rolled over the bank. The power line had swung back to its previous position. The trooper had his dispatcher summon an ambulance, and then went to the victim and covered him with his overcoat.

Local emergency medical service (EMS) personnel arrived approximately 13 minutes later. EMS personnel performed cardiopulmonary resuscitation (CPR) and advanced life support (ALS), which was continued enroute to the hospital. The victim was later pronounced dead at the emergency room of the hospital.

Utility company personnel arrived at the scene and informed the trooper that the pole was the property of a local electrical co-op. The co-op was notified and subsequently repaired the power line. Investigation by the co-op revealed that the fuse in the disconnect on the pole was operable. Additionally, the breaker for the line, located two poles down from the pole involved in the incident, had never been opened. This meant the line had remained energized throughout the incident.

Why the deputy was not electrocuted when he initially grasped the primary wire is unknown. Since the night was cold with frost, the humidity was very low, and the deputy was wearing thick rubber-soled shoes, he may not have created a path to ground until his soles were moistened by the wet berm. Or, the deputy may have initially grasped the portion of the broken insulator still attached to the line. A 36-inch-high galvanized pole with an attached reflector had been set on the berm of the highway near the point where the incident occurred. The deputy may have intended to attach the primary wire to the galvanized pole to keep it from swinging back over the highway. If so, he may have grasped the uninsulated wire as he approached the galvanized pole. In any case, a brief duration of time apparently elapsed between the moment the victim contacted the wire and/or the insulator and the moment he was electrocuted.

## Cause of Death:

The coroner's report stated that the cause of death was electrocution.

## Recommendations/Discussion

**Recommendation #1: Personnel assigned responsibility to coordinate activities at an incident site (e.g., deputy sheriffs, etc.) should follow established safety procedures.**

**Discussion:** The victim had received 2 weeks of law enforcement classroom training sessions, including instruction in power line safety procedures. These procedures require that the utility company be called to de-energize downed power lines before they are moved or otherwise contacted. The victim apparently believed that all energized power lines are wrapped with insulation, and that the bare wire, therefore, was a ground wire that could be safely moved by hand. The current procedure of staying away from downed power lines and calling the power company appears to be adequate if followed; however, in this case the procedure was not followed. Classroom session material should be reviewed to ensure that electrical hazards are being adequately addressed. Also, personnel should periodically review established safety procedures to reinforce initial safety training.

**Recommendation #2: Employers whose workers must routinely respond to emergency situations where exposures to specific hazards can be anticipated, should supplement on-the-job and classroom training with simulation training, or other forms of training which allow an evaluation of the worker's understanding of the hazards.**

**Discussion:** The victim had completed 8 weeks of on-the-job training and a 2-week law enforcement training session upon hire. That the fatality still occurred suggests that the mere communication of hazards may not be adequate to protect all individuals. If the worker will be exposed to specific hazards, the training program should include an evaluation of the

worker's understanding of these hazards. One method is to provide simulation training where the worker is faced with a task involving a hazard. Such simulations are commonly used in training police officers to respond to perpetrators with lethal weapons.

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