



The National Institute for Occupational Safety and Health (NIOSH)

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21-Year-Old Groundman Electrocuted in Tennessee

FACE 86-46

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 April 9, 1986, a 21-year-old groundman with a line maintenance crew was electrocuted when the boom of an aerial bucket contacted a 7200 volt line. The groundman was in contact with the truck, when a lineman in the aerial bucket inadvertently contacted the power line with the boom.

Contacts/Activities:

Officials of the Occupational Safety and Health Program for the State of Tennessee notified DSR concerning this fatality and requested technical assistance. This case has been included in the FACE Project. On August 27, 1986, a research industrial hygienist met with the owner of the company and discussed the fatal incident. Co-worker and next-of-kin interviews were precluded as the line maintenance part of the company is no longer in business and the former employees are no longer in the area.

Overview of Employer's Safety Program:

The company was an electrical line maintenance and construction operation with 16 to 18 employees. The victim was a new hire with very little experience. When additional employees were needed for jobs, the employer went through the local union. Training and safety on the job is offered by the State of Tennessee or the local union. Union members attend electrical safety training on a monthly basis. The employer provided no training for employees. No written safety rules were provided, except for those provided by the union or the State of Tennessee.

Synopsis of Events:

On April 9, 1986, two line construction and maintenance crews were in the completion stages of a project which called for replacing 5000 feet of 000 conductor wire and 19 utility poles. The new poles had been installed and the new wire was strung and connected to temporary tie offs. The two crews (10 men) consisted of two foremen, three linemen, two operators, and three groundmen. One crew was in the process of moving the new energized line from the temporary tie off positions to the permanent insulators and removing the old de-energized line when the fatal accident occurred.

The aerial boom truck had been recently moved (under the new line) and the groundman went to get parts from the truck. The groundman proceeded towards the truck and the lineman, who was in the aerial bucket, was raising the aerial bucket to inspect the new connections when the boom (between the insulated section of the boom and the truck) contacted the 7200 volt energized line. At about the same time the groundman opened the steel door of the storage compartment on the truck. When the boom made contact with the energized conductor, a path to ground through the victim's body was created.

The emergency medical squad (EMS) was called and arrived in approximately 30 minutes. The victim was transported to a local hospital where he was pronounced dead on arrival.

Cause of Death:

Cardiac arrest due to electrocution.

Recommendations/Discussion:

Recommendation #1: Employers should develop written safe job procedures that are task specific.

Discussion: The employer had no written safe job procedures. Safe job procedures specific to the task of working on power lines from aerial boom trucks should be developed and detailed procedures should be included that address the various safety hazards associated with these tasks. These procedures should minimally include positioning of the aerial boom truck, placement of line hoses and blankets, and the identification of personal protective equipment to be used. Once these specific procedures have been developed, the employer should assure that they are implemented and enforced by a qualified person at each job site.

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Partly

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