



The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces
through safety and health research



Operator/Truck Driver Electrocuted in Maryland

FACE 87-10

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 October 27, 1986, a pump operator/truck driver was electrocuted when the boom on the concrete pump he was operating contacted a 7600 volt power line.

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 November 20, 1986, a safety engineer conducted a site visit, photographed the accident site, interviewed a company representative and a comparison worker, and interviewed a surrogate for the victim.

Overview of Employer's Safety Program:

The employer is a family-owned and operated business that employs 30 workers. The company constructs concrete footers and foundations for light construction (i.e., single family residences) and has several trucks used for long distance hauling.

The company does not have a written safety program and depends on its small size to communicate safety issues and concerns. This is the first fatality experienced by the employer. Until this incident the employer had an improving safety record based upon declining worker's compensation rates.

Synopsis of Events:

On Monday, October 27, 1986, a pump operator/truck driver (the victim) was dispatched to a development of single family residences to pour the foundation of a residence being constructed. The victim had been on this job site the previous Friday and had poured the footers for the residence. Many of the job sites where this company works have underground electrical service; however, the owner of the company stated that he reminded the victim, prior to leaving for the job site, that this site had overhead power lines and that he should exercise caution. The truck was 28 feet long and had a concrete pump

mounted to the bed. A four inch steel reinforced, rubber hose was mounted on the boom. The back section of the boom could extend 24 feet and the entire boom can extend 72 feet (upwards or forwards). When the victim arrived at the job site he pulled his truck into the front yard of the residence with the cab closest to the house. Apparently he parked the truck in the same location on the previous Friday (approximately 10 to 15 feet from the house). He then began to set up the concrete pump. The victim lowered the outriggers on the truck and rotated the pump perpendicular to the bed of the truck. He then elevated the boom and the rubber hose so that he could reach the foundation that was to be poured. Although no one actually witnessed the incident, the consensus of those interviewed was that the victim was using the pendant controller to elevate the boom and was standing on the passenger side of the truck approximately eight feet away from the rear of the truck. The pendant controller had a 50 foot cable attached to it that permitted the operator to move around freely. According to the manufacturer of the pump, the pendant controller was electrically insulated from the pump. The truck had signs stating that operation of the equipment within ten feet of high voltage lines was unlawful.

The rubber hose mounted on the boom apparently contacted the overhead power line (approximately 33 feet above the ground). A witness who arrived at the scene shortly after the incident stated that the boom was approximately six inches away from the power line when he arrived. The victim was lying on the ground approximately seven and a half feet from the truck. The rubber hose mounted to the boom appeared to have a burn mark where the hose apparently contacted the power line. The cable to the pendant controller had several places where the insulation appeared to be melted; however, the pump and controller reportedly were operational after the accident.

Workers in a nearby residence heard the noise resulting from the contact and went to the aid of the victim. Two workers performed cardiopulmonary resuscitation (CPR) on the victim. Both workers were trained in CPR and one of these workers was a member of a rescue squad. The emergency medical service was notified and arrived at the scene approximately ten minutes later. The victim was transported to a nearby hospital and was pronounced dead on arrival.

Cause of Death:

The coroner determined the cause of death to be accidental electrocution. An autopsy was not performed.

Recommendations/Discussion:

Recommendation #1: Employers should enforce existing regulations concerning crane operations in the vicinity of overhead power lines.

Discussion: OSHA standard 1926.550(a)(15) requires that the minimum clearance between electrical lines rated 50 kV or below and any part of the crane or load shall be ten feet, unless the electrical lines have been "de-energized and visibly grounded" or physical contact between the lines, equipment, or machines is "prevented" by the erection of insulating barriers. Additionally, 29 CFR 1926.550(a)(15)(IV) requires that a person be designated to observe clearance of the equipment and to give timely warning for "all" operations where it is difficult for the operator to maintain desired clearances by visual means. The pump operator/truck driver in this case did not satisfy these requirements.

Recommendation #2: All boomed vehicles capable of contacting overhead power lines should be electrically insulated.

Discussion: The owner of the company stated that the victim had been made aware of the overhead power lines and there were signs on the truck stating that it was unlawful to operate the equipment within ten feet of high voltage power lines. Those personnel interviewed all stated that the victim was a good worker and was a safe worker. The victim had been on this work site previously without incident. Even with these safeguards and other considerations the fatal accident occurred. It is apparent that the regulations concerning cranes and overhead power lines are adequate when followed; however, boomed equipment should be provided with electrical insulation so that a momentary error in judgment does not result in the loss of life.

Recommendation #3: The employer should emphasize safety concerns to all employees.

Discussion: The employer does not have a written safety program and relies upon the small size of the company and its informal organization to assure employee safety. A more formal approach to safety should be initiated. Although a written safety program may not be necessary, a written policy stating management's commitment to work place safety should be developed. All employees should know that workplace safety is of the utmost importance, even when it may adversely impact production, efficiency, or scheduling. A more formal system of tailgate meetings, etc. could be used to address specific safety considerations.

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Last Reviewed: November 18, 2015

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