The National Institute for Occupational Safety and Health (NIOSH)

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41-Year-Old Truck Driver Electrocuted After Unloading Bricks in Maryland

FACE 87-36

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 March 16, 1987, a 41-year-old truck driver for a manufacturer of masonry products was electrocuted when a truck-mounted crane 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 The National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR) concerning this fatality and requested technical assistance. This case has been included in the FACE Project. On April 9, 1987, a safety engineer conducted a site visit, met with employer representatives, interviewed comparison workers, EMS personnel, and police, and visited the accident site. Photographs of the accident site were provided by the Maryland Occupational Safety and Health Administration.

Overview of Employer's Safety Program:

The employer manufactures and distributes masonry products. The company consists of two facilities with a total of 96 employees.

The company has a written safety program that includes safety committees, inspections, and training. Safety committee members are responsible to implement many aspects of the safety program. A rather extensive on-the-job training program has been implemented for truck drivers and manufacturing employees. The operations manager is assigned safety responsibilities on a collateral-duty basis; however, he has received no safety training.

Synopsis of Events:

On March 16, 1987, a truck driver (the victim) was to deliver three pallets (i.e., cubes) of bricks to a new residential development and then deliver the remainder of the truck's load to another site. The truck driver had previously made a delivery to the first site without incident; however, during the previous delivery he had pulled the truck off the dirt road to the side of the house and had stacked the masonry products to the rear of the house. On the day of the accident the victim parked the truck at an angle, blocking the dirt road. The truck driver stacked the bricks to the side of the house in the yard. A 7600 volt power line ran parallel to the dirt road on the side of the road farthest away from the house. The ground was wet on the day of the accident.

The victim had off loaded the three cubes of bricks and was apparently returning the truck mounted crane to the transport position when the crane contacted the 7600 volt power line, approximately 26 feet 9 inches above the ground. The truck driver was standing at the rear of the truck, operating the crane with a pendant controller. The pendant controller, being held by the driver, provided a path to ground through the victim's body and he was electrocuted.

After an indefinite period of time (estimated by police as 2 to 3 minutes), a workman in the residence noticed that the victim had been injured and notified emergency medical service (EMS) personnel, who were on the site three minutes after being notified. When EMS personnel arrived on the scene, the victim was in contact with the energized pendant controller and on fire. EMS personnel extinguished the fire by throwing dirt on the victim. After the victim was separated from the energized circuit, EMS personnel were unable to revive the victim and he was pronounced dead on the scene.

Cause of Death:

The cause of death was electrocution. The autopsy report has not been completed to date.

Recommendations/Discussion:

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

Discussion: Current OSHA standards 1910.180(j) and 1926.550 (a)(15) require 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" at the point of work or physical contact between the lines, equipment, or machines is "prevented" by the erection of insulating barriers which cannot be part of the crane. The truck driver did not comply with these requirements.

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

Discussion: It is apparent that current regulations concerning cranes and overhead power lines are adequate when followed; however, boomed equipment should be electrically insulated so that a momentary error in judgment does not result in the loss of life. One aspect of electrical insulation includes the pendant controller. The pendant controller in this case was electrically conductive and provided a path for the electrical current to go to ground through the body of the victim. Non-conductive controllers (i.e., fiber optic designs, etc.) would eliminate the pendant controller as the path to ground and could reduce the number of fatalities which result when boomed vehicles contact energized power lines. Since this incident, the employer has purchased fiber optic pendant controllers for all of their delivery trucks.

Recommendation #3: Employers should periodically conduct and document training concerning delivery site hazard awareness, including the hazards present around overhead power lines.

Discussion: The employer relies very heavily upon on-the-job training. Some of the problems with on-the-job training are that you cannot be sure of what was discussed and if all hazards have been addressed. If on-the-job training is to be relied upon, guidance concerning the contents of this training should be developed and provided to those employees responsible

to conduct on-the-job training. On-the-job training should be periodically supplemented with other forms of training. Employers must stress and routinely review the hazards associated with overhead power lines. Employers must also demonstrate that they are truly concerned about this aspect of job site safety and will not tolerate unsafe conduct.

Recommendation #4: The employer or the truck driver should evaluate all worksites to identify the presence of any hazardous situations (i.e., overhead power lines).

Discussion: All worksites (facilities of the employer and delivery sites) should be evaluated to identify the presence of any hazardous situations (i.e., overhead power lines). The employer's facility that was visited had overhead power lines present in areas where delivery trucks routinely operated. Although the employer has a prohibition against raising truck mounted cranes in the loading area, removal of the power lines should be evaluated. Removal of the power lines will eliminate the possibility of the occurrence of similar incidents if employer guidance is not followed.

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Last Reviewed: November 18, 2015