The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces through safety and health research

37-Year-Old Scale Technician Electrocuted in Indiana

FACE 86-24

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 16, 1986, a scale technician was electrocuted while assisting a crane operator that was preparing to lift a platform scale frame. The wire winch cable, extending from the boom tip, contacted a 7200 volt overhead powerline.

Contacts/Activities:

Officials of the Occupational Safety and Health Program for the State of Indiana notified the National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR) of this fatality and requested technical assistance. This case has been included in the FACE Project. On May 1, 1986, a DSR research team (consisting of two safety specialists) met with representatives of the company. The site of this fatality was visited and photographed. An interview was conducted with co-workers, who perform the same tasks as the victim, and an interview with the next of kin was also conducted.

Overview of Employer's Safety Program:

This company has been in operation and under the present ownership for the past 28 years. The company employs seven personnel that sell, service, and rent platform scales.

No written safety policy exists and safety performance depends largely on the common sense of the employees.

Synopsis of Events:

on the day of the accident (April 16, 1986), a two-man crew consisting of a crane operator and a scale technician (the victim) was dispatched to a private residence to remove an abandoned truck platform scale and return the scale to the employer's place of business. The scale consisted of three parts, the wooden platform (top section used to support weight),

the scale frame (housing for the scale), and the scale (weighing mechanism).

The removal of the scale and wooden platform, that was located in a pit 20 inches x 10 feet x 15 feet, was accomplished in the morning and early part of the afternoon. At approximately 2:30 p.m. the victim entered the pit in order to attach a chain sling to remove the scale frame that remained. The crane operator had positioned the truck crane and crane boom to lift the scale frame from the pit. The wind was gusting up to 25 mph with overhead electrical lines located 23 feet directly above the pit. The boom had been positioned within 10 feet of the electrical line, which is in violation of the OSHA standards regarding electrical lines rated 50 kV or below.

Apparently the victim, while attempting to attach the chain sling to the scale frame, swung the sling which was attached to the wire winch cable extending from the tip of the boom. This swinging motion of the sling and the winch cable, coupled with the wind gusts and the close proximity of the winch cable to the electrical lines, put the winch cable in contact with one phase of the 7200 volt overhead electrical lines. The electricity entered the victims right hand and exited through his feet to ground. The victim was in contact with the electrified sling for 5-10 seconds, until the electric line burned through and separated from the wire cable, thus breaking the flow of current.

Cause of Death:

The coroner determined that the cause of death was due to electrocution.

Recommendations/Discussion:

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

Discussion: OSHA standards 1926.550(a)(15) and 1910.180(j) 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. Standard 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. Additionally, 1926.550(a)(15)(vi) requires that any overhead line shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded. The accident may have been prevented had these requirements been satisfied.

Recommendation #2: Employers should develop written safe job procedures that are task specific.

Discussion: The employer has no written safe job procedures. Safe job procedures specific to the tasks performed by the employees should be developed and detailed procedures should be included that address the various safety hazards associated with these tasks. Once these specific procedures have been developed, the employer should assure that they are implemented and enforced.

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Last Reviewed: November 18, 2015