



The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces
through safety and health research



County Worker Dies In Tennessee

FACE 85-43

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. By scientifically collecting data from a sample of fatal accidents, it will be possible to identify and rank factors that influence the risk of fatal injuries for selected employees.

On August 28, 1985, a 25-year-old county highway worker was electrocuted when the 20 foot steel handle of a modified post hole digger he was holding made contact with a 7200 volt power line.

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 September 3 and 4, 1985, a safety specialist conducted a site visit, met with the county safety director, interviewed comparison workers and eyewitnesses, discussed the incident with the OSHA Compliance Officer, and photographed the accident site.

Overview of Employer's Safety Program:

Approximately 70 workers are employed by the County Highway Department. The highway department is responsible for the maintenance and repair of all existing county roads, culverts, and drainage ditches, and for the construction of new roads within the county. The Personnel, Zoning, and Maintenance Director is assigned safety responsibilities for all county departments on a collateral-duty basis. With the exception of the road supervisor, the supervisors of the various county departments have worked in conjunction with the safety director to establish standard operating procedures and safety policies for their departments. The highway department has no existing written safety policy, safety training procedures, or standard operating procedures.

Synopsis of Events:

On the day of the incident the road crew was performing maintenance work on a clogged section of pipe in an open drainage ditch. The pipe was 20 feet in length and 24 inches in diameter. The ditch was located approximately three feet horizontally from the side of the road. A 7200 volt power line was located approximately 20 feet above and perpendicular to the midpoint of the drain pipe. (Neither the foreman nor the two co-workers present noticed the power lines, before work

began on the clogged section of drain pipe.) The highway department routinely used a modified post hole digger when working on clogged drain pipes. The jaws of the post hole digger were welded in an open position and the wooden handles were replaced by a 20 foot section of steel pipe two inches in diameter. Due to the weight of the modified post hole digger, it was common practice for the road workers to clean the drain pipe from each end (one-half at a time).

After the victim had cleaned out one-half of the drain pipe, he removed the modified post hole digger from the drain pipe and held them on end at the side of the ditch. He then began to guide the modified post hole digger to the opposite end of the drain pipe. The road crew foreman (sitting in his truck) saw that the handle of the modified post hole digger was going to contact the 7200 volt power line and issued a verbal warning to the victim. The handle of the modified post hole digger then contacted the 7200 volt power line. The victim provided a path to ground and was electrocuted. The road crew foreman radioed for the rescue squad. CPR was initiated immediately by co-workers. The rescue squad arrived within thirteen minutes and transported the victim to the local hospital where he was pronounced dead by the attending physician.

Cause of Death:

The official cause of death had not been received by DSR at the time this report was finalized.

Recommendations/Discussion:

Recommendation #1: The employer should initiate a safety policy that address specific tasks performed by the employees, identifies safety hazards, and stresses safety training.

Discussion: The County Highway Department did not have a safety policy that addressed safety training and procedures specific to road maintenance and other high risk tasks performed by county highway department personnel. Written procedures should detail the tasks to be performed and should identify the safety hazards associated with these tasks. Training should be developed and implemented that addresses these proper work procedures. The employer should assure that safety policies are enforced.

Prior to the performance of a given task the crew foreman should perform a job site survey, which would identify any safety hazards present at a given job site (i.e., overhead power lines). Workers should then be made aware of the hazards they might encounter at a given job site. Once these hazards are identified, they can be controlled.

Recommendation #2: Employers should provide proper equipment to perform job-related tanks.

Discussion: The twenty foot section of two inch diameter steel pipe used as a handle for the tool, made the tool heavy, awkward, and hard for one man to maneuver. Since half of the pipe is cleaned from each of its ends, the handle could be shortened. A shorter handle would reduce the weight and improve maneuverability. Additionally, the county should consider using a non-conductive material such as fiberglass for tool handles when working in the presence of electrical hazards. A non-conductive material would greatly minimize the risk of injury due to contact with electrical power lines.

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