



The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces
through safety and health research



Billboard Worker Dies When Metal Ladder Contacts 7200 Volt Power Line in Kentucky

FACE 85-21

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 electrically-related and confined space fatalities. By scientifically collecting data from a sample of fatal accidents, it will be possible to identify and rank factors which influence the risk of fatal injuries for selected employees.

On May 4, 1985, a 28-year-old male billboard worker was electrocuted when a 24 foot hook ladder he was using came into contact with a 7200 volt overhead power line. The billboard worker was in the process of scraping a billboard at the time of the accident.

Contacts/Activities

The Division of Safety Research received an invitation from officials of Kentucky's Occupational Safety and Health Program to evaluate this electrocution incident as part of the FACE project. A research team consisting of a safety engineer and two safety specialists visited the site of the accident and the outdoor advertising agency that employed the victim. The accident site was photographed by the DSR research team. Additionally, video tape was taken of the actual posting of a billboard, demonstrating the standard operating procedure followed by the billboard workers. FACE survey instruments were completed for the comparison workers and the victim. Comparison workers were chosen randomly from the company's roster of billboard workers. Interviews were conducted with a company representative, comparison workers, and the wife of the victim.

Synopsis of Events

On Saturday, May 4, 1985, the victim received his work assignment from the outdoor advertising company's branch office in a nearby town instead of his regular work station. The victim usually worked a regular 5 day, 40 hour work week; however, overtime work at this branch office was required because of an exceptionally heavy work load. Since his residence was located midway between the two offices, the victim had taken a company vehicle home the previous night. He arrived at the branch office at approximately 7:00 a.m. and applied paste to the posters that he would hang that day. He left the branch office at approximately 7:30 a.m. and proceeded to his first work site where he posted three billboards, one of which had to be scraped. Upon completion of the work at this site, he proceeded to the next location, the accident site. The victim had eight years of experience posting billboards and had posted the billboards at the site of the accident on several previous

occasions. The 12 foot by 24 foot billboard was mounted on telephone poles four feet above ground level and was set back from the road approximately 12 feet. A company representative who was interviewed stated that evidence at the accident site (i.e., paper on the ground, etc.) indicated that the victim had begun to remove the outdated poster from the lower left portion of the billboard. It appears that the victim scraped that portion of the billboard that he could reach from the 14 foot ladder and then moved the ladder to the right portion of the billboard. The victim then removed a 24 foot hook ladder from the truck and was in the process of positioning the ladder so that he could scrape the upper left portion of the billboard, when the ladder contacted a 7200 volt overhead power line located approximately 8 feet above the top left side of the billboard. A 32 foot extension ladder was also available on the truck. This ladder would have been of sufficient length to perform the job and may have been a better choice of ladders for this task. Contact between the 24 foot hook ladder and the 7200 volt power line resulted in the electrocution of the billboard worker. Two passing motorists witnessed the incident, summoned help, and began to administer CPR. The victim was flown by helicopter to a local hospital where he was pronounced dead-on-arrival.

Recommendations/Discussion

1. Employers should identify all safety hazards at the work site.

A job site survey, which would identify any safety hazards present at a given job site, should be performed periodically on all company billboards. This job site survey should minimally include the identification of hazards such as: a) high voltage power lines close to a billboard, b) terrain around the billboard that would cause the billboard worker to set up his ladder in an unsafe place or manner, c) traffic, d) board conditions, e) any other special conditions that may impact safety. A record of these hazards should be maintained and billboard workers should be made aware of any hazards they might encounter on the billboards they are to post on a given day. Any hazards identified on a given board could be listed on a warning sign or sticker and placed in clear view on the lower face or frame of the board. Once these hazards are identified, they can be controlled.

2. Employers should provide proper equipment to perform all job related tasks.

The 24 foot hook ladder used in this instance was not the proper equipment for the task. The use of scaffolding or a long handled brush would have eliminated the need for ladders and would have minimized the hazard with the power line. In the past, these methods of bill posting were commonly used; however, the use of aluminum hook ladders has generally replaced both of these methods of bill posting. The employer should assure that changes in bill posting methods do not result in the creation of additional hazards to which the employees would be exposed. Additionally, the employer should consider the use of fiberglass ladders when posting billboards in the presence of electrical hazards. Fiberglass ladders, because of their lack of conductivity, would greatly minimize the risk of injury due to contact with electrical power lines.

3. Employers should develop written safe job procedures that are task specific.

The employer has a written safety policy; however, this policy does not contain any specific guidelines concerning the procedures to be followed or the equipment to be used when posting billboards and does not identify specific safety hazards. A safety policy specific to the posting of billboards and other high risk tasks 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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