



The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces
through safety and health research



Stagehand Electrocuted in Tennessee

FACE 87-14

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 October 26, 1986, a stagehand was electrocuted when he contacted an exposed electrical wire protruding from an uncovered junction box.

Contacts/Activities:

Officials of the Occupational Safety and Health Administration for the State of Tennessee notified the National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR) of this fatality and requested technical assistance. This case will be included in the Fatal Accident Circumstances and Epidemiology (FACE) Project. On November 28, 1986, a member of the DSR research team met with the Tennessee OSHA compliance officer for this case. The accident site was visited and photographed. Interviews were conducted with co-workers, a surrogate for the victim, and with the president of the local stagehands' union.

Background/Overview of Employer's Safety Program:

The victim was an independent contractor who was a member of the local stagehands' union. The union schedules work and distributes wages when concert groups perform in a local sports and entertainment center, but is not considered an employer. While safety is discussed at union meetings, there is no formal safety program. All training is provided "on the job."

Synopsis of Events:

On October 26, 1986, the victim was working above the ceiling of the entertainment center, preparing for an upcoming concert. He was lying on a metal catwalk, reaching out to replace a ceiling tile near the catwalk.

As the victim worked, he contacted a bare electrical wire (277 volts) which was protruding from an electrical junction box located on one side of the catwalk. The wire had previously supplied electricity to a nearby mercury vapor light. Apparently, when the light was disconnected, the cover plate of the junction box was not replaced and an energized conductor was protruding.

After contacting the energized conductor, the victim cried out and collapsed. Two co-workers ran to his assistance and began cardiopulmonary resuscitation (CPR) in less than one minute. The local ambulance service was called and paramedics responded in less than five minutes. However, the victim had to be carried down from the narrow catwalk located above the ceiling before defibrillation and other advanced cardiac life support (ACLS) measures could be applied. The total time which elapsed between the accident and defibrillation was greater than ten minutes and the victim could not be resuscitated. He was pronounced dead in a local emergency room.

Cause of Death:

The medical examiner listed the cause of death as electrocution. Electrical burns were noted on the victim's chest.

Recommendations/Discussion:

Recommendation #1: The electrical system above the ceiling of the entertainment center should be inspected periodically.

Discussion: Many examples of substandard electrical conditions were noted after the accident occurred, including broken conduit and uncovered junction boxes. While most of these have now been repaired, the wiring above the ceiling is subject to frequent modification and abuse and an ongoing inspection program will be necessary to maintain safety standards.

Recommendation #2: The stagehands should be trained in electrical safety.

Discussion: The stagehands should be trained to recognize and report unsafe electrical conditions (junction boxes without covers, etc.), as well as to avoid abusing the electrical system (there was evidence that someone had been walking on the electrical conduit).

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Partly

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