



The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces  
through safety and health research



# 54-Year-Old Certified Electrician Dies in North Carolina

FACE 86-47

## 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 August 23, 1986, a partner of an electrical contracting company (a certified electrician) was electrocuted while he repaired airport runway lights. These lights were energized prior to completion of the task.

## Contacts/Activities:

Officials of the Occupational Safety and Health Program for the State of North Carolina notified DSR concerning this fatality and requested technical assistance. This case has been included in the FACE Project. On August 28, 1986, the DSR research team (an epidemiologist and a safety engineer) conducted a site visit, met with employer representatives, interviewed a comparison worker, and photographed the accident site.

## Overview of Employer's Safety Program:

The employer was a small electrical contracting company. The victim was one of the partners in the company and was assigned responsibility for all field activities (i.e., the general superintendent). The victim was a certified electrician.

The company does not have a written safety program, but does stress its concern for employee safety in the Employee Information Brochure given to all employees.

## Synopsis of Events:

on August 23, 1986, a partner of an electrical contracting company and his son were repairing the runway lights at a small airport when the accident occurred. The runway lighting system was being replaced as part of a renovation project at the airport. This system consisted of runway lights connected in series to a 3000 V (2.2-6.6 amp) source with step-down transformers at each light. The contractor was required to keep the system operational throughout the project. The lights

had been out of order since the previous night and this condition required that the airport be closed. At 6:30 p.m. the electrical contractor, his son (an electrician in the company), and the manager of the airport began trouble shooting the runway lights to determine why the lights were inoperative. After identifying several problems with the old system that did not appear to be easily resolved, it was decided to complete the installation of the new system which had been partially installed previously. The contractor disconnected the old lines and installed new lines. After completion of this task the system was energized to determine if it was operating properly. The contractor's son was approximately 1500 feet from the work site in a small building which housed the power switch and the control panel for the runway lights. He was instructed to change the on/off status of the switch when he saw the flashlight blink five or six times. This system had been used without incident that night on four previous occasions.

The manager of the airport was holding a flashlight while the electrical contractor finished taping several connections. As the electrical contractor taped the conductors on the last runway light to be connected, the son turned on the runway lights. The electrical contractor was electrocuted. Apparently the motion of the electrical contractor's arm while taping intermittently blocked the light from the flashlight and the son misinterpreted this as a request to energize the circuit.

The manager of the airport saw the electrical contractor glowing as a result of his contact with the 3000 volt source. He attempted to knock the contractor away from the conductor, but failed. He called for help. Personnel working in a nearby hanger heard his calls and responded. One man ran to the small building housing the electrical panel and opened the breaker approximately 90 seconds after the accident. Another man (who was a trained EMT) went to the accident site and began CPR with the assistance of the manager of the airport. Emergency medical service was summoned. The victim was transported to a nearby hospital where he was pronounced dead.

## Cause of Death:

The coroner's office listed electrocution as the official cause of death. The victim had burns on his left hand between the thumb and the forefinger and on his left foot.

## Recommendations/Discussion:

**Recommendation #1: Energization/de-energization of an electrical source must be under the direct control of the personnel working on the system.**

**Discussion:** The blinking light system used to signal to energize/de-energize the system was misinterpreted. For this reason a lockout system is the only procedure that would preclude this incident. It is obvious that the workmen did not want to run back and forth to energize/de-energize the electrical source; however, it must be recognized that although obviously more time consuming, when working with electricity expediency must be secondary to safety. (Electricity is very unforgiving.)

**Recommendation #2: Electrical contractors should have a written lockout policy for all jobs and this policy should be enforced.**

**Discussion:** The electrical contractor did not have a written lockout policy and did not use lockout techniques while performing this task. However, the contractor was familiar with lockout requirements, because he was required to comply with those procedures as part of a contract he had with a Fortune 100 company.

[Return to In-house FACE reports](#)

Last Reviewed: November 18, 2015

How helpful was this page?



Not helpful

Very helpful

