MARYLAND DIVISION OF LABOR AND INDUSTRY
CASE: 98MD01901

TO: Project Officer, State FACE Project, Division of Safety Research

FROM: Maryland FACE Program, Division of Labor and Industry

SUBJECT: A siding mechanic falls from a ladder after he contacted a power line.

SUMMARY

On Thursday, May 14, 1998, a 40-year-old siding mechanic died four hours after falling approximately 25-feet from an aluminum extension ladder. The victim and three other workers were installing aluminum siding on a 2½ story duplex home, when the accident occurred at 3:15 p.m.

He was standing near the top of the ladder holding a 9-foot long by 10-inch wide aluminum siding cap. As he rotated the aluminum cap positioning it for installation, one end of the cap touched a utility wire that runs next to the home. Electricity arced to the house, through the aluminum siding cap, shocking the victim and causing him to fall onto the paved alleyway below the ladder.

Emergency medical crews arrived within ten minutes. They resuscitated and then transported the victim to the local trauma center. The victim died approximately four hours later, from injuries received from the fall.

The MD/FACE investigator concluded, that to prevent similar occurrences, employers should:

- *De-energize, ground or effectively guard circuits by insulation or other means before permitting work in the proximity to electrical power lines.*

- *Use ladders constructed with non-conductive materials when working near exposed energized electrical equipment.*

- *Develop, implement and enforce a safety and health program to instruct employees in hazard recognition and to provide clear guidance on safe work procedures and safe work practices.*

INTRODUCTION

On Thursday, May 14, 1998, a 40-year-old male siding mechanic (the victim) died after he received an electric shock and fell 25-feet from a ladder, while installing aluminum siding on a residential duplex home.

A Workers Compensation - First Report of Injury five days after the fatality notified the MD/FACE Field Investigator of the accident. The employer failed to notify Maryland Occupational Safety and Health as required by law. Information regarding the incident was gathered from a site visit, discussions with the company owner, newspaper articles, police report, death certificate and MOSH inspector's report.

The employer was engaged in the business of aluminum siding and spouting installation. The business had been in operation for eight years and is in a mid-sized metropolitan area. At the time of the incident, the company employed three workers. All three workers had been employed for more than a year and had experience in the installation of siding and spouting. The work crew normally worked five days a week, normally starting at 7:00 a.m..

The employer did not have an established formal safety and health program. However, according to the workers, the employer did train his workers to be aware of the hazards in the work area. In particular the hazards of working close to the electric power lines.

INVESTIGATION

On Thursday, May 14, 1998, a crew of four workers, consisting of the owner and three siding mechanics were completing the installation of aluminum siding on a two-family duplex home. This was their fourth day on the job. Three ladders were positioned at varying intervals in an alleyway, against the west side of the house. One worker was on the first (northern most) ladder near the front of the house at the lower edge of the roof, the employer was on the middle ladder and the victim had ascended the third (southernmost) ladder near the peak of the roof. The victim had carried an aluminum siding cap approximately nine-feet long and ten-inches wide up the ladder to a point approximately 25 feet above the pavement. The fourth worker was working on the ground between the second and third ladders.

Electrical utility lines ran through the alleyway, next to the house. The high voltage lines (7970 volts) were mounted on the pole approximately 30-feet above the ground, one of which was 5½-feet from the house.

No one in the work crew saw the victim contact the high voltage line. It is assumed that the victim rotated the nine-foot long aluminum siding cap into position for application. In doing so, one end of the aluminum siding contacted the high voltage wire, 5½-feet behind the ladder, as the other end touched the existing aluminum siding on the house, establishing a path to ground. The contact with the high voltage wire caused an electrical arc with sparks and a loud popping sound. None of the workers on the site saw the victim make contact with the energized wire. They only saw the aftermath of the event as the victim fell to the ground. At first the crew thought the victim had contacted a power source from within the house. Further investigation by

the fire department and the utility company proved that the victim contacted the high voltage utility wire.

Emergency crews responded within ten minutes revived the victim with CPR and transported him to the nearest hospital. The victim died of multiple injuries from the fall approximately four hours later.

CAUSE OF DEATH:

The death certificate, signed by the medical examiner, listed multiple injuries due to a fall as the primary cause of death.

RECOMMENDATION/DISCUSSION:

Recommendation #1: De-energize, ground or effectively guard circuits by insulation or other means before permitting work in the proximity to power lines.

Employers should not permit their employees to work near high voltage power lines if any parts of the worker or materials being used are coming within ten feet of that power line. Before doing work within ten feet of high voltage lines, employers should notify the operator of the high voltage line of the activity to be done. Arrangements should be made to ensure that the high voltage line has been effectively guarded against accidental contact by:

- Installing physical barriers to prevent physical contact with the high voltage line.
- Relocate the high voltage line
- De-energize and ground the high voltage line.

Recommendation #2: Use ladders constructed of non-conductive materials when working near exposed energized electrical equipment.

Employers should ensure that ladders shall have nonconductive side rails if they are used where the employee or the ladder could contact exposed energized electrical equipment. In this incident, employees were not only exposed to high voltage by carrying conductive material close to power lines, they were also exposed to potential contact during the erection and use of aluminum ladders.

Recommendation #3: Develop, implement and enforce a safety and health program to instruct employees in hazard recognition and to provide clear guidance on safe work procedures and safe work practices.

In this incident the employer had no written safety and health program or written procedures for safe work practices. However, employees stated that there was verbal communication of precautions while working in the area where the power lines are found. Employers should have a competent person, (one who can identify existing predictable hazards in the surrounding area or working conditions that are hazardous or dangerous to employees and who has the authority to take prompt corrective measures to eliminate them) should evaluate the work site to decide a work plan and the safest approach for completing the specific tasks required of the job.

Philip P. Weber
Field Investigator
Maryland FACE Program

Dr. Keith L. Goddard, P.E.
Principal Investigator
Maryland FACE Program

Division of Labor and Industry Division of Labor and Industry

Additional information regarding this report or the Maryland FACE Program is available from:

The Maryland FACE Program
Division of Labor and Industry

FATALITY ASSESSMENT AND CONTROL EVALUATION

The Maryland Division of Labor and Industry administers the Fatality Assessment and Control Evaluation (FACE) program under a cooperative agreement with the National Institute for Occupation Safety and Health, Division of Safety Research (NIOSH/DSR). The Maryland FACE program performs investigations of selected occupational fatalities, prepares summary reports and engages in prevention activities. The goal of our program is to prevent fatal work injuries in the future by studying the working environment, the worker, the task being performed, the tools employed, the energy exchange resulting in fatal injury and the role of management in controlling how these factors interact.

NIOSH/DSR developed the FACE research protocol in the early 1980's and continues to perform FACE investigations. To increase the research and prevention activities of NIOSH/DSR, states across the nation have been invited to participate in the State FACE Project. Maryland and seventeen other states currently participate in the State Based FACE Project. The other states are : Alaska, California, Colorado, Iowa, Indiana, Kentucky, Massachusetts, Minnesota, Missouri, New Jersey, Ohio, Oklahoma, Texas, Washington, Wisconsin and Wyoming.

1100 N. Eutaw Street Room 611
Baltimore, Maryland 21201-2206
Phone 410-767-2380
FAX 410-767-2003

98MD01901