Indiana State Department of Health

Indiana FACE 95IN14701

Date: September 26, 1995

TO: Charles L. Barrett, M.D., M.S.P.H., Medical Epidemiologist
Epidemiology Resource Center

FROM: Richard L. Warren, Indiana FACE Investigator

SUBJECT: Mechanical Designer dies from injuries sustained after falling 22 feet through roof opening

SUMMARY:

A 54-year-old mechanical designer (the decedent) working alone sustained severe injuries after falling 22 feet through a temporary covered roof opening of a large manufacturing plant to the concrete floor below. The decedent was taking measurements relating to the installation of a new service platform frame, west of and part of, a new makeup air vent. The decedent fell (unobserved) through the temporary roof opening, hitting an underhung 5 ton bridge crane and then fell to the concrete floor. The decedent was found a few minutes later by

co-workers still conscious, alert, and bleeding from the nose and right ear. Emergency medical personnel located at the plant were called. The county E.M.S. arrived a few minutes later and transported the decedent to a local hospital where he died six days later from complications sustained in the fall. The FACE investigator concluded to prevent similar occurrences, employers should:

1. Ensure temporary roof openings are covered or guarded by a standard railing.

a)

2. Ensure appropriate fall protection is available and correctly used when working where there is a danger of falling.

a)

3. Ensure scheduled and unscheduled safety inspections should be conducted by a competent person (one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authority to take prompt corrective measures to eliminate them).

INTRODUCTION:

On September 13, 1995, a 54- year-old male mechanical designer (the decedent) died from injuries sustained after falling 22 feet through a temporary covering in a roof opening to the concrete floor below. The Indiana FACE investigator met the IOSHA compliance officer's supervisor and the IOSHA compliance officer at the incident site. The company safety director, one of his associates, and a union person were interviewed. The safety director allowed the FACE investigator to take pictures.

The employer is a large manufacturing plant primarily involved in the manufacture of aluminum cans. The company employs 2600 people at the plant and has been in business for about 35 years. The decedent had been employed with the company for 24 years. The company has a very extensive written safety program with documented safety courses and weekly updates on safety procedures. The company employs six safety persons in addition to the safety director.

INVESTIGATION:

As stated by the company safety director the decedent and his supervisor visited the incident site the day before the incident to discuss the next days work assignment. The decedents work assignment was to measure for a service platform frame, west of and part of, a new makeup air vent. On August 31, 1995, the old duct work and old make-up air vent were replaced with a new make-up air

unit leaving a 49 inch x 10 feet 3 1/2 inch roof opening. The roof opening was covered with plywood, metal sheeting and a plastic tarp for weather protection.

Evidence suggests on October 7, 1995, the decedent was alone and without benefit of fall protection on the roof of the cathode building measuring metal decking for a service platform. While the decedent was taking measurements he stepped onto the tarp covering the metal sheeting and plywood which broke under his weight. He fell 8 feet 9 inches hitting a 5 ton American underhung bridge crane and its rail. The decedent then fell an additional 13 feet 10 inches to the concrete floor below. The decedent was found on the concrete floor 5 feet in front of a wheelabrator (machine which smoothes out rough edges of aluminum castings) with his foot stuck through an opening in the wall. Evidence indicates the decedent was still alert and must have put his foot through the opening in the wall to alert other employees.

The plant ambulance was summoned at 12:20 and arrived on the scene at 12:25. They found the decedent conscious, alert, breathing, bleeding from the nose and the right ear. The decedent also sustained injuries to the left eye, right shoulder, upper arm, left wrist and left lower back. The county EMT service was summoned and the decedent was loaded and transported by 12:52 to a local hospital where he died six days later from complications of the fall.

CAUSE OF DEATH:

The cause of death as presented on the certificate of death is massive saddle type pulmonary embolism due to convalescent phase of blunt impact trauma to head, chest, abdomen and extremities.

RECOMMENDATIONS AND DISCUSSION

RECOMMENDATION # 1:

Employers should ensure temporary roof openings are covered or guarded by a standard railing.

DISCUSSION:

In this incident the decedent obviously knew there was an opening below the temporary floor covering since he was attempting to take measurements relating to the installation of a new ventilation system and was informed about the hazard the day before. A warning sign or a standard railing (A vertical barrier erected along exposed edges of a floor opening, wall opening, ramp, platform or runway to prevent falls of persons) with a standard toeboard (A vertical barrier at floor level erected along exposed edges of a floor opening, wall opening, platform, runway or ramp to prevent falls of materials) might have made him stop and evaluate the situation. OSHA regulation 29 CFR 1910.23 (a)(7) states that

every temporary floor opening shall have standard railings, or shall be constantly guarded by someone, and/or covered by materials of standard strength and construction.

RECOMMENDATION # 2:

Employers should ensure that appropriate fall protection is available and correctly used when working where there is danger of falling.

DISCUSSION:

29 CFR 1926.501 (b) (1) states that “each employee on a walking /working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet (1.8 meters) or more above a lower level shall be protected from falling by use of guardrail systems, safety net systems, or personal fall arrest systems.” In this incident because of the location of the incident, it is questionable if the rule should have been applied. The decedent was not wearing fall protection equipment even though it was available from the employer. After the incident the employer proceeded to cover the floor with standard strength materials and used fall protection while completing the work task.

RECOMMENDATION #3:

Scheduled and unscheduled safety inspections should be conducted by a competent person.

DISCUSSION:

Employers should be aware of the hazardous conditions at jobsites and should take an active role to eliminate them. Scheduled and unscheduled safety inspections should be conducted by a competent person (one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authority to take prompt corrective measures to eliminate them) to ensure that jobsites are free of hazardous conditions. Even though these inspections do not guarantee the prevention of occupational injury, they may identify hazardous conditions and activities that should be rectified. Further, they demonstrate the employer's commitment to the enforcement of the safety programs and to the prevention of occupational injury.

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What is the FACE Program?

FACE is one of many prevention programs conducted by the Indiana State Department of Health (ISDH). FACE stands for "Fatality Assessment and Control Evaluation." The purpose of FACE is to identify factors that increase the risk of work-related fatal injury. Identification of risk factors will enable more effective interventions to be developed and implemented. The FACE Program does not just count fatalities. It uses information gained from each fatality investigation to develop programs and recommendations aimed at preventing future occupational fatalities.

Whom can you contact for additional information?

Indiana FACE Program

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