August 28, 1998

Nebraska FACE Investigation 98NE013

SUBJECT:

Ironworker Falls into Elevator Pit

SUMMARY:

A 39-year-old ironworker was killed when he fell off a ladder and struck his head on the edge of an elevator pit. He had been welding and was in the process of descending a 24-foot extension ladder when he fell approximately 14 feet. According to witness statements in the police report, it appears he became entangled in a vertical cable that was close to the ladder that caused him to lose his balance and fall. He struck his head on the floor at the edge of the elevator pit and continued to fall approximately four more feet. The victim was transported by emergency rescue to the hospital where he was pronounced dead.

The Nebraska Department of Labor investigator concluded that to prevent future similar occurrences employers and employees should:

* Ensure the area around all ladders is kept clear of obstructions that could hinder ascending and descending the ladder.

* Ensure ladder rails for portable ladders extend at least 3 feet above the upper landing surface to which the ladder is used to gain access.

PROGRAM OBJECTIVE:

The goal of the Fatality Assessment and Control Evaluation (FACE) workplace investigation is to prevent work-related deaths or injuries in the future by a study of the working environment, the worker, the task the worker was performing, the tools the worker was using, and the role of management in controlling how these factors interact.

This report is generated and distributed **solely** for the purpose of providing current, relevant education to employers, their employees and the community on methods to prevent occupational fatalities and injuries.

INTRODUCTION:

On May 27, 1998, at approximately 10:40 a.m., a 38-year-old iron worker was killed when he fell from a portable ladder. The Nebraska Department of Labor was notified of the fatality by personnel on the job site. The Nebraska FACE Investigator conducted site visits on May 27-28, 1998. Interviews were conducted with the victim's employer and coworkers. The incident occurred at a major building construction site. The victim was an employee of a sub contractor working at the site.

The company has been in business for 21 years and employs approximately 200 people in various locations. Approximately 10 employees were working at the incident location. The victim had been employed by the company for six months and had been at the incident job site for six months. The company has a written safety program and a full-time safety director. Also, the general contractor for this project has a very comprehensive safety program. The victim had attended weekly safety meetings covering fall protection and ladders and he had also attended union training courses and the general contractor's orientation course.

INVESTIGATION:

The incident occurred at a large construction site. A multi-story building was being constructed and the victim was working on a steel elevator structure. According to a coworker, the victim had been welding clips to steel support member C (see figure 1), while sitting on crossbar A. Another coworker said he saw the victim standing on the ladder and welding clips to structural member D. He apparently finished his welding and was descending the ladder. Another coworker said when the victim was descending the ladder he got tangled up in a cable that was running nearly parallel with the ladder (see figure 2) and this caused him to lose his balance. The victim fell between crossbars A and B, struck his head on the concrete edge of the elevator pit, and then fell to the bottom of the pit. The length of the fall was approximately 15 feet. He was wearing a welder's helmet when he fell but this came off during his fall, prior to impact. The cable he got tangled up in was connected to a steel support member that was lying across the top of the elevator pit (see figure 3). It was rigged to pull it up to the next floor.

A coworker immediately went to the victim and checked for a pulse. He did not detect a pulse and the victim was removed from the pit and CPR was administered. They were able to get a pulse

going a couple of times and continued CPR until emergency rescue personnel arrived. The victim was transported to a local hospital where he was pronounced dead.

CAUSE OF DEATH:

The cause of death, according to the Coroner's Report was massive blunt trauma to the head.

RECOMMENDATIONS/DISCUSSION:

Recommendation #1: **Ensure the area around all ladders is kept clear of obstructions that could hinder ascending and descending the ladder.**

Discussion: CFR 1926.1053(b)(1) states, "The area around the top and bottom of ladders shall be kept clear." According to a witness, the victim got tangled in a cable that was close to the ladder. Figure 2 shows the proximity of the cable to the ladder. This cable was connected to a steel member that was going to be raised to a higher floor. The cable should not have been attached to the steel member until immediately before it was raised to ensure the cable did not interfere with workers ascending and descending the ladder. Another option would be to ensure the cable is far enough away from the ladder to not interfere with safe use of the ladder.

Recommendation #2: **Ensure ladder rails for portable ladders extend at least 3 feet above the upper landing surface to which the ladder is used to gain access.**

Discussion: CFR 1926.1053(b)(2) states in part, "When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least 3 feet (.9 m) above the landing surface to which the ladder is used to gain access; or, when such an extension is not possible because of the ladder's length, then the ladder shall be secured at its top to a rigid support that will not deflect, and a grasping device, such as a grabrail, shall be provided to assist employees in mounting and dismounting the ladder." As can be seen from figures 1 and 2, the ladder in this incident did not extend any length past the surface the victim reportedly had been working on. It is possible the victim could have lost his balance while stepping from crossbar A to the ladder, got tangled up in the cable and subsequently fell to his left, between crossbars A and B.

REFERENCES:

1. Office of the Federal Register National Archives and Records Administration, Code of Federal Regulations, Labor, 29 CFR 1926.1053, 1997

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