The National Institute for Occupational Safety and Health (NIOSH)

Highway Technician Dies After Falling 55 Feet From Bridge Scaffold

Minnesota FACE Investigation 94MN06401

SUMMARY

A 51-year-old male highway technician (victim) drowned after falling 55 feet from a suspended bridge scaffold into a river. A private company was contracted to remove lead-based paint from the bridge and to repaint the bridge. On the day of the incident, the victim was inspecting the paint thickness of a recently completed section of the bridge. A steel platform scaffold was suspended directly below the most recently painted section of the bridge. A second platform scaffold with a damaged suspension mechanism had been left suspended next to the scaffold that the workers used the day of the incident. The two platforms were at the same height but were separated by a narrow gap. The scaffold with the damaged suspension mechanism was “off limits” to all workers at the site. However, there were no barriers to prevent workers from stepping across the gap between the platforms. The victim climbed down a bridge ladder affixed to the side of the bridge and onto the scaffold suspended below the bridge deck. He had various personal protective equipment, including a life vest, a safety belt, and a lanyard in his vehicle. He was not using any of this equipment at the time of the incident.

Two employees of the company contracted to refinish the bridge were on a barge in the river approximately 1/8 mile from the bridge. They noticed the victim fall into the river. They used a small boat to get to where they last saw him but they were unable to locate him. Emergency rescue personnel were immediately notified and arrived at the scene shortly after the incident. Dragging operations began and continued the next morning until the victim’s body was found. MN FACE investigators concluded that, to reduce the likelihood of similar occurrences, employers should:

- **ensure that appropriate fall protection equipment is available and correctly used when employees are working from elevations where the potential for a fall exists;**
-
- **develop, implement, and enforce a comprehensive safety program that includes, but is not limited to, training in hazard recognition and avoidance; and**
- **encourage workers to actively participate in work place safety.**

INTRODUCTION

On October 26, 1994, MN FACE investigators were notified of a work-related fatality that occurred on October 21, 1994. MN OSHA was contacted and releasable information was obtained. A site investigation was conducted by a MN FACE investigator on October 27, 1994. During the site investigation, releasable information concerning the incident was provided by the employer’s assistant safety administrator.

The victim was employed by a government agency for 26 years. For the past several years, he was employed as a senior highway technician. His responsibilities included the inspection of highway and bridge work performed by independent contractors. His employer provided employees various types of safety training in the use of personal protective equipment, hazard identification, and safe work practices. Approximately two years before the incident, the victim completed a bridge inspection course that covered the hazards of falls and the need to use fall protection equipment.

INVESTIGATION

The incident occurred at the site of an interstate highway bridge that spans the Mississippi River between Minnesota and Wisconsin. A private company had been contracted to remove lead-based paint from the bridge and to repaint the bridge. The project, which was nearly completed, began approximately 15 months before the incident occurred. On the day of the incident, the victim was working alone inspecting the paint thickness of a recently completed section of the bridge.

A steel platform scaffold was suspended directly below the most recently painted section of the bridge (see Figure 1). The scaffold was approximately 35 feet wide by 70 feet long and was suspended by chains and cables from the bridge. The scaffold surface was approximately 53 inches below the bottom of the beams that supported the bridge deck. It was installed by contract workers who were sandblasting and painting the bridge. The contractor's employees left the scaffold in place until their work was approved by the highway technician.

A second platform scaffold was suspended next to the scaffold that the workers used earlier on the morning of the incident. Although the suspension mechanism for the second platform had been damaged, the platform remained suspended beneath the bridge deck. The two suspended platforms were at the same distance beneath the bridge but were separated by a narrow gap. The gap was approximately 14 inches wide at one end and 43 inches wide at the other end. The scaffold with the damaged suspension system was "off limits" to all workers at the site. However, there were no barriers in place to prevent workers from stepping across the gap between the platforms. It is not known whether the victim was aware that one of the scaffolds was unsafe for use. In addition, guard rails had been removed from three sides of the scaffold that was safe for use by the workers.

The victim apparently climbed down a bridge ladder affixed to the side of the bridge and onto the suspended platform that was safe for use. The contract employees had exited the platform for their lunch break at the time of the incident. The victim used a mill thickness gauge to check the thickness of the recently applied coat of paint. He had conducted similar inspections two or three times a week since the project began. He had various personal protective equipment, including a life vest, a safety belt, and a lanyard in his vehicle, but he was not using any of it at the time of the incident.

Two employees of the company contracted to refinish the bridge were on a barge in the river approximately 1/8 mile from the bridge. They noticed the victim fall into the river.

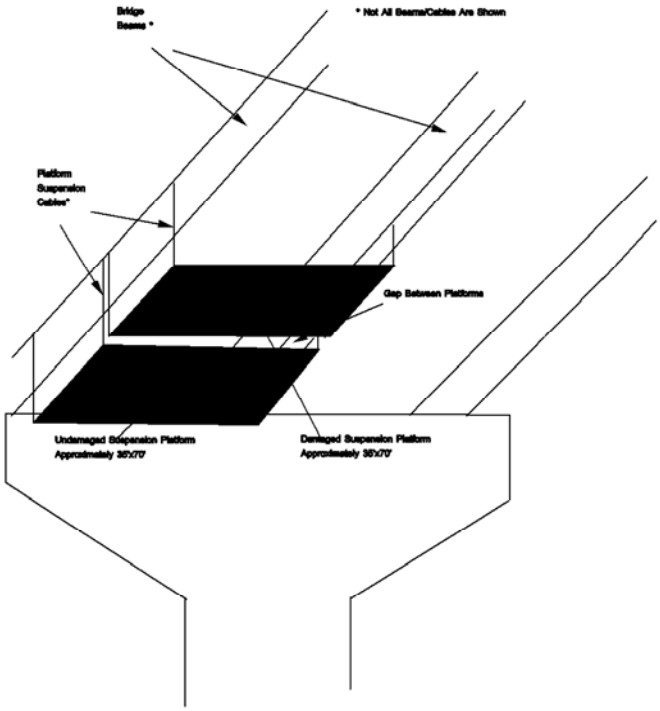

Figure 1. Suspension Platforms Below Bridge – Not to Scale

When the victim surfaced, they noticed him swimming toward the river bank but he suddenly disappeared under the water. They used a small boat to get to where they last saw him but were unable to locate him. Emergency rescue personnel were notified and responded to the scene. Dragging operations began and continued for approximately seven hours until darkness. The dragging operations resumed the next morning and continued for several hours until the victim's body was found.

The victim's mill thickness gauge was found on the scaffold platform that was unsafe for use. The battery cover was missing from the gauge which suggested that the gauge struck either the platform or another surface with enough force to knock the cover off the gauge. This may have occurred as a result of the victim tripping on equipment on the safe scaffold platform. It also may have resulted from the victim tripping and falling while attempting to step across the gap between the two scaffold platforms.

CAUSE OF DEATH

The cause of death listed on the death certificate was drowning.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should ensure that appropriate fall protection equipment is available and correctly used when employees are working from elevations where the potential for a fall exists.

Discussion: Whenever work is performed at an elevation where the potential for a fall exists, workers should use appropriate fall protection equipment. The victim was working 55 feet above the river in a situation where the potential for a fall existed. OSHA Standard 29 CFR 1926.28 (a) states that "the employer is responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions." Adequate fall protection equipment, such as lifelines, safety belts, and lanyards, should always be used whenever the potential for a fall exists. In addition, if the use of a traditional safety belt/lanyard combination is impractical, an alternate

form of fall protection (e.g., safety nets as specified in OSHA Standard 29 CFR 1926.105) should be used. If the victim had been using adequate fall protection equipment (i.e., lifeline, safety belt, and lanyard) or if safety nets had been installed beneath the platforms, this fatality might have been prevented.

Recommendation #2: Employers should develop, implement, and enforce a comprehensive safety program that includes, but is not limited to, training in hazard recognition and avoidance.

Discussion: Employers should evaluate the various tasks performed by their employees and identify potential hazards associated with those tasks. Employers should implement and enforce a comprehensive safety program as required by OSHA Standard 29 CFR 1926.20. In addition, OSHA Standard 29 CFR 1926.21 (b)(2) requires employers to "instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury." The development, implementation, and enforcement of comprehensive safety programs by employers will reduce the likelihood of the occurrence of fatal falls by employees.

Recommendation #3: Employers should encourage workers to actively participate in work place safety.

Discussion: Employers should ensure that all workers understand the roles they play in the prevention of occupational injuries. Workers should be aware of work place hazards and should remind each other of such things as the proper way to perform tasks and the need to use appropriate safety equipment. Employers should inform workers, via scheduled periodic reviews, of their roles to assist in establishing and maintaining safe work environments.

REFERENCES

1. Office of the Federal Register: Code of Federal Regulations, Labor, 29 CFR Part 1926.28 (a), 29 CFR 1926.105, 1926.20 and 1926.21 (b)(2), U.S. Department of Labor, Occupational Safety and Health Administration, Washington, D.C., July 1, 1993.

To contact Minnesota State FACE program personnel regarding State-based FACE reports, please use information listed on the Contact Sheet on the NIOSH FACE web site Please contact In-house FACE program personnel regarding In-house FACE reports and to gain assistance when State-FACE program personnel cannot be reached.

Back to Minnesota FACE reports

Back to NIOSH FACE Web

Page last reviewed: November 18, 2015
Content source: National Institute for Occupational Safety and Health