CSI Country Wide Case Study Safety Strategy Discussion

Construction Safety Investigator

Instructions

The objective of this tool is to provide field supervisors with information to proactively engage workers and discuss safety related concerns that they may encounter. Safety discussions should not be limited to the subject above and should pertain to the activities that workers will be involved in that may have the potential for safety related exposures.

Case Day:
August 2007

Accident Type:
Aerial Lift Accident - Boom Collapse

Relevant laws, rules and codes may include:
29 CFR 1926.453 and 1926.454, 29CFR 1910.67, ANSI/SIA A92.5-1992 "Boom-supported Elevating Work Platforms", Aerial Lift Manufacturer's Operation and Maintenance Specifications/Instructions

Case:

A mechanic sustained fatal injuries and a coworker was injured after the boom-supported aerial work platform they were riding collapsed.

Accident Detail:

The incident occurred at a college campus where the two workers were installing a sign on the campus Field House. The Field House is approximately 35 feet high and the sign was to be placed on the upper front section of the building. A boom-supported aerial work platform was used to elevate the workers. At the time of the incident, the victim with fatal injuries and the coworker were inside the lift basket. Both workers wore personal fall arrest systems (PFAS). The victim's lanyard was attached to the lift basket. The coworker's lanyard was not attached. At approximately 11:40 a.m., the boom of the work platform suddenly collapsed and the lift basket crashed to the ground. The victim and the coworker fell approximately 40 feet. Campus security was notified immediately and paramedics arrived within minutes. Both workers were transported to a hospital where the victim died an hour later. The coworker suffered serious injuries and survived.

Reconstructive Safety Evaluation:

- What are some of the possible causes of the accident being discussed?
- What actions could have been taken that might have prevented this accident from occurring?

Accident Scene Conclusion:

The collapse of the work platform was determined to be caused by the failure of the upright level cylinder: the rod of the cylinder had broken away from the cylinder barrel. The investigation found that the rod assembly of the failed cylinder had been modified and this modification caused the cylinder to fail. The thread of the failed cylinder rod had been ground off and a hole had been drilled through the rod. The hex nut had been drilled through to allow a bolt to be inserted to hold the rod and the nut together. A bolt had been inserted through the hex nut and the rod and had been fastened with a nut. The bolt broke into three pieces during the incident and caused the cylinder to fail.

Preventive Safety Measures Include:

- Prohibit unauthorized modifications of or alterations to the aerial work platform
- Ensure that after purchase of a pre-owned aerial work platform, the machine is thoroughly inspected by a dealer or a qualified mechanic before use
- Ensure that periodic inspections and preventive maintenance are carried out in strict accordance with the manufacturer's specifications
- Keep and maintain operation and maintenance manuals for aerial work platforms
- Train all maintenance personnel to strictly follow the manufacturer's requirements when performing machine maintenance

Attendance Roster

_____

_____

_____

_____

_____

_____

_____

_____

_____

Reference: This case was reported in the NIOSH Fatality Assessment and Control Evaluation (FACE) Program, New York Case Report 07NY080.

Chubb. Insured.℠