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:

June 7, 1999

Accident Type:

Steel Erection Accident - Unsecured Materials

Relevant laws, rules and codes may include:

29 CFR 1926.750, 1926.21(b)(2), 1926 Subpart R

Case:

Two electricians, a 46 and 49-year-old, died of injuries sustained when they were working on the sixth floor of a planned 30-story tower and were struck by an ironworkers' bolt bin that fell from the eighth floor of the building.

Accident Detail:

The victims worked as electricians for a company subcontracted to complete the electrical work on an office tower complex. They were working on the sixth floor of a 30-story tower when they were struck by an ironworkers' bolt bin that fell from the eighth floor.

During the steel erection process, the lower end of a column was placed near a seam in the decking rather than in a central portion that provided a safer location for heavy materials. During the lifting process, the lower end of the column slipped off pieces of wood that had been placed on the steel decking to prevent it from slipping.

The column punctured the eighth floor decking and dropped approximately seven feet. The column then swung from the crane's cables and bent a structural beam that supported the ends of the decking on which the bolt bin was sitting. The ends of the decking sheets fell from the beam as a result of the beam being bent.

The bolt bin and its contents fell through the eighth floor decking and continued to slam through each of the lower floors until it reached the first floor striking the two victims who were working directly beneath the falling bin. The workers also fell to the first floor.



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 Investigation indicated that the bin was resting directly on steel decking, rather than having its weight distributed over two structural beams which was the usual procedure. The lower end of a column set on the decking was near a seam in the decking rather than in a central portion of the decking that provided a safer location for heavy materials.

Preventive Safety Measures Include:

- Ensure that heavy items placed on preliminary flooring are placed over structural beams that can adequately support the weight of the items.
- Ensure that heavy construction materials, whenever possible, are only raised to elevations as they are needed.
- Ensure that construction materials such as columns are placed in the safest locations available if they cannot be stored on the ground.
- Items such as bolt bins and buckets or other materials are secured or otherwise prevented from falling to lower levels.

Attendance Roster				

Reference: This case was reported in the NIOSH Fatality Assessment and Control Evaluation (FACE) Program, Report #98MN063.

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