

# CSI Country Wide Case Study Safety Strategy Discussion

## Construction Safety Investigator



### Instructions

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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:

July 1, 2005

#### Accident Type:

Electrocution Accident - Overhead Powerlines

#### Relevant laws, rules and codes may include:

MIOSHA Part 1. General Rules, Rule 115(4), 1926.21(b)(2), 1926.20(b)(1),(2),(4), 1910.333(c)(3), 1926.451, 1926.451(f)(6), (7)

#### Case:

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A 36-year-old brick mason was electrocuted when he attempted to insert a 20-foot 1/2-inch section of rebar down through a grouted brick wall. The rebar contacted an energized, primary 4,800-volt single-phase powerline.

#### Accident Detail:

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The project consisted of adding space to an existing building by erecting a brick wall. This was being worked on by a 4-man crew (which included the deceased). All four workers at the job site set up the scaffolding which they were working from. The scaffold was leaning.

Due to the overhead power lines, Coworker 1 said he warned the decedent to be careful because he assumed they were “electrified”. The decedent indicated he would. Coworker 2, who was on the ground, said he personally didn’t worry about the wires, because they were “so high in the air”.

After every 5 foot vertical course of bricks, the masons on the scaffold would pour grout into the bricks and then the worker would insert rebar down through the grout to increase stability of the wall. The length of rebar the decedent would insert was 20-foot 1/2-inch long. The wall they were working on at the time was approximately 20-feet high. The rebar that the decedent was inserting into the grout was closer to the electrified power lines than the required 10 foot distance. When the rebar was lifting to be inserted through the bricks, it contacted the 4,800-volt primary electrical line, electrocuting the mason who then fell to the planks.

#### Reconstructive Safety Evaluation:

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- 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:**

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The investigation revealed that Coworkers 1 and 2 indicated they had received no safety training including no training regarding working near power lines. Workers had no training regarding the proper way to erect a scaffold. The 4 workers had learned how to set up a scaffold on the job by helping others.

The improperly erected scaffold was erected too close to the powerlines (approximately 9.5 feet). The jobsite had an identifiable hazard, i.e., energized primary electrical lines of 4,800 volts and secondary lines at 2,400 volts that a jobsite survey conducted by a competent person would have identified.

The masons’ instructions regarding the electrical wires consisted of the superintendent telling Coworker 2 that the high wires were live, but that the “dark” wire was not live and Coworker 1 overhearing the man whose identity he was not sure of, tell the superintendent that the lower “dark” wires were telephone or cable wires and were not live.

**Preventive Safety Measures Include:**

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- Employers should conduct a job safety task analysis (JSTA) during the planning phases of any construction activity to develop written plans to identify and remove potential hazards and implement appropriate control measures for them.
- Employers develop, implement and enforce comprehensive safety and safety training programs in the language of the workers that include training in hazard recognition and the avoidance of unsafe conditions such as working near overhead power lines.
- Employees required to work from a scaffold should be trained by a person qualified in proper scaffold erection and safety procedures.

**Attendance Roster**

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**Reference:** This case was reported in the NIOSH Fatality Assessment and Control Evaluation (FACE) Program, Report #2005MI065.

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