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: August 10, 1993

Accident Type: Power Tool Accident - Electrocution

Relevant laws, rules and codes may include: 29 CFR 1926.21(b)(2), 29 CFR 1926.400 to 1926.449

Case:

A 45 year-old electrician was electrocuted when he came into contact with an energized ½-inch metal-cased electric drill.

Accident Detail:

The victim was contracted to install electrical wiring in a residence under construction. On the day of the incident, the victim arrived at the residence and proceeded to the basement where he began using a ½-inch electric drill to drill holes in the overhead joists. He was in the process of drilling holes in the overhead joists when the incident occurred.

That afternoon, the contractor was unable to reach the victim by phone. After the victim failed to respond to phone calls, the contractor went to the work site where he found the victim lying in a puddle of water on the cement floor with the drill lying under him.

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:

Investigation revealed the drill was connected to a temporary power pole by a series of three extension cords, two of which were missing ground pins. One cord was missing the outer insulation jacket at both ends, exposing the wiring for about ½ inch. The cords extended through the doorway outside to the power pole, where the ends were lying on the ground in puddles of rainwater and mud from recent heavy rainfalls.

There were puddles of water on the cement floor of the work site. The cords were plugged into a ground fault circuit interrupter (GFCI) receptacle mounted on the power pole. Testing after the incident, however, discovered that the GFCI was inoperative and the fuse box for the 120 volt single phase 15- and 20-ampere receptacle outlets at the power pole contained two 40-ampere fuses.

Preventive Safety Measures Include:

- Ensure that electrical service supplied to a construction site complies with all OSHA standards, the National Electric Code, and local regulations.
- Implement an electrical safety, preventive maintenance program to keep cords, plugs, receptacles, and tools in good operating condition.
- If any electrical equipment, devices or tools are found to be damaged, they are removed from service until repaired by a qualified person (licensed electrician) or replaced.
- Test ground fault circuit interrupters on a daily basis.
- · Evaluate work areas to identify hazardous work conditions.

Attendance Roster

Reference: This case was reported in the NIOSH Fatality Assessment and Control Evaluation (FACE) Program, Report #93WI214.

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