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:

CHUBB

October 16, 2003

Accident Type:

Equipment Accident - Multi-Piece Rim

Relevant laws, rules and codes may include:

29 CFR 1926.21 (b)(2), 29 CFR 1910.177, Equipment Operator's Manual

Case:

A 42 year-old male laborer was fatally injured while inflating a front-end loader's tire which was mounted on a multi-piece rim.

Accident Detail:

The victim was fatally injured while inflating a front-end loader's tire which was mounted on a multi-piece rim. The loader's front left tire was completely flat, preventing the loader from being moved out of its normal location, which was the garage bay where it was parked.

The victim decided to inflate the loader's front left tire. He was sitting in a chair, approximately 12 inches from the tire's sidewall while he was inflating the tire when increased air pressure caused the tire tube to explode. The explosion knocked the victim backwards.

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 revealed that when the tire had fully deflated, the rim's lock ring had become partially unseated.

The air compressor being used by the victim to inflate the tire had a faulty pressure gauge; consequently, the victim could not measure the tire's increasing air pressure. Evidence indicates that the increase in air pressure caused the tube to explode, which caused the unseated lock ring and the tire to dislodge from the rim.

The victim, whose main task was operating a forklift, was apparently unaware of the hazards associated with inflating under inflated tires mounted on multi-piece rims and the company's procedure of using a local tire company for any servicing of these wheels.

Preventive Safety Measures Include:

- Ensure that tires mounted on multi-piece rims that are flat or under inflated (the tire has less than 80 percent of recommended pressure) are never re-inflated while the wheel is on the vehicle.
- Once the wheel is off of the vehicle, the rim should be disassembled, inspected, reassembled, re-inflated and placed back on the vehicle. The use of an inflation cage is recommended.
- Ensure that employees never position themselves in front of or over tires mounted on multi-piece rims during tire inflation.
- Develop standard operating procedures (SOP) for servicing multi-piece rims and provide training on these procedures.
- Develop, implement and enforce equipment maintenance programs that include inspecting all equipment for defects and having only trained workers service multi-piece rim wheels when problems are identified.

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Reference: This case was reported in the NIOSH Fatality Assessment and Control Evaluation (FACE) Program, Report # 03MA057-01.

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