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:

May 30, 2008

Accident Type:

Tower Crane Accident - Collapse

Relevant laws, rules and codes may include:

1926.550, 1926.550 (a)(1), 1926.550 (a)(5), 1926.550 (a)(6)

Case:

A New York City tower crane collapses during the early morning hours, causing debris and equipment to cascade down onto a nearby apartment building, killing the crane operator and a construction worker at street level.

Accident Detail:

A Kodiak brand tower crane's turntable, cab and luffing boom snapped from the upper most tower mast section while working on the construction of a 32-story high-rise NYC apartment building.

No load was on the hook at the time of the accident and the crane was not in the process of being jumped or dismantled.

The tower mast section did not break free from its supports or from the building structure.

Some estimates report that the accident could result in up to \$200 million in damages.

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:

Investigations focused on a weld in the crane's turntable, which includes a large gear that allows the boom's superstructure to rotate. Investigators believe that the weld failed causing the top of the crane to break away and fall to the street below.

Allegedly, the weld was part of a repair made nearly a year prior to the accident after workers detected a two-three foot cracks along the turntable while the crane was operating on another project.

The crane owner set out to repair the turntable after it was taken out of service after an engineering inspection. Allegedly, the tower crane's owner had received one bid of \$120,000 to make the welds on the crane's damaged turntable, then modified the repair specifications and received another bid of \$20,000 from a foreign company. Lawsuits filed in connection with the incident have claimed that the foreign company warned the crane owner that it doubted its ability to properly perform the welding necessary to fix the machinery.

Preventive Safety Measures Include:

- Qualified independent third-party crane inspections should be conducted during initial crane set up, after any alteration or modifications to the crane or its components, after each jump and at a minimum of twice per year.
- Daily inspection by a qualified/competent1 person must be conducted and documented.
- Follow manufacturer procedures and specifications; do not deviate from those procedures/specifications without written approval from the manufacturer.
- Where manufacturer specifications are not available, utilize the services of a qualified engineer competent in this field and these individuals determinations must be appropriately documented and recorded.
- Require ultrasonic or other non destructive testing of turntables and tower mast bolts on a periodic basis.

Attendance Roster		

Reference: This case was reported in Engineering News Record, 6/09/2008, NY Times, 3/30/2009

¹As defined by OSHA requirements

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