CSI Country Wide Case Study Safety Strategy Discussion

Construction Safety Investigator

CHUBB

Instructions:

The objective of this tool is to provide field supervisors with information to proactively engage workers and discuss safety-related concerns 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 Date:

2019

Accident Type:

Struck by Pressurized Hose

Relevant Laws, Rules, and Codes May Include:

29CFR 1926.20(a)(1); 1926.21(b)(2); Vehicle Operators Manual; Water Fill Sequence per manual for specific water source

Case:

Water Truck Operator – Struck By

Accident Detail:

A 67-year-old male water truck operator, working on a highway reconstruction project, sustained severe head injuries when a pressurized water hose burst, knocking him to the ground. He died two days later from his injury, which according to medical records was due to a skull fracture with intracranial bleeding.

The victim was performing dust control by spraying water at the project using the contractor's water truck. When the water in the truck was empty, he would normally refill it at the designated hydrant. However, because the groundwater supply was low, the normal hydrant used was not available.

Arrangements were made with a neighboring business to use their water system, which included a water storage tank supplying water at a higher pressure than the local water supply.

The normal procedure was to connect the hose (provided with the water truck) to the water tank hydrant outlet ball valve, then to the inlet ball valve on the truck. Once the hose was secured in place, the ball valve on the truck was to be opened first, followed by the ball valve on the hydrant. Water would then flow from the tank to the truck under a pressure that varied from 125-140 psi.

The victim was an experienced employee and had performed water transfers safely on many other occasions; however, this type of water transfer was not from a typical source.

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?

Accident Scene Conclusion:

- On the day of the incident, the victim used a water hose provided with the water truck that was only designed to withstand a maximum working pressure of 50 psi, which was in the range of the normal groundwater supply and <u>not</u> the higher pressure from the water storage tank being utilized for the alternate supply.
- He connected the hose to the truck and hydrant, then opened the hydrant's outlet ball valve. However, unlike the normal procedure, the victim did not open the inlet ball valve on the truck first.
- As he was attempting to fill the truck, the hose burst and struck the victim, causing him to fall to the ground and strike his head.
- A more adequate hose should have been utilized, such as, but not limited to, an ethylene propylene diene monomer (EPDM) bulk
 water discharge hose with spiral-plied synthetic fabric reinforcement. EPDM bulk water discharge hoses are used for pumping water
 in quarries, mines, construction sites, and other abrasive environments and can withstand working pressures up to 300 psi.
 This type of hose was not on the truck and therefore not available for the victim to utilize.

Preventive Safety Measures Include:

- Complete a Job Safety Task Analysis (JSTA) that includes scope of work, anticipated exposures, and safety equipment and/or
 procedures needed to ensure that the task is completed successfully and safely. These should be updated and communicated whenever
 changes take place.
- Conduct a pre-work meeting to review the JSTA and ensure that workers understand the task to be completed, any safe working procedures, and have the necessary safety equipment.
- Employees should have adequate training on job-specific tasks. Proper training must extend to all workers, including day laborers. Language barriers and communication should also be considered during training.
- Ensure that the machinery and equipment provided for all activities, in addition to the transfer of high-pressure water, can safely withstand all reasonably anticipated loads and are designed and intended to be utilized for that purpose.
- Ensure that safety policies and procedures are identified and that safe work practices are implemented and followed as well as modified as needed when conditions change.
- Any changes made to work policies and procedures must be effectively communicated to all workers involved, and appropriate tools, equipment, and PPE should also be provided as necessary to account for these changes.

Attendance Roster:				

Reference: This case is fictitious, and any resemblance to any persons, living or dead, is entirely coincidental. However, the type of accident described in this case summary happens all too often on construction sites.

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