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:

September 2, 2004

Accident Type:

Wood Floor Refinishing Accident

Relevant laws, rules and codes may include:

29 CFR 1926.21(b)(2), 29 CFR 1910.1200, 29 CFR 1926.20, 29 CFR 1926.57, 29 CFR 1926.24, 29 CFR 1926.150(a)(1), 29 CFR 1926.152(f)

Case:

Two 35 year-old floor sanders were fatally injured and two other floor sanders were burned when the three-family house they were working in caught fire.

Accident Detail:

A company was hired to refinish two sets of wood stairs leading up from the first floor to the third floor of a multi-family residence.

To perform the operation, the company stated that they opened the windows, extinguished the pilot lights and any other possible ignition sources prior to beginning the task. The job entailed applying floor primer to the sanded area and once the lacquer sealer was dry, applying two coats of polyurethane.

On the first day of the job, the crew arrived in the morning to begin the work. Just before noon, two more workers arrived to help apply the wood floor finishing products. As the workers on the third floor were applying the lacquer sealer, the vapors suddenly ignited, causing an explosion and creating a fireball that traveled through the two stairways down to the first floor. The explosion also resulted in a fire that engulfed the entire third floor of the multifamily house.

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 although the company stated they would open windows and extinguish pilot lights and other possible ignition sources prior to beginning, there were multiple ignition sources within the third floor unit and that the ignition source was most likely the gas stove pilot located in the kitchen of the third floor unit.

In addition, it was concluded that the third floor unit's windows were most likely closed at the time of the incident and no other means of ventilation was used in the work area where the lacquer sealer was being applied.

Preventive Safety Measures Include:

- Use wood floor finishing products that are less flammable (products with flash points greater than 100°F) for indoor applications. In this incident, a highly flammable lacquer sealer (flash point of 9°F) was being used indoors.
- Ensure that ignition sources including gas pilot lights are extinguished prior to beginning work.
- Ensure that work areas are adequately ventilated during indoor application of wood floor finishing products.
- Conduct Job Safety Task Analysis (JSTA) and ensure all workers involved are trained on the JSTA and safe work practices involved.
- Develop, implement, and enforce a written hazard communication program that includes training employees about the chemicals they work with and the associated hazards and controls of these chemicals.

Attendance Roster			

Reference: This case was reported in the NIOSH Fatality Assessment and Control Evaluation (FACE) Program, Report #04MA032.

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