

Case 125. 38-year-old construction equipment operator died when an explosion occurred while he was cutting pipes on top of a 400 gallon oil storage tank with a Partner K950 gas powered chop saw.

A 38-year-old construction equipment operator died when an explosion occurred while he was cutting pipes on top of a 400 gallon oil storage tank with a Partner K950 gas powered chop saw. The decedent was a member of a 2-person crew assigned to disassemble a tank battery (two condensate oil storage tanks and one water tank) at a natural gas production facility. After arriving at the worksite with the owner, one coworker left to go get an excavator and the owner traveled to another worksite but was to return shortly to this worksite. Another company had previously flushed (rinsed with hot water) but did not clean (bottom hatch is removed from the tank and personnel go into the tank and scrape the sides and bottom and remove all remaining sludge that could not be removed from the flushing process) the tank battery. The decedent was instructed to set up the job and to wait for the coworker with the excavator to return with the excavator and the decedent's tools so they could begin the demolition procedure. They were going to disconnect the valves from the pipes on top of the tanks, remove the catwalk and stairs, and lay the tanks over for loading on a trailer for transportation. The company procedure for taking the tanks down involved using pipe wrenches and open-end wrenches to disconnect the pipes on top of the tanks and to dismantle the stairs and catwalk. The decedent did not wait for his coworker and owner to return to the worksite and began to cut the gas vent piping system connecting Tank 2 (oil storage) and Tank 3 (water tank) using a spark creating Partner K950 chop saw with an abrasive-type blade. Tank 2 had a diameter of 12 feet and a height of 20 feet. The oil storage tanks were empty except for 1-2 inches of a water/oil mixture in the bottom of the tank below the discharge pipe. The tank thief hatches were opened. Both the condensate oil storage tank and water storage tank can have oil residue in them. The decedent did not conduct air monitoring or testing before starting to cut on the tank piping, nor were the tanks purged to eliminate the hazardous vapors.

MIOSHA Construction Safety and Health Division issued the following alleged Serious and Other-than-Serious citations.

SERIOUS:

- **GENERAL RULES, PART 1, RULE 114(1).**
An employer shall develop, maintain, and coordinate with employees an accident prevention program, a copy of which shall be available at the worksite.
The program shall, at minimum, provide for all of the following:
 - a) The designation of a qualified employee or person who is responsible for administering the program
 - b) The instruction to all employees regarding the operating procedures, hazards, and safeguards of tools and equipment when necessary to perform the job.
 - c) The inspection of the construction site tools, materials, and equipment to assure that any unsafe conditions that could create a hazard are eliminated,
 - d) The proper training for confined space entry.

- e) The instruction to all employees in the recognition and avoidance of hazards that could create an injury, including poisons, toxic materials, caustics, and harmful plants or insects.

No Accident Prevention Program has been developed, coordinated, and maintained with employees. The employee was using a Partner K950 chop saw to cut pipes on top of the oil storage tanks so the tanks could be removed from the site when an explosion occurred.

- TOOLS, PART 19, RULE 1932(7).
A tool that is used in a potentially explosive atmosphere shall be designed and approved for such atmosphere.

The employee was using a spark-creating Partner K950 chop saw with an abrasive-type blade to cut vapor, equalization, overflow, and supply lines during the demolition of the oil storage tanks when an explosion occurred throwing the employee several hundred feet to the northwest. The employee did not do any air monitoring or testing before beginning the work operation. The tanks had been flushed and were empty except for one or two inches of a water/oil mixture in the bottom of the tanks.

- HEALTH HAZARD CONTROL FOR SPECIFIC EQUIPMENT AND OPERATIONS FOR CONSTRUCTION, PART 621, RULE 6310(10)(a)
Where the presence of hazardous chemicals, gases, explosives, flammable materials, or other similarly dangerous substances is apparent and suspected in pipes, tanks, and other equipment on the property, the employer shall ensure that testing and purging is performed and the hazard eliminated before worksite demolition operations begin.

OTHER-THAN-SERIOUS:

- HAZARD COMMUNICATION, PART 430, 1910.1200(e)(1)
The employer shall develop, implement, and maintain a hazard communication program as described in 29 CFR 1910.1200 (e), (f), (g), and (h) and MCL 408.1014 c, j, and k of Act 154.