Makeshift Switch Sets Off Fuel Explosion



A makeshift switch on a sandblasting unit apparently set off an explosion of gasoline vapors killing a worker who was cleaning a petroleum storage tank.

The victim had recently been promoted to foreman. His first assignment was to clean and seal several petroleum tanks. He had taken care of the other tanks without incident, and was preparing to sandblast the interior of the final one.

He had taken a reading of the oxygen content and volatile gases content after the tank was cleaned the previous day. He proceeded to enter the tank to perform the sandblasting. A pump was still in the tank and needed to be removed before the sandblasting. He removed it, but apparently some gasoline spilled from the pump in the process.

The equipment to be used for sandblasting was powered electrically and its electrical cord was attached to an extension cord. Because there had been a problem with the switch getting gummed up with sand, the machine was to be turned on by touching together two wires and pulling them apart to stop. It appears the victim attempted to connect the wires to start. When the wires came apart, the resulting spark set off the explosion of the gasoline vapors.

The victim was not wearing a lifeline, and co-workers made an unsuccessful attempt to pull him out with electrical cords.

A firefighter entered the tank wearing no protective gear before two more firefighters, wearing air packs, arrived on the scene and completed the rescue.

On leaving the tank, one firefighter felt an electric shock because the sandblasting equipment had not been turned off after the mishap. At the time there was enough gasoline vapor in the tank for a second fire and explosion.

Many safety considerations were overlooked before this confined space tragedy occurred. The new foreman should have been supervised for a period of time to make sure he understood his safety responsibilities. The atmosphere should have been tested just prior to entry. Any equipment used in the tank should have been spark-proof. The person in the tank should have been equipped with a lifeline and harness to aid in rescue. Nobody should have entered the tank without respiratory protection, not even to rescue another person. And co-workers should have known what to do in case of an emergency – such as shutting off the power to the sandblaster. Ongoing safety training for everyone on the crew might have prevented this incident.