Spark Sets Off Tank Explosion

Two workers died after a welding spark set off an explosion in a tanker truck.

They were starting to replace an overflow pipe on the truck when the spark ignited flammable gas in the tank.

The truck was part of an oilfield maintenance operation. After field workers noticed a leak in the four-meter (13-foot) overflow pipe the vehicle was taken to be repaired at the shop where the victims worked.

Two shop employees climbed to the top of the tank truck and began grinding a new overflow pipe. Another worker was called from the front office to turn the truck around so welding could be done. He did so and returned to the office. Two workers in the front office heard an explosion and went out to the shop to investigate. One called an emergency services team while the other searched for the victims. He found one and started CPR (cardiopulmonary resuscitation). The other worker found the second victim on top of the tank truck. He comforted the dying man until emergency workers arrived. Both victims were pronounced dead at the hospital.

What went wrong? The tank contained a residue of water and the flammable gas methane. A spark from the wire-feed welder ignited the gas and caused the explosion. Nobody tested the tank prior to welding, although a portable gas meter was in the truck cab at the time. If the tank atmosphere had been tested and then purged before welding, it would not have exploded. A pre-job examination of the situation would have identified the hazard, and close supervision could have prevented this fatal incident.

Could something like this happen in your work area? Flammable liquid vapors, such as those from ordinary solvents and gasoline, can explode in just the same way, with a spark from any ignition source such as a cigarette, heater or static spark.

Flammable gases such as methane and carbon monoxide are commonly found in confined spaces such as tanks and sewer tunnels. Make sure you understand the hazards of flammable gases and vapors and what preventive measures you must take to protect your workers. In a properly managed and supervised workplace, testing for atmospheric hazards would be a regular and required part of