

Fatalities Associated with Hot Work on Oilfield Tanks, Tankers, and other related equipment

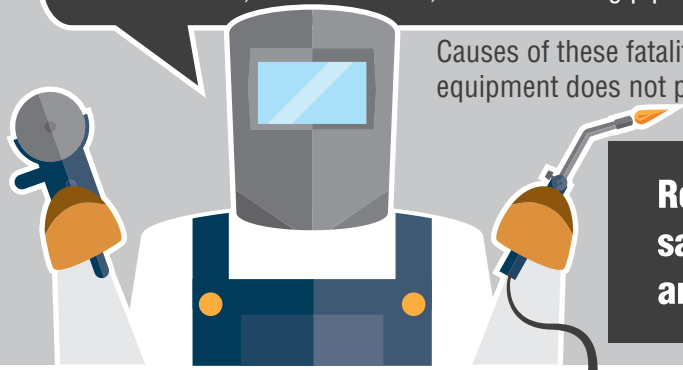
Between 2005 and 2015
85
 DEATHS due to fires or explosions

including **28**
 hot work deaths

Produced fluids, such as crude oil, flowback water, and produced water are brought to the surface, along with hydrocarbon vapors and gases during production operations. These fluids are separated and stored on the production site in tanks which require periodic monitoring and repair. Tanker/vacuum trucks and pipelines are used to transport and/or remove these fluids from the production site.

There are flammable and toxic hazards (e.g. H₂S, benzene) associated with hot work operations (burning, welding, using fire-or-spark producing tools) on permanent and temporary storage and tanker/vacuum truck tanks and other equipment such as heater/treaters, flowback tanks, interconnecting pipes, and produced water tankers which contain hydrocarbon residues.

Causes of these fatalities include improper hot work practices and assuming that empty oilfield equipment does not present a fire or explosion hazard.



Recognizing and understanding the job/hazards and following safe work practices can prevent potential fires, explosions, and health hazards.

Employers

Must conduct exposure and hazard assessments at the worksite and review with workers, including:

- Hazards of possible flammable/toxic hydrocarbons being present
- Safety Data Sheets (SDSs) on produced fluids
- Proper use and limitations of personal protection equipment (PPE), including eye, face, skin, hearing, and respiratory protection, and fire retardant clothing (FRC)

Must establish safe work practices and procedures for:

- Hot work, confined space work, Lockout/Tagout (LOTO) work
- Cleaning and venting tanks to safe areas before beginning work
- Monitoring (multi-gas meter) for H₂S, oxygen, and flammable gases and vapors (e.g. lower explosive limits - LELs)
- Thawing frozen valves, hoses, and lines

Must implement and train workers on additional hazard control measures, including:

- Hot work permits and other safe work practices (e.g. confined space, LOTO)
- Recognizing and eliminating ignition sources (e.g. ground and bond equipment, intrinsically safe tools)
- Air monitoring devices and procedures
- Emergency procedures

Must verify sub-contractors are following work practices/procedures

An Empty Tank Does Not Mean a Safe Tank — Check Every Tank Every Time

Workers

- Follow employer's work practices and procedures
- Use proper grounding/bonding
- Obtain appropriate hot work permits before beginning work
 - Review with and have supervisors sign off on permit/audit work procedures
- Attend hazard communication training – know the contents and hazards of the tanks you work on
- Control potential ignition sources (e.g. static, cell phones, open flames, cigarettes, sparks from tools or metal objects, etc.)
- Use required PPE, air monitoring devices, and heed all alarms
- Evacuate unsafe work area and report hazards immediately



If you're uncertain about potential risks or have questions,
STOP THE JOB AND ASK — IT COULD SAVE YOUR LIFE!

Through the OSHA/NIOSH/National STEPS Network Alliance, the participants developed this Hazard Alert for informational purposes only. It does not necessarily reflect the official views of OSHA or the U.S. Department of Labor. Under the Occupational Safety and Health Act, employers are responsible for providing a safe and healthy workplace and workers have rights. September, 2016

