

HARRIS FIRE FORENSICS

EXPERT INVESTIGATION AND LEGAL TESTIMONY

Oil/Gas Industry Safety Considerations

Flammable vapors and ignition sources must remain separate at all times.

Here are some brief safety considerations, often ignored, which cause fires.

- Diesel engines will, and do, ignite flammable gases, sometimes in a runaway condition. Adequate distances must be maintained.
- Flowing gases can be safe with the wind blowing; but consider the danger if the wind stops or changes direction. Pay attention to windssocks, flags, and telltales.
- Heating stuck valves, using a Hotsy, or welding sludge-encrusted tanks will create flammable vapors which can explode. The hot work creates flammable vapors and can also be the ignition source.
- Flammable gases in the field don't have odorant, so they don't smell strongly. Well sites, on the other hand, usually smell like oil, everywhere. Remain aware of the potential for flammable gases.
- Well site flammable gases can be explosive down to a 2% concentration in the air. That's not much. All of these gases, except methane, are heavier than air and can accumulate in low areas. Utilizing a combustible gas detector, (LEL, or 4 gas monitor) is a good idea when working with flammable vapors.
- Crude oil usually contains gasoline and lighter components (propane, natural gas, etc.), whose vapors are ignitable at all normal temperatures.
- Water (from a well) will often contain some 'gasoline', which floats on top of the water and gives off flammable vapors which can ignite explosively. This is true in many "water" tanks.
- Workers should avoid complacency. The safety rules and regulations should be followed.
- Sometimes, an immediate situation occurs where flammable vapors and an ignition source are both present simultaneously. Reduce/remove the fuel flow, if it can be done safely. Otherwise, just get away. Do not enter an explosive atmosphere until it is safe to do so. Entering can cause additional ignition sources and cause a flash fire.
- Don't assume that the previous worker left everything safe. Utilize your own lock-out/tag-out procedures and double check for dangerous conditions.
- Any fluid flowing through a pipe or hose can cause static electricity, which can discharge. Plastic pipe makes it worse. Plastic should not be used in the oil field. Equipment should be properly grounded.
- Special circumstances often occur, and conditions change. Workers should not be afraid to shut down an operation, to wait, or to change the configuration. Such stoppages should be welcomed by the company and parties involved, for safety's sake. Workers and companies should not be reprimanded for a safety delay, which possibly saved somebody's life.

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