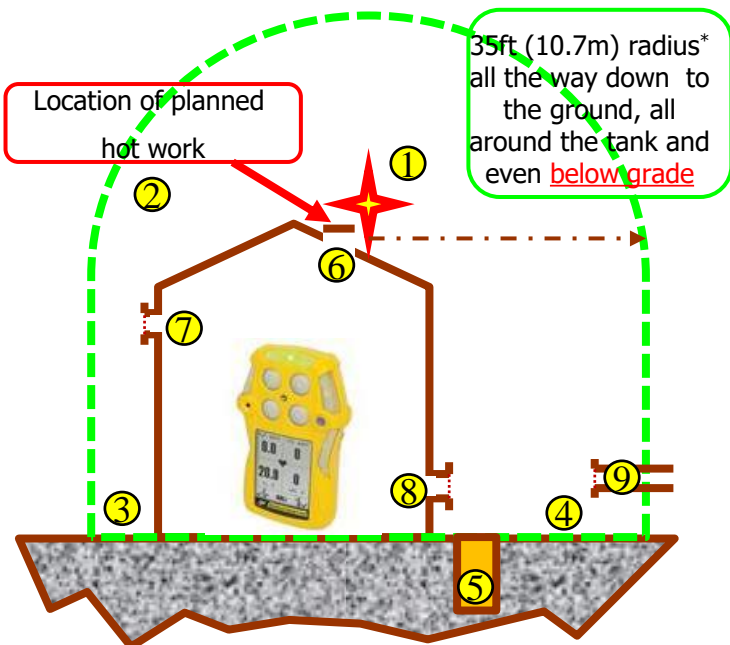


Where to Check the LFL Before Hot Work?

August 2020



Locations to be checked for LFL before & during hot work

There have been many fires and explosions in our industry over the years due to ignition during spark-producing Hot Work. The May 2020 Beacon covered the fatal consequences from one such event. One element of preparing for Hot Work is to check for – and prevent – the presence of combustible materials and/or flammable vapors “within 35 ft (10.7m)”.

(* The recommended distances from both US OSHA and the National Fire Protection Assoc.(NFPA)).

Many companies check for flammable vapors at all places where the sparks from the hot work could be expected to bounce. The diagram shows some locations to be checked. LFL gas detector readings need to check around the location of the hot work itself, as well as every place around and below where the hot particles could bounce. This includes using a probe (or sampling hose) to check inside open process pipes or inside sumps and process drains such as points 5-9.

Did You Know?

- Sparks from flame-cutting, welding and grinding can bounce a long way. That is why most permits call for removing combustible materials and testing for flammable gases within 35ft (10.7m)
- Gravity can pull sparks and hot particles down to the ground – and even down into pits and sumps. Monitor LFL under where elevated hot work is performed
- Most flammable vapors are heavier than air, so they tend to accumulate in low spaces, including sewers and sumps.
- Even lighter flammable vapors can linger in places with poor ventilation – like inside pipes, vessels, or containment walls.
- Contractors and Maintenance Workers don't know your process. They don't know all the places to look for flammable vapors.
- Conditions can change while hot work is being performed. Process operations, upsets, or even weather conditions can introduce flammable materials near where hot work is being performed.

What Can You Do?

- Check every opening and sump within the 35ft (10.7m) zone or “bell” or the distance specified by your company.
- Some companies require retests LFL frequently to manage changing conditions. Monitor the affected area to maintain a safe condition.
- Use your knowledge of the process area to think of places where flammable vapors or combustible liquids and solids could exist
- Use the “wands” or sample tubes that come with your gas detectors to check inside spaces
- Use Welding blankets and other protections to stop sparks and particles getting to places where they shouldn't. **BUT DON'T COUNT ON THESE ALONE!**

Test in ALL the places where flammable vapors could be ignited !