

# Preventing Dangerous and Life-Threatening Fires in Fixed Tanks

## Keeping an eye on your safety

Hydrogen Sulfide ( $H_2S$ ) is one of the most hazardous gases found in fixed-roof tanks that are used to store petroleum products. Colorless and invisible, it is highly flammable and can reach dangerous levels that cause fires, injury and death. As incidents with high concentrations of  $H_2S$  can lead to death within seconds, detection devices must be able to monitor all affected areas fast and reliably.

Overfill ground fires and vent fires are also common and associated with fixed-cone roof, internal floating roof, external floating roof, and domed-roof tanks. The main cause of these fires is a lightning strike that ignites fugitive vapors present at the vent.

## Challenges

- Overfill ground fires or dike fires
- Leaking pipes or tanks
- Operation error or equipment malfunction
- Leaks with or without ignition
- Blocked access to a burning roof or pan
- Liquid surface fires that are difficult to extinguish in tanks more than 150 in diameter

## Solutions

Perimeter monitoring is vital in fixed-roof tanks and adjacent areas, where piping manifolds, valves and other machinery must be closely checked to detect escaping vapors and gases.

Spectrex's offers a range of powerful detectors that detect fires, fuel, and gas emissions from long distances and with a high immunity to false alarms.



**The Next Generation of SharpEye™ Quad-Sense™ 40/40 Flame Detectors**  
- field-proven, reliable detectors that provide the fastest, longest detection of hydrocarbon-based fuel and gas fires.



**Quasar 900** - open-path detection system that provides innovative continuous IR technology monitoring for combustible hydrocarbon gases at very low concentrations, ensuring reliable and accurate protection.



**Quasar 950 open-path  $H_2S$  gas detector**  
- open-path toxic gas detectors for hydrogen sulfide, which is pervasive in these tanks. The detectors provide extremely reliable detection in all weather conditions.



Facilities using these types of tanks, for example, exploration and operation of petroleum products, must therefore be undertaken under very strict safety precautions, using gas-detection devices that cover wide temperature variations and withstand harsh weather conditions.