

# Protecting Floating Roof Tank

## Keeping SafEye on your safety

Industrial facilities like refineries, petrochemical and bulk storage plants, and marine terminals, as well as power plants, airports, local fuel companies, and large manufacturing facilities in the automotive and steel industries all store flammable and combustible liquid in tanks. These tanks (also known as floating roof tanks) can range from 10 feet to more than 350 feet in diameter, with an average height of 45 feet, holding more than 6 million gallons of liquid. Preventing a fire in these highly explosive environments is a priority.

In these tanks, a floating roof with a rim seal rises and falls with the level of surface liquid to minimize liquid loss through evaporation. However, when flammable products are stored, there is a risk of vapor leaks around the rim seal igniting, destroying the rim seal and causing a large fire, unless first detected by suitable flame and gas detectors.



To prevent mistakes before it is too late and provide fence-line protection from toxic gases leaked into safe living areas and fires, open-path H<sub>2</sub>S and other detection products are used to monitor and signal positive detection to indicate an area is unsafe for entry.

## Challenges

Safety challenges in these industries can be caused by natural phenomena or by human error, for example, lightning that generates static electricity when tanks are filled or emptied,

fire sources in pipes/valves, overfilling of the tanks, ineffective grounding, pumping equipment that becomes overheated, and/or malfunctioning venting devices.

## Solutions

The solution for these challenges is to detect gas escapes around the tanks' rim seal as soon as possible so that suppression is activated immediately, before the tank's rim seal is damaged and more vapors escape. This is optimally achieved using open-path H<sub>2</sub>S detectors to monitor tank piping manifolds, valves and their surrounding areas, laboratory and quality control facilities, control rooms, compressors and turbine enclosures, and loading/filling stations for rail cars and automotive tankers.



**40/40 series flame detectors** - these field-proven, reliable detectors provide the most comprehensive protection against hydrocarbon-based fuel and gas fires, hydroxyl and hydrogen fires, and metal and inorganic fires.



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



**SafEye Quasar 950 Open-Path H<sub>2</sub>S Gas Detector** - open-path toxic gas detectors for hydrogen sulfide, which is pervasive in oil and gas rigs. The detectors provide extremely reliable detection in all weather conditions.

Designed and manufactured by the inventors of the xenon flash lamp design that revolutionized the open-path gas detection market, these floating roof tank protection systems can all be tailored to protect high-risk installation and hazardous locations.

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