

FRONTLINE SAFETY CASE STUDY



BENZENE, ETHANE & METHANE

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WHAT WAS THE HAZARD?

The petrochemical site in question was at risk due to potential gas leaks of various toxic and flammable gases. The gases involved were primarily hydrocarbons, methane and ethane, and benzene, a hazardous Volatile Organic Compound (VOC).

PROBLEM IN MORE DETAIL

Ageing distillation columns and pipes raised concerns due to suspected ethane and methane leaks, signalled by distinct odours and pressure alarms. The absence of a precise detection system made identifying leak sources difficult. The potential health risks to employees from these leaks and the plant's proximity to a local community and its operation at near-full capacity underscored the urgency for effective safety measures. The growing stress on the ageing infrastructure amplified the need for a detection system to quickly locate and address leaks, safeguarding both employees and the environment.

AT A GLANCE

Challenges

- Multiple leak points.
- Previous incidents of minor gas leaks
- The necessity to detect a variety of hazardous gases.

Benefits

- Early detection and rapid response to any leaks
- Comprehensive coverage of the entire site with 35 points.
- Enhanced worker safety and confidence in the site's safety

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WHICH SOLUTION AND WHY?

Given the site's needs and the complexity of potential gas hazards, a GDS fixed gas detection system was chosen. Key components of this system included:

The GDS XDI Transmitter is known for its reliability in harsh environments and for detecting a wide range of gases. It communicates effectively with sensors and sends information to a central control system, making it ideal for petrochemical sites.

The GDS Combi 80 Control Panel is the central monitoring system for all detection points. It has a user-friendly interface that allows operators to identify leak sources quickly and respond promptly. The sensors connected to the GDS system detect hydrocarbons, such as methane, ethane, and 2 PID, at specific points.

The petrochemical site has 35 detection points located near high-risk areas, including storage tanks, pipelines, and processing units. These comprehensive detection points ensure quick leak detection and prevent potential hazards.