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Monitoring System Makes Confined Spaces Safer

Confined spaces are areas that have limited means for entry or exit and are not designed for continuous occupancy. Confined spaces include pipelines, tanks, vessels, silos, storage bins, vaults, pits, manholes, tunnels, and ductwork. A number of workers are injured or killed each year while working in confined spaces, and an estimated 60% of the fatalities reported were would-be rescuers.

Ensuring safety within confined spaces is one of the more challenging aspects of maintenance projects. This considerable level of danger calls for extra safety measures, such as constant monitoring and record keeping of confined-space work by an attendant positioned at the opening. However, the duties of the attendant are restricted to the outside of the vessel. So how are activities conducted within the confined space actively monitored?

The answer lies in leveraging technology. United Safety recently launched the TeQ Shield, a confined-space monitoring solution, at the Global Petroleum Show in Calgary on 9 June 2015.

One of the key benefits of the TeQ Shield is the ability to monitor the inside of a confined space remotely. From the command center, the safety operator has continuous awareness of all confined-space work. He analyzes visual input of work being performed and the surroundings, monitors gas levels, controls worker access information, and can communicate with personnel outside and inside the vessels. In the event of an emergency,

he is able to convey valuable information to the rescue team before its arrival.



From the TeQ Shield command center, the safety operator has continuous awareness of all confined-space work.

“With the TeQ Shield, the safety operator can rely on a solution that combines gas detection, video surveillance, two-way communication, access control, and a command center to effectively monitor confined spaces,

improving safety without delaying projects or increasing costs,” said Sher Alizander, technical service manager for United Safety.

The TeQ Shield has a host of features. Cameras with day and night vision installed outside and inside vessels allow for clear visibility in a wide array of environmental conditions. Video is recorded along with gas-detection logs.

The data stored can be used in training or investigations.

Two-way communication—outside and inside of the confined space—keeps personnel in constant contact with the command center. It can be used to answer questions of access control, to correct safety practices remotely, or to speak with personnel during emergencies.

The TeQ Shield is also equipped with continuous real-time gas detection. If a toxic atmosphere is detected, audible and visual alarms ensure proper evacuation. Additionally, an access-control feature uses site badges to allow only authorized individuals to enter a confined space. This enables an accurate count of who is present in the space.

The TeQ service line can be extended to cover a wide range of applications, including body cameras, monitoring of employee wellbeing, and facility-access control. The possibilities and applications will only grow as the technology evolves.

“By combining technology with safety expertise, we redefine confined-space work safety while improving the overall productivity of the event,” said Tim Wallace, executive vice president—western hemisphere for United Safety.

[Read more about TeQ Shield here.](#)