

CASE STUDY

How Total Safety's CCSM Prevented Two Fire Disasters at a Petrochemical Plant in 24 Hours

KEY FACTS

12 Confined spaces monitored



Hours of continuous confined space monitoring

THE CHALLENGE

Risk of Fire in Confined Spaces.

A petrochemical plant in Southeastern, US experienced first-hand how easily a fire can start in a compartment such as a container, tank or vessel. Maintenance work like cutting, grinding, and welding is very dangerous in confined spaces, because a single spark can mean disaster. Safety in confined spaces requires supervision and continuous assessment of atmospheric gas levels for the duration of the job. Having an emergency plan in place is critical for reducing risk of worker injury or fatality. During a 12-hour period the petrochemical plant had two separate incidents where a fire ignited in a vessel while the maintenance crew was on a lunch break.

OUR SOLUTION

Innovative Centralized Confined Space Monitoring.

Total Safety combines almost 20 years of Centralized Confined Space Monitoring (CCSM) experience with patented connected technology and highly trained safety technicians to deliver real-time monitoring of confined spaces. Each CCSM system provides five types of safety monitoring technology including access controls in (entry/ exit logs) compliance with permits, continuous atmospheric monitoring, video surveillance, two-way communication, and visual and audible alarms.



The client used Total Safety's CCSM system and Operators to monitor 12 confined spaces over 5 different towers where maintenance and repair work, including welding, cutting and grinding, were being performed. This type of activity is hazardous because there is an elevated risk of fire due to toxic fumes, which can ignite under intense heat.



TOTAL SAFETY OFFERING

Fires Prevented

Centralized Confined Space Monitoring (CCSM)

INDUSTRY

Petrochemical

LOCATION

Southeastern, US



THE SITUATION

The First Fire.

At almost midnight a crew were cutting and grinding in a confined space vessel when our CCSM Operator notified them that the carbon monoxide (CO) levels were rising and stopped work. The crew evacuated the area and took a lunch break.

Our CCSM techs continued to monitor the CO levels in the vessel and noticed that the levels were not decreasing, in fact, they were slowly increasing. The situation was reported to plant operations to investigate. The team immediately engaged proper safety protocol to inspect the vessel. They discovered material in the bottom of the tank ignited and the small smolder was able to be extinguished quickly and without injury or damage.

The Second Fire.

Twelve hours later, at just past noon while the maintenance team was on lunch break, Total Safety's CCSM Operator noticed a CO spike in one of the vessels. The alarms went off and it was observed there was a small amount of smoke gathering in the manway. In a short period of time the smoke began to intensify, and embers could be seen falling to an area below on the CCSM monitors. Immediately, the Vessel Entry Supervisor for the plant was notified and the area was evacuated. Because of the quick response time between the CO spike and communication to engage the operation teams, the situation was under control before an actual fire began.



Images of fire in the manway before and after extinguishing



Images of smoke in the manway

THE RESULT

The client was impressed with how well the Centralized Confined Space Monitoring (CCSM) system monitored the space, captured data, how efficiently the CCSM Operators were able to provide reports, and the over-all fast response of our team to control the situation. The integration of smart devices being connected and monitored 24/7 by a team of confined space safety experts is what elevates turnaround and maintenance safety.

The Total Safety CCSM system's connected ecosystem of technology including real-time gas analysis of the space, video surveillance, audio and visual alarming, and communication capabilities, allows Operators to provide an early response to dangerous tasks before they escalate into life-threatening situations.

Our Connected Solutions Operators are highly trained in life-saving protocols, and how to assess hazards by checking for any potentially flammable atmospheres or toxic fumes, emergency evacuations procedures, and many other pertinent skills to keep workers connected and safe.



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