CONFINED SPACES

Avoiding Common Mistakes in Gas Detection

By Rick Pedley

For maintenance, utility or construction professionals, working in confined spaces tends to be one of the most dangerous aspects of the job. Oxygen may be in short supply when working in manholes, crawl spaces, tunnels and other confined areas.

If hazardous gases are present in the air, you and your team must ventilate the space until safe readings are observed. That is why it is important to regularly monitor these areas for hazardous gases.

However, monitoring your workspace is often more involved than simply switching on a gas monitor. Avoid these common mistakes to keep your team safe when working in confined spaces.

Skipping the Initial Risk Assessment

Before you start monitoring the workspace, conduct an initial risk assessment to learn more about the area in question. The shape and structure of the space are critical to understanding how to approach the task. A diagram shared with the team can help identify hazards while assigning roles and responsibilities. Understand how air flows into the space and identify all exits and entrances to the space. Developing the habit of using a confined space permit procedure every time is an important first step.

Not Calibrating the Monitor Beforehand

It is important to calibrate monitors before using them in a confined space. You may be used to bump testing monitors at the start of each shift, but a full recalibration is the best way to protect yourself in confined spaces. Use this step to ensure that the monitor's alarms and sensors are working properly so you do not get stuck inside the space with malfunctioning equipment.

Using Expired Calibration Gas

When it comes to calibrating monitors, be sure to check the expiration date on the calibration cylinders. Disposable calibration cylinders have a set shelf life of between 18 months and 3 years, depending on the type of gas. If the cylinder is expired, the gas monitor may not respond to the test gas as intended, which means that the monitor will not be properly calibrated. Incorrect readings can dangerously narrow the margin for error inside a confined space.

Not Deciding Where & How to Monitor in Advance

The shape and structure of a particular confined space will determine what approach to take. Since various gases can stratify (some are heavier or lighter than air), a deep space should be measured starting at the lowest point and at different levels going up. This is best done with a motorized pump equipped gas detector. Once workers are inside, it is good practice for each team member to wear a personal gas detector, preferably in the breathing zone.

Not Preparing for Lack of Oxygen

Whenever entering a confined space, you must prepare for a sudden lack of oxygen. Create a contingency plan if the air quality suddenly changes. The gas monitor should send several warnings if hazardous gases are present in the space, including an audible alarm, vibrations or a flashing light. Once the alarm goes off, the team should respond immediately by either ventilating the space with additional air or leaving the space immediately. Make sure team members know what to do in the event of an emergency to reduce their exposure to hazardous gases in the workplace.

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Entering Without an Escape Route

If the confined space fills with toxic or explosive gases or oxygen becomes scarce, the team should have immediate access to an escape route. Monitor all exits and entrances to the space to make sure the team can leave as quickly as possible in the event of a leak. Avoid crowding around these entrances or blocking them with equipment. The nature of the work environment may change instantly. Make sure workers have a second escape route if one entrance becomes blocked.

Workers should also have a way to communicate with each other in the confined space so that everyone can leave promptly in the event of an emergency. Gas detection equipment can also fail from time to time, so workers must have access to a way out if their monitor suddenly stops working.

Not Monitoring the Space Over Time

Monitoring confined spaces for hazardous gases is an ongoing job. Oxygen levels can easily change over time, so you should get in the habit of monitoring the work space, both at the start of every shift and continuously throughout the day, to make sure workers can still breathe easily. Do not assume that the confined space is the same as it was yesterday. Take new readings to make sure the space is safe for human occupancy.

Conclusion

Working in confined spaces comes with plenty of potential hazards, but you can minimize risk if you and your team have access to the right gas detection equipment. Keep these tips on hand to give your team more peace of mind on the job. **PSJ**

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