Protecting the first responders

BY KAY MANGIERI

Being prepared for an emergency is a pretty tall order for any group that is assigned the task of being a "first responder" to the scene. Considering that the definition of an emergency is an unexpected event, planning must be broad in scope and detailed in nature. Unless there are multiple, specialized response teams, first responders to an event must be trained to handle a whole host of incidents that may involve life-threatening situations, including hazardous gas exposure. Many gas hazards are colourless and/or odourless, and are especially dangerous for that reason.

Emergency response to a refinery fire, overturned tanker, terrorist alert or chemical leak must include the use of atmospheric monitors for protection of the first responders investigating the incident. Firefighters, hazardous materials (HazMat) teams and law enforcement personnel should be equipped with portable gas detection instruments to measure and monitor the presence of gases and vapours.

Although gas detection equipment has been utilized by many emergency response teams, a clear understanding of the capabilities and limitations of each detector is critical. Purchasing decisions should consider past and potential response situations to evaluate the types of hazardous atmospheres that may be encountered. Manufacturers of the equipment will be able to help match products to anticipated needs.

Gas detection devices are used

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to qualify and quantify the hazard; most common are single-gas monitors, multi-gas monitors and photoionization detectors (PIDs).

While PIDs can be used as gross detection devices, single and multi-gas detectors can detect multiple gases specifically and simultaneously. Having a variety of detection options in an emergency call could help identify and specify gases and vapours that could be hazardous to the first responders and the public.

A typical set of detection tools would be able to monitor oxygen, toxic gases, volatile organic compounds (VOCs), hydrocarbons and combustible gases. At the minimum, an emergency response team should be equipped with a photoionization detector for gross detection of VOCs, a multi-gas detector capable of monitoring oxygen, combustible gases, and two or three toxic gases such as hydrogen sulphide, carbon monoxide and chlorine, and possibly a single gas monitor for a unique toxic sensor, such as phosphine or hydrogen chloride.

Respondents to incidents that definitely or may involve gas or chemical vapours should protect themselves from the atmosphere with HazMat suits and other Personal Protective Equipment (PPE) until the hazards are fully identified and mitigated.

Gas detectors and instrument readings are only as specific as the sensors installed. Depending on the mix of sensors installed in the monitor, other constituents of a highly toxic atmosphere may be present and may go unnoticed due

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A lifetime of protection

The GasBadge™ Pro provides a lifetime of gas hazard protection. Interchangeable "smart" sensors monitor unsafe levels of oxygen or any one of many toxic gases. Weighing just 3 ounces (85 grams), the monitor carries a lifetime warranty and comes standard with STEL and TWA readings, datalogging of up to one year of survey data and is compatible with the DS2 Docking Station™.

Can monitor from one to six gases

The iTX Multi-Gas monitor is a portable gas detection instrument capable of monitoring from one to six gases. Twenty-four configurable parameters allow the iTX to be transformed from a single gas go/no go monitor to a six-gas datalogging instrument, or anything in between. Providing simplified, single-button operation and calibration functions, the iTX's special Quick-Cal feature quickly calibrates up to four sensors at once. The unit is compatible with the DS2 Docking Station™.

Ultimate flexibility for portable detection

The VX500 PhotoIonization Detector (PID) provides the ultimate flexibility in portable detection of volatile organic compounds (VOCs). The VX500 utilizes a field-replaceable, plug-in detector and 10.6 eV lamp to monitor potentially hazardous compounds. An internal pump capable of drawing remote gas samples from up to 100 feet away makes the VX500 ideal for confined space entry testing, leak assessments, arson investigations and hazardous materials response monitoring. All monitors feature a standard backlit dot-matrix display and high intensity audible/ visual alarms. The VX500 is also Docking Station™ compatible.

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to the specific sensors installed. Most gas detectors have interchangeable sensors, but the sheer nature of emergency situations could not guarantee the right sensors are installed prior to arrival on the scene.

When the equipment is properly maintained and personnel are properly trained on the equipment and the technology, interpretation of the gas readings will help direct a team's quick response to the emergency situation. During an emergency response call, quick assessment and decision-making is critical to reduce risk and minimize danger. Gas monitors are an important tool for first responders for use in investigating atmospheric hazards.

Kay Mangieri is director of marketing for Industrial Scientific Corporation, an Acklands-Grainger supplier-partner. For more information on the range of Industrial Scientific gas monitors, contact your Acklands-Grainger account manager, or visit the branch near you.