

A Paradigm Shift in Gas Monitoring

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The safety industry has seen the rise and fall of focused attention over the decades, with specific industry or personal protection matters escalating to the surface. Safety issues surrounding air monitoring have come to light at certain points of time, such as during the awareness of black lung disease in coal mining, asbestos and indoor air quality concerns, and recognition of gas hazards in confined spaces. All in all however, air and gas monitoring is only one portion of the daily concerns of a safety manager. From a corporate perspective, gas monitoring is a minor part of the overall business concerns – a small distraction from managing the overall core business.

The challenge for any safety-conscious corporation is to juggle the demands of a comprehensive safety program that raises the bar for safety and health excellence while maintaining an economical balance of time and money spent toward those efforts. Many organizations have tackled the challenge head-on with corporate programs in place to reduce injuries, illnesses and fatalities in the workplace. The evaluation of alternative solutions for an all-encompassing gas monitoring program often falls through the cracks unless an ardent safety professional champions the effort. What is an all-encompassing gas monitoring program? One that considers the total requirements for providing gas monitors for worker protection, training of the equipment, routine maintenance, scheduled and unplanned repairs, parts procurement and instrument upgrades – at the lowest cost and the most convenience possible.

Protecting employees from hazardous gases in the workplace most often begins with the acquisition of the gas monitors as an outright purchase. A select few of the manufacturers offer alternative ownership options, such as rental or leasing of equipment to reduce the front-loaded costs of a gas monitoring asset purchase. Depending on company policies with respect to

asset ownership, rental or leasing can offer the same products with buyout or upgrade options built into the program to minimize hardware or software obsolescence.

At the time of instrument purchase or leasing, the focus is usually on product features and benefits, specifications and specific application requirements. Oftentimes there is limited discussion about future planning for after-sale support, training, maintenance and repair issues. On the plus side, the products are becoming more user-friendly and many of the gas monitor manufacturers have developed supplementary training tools such as video, CD or online training for product operation and routine maintenance. However, if worker turnover is high and temporary employees or contractors use the equipment, a training program with consistent subject matter and accurate record-keeping of user training is highly recommended.

Reliable performance of gas monitoring instruments depends on routine calibration and preventive maintenance schedule. Manufacturers have made great strides in improving calibration convenience to minimize the pain, but given the current sensor technology in these long-lasting monitors, calibration continues to be a required practice. Until recently, the manual process for

routine tasks command either on-staff or outsourced service technicians to handle the maintenance schedule for a fleet of instruments. In the past five years, a growing population of safety professionals relies on automated management systems for their gas monitoring instrument fleet. Product innovations, such as Industrial Scientific's Docking Station™, include hardware and software advancements that enable automated instrument function or "bump" testing, calibration, battery charging, record-keeping, data warehousing and instrument management. Proven successes and colleague acceptance support the benefits of automated fleet management, scheduled instrument maintenance, foolproof record-keeping, and associated reduction of liability.

In this era of "doing more with less," these automated, intelligent systems reduce human intervention and are not only appealing from a resource standpoint, but they minimize the time spent on routine processes while increasing consistency and reliability. However, gas monitors are like automobiles in that routine maintenance may help to extend the repair cycle, but eventually the battery, sensors and general mechanical repairs are inevitably required with this type of instrumentation. Manufacturers may offer extended warranty plans, instrument exchange programs, or planned repair service options to support the ongoing maintenance tasks, but often the repair resources and budget dollars are not planned at the onset of the initial purchase. It is not unusual that repair and maintenance costs of gas monitors are unknown due to sporadic repair schedules, assimilation into operating expenses or lack of historical records. Without pre-planned repair and maintenance services, a company may face worker downtime if instruments required for safe working conditions are in the repair shop and replacement instruments are not available. The most critical part of a gas monitor is the sensor, which has a shelf-life and therefore should not be purchased too far in advance prior to its use. Parts procurement can become a 'Catch-22' between pre-planning and shelf life dilemmas, which imply micromanagement tactics must be used to achieve an economical balance. Consideration should be given to programs that offer on-call or immediate delivery of age-sensitive parts to avoid inventory problems.

So far, this discussion has touched on instrument acquisition, training, routine maintenance, general repair and parts procurement for gas monitoring equipment. For a seemingly small distraction from the organization's core business, it is apparent that without forethought and planning of an all-encompassing gas monitoring program, decisions could be made in a reactionary state and the program will fall short of being cost-efficient or convenient. A professional safety manager typically faces time and resource shortages. Downsizing, plant consolidations and shared resources often result in fewer employees doing the same amount of work. In some organizations, outsourcing provides an economical alternative to the constraints imposed by resource allocation.



Outsourcing services enable companies to contract out programs that are not core business processes. The rising popularity of this new business practice demonstrates an economically-driven balance of principal and ancillary operations handled internally or subcontracted. In many cases, a third party handles the maintenance and repair of gas monitors and other instrumentation, either through a service contract or on-call basis. In some cases, company technicians handle the calibration and maintenance of the equipment, but the repair and servicing is outsourced. In all cases, a flawless system for tracking the whereabouts and maintenance status of an instrument fleet is critical for minimal downtime and associated costs.

A new set of gas monitoring services, offered by Industrial Scientific Corporation (Oakdale, PA - USA), encourages a paradigm shift in the way gas monitoring is managed. Through patented technology and remote, twenty-four hour monitoring, the status of the gas monitors, calibration gas condition, sensor performance and instrument calibration is reported via the Internet and is available as a service on a subscription basis. Notification of component or instrument failure, low or expired calibration gas, and calibration documentation is provided in a custom status report delivered weekly via e-mail. Customers are notified of overdue calibrations, sensors with marginal span reserves and instrument calibration failures. If customers wish to take it one step further, the service can include data warehousing of instrument readings, automatic initiation of repair part delivery, dispatch of instrument repair/replacement, or scheduling of an onsite service visit. Any or all pieces and parts of the all-encompassing gas monitoring program can be bundled as a monthly service fee to alleviate the internal burden and turn it over to the experts who can provide that core competency. A full-service solution is available to customers who want to outsource their gas monitoring maintenance program and receive on-site service visits for seamless repair work. For those organizations that do not want outside personnel on their site(s) or have their

own staff, alternative service solutions include outsourced service programs with instrument exchange or parts delivery service. This new way of managing a gas detection program modifies the current business model by providing a service-based solution, not a hardware based approach. Under this new paradigm, the supply, calibration, maintenance, repair and record-keeping of an

entire gas detection fleet can be managed remotely by the experts. Take a look at your organization's requirements for an all-encompassing gas monitoring program and make sure nothing is falling through the cracks. Consider alternative solutions that allow your organization to focus on your core business, not gas detection.

