

Fugitives on the loose

Abundant state and federal regulations aim to reduce chemical emissions

THE CHEMICAL PROCESSING COMMUNITY KNOWS all too well the importance of detecting and reducing fugitive emissions. So-called leak-detection and repair (LDAR) programs have been in effect for more than two decades, and regulatory scrutiny forcing greater emissions reductions is coming from all directions.

The maturation of the Clean Air Act (CAA), the Right-to-Know (RTK) movement, and the relentless drive to detect chemicals at lower levels through new and better technologies has greatly accelerated the need to reduce emissions. The manufacturing sector — now more than ever — must not only adhere to strict emissions limitations, it must publicly disclose its progress (or lack thereof) in meeting mandated or voluntary commitments to reduce emissions by certain dates. Several regulatory programs account for this trend. For example, the CAA Amendments of 1990 created maximum achievable control technology (MACT) standards and national emissions standards for hazardous air pollutants

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(NESHAP), which require the monitoring and reporting of fugitive emissions from process equipment.

These standards subject chemical plants and other sectors to LDAR programs to reduce emissions for targeted chemicals from valves, pumps and flanges. Additionally, many other federal, state and local regulations pertain to leak-detection and monitoring. These regulations typically apply different standards to the same equipment components. One of the many challenges confronting the environment, health and safety (EHS) professional in affected industry sectors, including chemical processing, is coordinating and consistently addressing the numerous periodic monitoring and repair program frequencies required under this patchwork set of standards.

These different regulatory standards often impose various recordkeeping and reporting obligations that arise under federal or state regulatory programs and/or facility-specific permit requirements. According to some sources, an average-size manufacturing facility might

have up to 30,000 components that require monitoring for leaks, all of which have recordkeeping and reporting obligations associated with their implementation and enforcement. A large facility might have more than 100,000 components, making the EHS professional's job more challenging.

Since enactment of federal legislation on air programs is unlikely in the near term, state legislatures likely will be the primary drivers for more reductions. For example, under legislation enacted last summer, New Jersey-based facilities are subject to a hefty charge of up to \$500,000 per year based on the amount of stack or fugitive emissions of certain chemicals. The new law offers serious monetary incentives to reduce stack and fugitive emissions of carcinogens, which are subject to the highest surcharge of \$10 per pound, and non-carcinogens that can cause adverse health effects, which are subject to a \$1-per-pound surcharge. Other substances with less severe health effects are subject to penalties of 10 cents per pound. This includes chemicals listed under the Toxics Release Inventory.

There is no one way to stay ahead of the blows inflicted by a federal, state or citizen enforcement action — or harshly presented news report excoriating a facility for polluting — therefore, there are a few things EHS professionals must do to avoid these pitfalls.

- *Know what you are up against.* EHS professionals must know the law and the specific permit parameters to which their operations are subject.
- *Know what resources are available.* LDAR tools now are widely available, and are more sophisticated and accessible. State-of-the-art technologies might be more accessible than previously thought, so you should regularly review available options.
- *Be proactive.* State initiatives like New Jersey's legislation will be more compelling as legislatures see surcharges as accomplishing two goals: pollution prevention and revenue-raising.

As noted, there is no one-size-fits-all approach. Working smart and in a proactive manner, however, goes a long way toward ensuring success. **CP**

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