

CONDENSER



Growing GREEN

HOW NATURALS ARE GAINING A SHARE OF NEW MARKETS



Pre-Emergency Readiness is Well Managed Business

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As much as we don't like to admit it, ammonia leaks happen. Even in systems we feel we manage and care for exceptionally well. But with increasing turnover resulting in less experience on off-shifts, where management presence is the lightest, and increased wear and tear from heightened demands being put on aging equipment, leaks are just part of the business. However, with some time spent on pre-emergency planning and emergency response, we can get ahead of this ever-looming vulnerability, making leaks a well-managed part of the business. Join us for our two-part series; covering in this edition Pre-Emergency Readiness, with our next edition covering Emergency Response, to help ensure any leaks at your facility result in a well-choreographed response, and not an uncoordinated major catastrophe.

EMERGENCY PLANNING & LEPC COORDINATION

There are multiple OSHA and EPA guidelines that can apply when you use ammonia as a refrigerant, and based on the quantity on-site, OSHA 1910.119 (PSM), 1910.120 (Emergency Response), SARA Title III, Tier II, and TRI, as well as CERCLA, RCRA, and the Clean Air Act all may apply to your site. Taking a 10,000-foot view of these regulations, they essentially tell employers if you choose to use toxic chemicals, it's your responsibility to have a robust, well thought out plan to keep your employees and the community safe, notify the correct people to let them know you have ammonia and the quantity, as well as if you have any releases. A key takeaway here is, a facility's local and regional HAZMAT teams are there to help and support, but the responsibility is placed firmly on the employer to have plans for safely and effectively managing any releases. OSHA's 14 element PSM program plays a significant role in ensuring a system runs safely, and alongside mechanical integrity, accurate process safety information, thorough employee training, SOPs, manage-

ment of change and pre-startup safety procedures, and efficient management of audits and their findings, emergency planning and coordination is a cornerstone in ensuring an ammonia system is also run responsibly.

The first step in preparing for an emergency is to begin writing an emergency plan. To do so, your location will need key information from local emergency planning officials and committees. It's important to note that, not all fire departments have HAZMAT teams, and those that once had equipment and training may have experienced budget cuts, so you'll want to ask the following questions:

- Does your area have a paid or volunteer Fire Department?
- Do they have a HAZMAT team, or would your responding HAZMAT team be the Regional team?
- Is the HAZMAT team stationed near you, across town, or in a different town altogether?
- How long will it take them to respond to you?
- Who will show up first? The HAZMAT team or a regular truck?
- Once HAZMAT arrives on site, how many minutes before they can enter the hot zone?
- If they have a HAZMAT trained team, how often do they get called out?
- Is there a possibility they could be on a call for another facility if you have a leak? If so, what is their protocol for responding to you?
- Do they have any fixed facility ammonia refrigeration experience? How would they know what to do?
- How much will we be billed if they respond to a leak at your site?

CONSIDER YOUR RESPONSE OPTIONS... AND THE COST:

One of the biggest deterrents to an internal HAZMAT team is the perceived cost of purchasing and maintaining



equipment and training employees. In addition to those concerns, there are multiple risk factors and response options that warrant management team consideration:

- What type of response will we have? Will it be offensive, defensive, or third party?
- Will our team respond in Level A, Level B, APRs, or all of the above? None of the above?
- How much will we spend on the purchase and maintenance of HAZMAT equipment?
- How much will we spend on training our employees?
- How long would we have to have production down before the training and equipment paid for itself?
- How much product loss would we have to incur before the training and equipment paid for itself?
- If only a trained operator can turn valves at our site, are we comfortable letting a fire department with limited refrigeration experience turn valves at our location?
- Are we comfortable letting a third party determine how much product loss and downtime we experience as a result of their response time and if they can correctly follow an SOP for an unfamiliar system?

ERPS AND EAPS:

Based on your management team's comfort level and answers to these questions, your team may determine having an internal HAZMAT team is a helpful management tool if parts don't come in on time, capital funding doesn't get approved, weather or a contractor delays

RECOMMENDED practices

a project, or you have to wait until the weekend to perform major repairs and maintenance. Conversely, your management team may still feel uncertain regarding the benefits of an internal team and choose to rely on a third party for HAZMAT responses. Regardless of the decision, your facility will need to document their emergency response plan (defensive, or no HAZMAT response), or their emergency action plan (offensive responses). Include information in your plan such as leak investigation plans and procedures, evacuation protocols that include at what parts per million (PPM) your facility will evacuate for ammonia if you'll have offensive and/or defensive leak responses or no emergency response to any ammonia leaks identified above evacuation levels, victim decontamination and triage protocols, and any steps required to return the facility back to normal operations. To maximize the effectiveness of this plan, you'll want to steer away from vague language and include site-specific explanations on your location's procedures and response capabilities, including the role of any third-party support.

A vital part of these response plans will include how you define an emergency, and what do you consider a HAZMAT response. To outline what that looks like at your location, ask your team if you have "nuisance" leaks? How big are they? At what point does a "nuisance" leak turn to a "regular" leak? 100PPM leaks are not the normal operation of our systems, but they're not unheard of either. If you have something leaking that should not be, ammonia PPM is above your evacuation level for employees not wearing PPE, and you have other employees put on PPE to manage the event, those employees are acting as HAZMAT responders in that moment which requires training. Just as a knife handler or palletizer would receive hands-on training on the job they're expected to do, a refrigeration operator should have training on leak responses that extends beyond reading the emergency portion of an SOP.

SOPs

It's a well-known requirement that ammonia systems have SOPs outlining how to run the system and everything in it. As an industry, we've made "we follow the SOP" our battle cry when asked how we know a procedure or process

is correct. Because of this reliance, it's important to understand the evolution of the SOPs at your facility, which in turn can drive your confidence level in their accuracy. Who wrote them? Someone on-site, or were they done by a third party off-site at the initial system startup? When were they last updated? Are they site and equipment specific, or are they mostly boilerplate? Who is reviewing the SOPs, and do they know what they're looking for when reviewing? SOPs can play a huge role in emergency preparedness and planning in that they have built-in emergency response sections. However, if that section cannot be accomplished or isn't specific, they can also lead to a false sense of security, leaving a location vulnerable without even realizing it. Ensuring your SOPs are accurate can go a long way just in itself in ensuring a smooth emergency response.

WE'RE GOING TO HAVE A TEAM. NOW WHAT?

If your management team has decided to have a HAZMAT team, you will first want to focus on determining who should be on the team, and medically qualifying those employees. When selecting team members, it's best to think big and have a deep bench to pull from if multiple entrants cannot pass pre-entry vital screening in the field, leak or victim management requires multiple entry teams, and for leaks that happen on nights, weekends, holidays, or adverse weather to ensure you have enough people to run a response. This can include your refrigeration operators, maintenance technicians, safety, environmental, human resources, nursing, security, and production employees. You'll also want to work with your local medical providers to have employees complete medical clearance forms and HAZMAT physicals, fit tests, put together guidelines for pulmonary function tests, and to help you outline what your team's pre-entry vital "cut-offs" for blood pressure, pulse, and temperature will be.

Your next step will include the purchase of gear for the response styles you will perform at your facility. A good place to start would be by working with your HAZMAT trainer for equipment styles, types, and quantities- provided that they are not receiving an incentive from any vendors. This list may include Level A and B suits, steel-toe chemi-

cal resistant boots, hard hats, hearing protection, gloves, respiratory equipment (APRs, SCBAs, etc.), tape, meters, and decontamination supplies. As equipment comes in, it's important to set up monthly PMs to ensure the equipment is inspected and ready for use once your team has completed training.

PICKING THE RIGHT TRAINER FOR YOU:

Possibly the most important bit of knowledge to have when selecting a HAZMAT trainer is that there are no "trainer" certifications to teach HAZMAT courses, which can leave you two options: internal training, and external training. When evaluating internal training, consider the trainer's past experience with PSM, refrigeration, fixed facility HAZMAT response, and the legal liability they're having to accept. If things went badly during a leak, would they end up being collateral damage and released from their job? Is there a potential for civil lawsuits? External trainers have professional liability insurance, is there any insurance in place to protect them?

When considering an external trainer, you will find there are many to choose from, so asking the right questions will become vitally important. You will want to look for a company where trainers have done real HAZMAT responses so that the first time their ideas are tested isn't when your team has a leak. You will also want to ask how recently they've had a response, and how active they are in your industry/field to ensure the information they're training your team on is relevant to your business and up to date. Look for certifications, such as a certified hazardous materials manager (CHMM) certification, or HAZMAT experience with a prior job. When hiring a company, inquire about the trainer visiting your site to ensure they (and not just the company owner) have some of this same experience, and ask about any trainers doing training part-time. Why are they only part-time, and, if they're not "all in," is that who you want doing your training? And yes, even in COVID times, always exercise caution when considering the use of computer programs or virtual training. Consider if the processes can effectively simulate the current conditions employees would be responding in, and if they can accurately identify gaps

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in employee proficiency and competency with your equipment, at your site.

WHAT SHOULD (AND SHOULDN'T) YOUR TRAINING COVER?

In short, your training should cover exactly what your team is expected to do. This should include your team's limitations, your company's safety protocols, any PSM/RMP plans, applicable OSHA and EPA law, donning and doffing your company's equipment, vitals protocols, victim management, and decontamination. To cover these subjects, a 24 hour initial HAZMAT Technician course for new team members is adequate, with an 8 hour HAZMAT Technician refresher course every 12 months thereafter to keep their certification current. Yes, this requirement applies even during COVID times if you continued running production and would expect your team to respond to a HAZMAT event.

For anyone managing a HAZMAT response, an Incident Command course is required, with a 24-hour Initial Technician certification (and annual refresher thereafter) being the prerequisite. Incident Command refreshers are conducted every 2-3

years after the initial IC course, provided that the attendee's HAZMAT Technician certification is maintained annually. But with 40-hour classes offered, this begs the question, is more hours for your initial course better? Depending on what is covered maybe, but maybe not. 40-hour classes typically cover hazardous waste, cleanup, and disposal and do not cover the requirements outlined in OSHA's 1910.120 emergency response codes. If you expect your team to shut down and stop a leak or remove a victim from a hot zone, then a 40-hour class would not be necessary or adequate for covering those skillsets. At the end of any HAZMAT training conducted, be it 8, 24, or 40 hours, you find your trainer didn't cover something, you'll still need to cover that information with your teams internally, remembering that if it isn't documented, it didn't happen.

A heavy focus on skillsets beyond your team's limitations, or that don't apply at your site can leave your team feeling confused, and lacking confidence in the tasks they will perform. To ensure good use of your team's time and money, what shouldn't your training cover beyond awareness level? Fire guidelines (NFPA) if

you're a fixed facility where OSHA applies, training on equipment that isn't yours, responses to railcars or bulk chemical tanks if your team doesn't have those on-site, plug and patch responses if you won't plug/patch barrels or totes, and hazardous waste cleanup and disposal if your team will use your current hazardous waste hauler to remove contaminated items from your site after the emergency is over.

GOOD FOR BUSINESS

Responses happen all over the country on a regular basis. But with thorough preparation, we can plan for and minimize any vulnerabilities at our locations, making effective emergency planning and preparedness good for business. This allows us to manage our facilities with a focus on continuous improvement, safety, and efficiency and goes a long way in eliminating the days of running our locations reactively.

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