Preparing Emergency Responders for Railcar Releases

Even though rail is one of the safest ways to transport hazardous chemicals, in the event there are problems, providing first responders with Emergency Response Kits is an important way to increase response effectiveness

By David Clugg

In the event of a hazardous materials leak, specialized equipment must be utilized to mitigate the risks

Introduction

There are roughly 2.3 billion tons of hazardous materials transported in the United States each year. Used for raw materials and fuels throughout a variety of industries, hazardous materials are defined as industrial products that are flammable, toxic, corrosive, or explosive. While playing a vital role in the economy, these materials pose a serious risk to public safety and the environment while being transported.

The majority of all hazardous materials are produced in a limited number of locations within the United States, primarily on the Gulf Coast; so transporting these products from production facilities to usage locations across the country adds up to millions of miles in transportation each year. Although many modes of transportation are utilized, rail is often the preferred choice among shippers because there are a small number of dedicated networks to move large quantities of product. This allows for more visibility while minimizing the potential threat of a collision or accident. For this reason, nearly 80 percent of all long-haul hazardous materials are transported by rail.

Although rail is considered one of the safest methods for transporting hazardous materials, occasionally rail tank cars do experience leaks and release chemicals into the air and/or onto the ground. Chemical releases often result in costly property damage and are extremely harmful to the environment. In addition, exposure to hazardous materials can place the general public in extreme jeopardy.

Identifying The Potential Risks

Leaks from rail tank cars can occur either in an accident, by mechanical failure or by operator error. The first is usually unavoidable and relies on many external factors. The second and third have been termed “non-accident releases” (NARs) and are being monitored closely by the railroad industry.

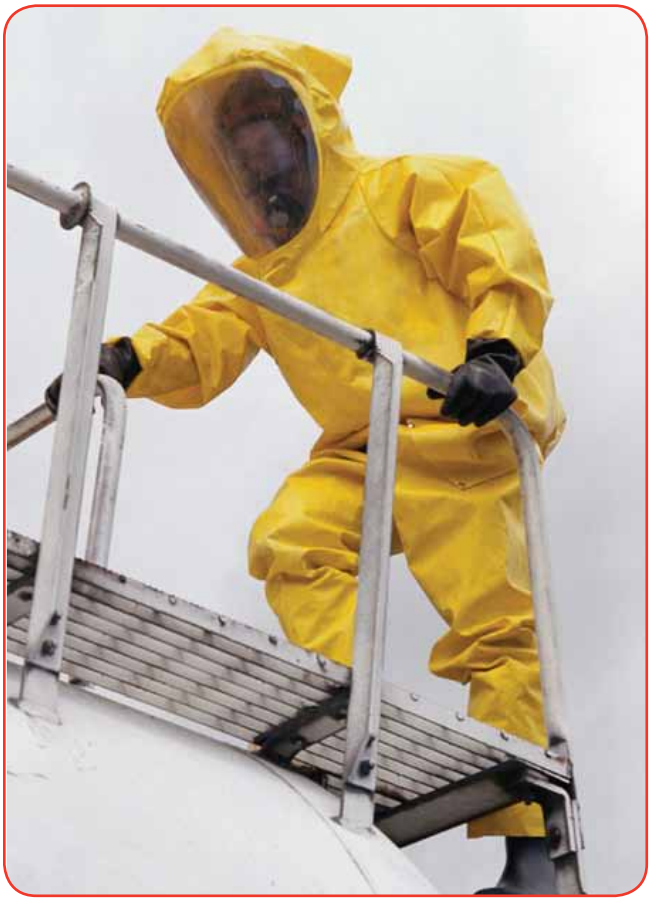
By definition, a NAR is the unintentional release of a hazardous material while in transportation (including loading and unloading) and does not involve an accident. NARs consist of leaks, splashes and other releases from improperly secured or malfunctioning valves, fittings and tank shells, and also include releases from pressure relief devices. Although

the vast majority of NARs involve small quantities, NARs can still have a detrimental effect on a community.

In addition to NARs, terrorism has also become a potential threat in recent years in concern to hazardous materials exposure. Although no hazardous materials have been released in the United States due to terrorism, the government has reported that terrorists have targeted hazardous materials containers in the past. While NARs are more common, a potential terrorist attack could result in a higher number of fatalities if terrorists deliberately release these dangerous materials in a more densely populated area.

Be Prepared

While the vast majority of rail shipments are completed without incident, it is important to remember that a hazardous materials leak can occur anytime, anywhere and certainly without warning. Because the average rail shipment is over 578 miles long and moves along a railroad network that consists of over 150,000 miles of track, these shipments come in close proximity to a large number of the population everyday. So while most usage facilities are located near large cities, even cities without hazardous materials facilities must be prepared to respond if an incident occurs.



Exposure to hazardous materials can be extremely harmful and result in costly properly damage

Within recent years, the railroad industry has made significant improvements to help minimize the risk of transporting hazardous materials, including improvements in rail car equipment and transportation regulations. For example, Midland Manufacturing, Skokie, Illinois, USA, recently worked with a number of shippers, rail car builders, leasing companies and regulatory agencies to develop its Enhanced Fittings Package that has been designed with all the primary seals located at, or below, the surface of the pressure plate. This reduces the risk of product loss to the atmosphere in the event of an accident resulting in damage to the fittings.

Although rail car equipment improvements have helped reduce the amount of NARs and accidental releases, it is ultimately the role of first responders, such as the local fire and police departments, that play the biggest role during an emergency situation. Since there is a direct correlation between first responders and the number of fatalities and property damage, it is very important that first responders are well trained, well informed, and well equipped. With this in mind, first responders must have the best available specialized safety equipment at their disposal.

When speaking specifically about specialized safety equipment, Midland has developed its B-243 Emergency Response Kit (ERK) to provide emergency responders with a variety of tools and replacement parts that can be used to quickly and safely stop the leak on any of the various valves and fittings. Over five decades of real-world experience goes into the manufacturing of Midland's ERK. The ERK consists of two large carrying cases; a toolbox containing a broad range of tools and replacement parts; five different cover cans with respective gaskets, which can be used to cap a leaking valve or fitting; and a bridge, used to secure cover cans to the manway cover plate.

The ERK has been designed to work on all rail cars that can be capped. Additionally, the portable and compact cases can be stored conveniently and carried to the location. Midland's rigid quality control standards help ensure the ERK will provide a reliable product performance. The tools included in the Midland ERK are highly durable and engineered to fit and perform at a time when it is critical to have the right tool. The capping kits are designed and engineered to withstand the pressure, flow and external abuse that are common during hazardous materials leaks.

In addition, an emergency is no time for on-the-job training. With this in mind, Midland offers onsite training for first responders in proper ERK procedures. Training videos and presentations are also included in every Midland ERK package, which demonstrate the proper installation and use of the ERK product.

Purchasing an ERK Through A Grant

When it comes to the costs associated with preparing for a hazardous materials leak incident, ultimately the taxpayers take on most of the burden. It can be very expensive to properly prepare for a potential incident. And in the case of an actual incident, the cost of emergency response and cleanup would be extremely costly.

In our current economic climate, local funding for basic hazardous materials response equipment is minimal. Budgetary constraints often make it difficult to secure the equipment and training necessary to prepare for events that have a low-probability rate. However, the federal government, railroads and the chemical industry support first responders through regulations and funding for training and equipment.

A variety of federal grants and programs are available to help offset the costs of specialized equipment and training, including the purchase of Midland's ERK. Many of these grants are offered annually to support local first responders, including:

- Federal Emergency Management Agency's (FEMA) Assistance to Firefighters Grant (AFG)
- FEMA State Homeland Security Grant Program (HSGP)
- U.S. Department of Transportation's (DOT) Hazardous Materials Emergency Preparedness grant (HMEP)
- Various programs supported by individual states

FEMA's AFG awards one-year grants directly to fire departments and nonaffiliated emergency medical services (EMS) organizations to enhance their abilities with respect to fire and fire-related hazards while meeting emergency response needs. Since 2001, it has helped firefighters and other first responders obtain critically needed equipment, protective gear and the training needed to protect the public and emergency personnel from fire and related hazards. For more information, visit http://www.fema.gov/firegrants/afggrants/index.shtm.

The HSGP consists of multiple grants, and helps fund a full range of preparedness activities, including planning, organization, equipment purchase, training, exercises and management and administration. In addition, the HSGP supports the implementation of state Homeland Security Strategies to prevent, protect against, mitigate, respond to, and recover from acts of terrorism and other catastrophic events. For more information, visit http://www.fema.gov/government/grant/hsgp/#0.

DOT's HMEP provides assistance to public sector employees through training and planning grants to States, Territories, and Native American tribes for emergency response. The purpose of the grant is to increase local effectiveness in safely and efficiently handling hazardous materials accidents and incidents and encourage a comprehensive approach to emergency training and planning by incorporating the unique challenges of responses to transportation situations. For more information, visit http://www.phmsa.dot.gov/hazmat/grants.

Emergency Response Kit

In addition to the federal grants listed above, individual states offer programs to increase local effectiveness in the case of a hazardous materials incident. For example, the Pennsylvania Emergency Management Agency (PEMA) offers a Hazardous Material Response Fund Grant (HMRF). This type of grant provides financial assistance to counties to provide an integrated emergency response capability to the health hazards, dangers and risks posed to the public by the release of hazardous materials. These funds can be used for emergency planning, training, recovery, specialized equipment and response capabilities. For more information on state funded programs, check with your individual state.

Conclusion

It cannot be overstated that being prepared to handle a hazardous materials incident is very important to the well being of the general public. Through the use of a variety of federal and state funded programs, first responders can

easily purchase the equipment and take part in the training they need to effectively mitigate the risks involved with transporting hazardous materials. As part of this equipment, the Midland Emergency Response Kit is an invaluable tool for first responders, and will quickly and efficiently diminishes hazardous materials exposure in the case of an accident or NAR.

For more information, please visit the following websites:

- Non-Accident Release Program – http://nar.aar.com
- Midland Emergency Response Kit – http://erk.midlandmfg.net
- FEMA's Assistance to Firefighters Grant – http://www.fema.gov/firegrants/afggrants/index.shtm
- FEMA's State Homeland Security Grant Program – http://www.fema.gov/government/grant/hsgp/#0
- U.S. DOT's Hazardous Materials Emergency Preparedness – http://www.phmsa.dot.gov/hazmat/grants

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