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**Using digital solutions to save aging
wastewater infrastructure**

Storing sulfuric acid presents major problems

Optimizing wastewater utility operations

Removing PFAS from groundwater

EMERGENCY RESPONSE KITS PLAYING A CRITICAL ROLE IN IMPROVING THE SAFETY OF RAIL TRANSPORTATION

By **Troy Scarrow**

In 2018, Transport Canada reported that the country's railroads moved more than 331.7 million metric tonnes of freight. A 2020 report from the United States Federal Highway Administration and the Association of American Railroads noted that total railroad freight shipments in the U.S. would rise from 18.6 billion metric tonnes in 2018 to an estimated 24.1 billion metric tonnes by 2040, an increase of 30%.

According to the U.S. Federal Railway Administration's 2018 rail-safety report, the overall rates for train accidents, equipment-caused accidents, track-caused accidents, derailments and employee injuries per million train miles travelled have declined by as much as 26% since 2009, depending on the category.

More specifically, between 2008 and 2018, the hazardous material accident rate fell by 48%. In 2018, more than 99.999% of rail hazmat shipments reached their destination without a release caused by an incident.

These heartening statistics are much more than a happy coincidence. They are the manifestation of railroad companies making a strong commitment to ensuring their infrastructure and rolling stock are up to date and in top working order. Also, that all regulations regarding hazmat hauling are steadfastly observed and that their employees are properly trained.

The North American railroad industry has a goal of one day becoming accident-free, but if this operational nirvana is ever to be achieved, railroad operators must be familiar with the risks inherent in the handling of hazardous materials. Also, they must be familiar with the ways that they can help prevent incidents that could release hazardous materials.

There are three primary potential risks



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every time a train laden with hazardous materials pulls away from the depot:

Accident: Accidents can be one of the hardest things for railway operators to protect against since their rate of occurrence is capricious and they are often caused by external factors that are entirely out of the operator's control. These can range from an automobile or truck stopped illegally on the tracks to a tree that may have fallen across the tracks during a passing storm.

Mechanical Failure: Mechanical failures include all leaks and other releases from malfunctioning or improperly secured pressurized railcar pressure-relief devices, valves, couplings, hoses, fittings and tank shells.

Operator Error: Finally, no matter their level of conscientiousness or training, operators can still make mistakes.

So, all railroad technicians must take every precaution necessary to ensure that every coupling is attached properly and every valve is closed correctly before, during and after every railcar loading or unloading event.

A FRIEND FOR FIRST RESPONDERS

Despite the next-generation design and notable improvements in the operation of railcars and their ancillary components, the high-level training that rail personnel receive, the attention paid to guaranteeing that the railway infrastructure is in good working order, and stricter regulations governing the transport of hazardous materials, there is still a chance that a hazmat release could occur.

Midland Manufacturing's B-240/B-243 emergency response kit (ERK) was developed to give emergency responders

three easy-to-use cover assemblies and a carrying case that contains all of the tools and parts needed to quickly and safely cap hazmat leaks that can emanate from the top of pressurized railcars in the event of an accident or non-accident release incident.

A typical ERK consists of a toolbox containing a broad range of tools and replacement parts: cover cans of five different sizes that are used to cap a leaking valve or fitting, along with corresponding gaskets, and a bridge that is used to secure a cover can to the railcar's man-way cover plate.

Knowing the importance of the kit's components being able to perform reliably in high-leverage situations, all of the tools are highly engineered and designed to be durable under the variable pressures, product flows and general abuse they are subject to during a hazmat release incident.

Like any product, the user of an emergency response kit is only as proficient in its use as the level of training they receive. With that in mind, providers offer training classes and videos formatted to help users confidently perform these tasks during the most dangerous release incidents.

In fact, it is recommended that all first responders practice using the components in the ERK at least twice a year

and, if possible, train with an actual hazmat railcar as a way to better familiarize themselves with the railcar's components and where things can potentially go wrong.

The ultimate goal is for first responders to feel as comfortable as possible with the ERK and its components and capabilities long before they ever have to use it. ■

Troy Scarrow is with Midland, which is part of OPW, a product brand of the Dover Corporation. For more information, visit www.midlandmfg.com

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A typical ERK consists of a toolbox containing tools and replacement parts, as well as a bridge that is used to secure a cover can to the railcar's man-way cover plate.



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