

UNION PACIFIC

Hazardous Materials Management Group

The Union Pacific Hazardous Materials Management Group (HMM) consists of experts in hazardous material transportation safety, securement and response. The HMM team understands that communities are concerned about the risks associated with hazmat shipment by rail. Providing safe and fuel efficient freight transportation is how Union Pacific is participating in America's energy evolution.

We haul products related to the entire energy sector including wind, solar, coal, ethanol and crude oil. We take our responsibility to ship crude oil, as mandated by federal law, seriously. Our goal is the same as our customers and the communities in which we operate: to deliver every tank car safely while at the same time being prepared to respond in the case of an accident.

The HMM Group is part of Union Pacific Railroad's Safety Department. Its primary focus is the safety of all Union Pacific employees, the residents of communities where we operate trains and our customers. This team of experts has a four-part mission:

- **Prevention** – Prevent releases of hazardous materials in transportation
- **Preparedness** – Develop internal and external assets for hazmat education, response and recovery
- **Response** – Respond to incidents to protect health and minimize harm to the environment
- **Recovery** – Restore normal rail operations as quickly as possible in the event of an incident

PREVENTION

Union Pacific's HMM team members regularly inspect tank cars moving on the Union Pacific network. In each inspection, an HMM team member examines fittings, markings, safety appliances and waybills. Union Pacific's HMM managers annually perform thousands of these inspections. HMM conducts tank car inspection blitz programs throughout the year in which Union Pacific managers, outside contractors, customers and regulators work together to inspect a large number of tank cars in a defined geographic area. High volume crude oil locations are chosen for tank car inspection blitz programs, with 10 to 16 blitzes performed annually across the Union Pacific network.

HMM is responsible for training Union Pacific employees about hazardous materials safety. U.S. Department of Transportation-defined "hazmat employees" are required to be trained in the safe handling of hazardous materials. Union Pacific train crews are required to carry a copy of Instructions for Handling Hazardous Materials while operating a train carrying hazmat. This is a reference guide published by HMM.

If Union Pacific inspections identify a shipper with recurring issues, HMM will provide onsite training for proper tank car securement to ensure the shipper is educated in best practices for preparing hazardous materials shipments.

PREPAREDNESS

Preparation is critical to an appropriate incident response. HMM develops the Union Pacific Hazardous Materials Emergency Response Plan (HMERP), a performance based plan that provides guidance about reporting a release as well as a list of training requirements for those responding to an incident. Each of the 22 operating divisions at Union Pacific undergoes an annual unannounced drill to ensure all aspects of the HMERP are in place and being followed by Union Pacific employees. The requirements, including drills and exercises, for specific plans for large oil storage tanks are managed by HMM.



A safety training event for local first responders.

PREPAREDNESS *(continued)*

Providing no-cost training to public responders is Union Pacific's most substantial preparedness effort. Having cataloged every fire department that may respond to an incident along the Union Pacific network, HMM team members reach out to fire departments on an annual basis to offer training or information to assist fire departments in their preparation for a potential incident. Training consists of classroom and hands-on activities using a specially-designed training trailer or training tank car. Trainees learn how to contact the railroad during an emergency, how to read shipping documentation, derailment safety considerations and what assets the railroad can provide in the event of an incident. HMM performs large scale training events in collaboration with Union Pacific's partners in TRANSCAER (Transportation Community Awareness and Emergency Response).

RESPONSE

The response process used by HMM is designed to be easily incorporated into public response incident command structure. This process requires analyzing the problem, planning the response, implementing the plan, and evaluating and adjusting the response as necessary. Union Pacific's Response Management Communication Center (RMCC) is an around the clock security response center where critical call dispatchers manage calls from the public, law enforcement and others who are reporting emergencies and other incidents on Union Pacific's 32,000-mile network. RMCC follows all regulations regarding notification of local, state and federal agencies in the event of an accident and works closely with first responders throughout an incident.

Union Pacific has 30 highly trained hazardous materials responders. We rely on a network of private response contractors who are carefully vetted and audited on an annual basis to ensure a constant state of readiness. Most of these contractors are qualified with fire fighting or United States Coast Guard Oil Spill Recovery Organization (OSRO) certifications. OSRO-certified contractors have demonstrated expertise and equipment to handle oil spills on land and water. Contractors have access to the equipment (boats, boom, skimmers, vacuum trucks, storage tanks, heavy equipment) necessary to respond to a hazardous materials incident.

To supplement the response, HMM has air monitoring contractors who can be quickly deployed to provide real-time data to public responders. Union Pacific works closely with community leadership throughout the response process. Additionally, HMM can deploy contractors who are subject-matter experts in toxicology, industrial hygiene, medicine, nursing and environmental protection. These specialty contractors can work in the communities impacted by an incident and in concert with first responders to ensure a safe response.

HMM invested in response equipment in the form of firefighting trailers, foam caches, air monitoring equipment and specialty tools to ensure resources are readily available.

RECOVERY

Once an incident has been stabilized, recovery begins. If a tank car has been damaged and cannot travel safely on the railroad, the contents must be transferred to an undamaged car. Union Pacific is the only railroad that owns and operates all of the equipment necessary to transfer any liquid or compressed gas from one tank car to another. Once the tank car is liquid free, HMM will clean and purge the damaged car to ensure it can be safely repaired or dismantled.

Once all hazardous materials have been removed from the incident site, HMM will transition the project to the Union Pacific Site Remediation Group for remediation and closure with regulatory agencies.

The final aspects of recovery include a debriefing with the public responders and an internal post-incident analysis. These activities are an invaluable means of improving the group's overall capability to respond to a hazmat-related incident.