



# **TRANSPORTATION RAIL INCIDENT PREPAREDNESS & RESPONSE: FLAMMABLE LIQUID UNIT TRAINS RESOURCE FACT SHEET**

## **MISSION:**

The Transportation Rail Incident Preparedness and Response Flammable Liquid Unit Trains resource materials provide critical information on best practices related to rail incidents involving Hazard Class 3 flammable liquids such as petroleum crude oil and ethanol. A key component of this initiative is to learn from past experiences and to leverage the expertise of public safety agencies, rail carriers, and industry subject matter experts in order to prepare first responders to safely manage rail incidents involving commodities such as crude oil and ethanol. The information and resources found in the TRIPR modules and scenarios supplement the information outlined in the “Commodities Preparedness and Incident Management Reference Sheet for Petroleum Crude Oil.”

## **INTENT:**

This U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA) led program resulted from collaborative efforts to expand awareness on incident management lessons learned related to rail incidents involving Hazard Class 3 flammable liquids such as ethanol and crude oil. These resources offer a flexible approach to increasing awareness of first responders and emergency services personnel in pre-incident planning and response. The resources supplied are not intended to be a standalone training program but are offered to supplement existing programs.

## **DELIVERY:**

All of the information is easily downloadable for public safety organizations and instructors. Each module contains a PowerPoint presentation, Student Workbook, and Instructor Lesson Plan. In addition to these materials, there are three interactive scenarios with animation and introduction videos to help instructor’s lead tabletop discussions. All information can be edited and modified to suit the instructor’s needs. The following is a direct link to the website: <http://dothazmat.vividlms.com/tools.asp>

## **BACKGROUND:**

With an increase in the production and movement of commodities such as crude oil and ethanol by rail and highway, it is important that the risk of incidents be minimized through a strategic approach. U.S. crude oil production averaged 8.5 million barrels per day in 2014 and in 2015, according to Energy Information Administration projections, it will average 9.0 million barrels per day. This is a considerable increase since 2008 when the U.S. crude oil production fell to 5.0 million barrels. Along with the increase in production, the volume of crude oil moving by rail quadrupled in less than a decade. According to the Association of American Railroads, 9,500 carloads of crude oil were transported in 2008 compared to 407,761 carloads in 2013. Recent derailments involving crude oil shipments renewed focus on the safe transportation of bulk hazardous materials by rail. Denatured fuel ethanol, also referred to simply as “ethanol”, is also routinely transported by rail. Ethanol preparedness and response information is included to round out this information resource.



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### FLAMMABLE LIQUID UNIT TRAINS

#### RESOURCE FACT SHEET

PHMSA and the Federal Railroad Administration (FRA) have been working with the U.S. Fire Administration (USFA), TRANSCAER®, the Association of American Railroads (AAR), rail industry owners and operators, the American Petroleum Institute (API), Renewable Fuels Association (RFA) and the emergency response community to address the hazards associated with incidents involving hazardous materials unit trains.

In May 2014, a Lessons Learned Roundtable forum and follow-up report gathered feedback from a panel of fire chiefs and emergency management officials from some of the jurisdictions that experienced a crude oil or ethanol rail transportation incident. The forum's purpose was to share firsthand knowledge about their experiences responding to and managing these incidents. Further collaboration with stakeholders resulted in the development of the Crude Oil Rail Emergency Response Workgroup which subsequently created the Commodities Preparedness and Incident Management Reference Sheet for Petroleum Crude Oil. The information in the reference sheet and the expertise shared during these collaborative efforts are the backbone of this program.

#### HOW TO USE THIS PROGRAM

The program consists of an introduction and nine modules. The training modules focus on key response functions along and the three incident scenarios are provided for group-level discussions. Instructors and facilitators can use the program materials in several ways, including:

- Deliver all of the modules in one or more sessions.
- Deliver the modules as individual, stand-alone sessions. The final scenarios would then be the final capstone session.
- Deliver the scenarios as an individual, stand-alone session.

Organizations using this program are encouraged to involve other related stakeholders in its delivery. Depending upon the host organization and location, options may include public safety agencies, rail carriers, industry preparedness organizations, industry owners and operators, regional, state and federal emergency response partners, and product and container specialists.

Instructors and facilitators should have a basic understanding of the following topics for most effective use of these materials:

- Hazardous Materials Technician-level skills
- Flammable liquid firefighting and the use of Class B fire extinguishing agents
- Tank car design, construction and behavior
- Management of large, complex incidents

The lessons learned and information provided in this program are designed to be delivered through the instructional technique of "Learning by Questioning." These instructional materials are provided as guidance to foster a deeper understanding of the topic and develop critical thinking skills and processes that will assist responders in identifying key considerations related to the planning, management and response to rail incidents involving flammable liquid unit trains. Questions or comments can be submitted using the feedback button found on the website.