

Classification and Package Selection of Hazardous Materials

Summary

On January 13, 2003, at approximately 4:30 pm, a vapor cloud deflagration and pool fire erupted at the BLSR Operating, Ltd. (BLSR), facility near Rosharon, Texas. Two BLSR employees were killed, and three were seriously burned. Two T&L Environmental Services, Inc. (T&L), drivers, who had just delivered gas condensate storage tank basic sediment and water (BS&W)¹ to BLSR, were seriously burned; one died on March 2, 2003. The fire was caused by the release of hydrocarbon vapor during the unloading of BS&W from two vacuum trucks into an open area collection pit. BS&W is an oil/gas exploration and production (E&P) waste liquid. The fire destroyed two 2,750 gallon non-specification cargo tanks that were used to transport the hazardous material and seriously damaged waste liquid offloading equipment and structures at BLSR. The vacuum truck diesel engine was the most likely source of ignition. For a complete description of the incident please refer to the following link: www.csb.gov/completed_investigations/docs/BLSRFinalInvestigationReport.pdf.

Explanation

The Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) apply to any person who offers for transportation or transports HM in commerce. A third party who performs regulated HMR functions on behalf of, or under contract to an offeror, carrier, or other regulated entity meets the definition of “a person who offers” or “offeror” and must perform those functions in accordance with all applicable HMR requirements. The offeror of the Hazardous Material (HM) is required to properly classify the material and to determine the proper package based on the classification of the material. In this particular instance the shipper of the HM, failed to perform analysis on the material to determine if the material met the definition of a hazardous material and attempted to transfer their regulatory responsibilities for properly classifying the material, selecting the proper package, and preparing shipping documents by entering into a contract for these services with a hauler or other third party. Clauses in a contract that shift a regulatory responsibility from one party to another are issues between the parties and generally do not affect a party’s responsibility or the Department’s ability to bring an enforcement action. In fact, these contracts may enable the Department to bring a cause of action against a third party because of their newly acquired regulatory responsibilities.

Related Issues

On March 6, 1995 the Research and Special Programs Administration (now the Pipeline and Hazardous Materials Safety Administration PHMSA) issued an interpretation which states that when gasoline (flammable liquid) and water are stored and/or transported in the same container the water and flammable liquid do not mix and the flammable liquid forms a layer on top of the water. Because of these physical properties the flammable liquid retains a low flash point and meets the defining criteria for Class 3 (flammable liquid). Therefore, the flammable mixture is regulated accordingly by the Hazardous Materials Regulations (HMR).

Guidance

It is an offeror's responsibility to properly classify HM before it is tendered to a carrier. In addition, the carrier must ensure that the cargo tank used to transport the HM is authorized for the material being transported. The HMR does not authorize flammable liquids to be transported in non-specification cargo

¹ Condensate consists primarily of hydrocarbon liquid with trace amounts of contaminants, including water, paraffin, sand, and other materials. It is stored in aboveground storage tanks where resident time provides further separation of the liquids and remaining entrained solids. BS&W settles to the bottom of the tank, and the lower specific gravity condensate floats on top.

tanks such as the vacuum cargo tanks used in the Rosharon, TX incident. Finally, and most importantly, training, shipping papers, hazard communication, attendance, and an HM endorsement to the commercial driver license of a vehicle operator apply to the bulk transport of flammable and combustible liquids and that a specification cargo tank must be used for a flammable liquid other than one which can be reclassified as combustible. Specification requirements for cargo tanks and information regarding cargo tanks that may be loaded by vacuum are found in 49 CFR Part 178. For specific guidance on transporting BS&W in vacuum cargo tanks, please refer to the American Petroleum Institute (API) RP-2219 titled *Safe Operation of Vacuum Trucks in Petroleum Service*.