



U. S. Chemical Safety and Hazard Investigation Board

RECOMMENDATION STATUS CHANGE

SUMMARY

Report:	Caribbean Petroleum Refining Tank Explosion and Fire
Recommendation Number:	2010-02-I-PR-R3
Date Issued:	October 21, 2015
Recipient:	Environmental Protection Agency (EPA)
New Status:	Open – Acceptable Response or Alternate Response
Date of Status Change:	October 31, 2023

Recommendation Text:

As an interim measure, until the rule changes in CSB Recommendation No. 2010-02-I-PR-R1 are adopted and go into effect: issue appropriate guidance or an alert, similar to EPA's previously issued Chemical Safety Alert addressing Rupture Hazard from Liquid Storage Tanks, to illustrate the hazards posed by spills, releases, fires and explosions due to overfilling bulk aboveground storage containers storing gasoline, jet fuel, blendstocks, and other flammable liquids having an NFPA 704 flammability rating of 3 or higher.

Board Status Change Decision:

A. Rationale for Recommendation

On October 23, 2009, an above ground storage tank at the Caribbean Petroleum Corporation (CAPECO) tank farm facility in Bayamón, Puerto Rico was overfilled. The overfill occurred during the offloading of the tank ship, Cape Bruny. An estimated 200,000 gallons of gasoline was spilled during the overfill.

During the overflow some of the gasoline, which sprayed from the tank's roof vents and hit the tank's wind girder as it fell, aerosolized, forming a large vapor cloud (estimated to encompass an area of about 107 acres) that subsequently ignited after reaching an ignition source in CAPECO's wastewater treatment facility. The ensuing blast, multiple secondary explosions, and a subsequent fire resulted in significant damage to 17 of 48 petroleum storage tanks. The blast created a pressure wave that registered 2.9 on the Richter scale and damaged approximately 300 homes and businesses, up to 1.25 miles from the site. Fortunately, there were no fatalities and only three people experienced minor injuries offsite as a result of the initial blast. The fires burned for almost 60 hours. Petroleum products leaked into the soil, nearby wetlands, and navigable waterways in the surrounding area.

As a part of its investigation, the U.S. Chemical Safety and Hazard Investigation Board (CSB) analyzed relevant regulatory, industry, and consensus standards for safety and management of bulk aboveground storage facilities. While certain environmental statutes and EPA regulations apply to bulk aboveground storage tank terminals, such as CAPECO, the CSB determined that these regulations do not offer robust protections to the public from catastrophic explosion and fire incidents that may occur due to overfilling at such facilities that store gasoline, jet fuels,

blendstocks, and other flammable liquids having an NFPA 704 flammability rating of 3 or higher. As a result of this finding, the CSB issued three recommendations to the Environmental Protection Agency (EPA). This status change summary addresses CSB Recommendation No. 2010-02-I-PR-R3.

B. Response to the Recommendation

On October 2, 2023, the EPA notified the CSB that they will be drafting a safety bulletin addressing container overfill requirements. This safety bulletin will discuss the CAPECO incident and the responsibility of owner/operators to maintain and inspect equipment and/or implement procedures to prevent overfills. The target date for completing the safety bulletin is the end of March 2024.

C. Board Analysis and Decision

Based upon the information above, the Board voted to change CSB Recommendation No. 2010-02-I-PR-R3.to: “Open – Acceptable Response or Alternate Response.”