



U. S. Chemical Safety and Hazard Investigation Board RECOMMENDATION STATUS CHANGE SUMMARY

Report:	TPC Port Neches Explosions and Fire
Recommendation Number:	2020-02-I-TX-R2
Date Issued:	December 19, 2022
Recipient:	TPC Group
New Status:	Closed – Acceptable Action
Date of Status Change:	July 26, 2023

Recommendation Text:

For all TPC PNO terminal operations, passivate all storage vessels, fixed equipment, and associated piping systems in high-purity butadiene service consistent with industry good practice guidance.

Board Status Change Decision:

A. Rationale for Recommendation

On the morning of November 27, 2019, a dead leg between the Final Fractionator A and the manual isolation valve upstream of an offline pump in the TPC Group Port Neches Operations facility's butadiene unit ruptured. Approximately 6,000 gallons of liquid, primarily butadiene, were released. The liquid butadiene vaporized forming a flammable vapor cloud that ignited moments later causing multiple fires and explosions. After the initial fires were contained, smaller fires burned for more than one month while isolation efforts were underway.

During the initial explosion two TPC Group employees and a security contractor suffered nonlife-threatening injuries. Jefferson County officials reported that five additional minor injuries were suffered by residents of the community. Additionally, the blast damaged nearby homes and buildings and was reportedly felt as far away as 30 miles from the facility. County officials declared a state of disaster and multiple shelter-in-place and evacuation orders were issued.

As a result of the incident, the butadiene unit was completely destroyed, and butadiene production operations ceased indefinitely. The incident caused \$450 million in on-site property damage, and an additional \$153 million in off-site property damage. The facility has since been transitioned to a "terminal and services" operation and on June 1, 2022, TPC Group filed for Chapter 11 bankruptcy.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found several safety issues including failures in dead leg identification and control, process hazard analysis action item implementation, control and prevention of popcorn polymer, and a lack of remotely operated emergency isolation valves. As a result of these

findings, the CSB issued three recommendations to TPC Group. This status change summary addresses CSB Recommendation No. 2020-02-I-TX-R2.

B. Response to the Recommendation

TPC Group notified the CSB that they have passivated the equipment at their Port Neches Operations facility as required by the recommendation. They also developed and implemented policies and procedures to ensure that the equipment at their facility would undergo passivation in the future in accordance with industry good practice guidance. TPC Group verified this by providing policy documents and records of past passivation activities.

C. Board Analysis and Decision

The Board appreciates the TPC Group's prompt and thorough response to this recommendation. Based upon the information above, the Board voted to change CSB Recommendation No. 2020-02-I-TX-R2 to: "Closed – Acceptable Action."