



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-R3
Date Issued:	December 13, 2022
Recipient:	TPC Group
New Status:	Open – Awaiting Response or Evaluation/Approval of Response
Date of Status Change:	Not Applicable – Initial Status

Recommendation Text:

At the TPC PNO facility, incorporate the recording of any paper-based process performance information into TPC PNO's existing electronic records management system so that the information can be reliably retained, retrieved, and analyzed in the event of a catastrophic incident. At a minimum, those records shall include Dead Leg Inspection check sheets, Spare Pump Rotation check sheets, and handwritten logs documenting the performance of all critical process instrumentation (e.g., the oxygen analyzer).

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. As a result of the rupture, approximately 6,000 gallons of liquid, primarily butadiene, was released. The liquid butadiene vaporized upon release 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 non-life-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 providing 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-R3**.