



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

Report:	Arkema Inc. Chemical Plant Fire
Recommendation Number:	2017-08-I-TX-R3
Date Issued:	May 24, 2018
Recipient:	Arkema, Inc.
New Status:	Closed – Acceptable Action
Date of Status Change:	July 28, 2021

Recommendation Text:

Establish corporate requirements for its facilities that manufacture organic peroxides or that have processes which involve more than the threshold quantities of highly hazardous chemicals (HHC) to ensure that critical safeguards, such as backup power, function as intended during extreme weather events, including hurricanes or floods.

Board Status Change Decision:

A. Rationale for Recommendation

On August 24, 2017, Hurricane Harvey, a Category 4 hurricane, made landfall in southeast Texas. Extensive flooding caused by heavy rainfall from the hurricane exceeded the equipment design elevations and caused the Arkema Houston plant to lose power, backup power, and critical organic peroxide refrigeration systems. Consequently, Arkema used its standby refrigerated trailers to keep the organic peroxide products cool. On August 31, 2017, organic peroxide products stored inside a refrigerated trailer decomposed, causing the peroxides and the trailer to burn. Twenty-one people sought medical attention from exposure to fumes generated by the decomposing products when the vapor travelled across a public highway adjacent to the plant. Emergency response officials initially decided to keep this highway open because this road served as an important route for hurricane recovery efforts. Over the next several days, a second fire and a controlled burn conducted by the Unified Command consumed eight more trailers holding Arkema's remaining organic peroxide products that required low-temperature storage. Over the course of the three fires, in excess of 350,000 pounds of organic peroxide combusted. As a result, more than 200 residents living within 1.5 miles of the facility who had evacuated the area could not return home for a week.

As a part of its investigation, the United States Chemical Safety and Hazard Investigation Board (CSB) examined Arkema corporate policies pertaining to the evaluation of process safety risks due to extreme weather events and determined that while the existing corporate policy addressed flooding, it did not address other extreme weather events that Arkema facilities may experience. Consequently, the Board issued a recommendation to Arkema to ensure that critical safeguards are available and function as intended during extreme weather events.

B. Response to the Recommendation

Between October 2020 and January 2021, Arkema supplied the CSB with copies of the *Natural Disaster Preparedness Assessment* and *Natural Hazards Assessment* procedures and other tools that it developed for its plant sites to ensure that critical safeguards function as intended during extreme weather events. In addition, Arkema supplied examples for CSB to review of individual plant site gap analyses and corrective action plans from among the 22 plants that conducted these assessments.

C. Board Analysis and Decision

As the procedures and supplemental documentation provided by Arkema, meet the intent of the CSB Recommendation, the Board voted to change the status of CSB Recommendation No. 2017-08-I-TX-R3 to: “Closed - Acceptable Action”