



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

Report:	Kuraray Pasadena Release and Fire
Recommendation Number:	2018-03-I-TX-R7
Date Issued:	December 21, 2022
Recipient:	Kuraray America, Inc.
New Status:	Closed – Acceptable Action
Date of Status Change:	February 2, 2024

Recommendation Text:

Develop and implement a program to ensure that the company's EVAL Plant nightly operating instructions do not conflict with its written operating procedures. Ensure that employees use the management of change system when changes to the written operating procedure are desired. Additionally, develop and implement a written procedure and conduct training on how to perform the EVAL Reactor methanol flush operation.

Board Status Change Decision:

A. Rationale for Recommendation

On the morning of May 19, 2018, the pressure relief devices of a reactor used to make ethylene and vinyl alcohol copolymer (EVAL) activated and discharged ethylene into the air through horizontally oriented discharge piping. The resulting flammable vapor cloud found a heat source and ignited. The fire burned for approximately three minutes until enough ethylene was released to reduce the pressure inside the reactor to allow the pressure relief valve to close. Kuraray America, Inc. (Kuraray) reported releasing 2,347 pounds of ethylene. Several workers sustained injuries resulting from the fire as well as from trying to escape the fire. Twenty-one injured workers were transported to off-site medical facilities for treatment. Additionally, two workers were life-flighted from the Kuraray facility.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found several safety issues including failures in pressure-relief system discharge design, excluding non-essential personnel during transient operations, and weakly implemented process safety management system elements. As a result of these findings, the CSB issued twelve recommendations to Kuraray. This status change summary addresses CSB Recommendation No. 2018-03-I-TX-R7.

B. Response to the Recommendation

Kuraray notified the CSB that the company has developed a standard operating procedure (SOP) instructing technicians to elevate differences between SOPs and operating instructions to supervisors immediately for clarification. In addition, Kuraray requires all changes to SOPs to be approved through the site's Management of Change (MOC) system, which is used to communicate and manage a variety of changes. Finally, Kuraray developed and implemented a

written procedure and conducted training on how to perform the EVAL Reactor methanol flush operation. Upon review of the relevant procedures provided, the CSB concluded that Kuraray's actions satisfy all elements of the recommendation.

C. Board Analysis and Decision

Based upon the information above, the Board voted to change CSB Recommendation No. 2018-03-I-TX-R7 to: "Closed – Acceptable Action."