



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

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| Report: | Kuraray Pasadena Release and Fire |
| Recommendation Number: | 2018-03-I-TX-R5 |
| Date Issued: | December 21, 2022 |
| Recipient: | Kuraray America, Inc. |
| New Status: | Closed – Acceptable Action |
| Date of Status Change: | June 10, 2025 |

Recommendation Text:

Review the Center for Chemical Process Safety guidance on recognizing catastrophic incident warning signs and then develop and implement a program for the EVAL Plant that incorporates warning signs into its safety management system.

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 American, 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-R5.

B. Response to the Recommendation

Kuraray notified the CSB following the CCPS guidance on recognizing catastrophic warning signs, they developed a program to assist technicians in recognizing various levels of warnings, including catastrophic incident warning signs. As a part of the program, Kuraray conducted surveys to help determine what employees considered to be the most important information needed to recognize incident warning signs. They collected and analyzed the data from the surveys and other audits and incorporated the findings into various elements of their safety

management system. Upon review of the relevant and extensive documentation 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-R5 to: "Closed – Acceptable Action."