



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

|                               |   |
|-------------------------------|---|
| <b>Report:</b>                | Kuraray Pasadena Release and Fire                           |
| <b>Recommendation Number:</b> | 2018-03-I-TX-R11  |
| <b>Date Issued:</b>           | December 16, 2022   |
| <b>Recipient:</b>             | Kuraray America, Inc.                                       |
| <b>New Status:</b>            | Open – Awaiting Response or Evaluation/Approval of Response |
| <b>Date of Status Change:</b> | Not Applicable – Initial Status                             |

### **Recommendation Text:**

*Modify the EVAL Plant's safe operating limits program to prevent operating under conditions that rely upon equipment design safety factors, such as the American Society of Mechanical Engineers (ASME) code material safety factors.*

### **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 of the reactor to allow the pressure relief valve to close. Kuraray America, Inc. reported releasing 2,347 pounds of ethylene. Several workers sustained injuries resulting from the fire as well as from trying to escape the fire. 21 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 America, Inc. This status change summary addresses **CSB Recommendation No. 2018-03-I-TX-R11**.