



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

Report:	Optima Belle LLC Explosion and Fire
Recommendation Number:	2021-02-I-WV-R5
Date Issued:	July 6, 2023
Recipient:	Clearon Corporation
New Status:	Open – Awaiting Response or Evaluation/Approval of Response
Date of Status Change:	Not Applicable – Initial Status

Recommendation Text:

Develop and implement a comprehensive process knowledge management program or evaluate and revise existing process safety management procedures to ensure consistency with industry guidance publications such as the Center for Chemical Process Safety's Guidelines for Risk Based Process Safety. The program should:

- a) assign specific responsibilities for compiling content and maintaining robust process technology and safety information packages that incorporate relevant knowledge for all hazardous processes and substances operated, manufactured, and/or handled by Clearon Corporation;*
- b) ensure that key process personnel are aware of critical reactive chemistry information, including thermal stability and calorimetry data, chemical compatibility information, and descriptions of any past reactive incidents and safety studies involving the materials; and*
- c) define procedures for the transmittal of such information to toll manufacturers.*

Board Status Change Decision:

A. Rationale for Recommendation

On December 8, 2020, a metal rotary cone double dryer containing a chlorinated isocyanurate compound (trade name CDB-56®) exploded following a decomposition reaction that resulted in a fire and toxic chlorine release at the Optima Belle LLC (Optima Belle) facility in Belle, West Virginia. The explosion occurred while Optima Belle, a toll manufacturer, was dehydrating CDB-56® on behalf of Clearon Corporation through a contractual agreement with Richman Chemical Inc.

One Optima Belle employee was fatally injured in the explosion, two others were evaluated for respiratory irritation, and one member of the public reported a minor leg injury. Debris from the explosion was found almost a half-mile from the incident. Local authorities issued a shelter-in-place order for a two-mile radius for over four hours. The facility experienced an estimated \$33.1 million in property damage.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found several safety issues including ineffective process knowledge management, a lack of thermal hazard assessment, ineffective selection of process equipment, shortcomings in industry practices related to tolling hazardous materials, and a lack of regulatory coverage of reactive hazards under the Occupational Safety and Health Administration's (OSHA's) Process Safety Management standard (PSM) and the Environmental Protection Agency's (EPA's) Risk Management Program rule (RMP). As a result of these findings, the CSB issued five recommendations to Clearon Corporation. This status change summary addresses **CSB Recommendation No. 2021-02-I-WV-R5**.