



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-R7
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 written program for tolling process design and equipment selection using resources such as the Center for Chemical Process Safety's Guidelines for Process Safety in Outsourced Manufacturing Operations and Guidelines for Risk Based Process Safety to ensure that:

- a) equipment design basis is adequate for any new tolling process or product; and*
- b) safeguards and ancillary equipment are considered and adequately designed, installed, and function as designed and required.*

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-R7**.