



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

Report:	Optima Belle Explosion and Fire
Recommendation Number:	2021-02-I-WV-R15
Date Issued:	July 6, 2023
Recipient:	Center for Chemical Process Safety (CCPS)
New Status:	Closed – Exceeds Recommended Action
Date of Status Change:	June 9, 2026

Recommendation Text:

Update Guidelines for Process Safety in Outsourced Manufacturing Operations or develop a new tolling guidance document to supplement existing guidelines. The publication should include current best practices, introduce guidance specific to tolling brokers and/or project managing companies such as Richman Chemical Inc., and cross-reference and align with the comprehensive management systems framework and terminology contained in Guidelines for Risk Based Process Safety and other contemporary industry good practice guidance.

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 one recommendation to the Center for Chemical Process Safety (CCPS). This status change summary addresses CSB Recommendation No. 2021-02-I-WV-R15.

B. Response to the Recommendation

CCPS assembled a team of experts from their member companies with practical experience in outsourced manufacturing to develop a complete re-write for the 2nd edition of their publication *Guidelines for Process Safety in Outsourced Manufacturing*. The 2nd Edition of *Guidelines for Process Safety in Outsourced Manufacturing*¹ provides detailed and actionable information and guidance concerning best practices in outsourced manufacturing guidance specific to toll brokers and/or project management companies, and is cross referenced with the elements of Risk Based Process Safety (RBPS). The updated publication meets the objective of the recommendation.

In addition to re-writing this publication, CCPS has also developed a monograph titled *CCPS Monograph: Process Safety in Outsourced Manufacturing Operations*². The monograph provides a high-level summary of key aspects of the guideline and provides high-level guidance to all affected parties. This monograph is available for free to the public online. Through publication of this monograph CCPS has reached a broader audience than they would have otherwise and provided another valuable industry resource for entities involved in outsourced manufacturing. The monograph was not required by the recommendation and surpasses the objective of the recommendation.

C. Board Analysis and Decision

These updated publications will undoubtedly serve as invaluable resources for industry. The CSB congratulates the CCPS on the quality, timeliness, and detail of the information presented in *Guidelines for Process Safety in Outsourced Manufacturing*, 2nd Edition and *CCPS Monograph: Process Safety in Outsourced Manufacturing Operations*. CCPS has worked closely with the CSB to drive chemical safety excellence for many years. The CSB urges the readers of these publications to take its lessons to heart to help prevent future incidents.

The Board appreciates the work of the leadership and staff of CCPS and the project team responsible for these publications in developing these resources. Based upon the information above, the Board voted to change the status of CSB Recommendation No. 2021-02-I-WV-R15 to: “Closed – Exceeds Recommended Action.”

¹ <https://www.aiche.org/ccps/resources/publications/books/guidelines-process-safety-outsourced-manufacturing-2nd-edition>

² <https://www.aiche.org/sites/default/files/html/ccps/3561521/mobile/index.html>