



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

Report:	Wacker Polysilicon Chemical Release
Recommendation Number:	2021-01-I-TN-R8
Date Issued:	June 15, 2023
Recipient:	Center for Chemical Process Safety (CCPS)
New Status:	Closed – Acceptable Action
Date of Status Change:	March 4, 2025

Recommendation Text:

Develop and publish a safety product on Safe Work Practices, including detailed and practical guidelines for evaluating simultaneous operations (SIMOPs). The product, at a minimum, should:

- a. Address the content found in CCPS's website resource for implementing Safe Work Practices; and*
- b. Discuss guidelines for a SIMOPs life cycle, including:
 - 1. methods to identify SIMOPs;*
 - 2. methods to conduct a SIMOPs hazard assessment;*
 - 3. safeguards and controls pertaining to SIMOPs;*
 - 4. preparation for SIMOPs; and*
 - 5. SIMOPs execution.**

*In developing this safety product, consider the findings presented in the CSB report titled *Fire During Hot Work at Evergreen Packaging Paper Mill* and this CSB report, titled *Equipment Fracture and Fatal Hydrogen Chloride Release at Wacker Polysilicon North America*.*

Board Status Change Decision:

A. Rationale for Recommendation

On November 13, 2020, a graphite heat exchanger cracked during maintenance activities, releasing anhydrous hydrogen chloride at the Wacker Polysilicon facility in Charleston, Tennessee. The incident occurred on the fifth floor of an equipment access structure when a contractor applied excessive torque to flange bolts on the heat exchanger's discharge pipe.

Seven workers from two contracted companies were in close proximity to the release. The location of the release prevented the workers from accessing the platform's single means of egress. While attempting to escape by climbing down piping on the side of the structure, three of the workers fell to the ground, fatally injuring one and seriously injuring the other two. The other four workers remained in place until the release ended. One of these four workers sustained

chemical burns from the release due to a rip in their personal protective equipment (PPE). The remaining three workers were uninjured.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found several safety issues including ineffective written procedures, control of hazardous energy, and management of hazards during simultaneous operations (SIMOPs), as well as an insufficient means of egress from the platform. 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. 2021-01-I-TN-R8.

B. Response to the Recommendation

In early February of 2025, CCPS published a Safe Work Practice on Simultaneous Operations (SIMOPS). This document is available for free viewing and download on the CCPS website¹. The CSB reviewed this document and determined that it satisfies all elements of the recommendation.

C. Board Analysis and Decision

The Board congratulates CCPS for publishing this excellent resource addressing SIMOPS. SIMOPS has been identified as a safety issue in several recent incidents that have resulted in fatal and serious injury to workers. The illustrative examples and other resources provided in this document demonstrate practical and necessary steps to take to ensure safety during SIMOPS. Following the guidance within this document will most certainly prevent future incidents or at least mitigate the consequences of such incidents. Based upon the information above, the Board voted to change CSB Recommendation No. 2021-01-I-TN-R8 to: “Closed – Acceptable Action.”

¹ https://www.aiche.org/sites/default/files/html/ccps/3480451/files/downloads/CCPS_SWP_SIMOP%20Final.pdf