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

Report:	Wacker Polysilicon Chemical Release
Recommendation Number:	2021-01-I-TN-R10
Date Issued:	June 15, 2023
Recipient:	National Fire Protection Association
New Status:	Open – Awaiting Response or Evaluation/Approval of Response
Date of Status Change:	Not Applicable – Initial Status

Recommendation Text:

Revise NFPA 101 Life Safety Code, NFPA 55 Compressed Gases and Cryogenic Fluids Code, or NFPA 400 Hazardous Materials Code to address conditions which may require multiple means of egress from elevated industrial structures containing hazardous materials posing physical and health hazards, regardless of their combustibility, burn rate, or likelihood of explosion. The guidance should address egress situations for workers on unwalled, elevated structures in the presence of materials posing physical and health hazards. Specify the minimum number of egress points to increase the likelihood of worker escape in the event of a hazardous material release.

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 toque 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 National Fire Protection Association. This status change summary addresses **CSB Recommendation No. 2021-01-I-TN-R10**.