U.S. Chemical Safety and Hazard Investigation Board

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Honorable Kristen M. Kulinowski
Board Member
Designated Interim Executive and Administrative Authority

Honorable Manny Ehrlich, Jr.
Board Member

Honorable Rick Engler
Board Member

APR 23 2019

The Honorable Andrew R. Wheeler
Administrator
U.S. Environmental Protection Agency
Office of the Administrator, 1101A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dear Mr. Administrator:

The U.S. Chemical Safety and Hazard Investigation Board (CSB) is the independent Federal agency charged with investigating chemical accidents. In the course of our investigations of two petroleum refinery explosions, we have become aware of community concerns about the use of hydrofluoric acid (HF) at these refineries and the adequacy of their risk management programs to protect against an uncontained release of this hazardous substance. As a result of these investigations, the CSB strongly encourages the U.S. Environmental Protection Agency (EPA) to initiate a review and update of its 1993 HF study to determine whether these refineries' existing risk management plans are sufficient to prevent catastrophic releases; and, to determine whether there are commercially viable, inherently safer alkylation technologies for use in petroleum refineries.

In the last four years, the CSB has investigated two petroleum refinery incidents where an explosion elevated the threat of a possible release of HF or modified hydrofluoric acid (MHF). In both investigations, the CSB conducted a public hearing in which members of the surrounding communities indicated great concern about the adequacy of the risk management strategies for the use of HF and the effectiveness of community notification procedures in the event of a catastrophic release.

ExxonMobil Torrance Refinery Explosion

On February 18, 2015, an explosion occurred at the former ExxonMobil refinery in Torrance, California, when the electrostatic precipitator (ESP), a pollution control device in the fluid catalytic cracking (FCC) unit, exploded during maintenance activities. The resulting explosion spewed debris that impacted scaffolding on the alkylation unit and nearly hit two settler tanks containing MHF, which were in close proximity to the ESP. The CSB deployed a team of investigators to this incident.

As part of its investigation process, the CSB conducted a public meeting on January 13, 2016, to communicate preliminary investigative findings and areas of future investigation. The public

meeting provided an opportunity to receive public input about the incident. During the meeting, members of the Torrance community expressed their concern about the presence of MHF in their community and questioned whether there was a safer alternative. A full transcript of the CSB's public meeting is available here[1].

Husky Energy Refinery Explosion and Fire

On April 26, 2018, an explosion and subsequent fire occurred at the Superior Refinery Company LLC refinery in Superior, Wisconsin ("Husky Refinery"). As a result of the explosion, 36 people sought medical attention, including 11 refinery and contract workers who suffered injuries. In addition, a portion of Superior, Wisconsin was evacuated. The CSB found that the evacuation zone was largely determined based on the potential risk of a release of HF, which was stored at the refinery. Although the HF tank was not impacted by debris from the explosion and no release of HF occurred, explosion debris punctured an asphalt storage tank located further away from the point of the explosion than the refinery's HF storage tank.

On September 26, 2018, five Members of Congress[2] wrote the CSB a letter requesting that the agency hold an interim public meeting to allow input from the refinery communities about the scope of the Board's investigation of the incident and provide an opportunity to discuss public safety concerns surrounding the storage and use of HF at the facility.

In response, the CSB held a public town hall meeting on December 12, 2018, in Superior, Wisconsin, to present a factual update on the incident and provide an opportunity for public comment. During this meeting concerned citizens expressed their desire to see HF eliminated from the Husky Refinery and the fear they experience of a possible HF release. Many community members urged the CSB to recommend that Husky use a safer alternative to HF at the facility. Others urged the state of Wisconsin to ban the use of HF altogether. A transcript of the public meeting is available here[3].

In 1990, Congress directed the EPA to study HF to identify potential hazards posed to public health and the environment. The study was to consider a range of events, including worst-case accidental releases, and make recommendations for reducing the hazards. In response, the EPA developed a report to Congress in 1993 identifying and evaluating the hazards posed to the public by producing and using HF. The report noted that there were over 500 facilities using HF in the U.S., including 62 petroleum refineries, and that an accidental release of HF could travel significant distances downwind as a dense vapor or aerosol cloud, which could pose a significant threat to the public and result in severe consequences. The EPA did not recommend legislative action at that time stating that "the legislative authorities already in place provide a solid framework for the prevention of accidental chemical releases and preparedness in the event that they occur."[4]

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[1] https://www.csb.gov/assets/1/20/public_meeting_transcript.pdf?15637

[2] https://www.csb.gov/assets/1/20/18.0926_urging_chemical_safety_board_to_hold_public_hearing_on_husky_refinery_accident_(002).pdf?16450

[3] https://www.csb.gov/assets/1/20/csb_-_husky_meeting_-_121218_pdf.pdf?16451

[4] EPA. *Hydrogen Fluoride Study: Report to Congress, Section 112(N)(6), Clean Air Act as Amended:* Final Report.

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The CSB's mission is to drive chemical safety change through independent investigations to protect people and the environment. As such, our investigations examine the risk management plans at refineries for the handling and use of hazardous materials. While we understand the anxiety and concern the presence of MHF and HF at the Torrance and Husky refineries causes residents of these local communities, the CSB does not have the statutory authority to prevent the use of HF or MHF, or to order the use of any other alternatives at these refineries. It is our understanding that new alkylation technologies are being developed, which may have inherent safety advantages over the use of HF at U.S. refineries. These include a solid-state technology and an ionic liquid technology, both of which are currently being planned to replace existing HF alkylation units in at least two U.S. refineries.

As a result of these two investigations, we urge the EPA to initiate a review and update of its 1993 HF study to determine whether these refineries' existing risk management plans are sufficient to prevent catastrophic releases; and, to determine whether there are commercially viable, inherently safer alkylation technologies for use in petroleum refineries. We encourage the EPA to broadly disseminate the results of its updated study to provide the information on potential alternatives and to make recommendations to incorporate these technologies at U.S. petroleum refineries, if appropriate. We believe that this is fully within the authority and responsibility of the EPA pursuant to the newly adopted Risk Management Plan (RMP) Rule (40 CFR Part 68.67) as well as through its General Duty Clause.

Safety is a shared responsibility, and the CSB welcomes your future action on this important matter. If you have any further questions, please do not hesitate to have your staff contact Mr. Charles Barbee, Director of Recommendations at (202) 261-7621 or Charles.barbee@csb.gov.

Sincerely,

Kristen M. Kulinowski, Ph.D.
Board Member
Designated Interim Executive and Administrative Authority

cc: The Honorable Tammy Baldwin, United States Senate
The Honorable Amy Klobuchar, United States Senate
The Honorable Tina Smith, United States Senate
The Honorable Betty McCollum, United States House of Representatives
The Honorable Richard M. Nolan, United States House of Representatives