



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

<b>Report:</b>	Husky Energy Superior Refinery Explosion and Fire
<b>Recommendation Number:</b>	2018-02-I-WI-R9
<b>Date Issued:</b>	December 29, 2022
<b>Recipient:</b>	Cenovus Energy, Inc.
<b>New Status:</b>	Closed – Acceptable Action
<b>Date of Status Change:</b>	October 23, 2024

### Recommendation Text:

*Develop and implement a technology-specific knowledge-sharing network program across all Cenovus operated refineries, which at a minimum includes an FCC technology peer network. The peer network(s) must include engineers, operations management, and operations staff from each site that uses the technology, including the Cenovus Superior Refinery. The network(s) must meet at least annually to discuss process safety topics in the technology including:*

- a) Relevant incidents and near-misses at the refineries and/or in industry;*
- b) Refinery learnings in implementing process safety improvements;*
- c) Relevant industry tools, bulletins, and knowledge-sharing documents, such as those published by AFPM, CCPS, and API; and*
- d) Relevant updates to industry publications and standards.*

### Board Status Change Decision:

#### A. Rationale for Recommendation

On the morning of April 26, 2018, the primary and sponge absorber of the Husky Energy Superior Refinery exploded during the planned shutdown of the facility's fluidized catalytic cracking (FCC) unit. Debris from the explosion struck an asphalt storage tank approximately 200 feet away. Asphalt leaked from the damaged tank and over the containment wall spreading into the FCC and crude unit operating areas before eventually catching fire. Husky Superior Refinery reported that 39,000 pounds of a flammable hydrocarbon vapor mixture as well as approximately 17,000 barrels of asphalt were released during the incident.

36 refinery and contract workers received medical treatment as the result of the incident. Of those 36 injuries, 11 met the criteria to be considered OSHA recordable. None of the injuries suffered were deemed life-threatening. It was reported that the explosion shook buildings up to a mile away. The plume from the burning asphalt was visible from neighboring communities. An evacuation order was issued by county officials to protect the public from the smoke plume and as a precaution for fear the incident would escalate.

As a result of the incident the facility was destroyed. The incident resulted in \$550 million of on-site and \$110,000 of off-site property damage. This incident was recorded as having the 33rd

largest adjusted property damage loss in the hydrocarbon extraction, transport, and processing industry since 1974<sup>1</sup>. In September 2019 a permit was issued to rebuild the refinery and construction began soon after. Husky Energy merged with Cenovus Energy, Inc., a Canadian oil and natural gas company, on January 1, 2021. The refinery is expected to resume operations in 2023 as Cenovus Superior Refinery.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found several safety issues including ineffective transient operation safeguards, a lack of process knowledge, ineffective process safety management systems, a lack of available industry knowledge and guidance, and failures in emergency preparedness. As a result of these findings, the CSB issued three recommendations to Cenovus Energy, Inc. This status change summary addresses CSB Recommendation No. 2018-02-I-WI-R9.

#### B. Response to the Recommendation

Cenovus Energy, Inc. notified the CSB that an FCC technology network has been established across their owned and operated assets. The first meeting was held November 2023. During the meeting all owned or operated facilities were represented as well as corporate support functions. Amongst other topics, the requirements of the recommendation were discussed. The next meeting is currently planned for November 2024. According to the charter submitted by Cenovus this group will meet at least annually as required by the recommendation. Upon review of the information provided, the CSB concluded that Cenovus Energy, Inc.'s actions satisfy all elements of the recommendation.

#### C. Board Analysis and Decision

Based upon the information above, the Board voted to change the status of CSB Recommendation No. 2018-02-I-WI-R9 to: "Closed – Acceptable Action."

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<sup>1</sup> Marsh JLT Specialty, "100 Largest Losses in the Hydrocarbon Industry," 2022. [Online]. Available: <https://www.marsh.com/us/insights/research/100-largest-losses-hydrocarbons-industry-html>. [Accessed 5 October 2022]