



U. S. Chemical Safety and Hazard Investigation Board

RECOMMENDATIONS STATUS CHANGE

SUMMARY

Report:	Tesoro Refinery Fatal Explosion Fire
Recommendation Numbers:	2010-8-I-WA-R4
Date Issued:	May 1, 2014
Recipient:	U.S. Environmental Protection Agency (EPA)
New Status:	Closed – Reconsidered/Superseded
Date of Status Change:	February 1, 2017

Recommendation Text:

CSB Recommendation No. 2010-08-I-WA-R4:

Effectively participate in the Tesoro Anacortes Refinery process safety culture survey oversight committee as recommended under recommendation 2010-08-I-WA-R15¹. Incorporate the expertise of process safety culture experts in the development and interpretation of the safety culture surveys. Ensure the effective participation of the workforce and their representatives in the development of the surveys and the implementation of corrective actions.

Board Status Change Decision:

A. Rationale for Recommendation

On May 1, 2014, the CSB released its report on the April 2, 2010, catastrophic heat exchanger rupture at the Tesoro Anacortes refinery which fatally injured seven workers. The CSB found that the heat exchanger rupture was caused by high temperature hydrogen attack (HTHA), a damage mechanism that occurs when carbon steel equipment is exposed to hydrogen at high temperatures and pressures. We further determined that a key causal factor of the April 2010 incident was Tesoro's failure to implement more effective safeguards to prevent the heat exchanger failure, such as employing inherently safer materials that are resistant to HTHA.

The CSB's investigation identified numerous deficiencies in the safety culture at the Anacortes refinery which contributed to the incident. The Board issued a recommendation that the U.S. Environmental Protection Agency (EPA) participate with Tesoro management, United Steelworker (USW) representatives, and the Washington State Department of Labor & Industries, Division of Occupational Safety and Health in a process safety culture program at the Tesoro Anacortes refinery.

¹ 2010-08-I-WA-R15 to the Tesoro Anacortes Refinery: Implement a process safety culture continuous improvement program at the Tesoro Anacortes Refinery including a written procedure for periodic process safety culture surveys across the work force. The process safety culture program shall be overseen by a tripartite committee of Tesoro management, USW representatives, Washington State Department of Labor and Industries – Division of Occupational Safety and Health, and the U.S. Environmental Protection Agency. This oversight committee shall:

- Select an expert third party that will administer a periodic process safety culture survey;
- Review and comment on the third party expert report developed from the survey;
- Oversee the development and effective implementation of action items to address identified process safety culture issues; and
- Develop process safety culture indicators to measure major accident prevention performance.

The process safety program shall include a focus on items that measure, at a minimum, willingness to report incidents, normalization of hazardous conditions, burden of proof of safety in plant process safety programs and practices, and management involvement and commitment to process safety. The periodic process safety culture report shall be made available to the plant workforce. The minimum frequency of process safety culture surveys shall be at least once every three years.

B. Response to the Recommendations

The EPA responded that it does not plan to participate in the Tesoro Anacortes process safety culture surveys or recommended oversight committee. The CSB made parallel recommendations to the USW (2010-08-I-WA-R16) and the Washington State Department of Labor & Industries, Division of Occupational Safety and Health (2010-08-I-WA-R9), both of whom are participating in the Tesoro Anacortes Refinery 2016 process safety culture assessment which is due to be completed by the end of this calendar year. Although the intent of this recommendation was for EPA to participate in a process safety oversight committee, Tesoro has not yet created an oversight committee.

C. Board Analysis and Decision

The Board has reconsidered the appropriateness of the recommendation for a federal agency to implement a company specific program. Therefore, the Board voted to designate **Recommendation No. 2010-08-I-WA-R4** as “**Closed – Reconsidered/Superseded.**”