



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

Report:	Tesoro Refinery Fatal Explosion and Fire
Recommendation Number:	2010-08-I-WA-R15
Date Issued:	May 12, 2014
Recipient:	Tesoro Anacortes Facility
New Status:	Open – Acceptable Alternate Response
Date of Status Change:	June 1, 2015

Recommendation Text:

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:

- a. Select an expert third party that will administer a periodic process safety culture survey;*
- b. Review and comment on the third party expert report developed from the survey;*
- c. Oversee the development and effective implementation of action items to address identified process safety culture issues; and*
- d. 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.

Board Status Change Decision:

A. Rationale for Recommendation

On April 2, 2010, a catastrophic heat exchanger rupture at the Tesoro Anacortes refinery fatally injured seven workers. The CSB's investigation identified numerous deficiencies in the safety culture at the Anacortes refinery which contributed to the severity of the incident, including:

- The acceptance of frequent heat exchanger leaks during unit start-up activities as “normal”;
- The use of excessive numbers of personnel to participate in hazardous, non-routine operations;
- The failure to verify actual process conditions in assessing the potential for high temperature hydrogen attach; and

- The use of Process Hazard Analysis assumptions that contributed to ineffective hazard evaluations.

Based on the findings of the investigation, the CSB issued Recommendation No. 2010-08-I-WA-R15 to the Tesoro Anacortes Facility. The recommendation called for the facility to implement a process safety culture continuous improvement program that included a written procedure for periodic process safety culture surveys across the workforce. The recommendation specified that the process safety culture program shall be overseen by a tripartite committee of Tesoro management, United Steelworkers (USW) representatives, Washington State Department of Labor and Industries Division of Occupational Safety and Health (Washington L&I), and the U.S. Environmental Protection Agency (U.S. EPA).

B. Response to the Recommendation

Tesoro indicated to the CSB that they plan to develop and implement a process safety culture continuous improvement program at the Tesoro Anacortes Refinery that would contain the elements the CSB laid out in the recommendation. It indicated that Tesoro would issue a document describing the program and its implementation by December 31, 2015. Tesoro also indicated that they would reach out to solicit input from the United Steelworkers, the U.S. Environmental Protection Agency, and the Washington State Department of Labor and Industries. In addition, Tesoro submitted plans to the CSB for conducting a first process safety culture survey by December 31, 2016, a second survey by December 31, 2019, with subsequent surveys conducted every five years or less.

C. Board Analysis and Decision

As Tesoro has committed to developing at its Anacortes Refinery a process safety culture continuous improvement program that includes the elements listed in the recommendation, and as part of the program has committed to completing process safety culture surveys with sufficient frequency to ascertain safety hazards and improvements, the Board voted to change the status of CSB Recommendation No. 2010-08-I-WA-R15 to: **“Open-Acceptable Alternate Response.”**