



U. S. Chemical Safety and Hazard Investigation Board

RECOMMENDATIONS STATUS CHANGE

SUMMARY

Report:	Williams Olefins Case Study
Recommendation Number:	2013-3-I-LA-R2
Date Issued:	October 19, 2016
Recipient:	Williams Geismar Olefins Facility (Williams)
New Status:	Open – Acceptable Response or Alternative Response
Date of Status Change:	March 1, 2017

Recommendation Text:

Develop and implement a permanent process safety metrics program that tracks leading and lagging process safety indicators. Consider available industry guidance, such as the guidance presented in the Center for Chemical Process Safety (CCPS) book Guidelines for Process Safety Metrics and the example metrics provided in the book's accompanying CD. Design this metrics program to measure the effectiveness of the Williams Geismar Olefins Facility's process safety management programs. Include the following components in this program:

- a) *Measure the effectiveness of the Williams Geismar Management of Change (MOC) program, including evaluating whether MOCs were performed for all applicable changes, the quality of MOC review, and the completeness of the MOC review;*
- b) *Measure the effectiveness of the Williams Geismar Pre-Startup Safety Review (PSSR) program, including the quality of the PSSR review and the completeness of the PSSR review;*
- c) *Measure the effectiveness of the Williams Geismar methods to effectively and timely complete action items developed as a result of Process Hazard Analyses (PHAs), Management of Change (MOC), incident investigations, audits, and safety culture assessments; and*
- d) *Measure the effectiveness of the Williams Geismar development and implementation of operating procedures.*

Develop a system to drive continual process safety performance improvements based upon the data identified and analysis developed as a result of implementing the permanent process safety metrics program.

Board Status Change Decision:

A. Rationale for Recommendation

On June 13, 2013, a fire and explosion occurred at the William Olefins, Inc. (Williams), Plant located in Geismar, Louisiana, when a reboiler which supplied heat to a propylene fractionator column ruptured due to an overpressurization event while it was isolated from its pressure relief device. Two Williams employees were killed and 167 employees were injured, consisting of three Williams employees and 164 contractor employees.

As a part of its investigation, the CSB examined the facility's process safety management program as well as the facility 's process safety culture. The CSB found significant weaknesses

in the Williams process safety culture that were demonstrated by a series of deficiencies in implementing the site's process safety management programs as well as weaknesses in the written programs themselves. These deficiencies include: (1) poorly conducted Management of Change and Pre-Startup Safety Reviews; (2) ineffective safeguard selections, insufficient safeguard evaluation requirements, and poor implementation of action items in Process Hazard Analyses; (3) inadequate focus on developing and maintaining operating procedures; and (4) allowing uncontrolled field equipment manipulations without first assessing the hazards and developing a procedure. To address these areas, the CSB Board issued three recommendations aimed at improving the facility's process safety management program and process safety culture. This status change summary addresses the recommendation to improve the facility's process safety metrics program (2013-3-I-LA-R2)

B. Response to the Recommendation

In a November 2016 response, Williams advised the CSB that it:

- Had previously developed metrics for: Timely Completion of PHA Action items, Audit Items, All EHS Action Items, Categorization of Near Miss and Incidents to API RP 754 (Process Safety Performance Indicators for the Refining and Petrochemical Industries) criteria, Incident Investigation Closure, Severity and Potential Severity Categorization for Incident and Near Miss.
- Is currently in the process of developing metrics for: Management of Change, Pre-Startup Safety Reviews and Operating Procedures and expects to have them in place by April 30, 2017. In developing these new metrics Williams will consider industry guidance, including the referenced guidance in the CSB Recommendation from the Center for Chemical Process Safety.
- Will communicate metrics on a monthly basis via a dashboard to Senior Leadership and all operating areas. Metrics will be discussed monthly in the Senior Leadership meeting and employee safety meetings, as well as with the Safety Committee. Based on these discussions, action items will be generated to improve performance.

C. Board Analysis and Decision

As the actions currently being undertaken by Williams appear to be consistent with the intent of the CSB Recommendation and provide both a timeframe and some indication of the supporting documentation that will be provided for future evaluation, the Board voted to change the status of CSB Recommendation No. 2013-3-I-LA-R2 to: **“Open— Acceptable Response or Alternative Response.”**