



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

Report:	BP America Refinery Explosion
Recommendation Number:	2005-4-I-TX-R8
Date Issued:	March 20, 2007
Recipient:	Occupational Safety & Health Administration (OSHA)
New Status:	Closed – Acceptable Alternative Action
Date of Status Change:	September 17, 2019

Recommendation Text:

Strengthen the planned comprehensive enforcement of the OSHA Process Safety Management (PSM) standard. At a minimum:

- a) Identify those facilities at greatest risk of a catastrophic accident by using available indicators of process safety performance and information gathered by the EPA under its Risk Management Program (RMP).*
- b) Conduct, or have conducted, comprehensive inspections, such as those under your Program Quality Verification (PQV) program, at facilities identified as presenting the greatest risk*
- c) Establish the capacity to conduct more comprehensive PSM inspections by hiring or developing a sufficient cadre of highly trained and experienced inspectors.*
- d) Expand the PSM training offered to inspectors at the OSHA National Training Institute.*

Board Status Change Decision:

A. Rationale for Recommendation

On March 23, 2005, the BP Texas City refinery experienced severe explosions and a fire in an isomerization unit (ISOM) that resulted in 15 deaths, 180 injuries and significant economic losses. The incident occurred when a raffinate splitter tower overfilled during startup. The overfilling caused pressure relief devices to open and dump flammable liquid into a blowdown drum and stack that vented directly to the atmosphere. When the drum and stack also overfilled, flammable liquid and gas were released into the surrounding area and ignited, resulting in the explosions and fire.

Due to the many process safety issues identified at the BP Texas City refinery as a part of its investigation, the U.S. Chemical Safety and Hazard Investigation Board (CSB) examined how OSHA was enforcing compliance with its process safety management standard (PSM). The investigation found that OSHA's national focus on inspecting facilities with high personnel injury rates had resulted in reduced attention to preventing less frequent, but more catastrophic, process safety incidents. The CSB found that very few planned comprehensive process safety inspections were conducted by OSHA prior to the BP explosion and only a limited number of OSHA inspectors had the specialized training and experience to effectively inspect facilities covered by the PSM standard.

Consequently, the CSB Board issued a recommendation to OSHA to strengthen its planned comprehensive enforcement of the PSM standard by identifying facilities posing the greatest catastrophic risk; conducting more comprehensive planned inspections; hiring or developing more experienced inspectors; and expanding PSM training offered to inspectors at the OSHA National Training Institute.

B. Response to the Recommendation

To address the elements listed in CSB Recommendation, OSHA informed the CSB that it has taken the following actions:

- 1) On January 17, 2017, OSHA issued a revised *PSM Covered Chemical Facilities National Emphasis Program Directive*:
 - The revised Directive applies to all PSM-covered facilities, including petroleum refineries, and requires State Plan states to participate in the program.
 - Four sources are used for targeting: (1) EPA RMP facilities (all program levels); (2) explosives and pyrotechnics NAICS¹ codes; (3) Prior PSM citations in OSHA’s own databases; and (4) OSHA Area Office knowledge of local facilities
 - Instead of using the PQV inspection methodology, OSHA adopted an alternative approach for conducting planned PSM inspections. This new approach, which OSHA characterizes as a “gap analysis,” uses a dynamic list of questions to evaluate PSM compliance at the facilities selected for inspection under the NEP.
- 2) OSHA reported to the CSB that it has trained 411 Federal and 293 State Plan compliance and compliance assistance personnel in PSM. OSHA informed the CSB that many compliance officers have taken multiple courses with PSM trained Federal personnel averaging 2.0 PSM classes each and PSM trained State personnel averaging 1.6 PSM classes each. In addition, many of these trained compliance officers have gained valuable PSM inspection experience by participating in the older Petroleum Refinery and Chemical NEPs. Moreover, the 2017 PSM directive specifies that team leaders must have completed three OSHA PSM courses along with having participated in six prior PSM inspections. Compliance officers who will evaluate all aspects of a company’s PSM program must have completed two OSHA PSM courses along with having participated in three prior PSM inspections. Compliance officers with lesser levels of training and experience can evaluate only certain programmatic aspects of an inspected company’s PSM program, such as employee participation, training, contractors and hot work permits.
- 3) At the time that the recommendation was issued, the OSHA National Training Institute offered only two PSM courses. Since then, in addition to those two courses, the Training Institute has developed two additional advanced level PSM courses which have been presented over 20 times to federal and state compliance officers.

C. Board Analysis and Decision

Based on the above information, the Board voted to change the status of **CSB Recommendation No. 2005-4-I-TX-R8** to: “**Closed – Acceptable Alternative Action.**”

¹ NAICS is an abbreviation for the North American Industrial Classification System and is used by OSHA and other Federal agencies to classify establishments into categories based the type(s) of goods or services that they provide.