



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

<b>Report:</b>	ExxonMobil Torrance Refinery Explosion
<b>Recommendation Number:</b>	2015-02-I-CA-R1
<b>Date Issued:</b>	May 3, 2017
<b>Recipient:</b>	ExxonMobil Corporation
<b>New Status:</b>	Closed – Acceptable Action
<b>Date of Status Change:</b>	January 20, 2021

### Recommendation Text:

*A Variance to a safety policy or procedure requires robust analysis of the proposed safeguard prior to its approval and implementation. To ensure the proposed methodology described in the Variance is safe and the proposed safeguards are sufficiently robust, revise corporate and U.S. refinery standard(s) to require that a multidisciplinary team reviews the Variance before it is routed to management for their approval. Include knowledgeable personnel on the Variance multidisciplinary team such as:*

- (1) the developer of the Variance;*
- (2) a technical process representative (e.g. process engineer for the applicable unit);*
- (3) a hourly operations representative (e.g. experience operator in the applicable unit);*  
*and*
- (4) a health and safety representative.*

*The role of the multidisciplinary team is to formally meet to review, discuss, and analyze the proposed Variance, and adjust the safety measures as needed to ensure a safe operation. In the event the expert team members do not come to a consensus that the Variance measures can result in a safe operation, require the proposed work to be routed to a higher management level for final approval.*

### Board Status Change Decision:

#### A. Rationale for Recommendation

On February 18, 2015, an explosion occurred in the ExxonMobil (EM) Torrance, California refinery's Electrostatic Precipitator (ESP); a pollution control device in the fluid catalytic cracking (FCC) unit that removes catalyst particles using charged plates that produce sparks during normal operation. The incident occurred when EM was attempting to isolate equipment for maintenance while the unit was in an idle mode of operation. Preparations for the maintenance activity caused a pressure deviation that allowed hydrocarbons to backflow through the process and ignite in the ESP.

As a part of the investigation, the U.S. Chemical Safety and Hazard Investigation Board (CSB) found that this incident occurred due to weaknesses in the EM Torrance refinery's process safety management (PSM) system. These weaknesses led to the operation of the FCC unit without pre-

established safe operating limits and criteria for unit shutdown, reliance on safeguards that could not be verified, the degradation of a safety-critical safeguard, and the re-use of a previous procedure deviation without a sufficient hazard analysis to confirm that the assumed process conditions were still valid.

As a result, the CSB issued five recommendations to EM Corporation regarding their PSM system. This status change summary is specific to Recommendation No. 2015-02-I-CA-R1.

## B. Response to the Recommendation

EM formed an internal multidisciplinary task force to address each recommendation. The task force worked with each of EM's Upstream and Downstream business lines to identify and update the appropriate documentation required to incorporate the recommendation. The task force completed its work and finalized and published its updated documents. The documentation requires, among other things, that:

- Deviations must be reviewed by a multidisciplinary team of individuals knowledgeable with the issues associated with the proposed deviation;
- Knowledgeable personnel on the variance/deviation multidisciplinary team should consist of personnel such as:
  - the developer of the variance/deviation;
  - a technical process representative;
  - an hourly operations representative; and
  - a health and safety representative;
- Deviation reviews must be conducted via interactive dialogue of the multidisciplinary team; and
- Deviations from the requirements must be approved by the Production Manager.

## C. Board Analysis and Decision

Based upon EM's actions to update its documentation to implement the recommendation, the Board voted to change **Recommendation No. 2015-02-I-CA-R1 to: "Closed-Acceptable Action."**