



# 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-R4
<b>Date Issued:</b>	May 3, 2017
<b>Recipient:</b>	ExxonMobil Corporation
<b>New Status:</b>	Open – Acceptable Response or Alternative Response
<b>Date of Status Change:</b>	April 15, 2019

#### Recommendation Text:

*ExxonMobil extended the maintenance interval of the spent catalyst slide valve and the inspection interval of the pumparound heat exchanger without analyzing whether the extended operation lowered their availability (by operating them beyond their predicted safe operating life) and could result in negative safety consequences. In the event safety-critical equipment is operated beyond its inspection and/or maintenance interval (e.g. extended turnaround interval), require all ExxonMobil U.S. refineries to perform a risk evaluation (e.g. MOC or risk assessment) to identify the safety consequences of the extended operation. Require that each mode of operation, including but not limited to normal operation, start up, shut down, and “Safe Park” modes of operation is evaluated during the risk evaluation.*

#### Board Status Change Decision:

##### A. Rationale for Recommendation

On February 18, 2015, an explosion occurred in the ExxonMobil 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 ExxonMobil 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 its investigation, the U.S. Chemical Safety and Hazard Investigation Board (CSB) found that this incident occurred due to weaknesses in the ExxonMobil Torrance refinery’s process safety management (PSM) system. These weaknesses led to 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 made five recommendations to ExxonMobil Corporation regarding their PSM system. This status change summary is specific to Recommendation No. 2015-02-I-CA-R4.

##### B. Response to the Recommendation

EM has been very responsive to our recommendations and kept the CSB regularly apprised of implementation progress. They formed an internal multidisciplinary task force to address each

recommendation. They updated and issued their Global Manufacturing OIMS Practice 6.3 *Critical Equipment* which contains updated requirements for safety critical devices (SCD) specifically to address risk evaluation for extending maintenance / inspection intervals and anticipates full implementation of the recommendation by the end of calendar year 2019.

C. Board Analysis and Decision

Based upon the information above, the Board voted to change **Recommendation No. 2015-02-I-CA-R4** to: **“Open – Acceptable Response or Alternate Response.”**