



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

<b>Report:</b>	ExxonMobil Torrance Refinery Electrostatic Precipitator Explosion
<b>Recommendation Number(s):</b>	2015-02-I-CA-R6
<b>Date Issued:</b>	May 3, 2017
<b>Recipient:</b>	Torrance Refining Company LLC
<b>New Status:</b>	Closed-Acceptable Action
<b>Date of Status Change:</b>	May 29, 2018

### Recommendation Text(s):

*Implement protective systems that prevent ignition of flammable gases (including hydrocarbons not in the presence of CO) inside of the electrostatic precipitator, for each mode of operation.*

### 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 idle. Preparations for the maintenance activity caused a pressure deviation that allowed hydrocarbons to backflow through the process and ignite in the ESP.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) identified several process safety design weaknesses in the Torrance refinery FCC unit at the time of the incident. As a result, the CSB made four recommendations to Torrance Refining Company LLC. This recommendation is specific to systems that prevent ignition of flammable gases inside the ESP.

#### B. Response to the Recommendation

Torrance Refining Company LLC (TORC) provided two detailed recommendation responses to the CSB that included supporting documentation. TORC formed a cross-function team of local and ExxonMobil circuit experts and developed an FCC Safe Park procedure and updated the FCC Normal Shutdown, Emergency Shutdown, and Start-up procedures for the Torrance Refinery. TORC provided the CSB with copies of all the procedures. TORC also informed the CSB that they ensured there is an appropriate steam-induced pressure barrier for FCC Emergency Shutdown and Safe Park procedures, confirmed appropriate FCC spent catalyst slide valve seal for FCC Emergency Shutdown and Safe Park procedures, and updated ESP logic to de-energize the ESP upon loss of FCC main air blower.

C. Board Analysis and Decision

As the above changes meet the requirements of the CSB recommendation, the Board voted to change the status of CSB Recommendation No. 2015-02-I-CA-R6 to: **“Closed-Acceptable Action.”**