



3485 Pacheco Boulevard  
Martinez, CA 94553

July 28, 2020

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

Bay Area Air Quality Management District  
ATTN: Mail Stop FM1  
375 Beale Street, Suite 600  
San Francisco, CA 94105

To Whom It May Concern:

**Subject: May 18, 2020 Reportable Flaring Event Incident Report-Public Version**

Pursuant to Regulation 12 Rule 12 Section 406, Martinez Refining Company submits the following information regarding a reportable flaring event as defined in Regulation 12-12-208 that occurred on May 18, 2020. The attached report is the public version and discusses the cause of the flaring event and any prevention measures implemented or considered to prevent recurrence of the event.

If you have any questions concerning the information, please contact Rick Shih at (925) 313-3743 or richard.shih@pbfenergy.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "Gordon Johnson", with a long horizontal flourish extending to the right.

Gordon Johnson  
Manager, Environmental Affairs  
Martinez Refining Company

Attachment

## Regulation 12 Rule 12 Reportable Flaring Event Causal Analysis Report

1. **Report Date:** July 22, 2020
2. **Refinery Name and Site Number:** Martinez Refining Company - BAAQMD Site # A0011
3. **Refinery Contact and Phone Number:** Rick Shih (925) 313-3743
4. **Flare Identification:** LOP flare S-1471
5. **Flaring Event Duration:**
  - a. **Date:** May 18, 2020
  - b. **Time:** 4:15 PM – 6:17 PM
  - c. **Total Duration of Event:** 2 hours
6. **Brief Description of Flaring Event:** Failure of electrical transformer caused the shutdown of numerous equipment and flaring at the LOP flare, resulting in sulfur dioxide emissions greater than 500 pounds in a day and total gas flared greater than 0.5 million standard cubic feet (MMSCF).
7. **Process Flow Diagram:** see attached process flow diagram
8. **Volume of Gas Flared:** 1.04 MMSCF
9. **Total Emissions due to flaring based on Regulation 12 Rule 11 Methodology:**
  - a. 560 lbs of methane
  - b. 422 lbs of non-methane hydrocarbons
  - c. 559 lbs of sulfur dioxide
10. **Was the Gas Scrubbed?** The vent gas that went to the flare was not scrubbed.
11. **Primary Cause of Flaring Event including Detailed Description of the Cause and Contributing Factors:**

The primary function of Catalytic Cracking Unit (CCU) is to crack high molecular weight hydrocarbons into smaller, lighter range molecules such as gasoline using a circulating catalyst at high temperatures. The system primarily relies on a reactor and a regenerator. The reactor is responsible for cracking the incoming feedstock and the regenerator is responsible for burning off the coke deposits on the catalyst so the catalyst can be reused. The vapors produced are then routed to a distillation column (CCU Main Fractionator) where they are separated into different fractions for additional processing.

On May 18, 2020, an electrical transformer failed, resulting in multiple equipment shutting down. This included the volatile lean oil (VLO) pumps ( ), which pump liquid from the Overhead Accumulator vessel ( ) to the Rectified Absorber Column. The accumulator receives material from multiple sources including the CCU Main Fractionator overhead. With the VLO shut down, liquid can travel to a wet gas compressor ( ) which can damage the compressor. In response to the equipment shutdowns, the feed to the CCU was diverted. During a feed diversion, all feed streams are stopped and/or diverted away from the reactor. The temperature in the regenerator overhead ( ) increased, tripping the system so that the regenerator slide valve ( ) and the stripper slide valve ( ) closed. Closing the valves isolates the regenerator and reactor, to prevent HC from the reactor flowing to the oxygen rich regenerator or oxygen flowing from the regenerator to the HC in

the reactor. Process material was then sent to the flare. As feed was diverted from the CCU, flaring eventually stopped.

**12. Immediate Corrective Actions Taken:**

Divert feed from the CCU which resulted in stopping the flaring.

**13. Was the Flaring the Result of an Emergency?**

Yes. The flaring was a result in the loss of electrical systems which caused key equipment to shut down.

**14. Was the Flaring Consistent with an Approved FMP?**

Yes, the flaring was consistent with Martinez Refining Company approved Flare Management Plan (FMP). As stated on page 3-1 of the FMP, Martinez Refining Company believes the key to flare minimization is careful planning to avoid flaring coupled with evaluation of any flaring events that occur and incorporation of lessons learned back into the planning process to further reduce flaring. As part of the FMP, Martinez Refining Company developed procedures to implement this process. As stated on page 3-1 of the FMP, "when these procedures are followed, any flaring is consistent with the FMP." Operations followed procedure C(F)-20 – Unanticipated Flaring. This procedure addresses flare events caused by process upsets or unplanned events.

**15. Was the Flaring due to a Regulatory Mandate to Vent to a Flare?**

The flaring was not due to a regulatory mandate to vent to the flare.

**16. Prevention Measures Considered to Minimize Flaring from this Type of Flaring Event**

A failure of an electrical transformer caused multiple units to shut down and the resulting flaring. A replacement transformer was installed and placed into service.

PUBLIC VERSION

Figure 1: Process Flow Diagram of CCU

Figure 2: Process Flow Diagram of Main Fractionator

[The figures have been redacted from the Public Version as they contain Business Confidential Information]