



3485 Pacheco Boulevard
Martinez, CA 94553

VIA EMAIL

March 11, 2024

Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105

Subject: December 15, 2023 Reportable OPCEN HC, FXG, LOP, DCU Flaring Event Incident Report - Public Version

To Whom It May Concern:

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 December 15, 2023. The attached report discusses the cause of the flaring event and any prevention measures considered to prevent recurrence of the event. This report was originally submitted to the Air District on February 23, 2024 as 4 separate flare reports. At the request of the Air District, this report is being resubmitted as a combined report for 4 flares.

Should you have any questions or concerns regarding this report, please contact me at (925) 313-5387 or at william.hewlett@pbfenergy.com.

Sincerely,

William Hewlett

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Attachment

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Regulation 12 Rule 12 Reportable Flaring Event Causal Analysis Report

1. **Report Date:** March 11, 2024
2. **Refinery Name and Site Number:** Martinez Refining Company - BAAQMD Site # A0011
3. **Refinery Contact and Phone Number:** William Hewlett (925) 313-5387
4. **Flare Identification:** [REDACTED] Flare S-1772, [REDACTED] Flare S-1771, [REDACTED] Flare S-4201, and [REDACTED] Flare S-1471
5. **Flaring Event Duration:**
 - a. [REDACTED] **Flaring Dates:** December 15, 2023 to December 17, 2023
 - i. **Start Time:** December 15, 2023 at 9:38
 - ii. **End Time:** December 17, 2023 at 23:59
 - iii. **Total Duration of Event:** Approximately 62 hours and 21 minutes
 - b. [REDACTED] **Flaring Dates:** December 15, 2023 to December 19, 2023
 - i. **Start Time:** December 15, 2023 at 9:01
 - ii. **End Time:** December 19, 2023 at 13:24
 - iii. **Total Duration of Event:** Approximately 100 hours and 23 minutes
 - c. [REDACTED] **Flaring Dates:** December 15, 2023 to December 18, 2023
 - i. **Start Time:** December 15, 2023 at 9:04
 - ii. **End Time:** December 18, 2023 at 8:40
 - iii. **Total Duration of Event:** Approximately 71 hours and 36 minutes
 - d. [REDACTED] **Flaring Dates:** December 15, 2023
 - i. **Start Time:** December 15, 2023 at 9:27
 - ii. **End Time:** December 15, 2023 at 14:45
 - iii. **Total Duration of Event:** Approximately 5 hours and 18 minutes
6. **Brief Description of Flaring Event:**

On December 15, 2023, at approximately 8:35 AM, the [REDACTED] unit unexpectedly shut down resulting in a loss of 650 psig steam pressure across the refinery. This loss of steam production led to the immediate shutdown or slowdown of most of the process units in the refinery. As a result of the unplanned shutdowns, flaring was required at the [REDACTED] flare, [REDACTED] flare, [REDACTED] flare, and [REDACTED] flare to bring the refinery down to a safe operating condition, according with the Flare Minimization Plan approved by the BAAQMD.
7. **Process Flow Diagram:** see attached process flow diagram
8. **Total Volume of Gas Flared:** 17,467,093 SCF
 - a. **Total Volume of Gas Flared from [REDACTED] Flare:** 3,871,157
 - i. **Volume of Gas Flared 12/15/23:** 3,479,124 SCF
 - ii. **Volume of Gas Flared 12/16/23:** 301,285 SCF
 - iii. **Volume of Gas Flared 12/17/23:** 90,748 SCF
 - b. **Total Volume of Gas Flared from [REDACTED] Flare:** 3,091,148 SCF
 - i. **Volume of Gas Flared 12/15/23:** 2,305,490 SCF
 - ii. **Volume of Gas Flared 12/16/23:** 592,204 SCF
 - iii. **Volume of Gas Flared 12/17/23:** 133,817 SCF
 - iv. **Volume of Gas Flared 12/18/23:** 43,329 SCF
 - v. **Volume of Gas Flared 12/19/23:** 16,309 SCF

- c. Total Volume of Gas Flared from [REDACTED] Flare: 8,164,903 SCF
 - i. Volume of Gas Flared 12/15/23: 5,598,359 SCF
 - ii. Volume of Gas Flared 12/16/23: 706,149 SCF
 - iii. Volume of Gas Flared 12/17/23: 1,734,441 SCF
 - iv. Volume of Gas Flared 12/18/23: 125,954 SCF
- d. Total Volume of Gas Flared from [REDACTED] Flare: 2,339,885 SCF

9. Total Emissions due to flaring based on Regulation 12 Rule 11 Methodology

- a. Total Emissions from [REDACTED] Flare:
 - i. 1,146 lbs of methane
 - ii. 2,703 lbs of non-methane hydrocarbons
 - iii. 4,162 lbs of sulfur dioxide
- b. Total Emissions from [REDACTED] Flare:
 - i. 433 lbs of methane
 - ii. 7 lbs of non-methane hydrocarbons
 - iii. 9 lbs of sulfur dioxide
- c. Total Emissions from [REDACTED] Flare:
 - i. 1,408 lbs of methane
 - ii. 1,821 lbs of non-methane hydrocarbons
 - iii. 808 lbs of sulfur dioxide
- d. Total Emissions from [REDACTED] Flare:
 - i. 1,175 lbs of methane
 - ii. 1,231 lbs of non-methane hydrocarbons
 - iii. 7,606 lbs of sulfur dioxide

10. Was the Gas Scrubbed? The vent gas that went to the [REDACTED] flare for this flaring event was scrubbed with water by the [REDACTED] Scrubber and [REDACTED] during the entire flaring event. In addition, the vent gas that went to the [REDACTED] flare was also scrubbed with [REDACTED] in the [REDACTED] Absorber. The vent gas that went to the [REDACTED] flare was not scrubbed.

11. Primary Cause of Flaring Event including Detailed Description of the Cause and Contributing Factors:

On December 15, 2023, the [REDACTED] unit unexpectedly shutdown due to an electrical failure of the charger at the [REDACTED] substation 125 vDC distribution panel creating a low steam pressure emergency across the refinery. The [REDACTED] unit shutdown while maintenance was troubleshooting an alarm received for the distribution panel at the [REDACTED] substation. While troubleshooting the alarm on the primary charger, electricians attempted a switch from the primary charger to the backup charger, and the distribution panel suddenly lost power. This incident resulted in a loss of power at the [REDACTED] unit and also a loss of control power to the motor relays for the [REDACTED] boiler feedwater pumps. Since the feedwater pump motor relays were designed to fail safe from a loss of control power, this incident shutdown the boiler feedwater pumps, resulting in a loss of boiler feedwater flow, which in turn caused the boiler tubes to overheat and rupture. The ruptured boiler tube released steam that created high [REDACTED] exhaust backpressure causing the [REDACTED] unit to trip and shutdown. Since the [REDACTED] unit was already down for planned maintenance, the [REDACTED] unit shutdown created a low steam pressure emergency at the refinery.

12. Immediate Corrective Actions Taken:

Operations across the refinery responded to the emergency incident by immediately slowing down or shutting down process units to curtail steam usage across the site, in order to prevent additional

shutdowns and to minimize flaring and potential impacts to the environment and community. Flaring allowed operations to safely shutdown and restart process units in the refinery.

13. Was the Flaring the Result of an Emergency?

Yes. Regulation 12 Rule 12 defines “Emergency” as “a condition at a petroleum refinery beyond the reasonable control of the owner or operator requiring immediate corrective action to restore normal and safe operation that is caused by a sudden, infrequent and not reasonably preventable equipment failure, natural disaster, act of war or terrorism or external power curtailment, excluding power curtailment due to an interruptible power service agreement from a utility.” Flaring was the result of a sudden loss of steam pressure throughout the refinery which led to multiple units shutting down or slowing down. Emergency flaring was required to allow the process units to safely shutdown. This was an emergency event caused by a “sudden, infrequent and not reasonably preventable equipment failure.”

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

To help eliminate future flaring events this type of electrical failure, the following action items will be completed:

- a) Replace battery and charger system for distribution panel at the [REDACTED] substation.
- b) Modify relay design for boiler feedwater pumps to ensure pumps fail running (non-fail safe) during a loss of control power. Also add alarm to alert operations when there is a loss of control power to the boiler feedwater pumps. (This action is complete.)

Figure 1: Process Flow Diagram

