BAAQMD received 06/28/24

Benicia Refinery • Valero Refining Company - California
3400 East Second Street • Benicia, California 94510-1097 • Telephone (707) 745-7011 • Facsimile (707) 745-7339

Via Email Notification

June 28, 2024

Reportable Flaring Event Causal Analysis
April 10, 2024
Plant No. B2626

Dr. Philip Fine
Bay Area Air Quality Management District
Bay Area Metro Center
375 Beale Street, Suite 600
San Francisco, CA 94105

Dear Dr.Fine:

A reportable flaring event occurred on April 10, 2024 at the Valero Refining Company – California, Benicia Refinery (Valero Refinery) (Id. No. B2626). The following Causal Analysis for this Reportable Flaring Event is provided to the Bay Area Air Quality Management District (District) pursuant to and in accordance with Section 12-12-406 and the District's Compliance Advisory dated June 25, 2007.

1. *Date on which the report was drafted (12-12-406).*

   June 20, 2024

2. *The refinery name and site number (12-12-406).*

   Valero Benicia Refinery, Id. No. B2626

3. *The assigned refinery contact name and phone number (12-12-406).*

   Taryn Goodwin at (707) 745-7475

4. *Identification of the flare(s) at which the reportable event occurred by reviewing water seal monitoring data to determine which seals were breached during the event (12-12-406).*

   South (S-18) and North (S-19) Flare

5. *The flaring event duration for each affected flare (12-12-406.1):*

   a) *The date(s) of the event;*
   b) *The start and end time of the event; and*
   c) *The net duration of event (in hours and minutes).*

Item	South Flare (S-18)	North Flare (S-19)	Flare Event Total
Start Date	4/10/2024	4/10/2024	4/10/2024
Start Time (hh:mm)	02:43	01:46	01:46
End Date	4/10/2024	4/10/2024	4/10/2024
End Time (hh:mm)	22:09	22:12	22:12
Duration (hh:mm)	19:26*	20:26*	20:26*

*Flaring was intermittent during this time period

6. *A brief description of the flaring event (12-12-406.1) (e.g., "flaring due to turnaround maintenance").*

   Flaring was due to turnaround startup activities.

7. *A process flow diagram showing the equipment and process units that were the primary cause of the event (12-12-406.1).*

   The relevant piping and instrumentation diagrams (P&IDs) are attached and highlighted.

   Please note that the attached P&ID contains information that the Valero Refinery considers to be trade secret and confidential business information (CBI) as defined by the California Public Records Act, Government Code § 6254.7 et seq., and the Freedom of Information Act, 40 CFR Part 2 (40 CFR § 2.105(a)(4)), 5 USC 552(b)(4), and 18 USC 1905. Because of the sensitive and competitive nature of this information, the Valero Refinery requests that the District afford the information CBI status and treatment indefinitely.

8. *The total volume of vent gas flared (MMSCF) throughout the event (12-12-406.5).*

Item	South Flare (S-18)	North Flare (S-19)	Flare Event Total
4/10/2024			
Volume (MMSCF)	0.077	0.605	0.683
Flare Event Total			
Volume (MMSCF)	0.077	0.605	0.683

9. *The emissions associated with the flaring event per calendar day (12-12-406.5):*
   a) *# methane (CH_4) emitted;*
   b) *# non-methane hydrocarbon emitted; and*
   c) *# SO_2 emitted.*

   Also provide *the assumptions used to calculate emissions associated with the flaring event if they are different from those used for reporting under Regulation 12, Rule 11.*

Item	South Flare (S-18)	North Flare (S-19)	Daily Total
4/10/2024			

CH4 (lbs)	41	310	351
NMHC's (lbs)	32	232	264
SO2 (lbs)	2	247	248
Flare Event Total			
CH4 (lbs)	41	310	351
NMHC's (lbs)	32	232	264
SO2 (lbs)	2	247	248

The assumptions used to calculate emissions associated with the flaring event are consistent with those used for reporting under Regulation 12, Rule 11.

10. *A statement as to whether or not the gas was scrubbed to eliminate or reduce any entrained compounds and a list of the compounds for which the scrubbing was performed (12-12-406.1).*

    The vent gases flared during this event were not scrubbed.

11. *The primary cause of the flaring event including a detailed description of the cause and all contributing factors. Also identify the upstream process units that contributed vent gas flow to the flare header and provide other flow instrumentation data, where available (12-12-406.1).*

    The cause of this flaring event was the start-up of the fluid catalytic cracker unit (FCCU) start-up. As noted in the Valero FMP "Each flare gas header also has connections for equipment depressurization and purging for maintenance activities including startup, shutdown and turnaround." During FCCU startup it's necessary to vent two exchangers (E-812 and E-814) to the flare header to purge non-condensable gases. When the FCCU is down, these exchangers are blanketed with non-condensable fuel gas which needs to be purged during start up, otherwise the exchangers may cause the upstream towers to overpressure and result in an atmospheric release through a safety valve.

12. *Describe all immediate corrective actions to stabilize the flaring event, and to reduce or eliminate emissions (flare gas recovered or stored to minimize flaring during the event). If a decision was made not to store or recover flare gas, explain why (12-12-406.1).*

    Operations followed procedures to minimize flaring during the planned startup. Flaring was stopped once the FCCU was successfully started up.

13. *Was the flaring the result of an emergency (See definition in Reg. 12-12-201)? If so, was the flaring necessary to prevent an accident, hazard or release to the atmosphere (12-12-406.4)?*

    This section is not applicable, as this flaring incident was not the result of an emergency.

14. *If not the result of an emergency and necessary to prevent an accident, hazard or release to the atmosphere, was the flaring consistent with an approved FMP? If yes,*

provide a citation to the facility's FMP and any explanation necessary to understand the basis for this determination (12-12-406.3).

Pursuant to Regulation 12-12-301, flaring is prohibited unless it is consistent with an approved FMP. The current approved FMP is Revision 19.1 dated February 8, 2024. This series of events is consistent with Section 2.2 of the Valero Refinery FMP, Reasons for Flaring:

2.2.1 -Planned Maintenance Activities (FCC Startup)

15. *If the flaring was due to a regulatory mandate to vent to a flare, why couldn't the gas be recovered, treated, and used as fuel gas (12-12-406.4)?*

    The flaring was not due to a regulatory mandate to vent to a flare. The flaring was consistent with the Valero Refinery's approved FMP.

16. *Identify and describe in detail each prevention measure (PM) considered to minimize flaring from the type of reportable flaring event that occurred (12-12-406.2):*

    No new prevention measures or corrective actions were identified. The startup was a planned activity.

Please contact Taryn Goodwin at (707) 745-7475 if you have any questions on this reportable flare event.

Sincerely,

Taryn Goodwin

Taryn Goodwin
Manager – Environmental Engineering

ecc:
Compliance@baaqmd.gov;
Anthony Smith anthony.smith@baaqmd.gov;
Colby La Place CSLaPlace@Solanocounty.com

Enclosures: (1 P&ID)
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