



Shawn Lee
HSE Manager, Richmond Refinery

September 29, 2021

Via E-mail

Bay Area Air Quality Management District
Attn: Compliance and Enforcement Division
375 Beale Street, Suite 600
San Francisco, CA 94105

**Chevron Richmond Refinery
July Flaring Causal Analysis Report**

To Whom It May Concern:

Attached is the flaring causal analysis report for July 2021 for Chevron's Richmond Refinery. This report is submitted pursuant to Regulation 12, Rule 12, Section 12-12-406. The report is due within 60 days of the end of July 2021 for any reportable flaring events that occurred during the month of July 2021. There was one reportable flaring event that occurred in July 2021.

If you have any questions, please contact Mr. Brandon Sutter at 925-394-8773 or brandonsutter@chevron.com.

Sincerely,

A handwritten signature in blue ink that appears to read "Shawn Lee".

for

Shawn Lee

Attachment

cc: Chris Crowley, Bay Area Air Quality Management District (via e-mail, w/ attach)
Almira Van, Bay Area Air Quality Management District (via e-mail, w/ attach)
Verntzoone R. Pharn, Bay Area Air Quality Management District (via e-mail, w/ attach)

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Attachment I

Causal Analysis Report

Chevron Richmond Refinery
Reportable Flaring Events

July 25-26, 2021
Flaring Due to Power Dip

Refinery Flare Event – Cause Investigation Report

1. Date on which the report was drafted: September 29, 2021

2. The refinery name and site number:

Refinery: Chevron Richmond Refinery

Refinery Site Number: A0010

3. The assigned refinery contact name and phone number:

Contact Name: Brandon Sutter

Contact Phone Number: (925) 394-8773

Is this a rescission/modification of a previous report: No

Date of initial report: Not Applicable

Reason for rescission/modification: Not Applicable

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

Flare	Reportable Event (SO2 or Vent Gas Volume)
H2 (S-6021)	Vent Gas Volume

5. The flaring event duration for each affected flare

Flare (Source Number): H2 (S-6021)

The Date(s) of the event: July 25-26, 2021

The start time of the event: 7/25/2021 2:18 AM

The end time of the event: 7/26/2021 2:49 PM

6. A brief description of the flaring event –

On July 25th, 2021, the Refinery experienced two momentary disruptions on the 115kV electrical transmission system. The momentary disruptions led to voltage sags at the substations. As a result of the voltage sags, hydrogen production plants shut down in response to pressure issues on Train 1 and loss of air flow on Train 2. Hydrogen plant shutdown procedures include routing flows to relief and subsequent flaring.

7. A process flow diagram showing the equipment and process units that were the primary cause of the event.

See Attachment Ia.

8. The total volume of vent gas flared (MMSCF) throughout the event

Flare	Volume (MMSCF)
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H2	16.8
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9. The emissions associated with the flaring event per calendar day

Flare	Calendar Day	CH4 (lbs.)	NMHC (lbs.)	SO2 (lbs.)
H2	July 25, 2021	977	409	3
H2	July 26, 2021	1,284	108	3

Assumptions used to calculate emissions – consistent with the reporting under Reg. 12-11.

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.

The vent gas was not scrubbed to eliminate or reduce any entrained compounds.

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.

Primary causal factor: Contaminant accumulation on a 115kV insulator.

Contributing causal factor: Logic at H2 plant motor control circuits tripped unit equipment.

The primary contributor of the vent gas flow to the flare was the Hydrogen Plant.

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.

Operations proceeded with the shutdown activities per the procedure in a timely fashion to reduce the emissions. The Hydrogen Plant does not have flare gas recovery.

13. Was the flaring the result of an emergency? If so, was the flaring necessary to prevent an accident, hazard or release to the atmosphere?

Flaring was not due to an Emergency (defined in Regulation 12-12-201) as interpreted by the BAAQMD.

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.

Flaring was consistent with Chevron’s FMP Section 2.1 Table 2-4. Table 2-4 identifies sources that can be flared in non-emergency situations (e.g. start-up, shut-down).

15. If the flaring was due to a regulatory mandate to vent to flare, why couldn’t the gas be recovered, treated, and used as fuel gas?

N/A. Flaring was not due to a regulatory mandate.

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

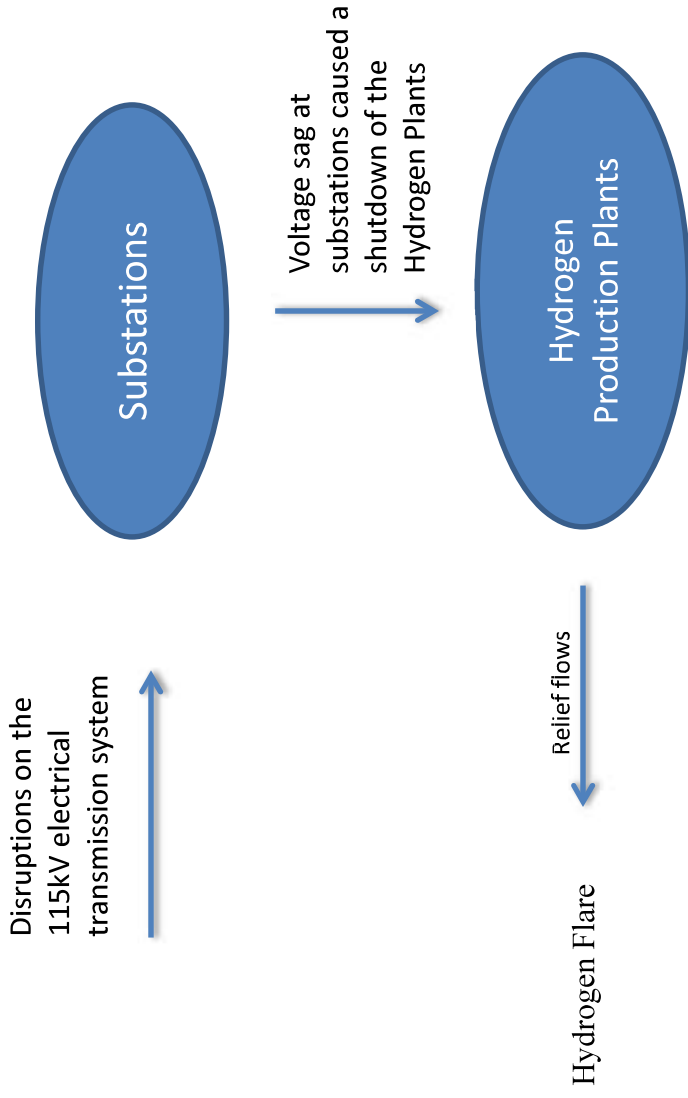
a) State whether the PM is feasible (and will be implemented), or not feasible

b) Explain why the PM is not feasible, if applicable

All prevention measures have been considered and have or will be implemented.

1. Review preventative cleaning program for 115 kV electrical system. Evaluate increasing the frequency of insulator cleaning on 115 kV system.
2. Redesign and implement new control relay coordination and logic of the 4kV motor control at the H2 Trains.

Flaring Due to Power Dip



Signature: *Linda Duca*

Email: lduca@baaqmd.gov

Signature: *Alme Rosquites*

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