



Proposed Amended Rule 1118: Control of Emissions from Refinery Flares

Working Group Meeting #5

December 12, 2023

Join Zoom Webinar

<https://scaqmd.zoom.us/j/96400022757>

Webinar ID: 964 0002 2757

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Agenda

Summary of Working Group Meeting #4

Rule Development Progress and Updates

AB 617 CERP Actions and Progress

Clean Service Flares at Hydrogen Production Plants

Initial Preliminary Draft Rule Language Overview

Next Steps

Summary of Working Group Meeting #4 and Progress Since Meeting

Summary of Working Group Meeting #4

Providence Photonics representative presented on optical remote sensing technology

- Mantis and Mantis Light Video Imaging Spectral Radiometry (VISR) technology

Staff discussed:

- Regulatory background of Rule 1118
- Preliminary concepts for Proposed Amended Rule 1118
 - Proposal to lower SO₂ Performance Target and increase mitigation fees
 - Proposal for flare minimization at clean service flares (Hydrogen and LPG flares)

Rule Development Progress and Updates

Staff continued rule development

- Continued meeting and discussions with stakeholders
- Released initial draft of proposed amended rule language for discussion purpose on December 8, 2023

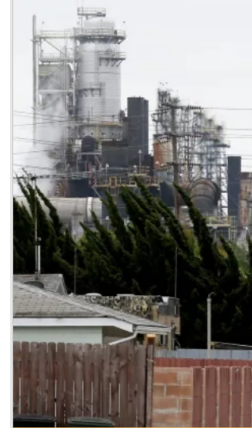
AB 617 CERP Actions and Progress

AB 617 Background

- AB 617 signed into law in 2017
 - Statewide strategy to reduce toxic air contaminants and criteria pollutants in designated environmental justice communities
 - Establishes community-focused and community-driven actions to reduce air pollution and improve public health
- Wilmington/Carson/West Long Beach (WCWLB) is one of the first designated AB 617 communities
- Most of the refineries located in Wilmington/Carson/West Long Beach

Slide from WGM #2

AB 617 Community Emissions Reduction Plans (CERPs)



WCWLB CERP included the following action items for Rule 1118:

- Lower performance targets and/or increased mitigation fees
- Increase capacity of vapor recovery systems to store gases during shutdowns
- Header modifications for gas diversion with process controls
- Back-up power systems for key process units
- Remote optical sensing for flare emission characterization
- Lower-emission flaring technologies
- Additional flare minimization plans

WCWLB CERP: <http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/wilmington/cerp/final-cerp-wcwb.pdf?sfvrsn=8>

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WCWLB CERP Actions

Lower performance targets and/or increase mitigation fees

- Proposing to lower performance target
- Proposing to increase mitigation fees using Customer Price Index

Additional flare minimization plans

- Lowered performance target would trigger FMP submittals more frequently

Increase capacity of vapor recovery systems to store gas during shutdowns

- Recovered gases and vapors are not intended to be stored
- Large volume of stored gas can create an explosive environment

Header modifications for gas diversion with process controls

- 2005 rule amendments required modification of header to install or upgrade flare gas recovery systems

Remote optical sensing for flare emission characterization

- Met with Providence Photonics regarding Mantis VISR technology
- Currently under review by U.S. EPA, but no approved VISR method

Lower-emission flaring technologies

- Flare manufacturers improve design, efficiency, and performance
- Facilities replace and upgrade in accordance with turnaround

Back-up power systems for key process units

- Facilities will need to improve and upgrade electrical reliability
- One facility installed underground feeder lines at cost of \$75 MM

CERP Action: Back-Up Power Systems for Key Power System

- Flaring due to external power loss has been less frequent in recent years
- Staff evaluated historical flare data to calculate the share of flare events associated with internal power loss
 - Data does not include unexpected external power interruption beyond facility's control
- More frequent FMPs would trigger actions that reduce flaring due to internal power loss
 - According to SCARs, power failures mainly results form electrical switch failures, transformer ground faults, blown fuse, short circuits, and animal intrusions

Total Flared Gas due to Internal Power Loss (Percent of Total/year)						
	Chevron	Marathon	P66 Wilmington	P66 Carson	Torrance	Valero
2013	-	-	1%	-	-	-
2014	-	-	-	-	-	5%
2015	13%	-	-	-	-	-
2016	16%	-	-	-	-	-
2017	28%	-	6%	36%	-	-
2018	52%	-	0.01%	-	-	-
2019	-	-	-	-	-	-
2020	-	-	-	-	-	-
2021	0.2%	5%	-	21%	-	-

Hydrogen Clean Service Flares

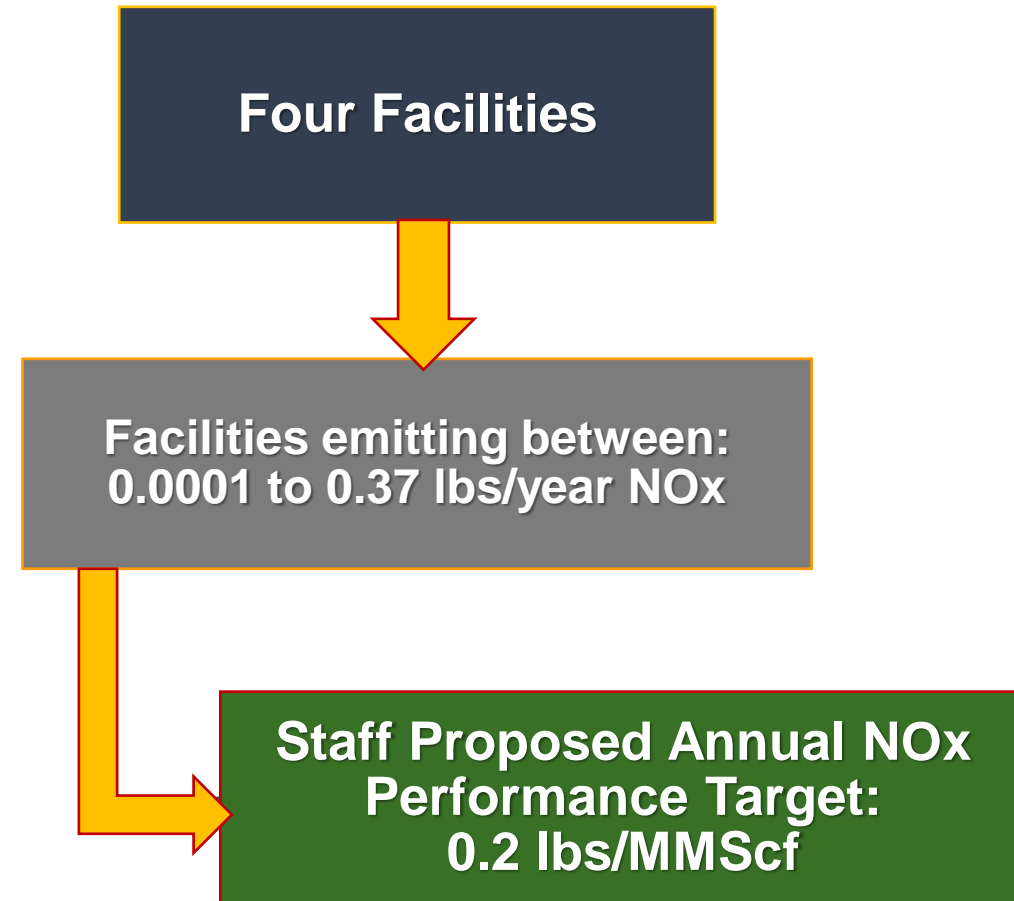
Clean Service Flares: Hydrogen Plant Flares

- At WGM #4, staff discussed clean service flares used solely for vent gas streams from hydrogen production plants
 - Hydrogen production plant flares are subject to SO₂ performance target
 - No flare minimization action has been triggered due to low sulfur in vent gas streams
 - Facilities have not been subject to Flare Minimization Plans or Mitigation Fees
- Staff proposed to establish a NO_x performance target to control flare emissions
- Staff met with each of the four affected facilities to discuss operations



Clean Service Flares: Hydrogen Plant Flares (cont.)

- Staff evaluated NOx emissions data from flares for last 10 years
- Proposing to normalize NOx performance based on maximum hydrogen plant production capacity in million standard cubic feet (MMScf)
 - Maximum hydrogen production capacity ranges from 72 to 96 MMScf per day
- Exceeding threshold will require a facility to submit a Flare Minimization Plan and will be subject to mitigation fees



Initial Preliminary Draft Rule Language

Rule Structure Overview

Rule 1118

- (a) Purpose and Applicability
- (b) Definitions
- (c) Requirements
- (d) Performance Targets
- (e) Flare Minimization Plan
- (f) Flare Monitoring and Recording Plan Requirements
- (g) Operation, Monitoring and Recording Requirements
- (h) Recordkeeping Requirements
- (i) Notification and Reporting Requirements
- (j) Testing and Monitoring Methods
- (k) Exemptions
- Attachment A
- Attachment B



PAR 1118

- (a) Purpose
- (b) Applicability
- (c) Definitions
- (d) Requirements
- (e) Specific Cause Analysis Requirements**
- (f) Performance Targets Requirements
- (g) Requirements for Non-Hydrogen Clean Service Flares**
- (h) Flare Minimization Plan Requirements and Schedule
- (i) Flare Monitoring and Recording Plan Requirements
- (j) Monitoring, Recordkeeping and Reporting Requirements
- (k) Testing and Monitoring Methods
- (l) Flare Event Notification Requirements
- (m) Exemptions
- Attachment A
- Attachment B
- Attachment C**
- Attachment D**

Summary of Key Updates to Initial Preliminary Draft Rule Language

Updated rule structure

- Added two new attachments
- New subdivision for non-hydrogen clean service flare

Clarified and streamlined rule language

- Consolidated rule provisions

Key New Proposed Rule Concepts and Updates

- New requirements for clean service flares
- Lower SO₂ performance target threshold
- Standardized reporting through FENS
- Updated requirements for notification sent through FENS
- Requirements for reporting flare images to be posted on FENS or another webpage

Subdivision (a) Purpose and Subdivision (b) Applicability

Purpose and Applicability divided into separate subdivisions

(a) ~~Purpose and Applicability~~

The purpose of ~~Rule 1118~~ this rule is to monitor and record data on ~~refinery~~ Refinery and related flaring operations, and to control and minimize flaring and ~~flare~~ Flare-related emissions. The provisions of this rule are not intended to preempt ~~the operations and practices of any petroleum refinery~~ Refinery, ~~sulfur recovery plant~~ Sulfur Recovery Plant, ~~and or hydrogen production plant~~ Hydrogen Production Plant ~~operations and practices~~ with regard to safety. ~~This rule applies to all flares used at petroleum refineries, sulfur recovery plants and hydrogen production plants.~~

(b) Applicability

This rule applies to all Flares used at Refineries, Sulfur Recovery Plants, and Hydrogen Production Plants.

Subdivision (c) Definitions – Definition of “Essential Operation Need”

Updated definition of “Essential Operation Need” to align the language with the new proposed requirement for clean service flares located at refineries

~~(3)~~(4) ESSENTIAL OPERATIONAL NEED is an activity other than resulting from poor maintenance or operator error, determined by the Executive Officer to meet one of the following:
[...]
(C) Venting of ~~clean service streams~~ Clean Service Streams to a ~~clean service flare~~ Hydrogen Clean Service Flare, Non-Hydrogen Clean Service Flare, or a general service flare General Service Flare. Routine venting of Clean Service Streams where recovery through refrigeration, compression, or other applicable means is feasible shall not be deemed Essential Operational Need.

Subdivision (c) Definitions – Definition of “Flare”

- Current definition of “Flare” accounts for two types of flares
 - General Service Flares
 - Clean Service Flares
- Staff updated the definition to separate clean service flares that solely combust hydrogen streams from other clean service flares
 - PAR 1118 considers different requirements for clean service flares at refineries and Hydrogen production plants

~~(4)~~(6) FLARE is a combustion device that uses an open flame to burn combustible gases with combustion air provided by uncontrolled ambient air around the flame. When used as a verb means the combustion of ~~vent gases~~ Vent Gas in a ~~flare~~ Flare device. Based on their use, ~~flares~~ Flares are classified as:

~~(A) — CLEAN SERVICE FLARE is a flare that is designed and configured by installation to combust only clean service streams.~~

~~(B)~~(A) GENERAL SERVICE FLARE ~~is a flare~~ that is not a Hydrogen Clean Service Flare or Non-Hydrogen Clean Service Flare;

(B) HYDROGEN CLEAN SERVICE FLARE that is designed and configured by installation to combust only Clean Service Streams from a Hydrogen Production Plant; or

(C) NON-HYDROGEN CLEAN SERVICE FLARE that is designed and configured by installation to combust only Clean Service Streams from a Facility other than Hydrogen Production Plant.

Subdivision (c) Definitions – Definition of “Flare Event”

- Current definition of “Flare Event” is not comprehensive to both planned and unplanned events
- Moved the language to determine the start and end of a flare event to Subdivision (d) – Requirements
- Moved the requirements for reporting flare events to Subdivision (l) – Flare Event Notifications Requirements

~~(5)(7)~~ FLARE EVENT is any ~~intentional or unintentional~~ planned or unplanned combustion of ~~vent gas~~ Vent Gas in a flare Flare. ~~The start is determined by the vent gas flow velocity exceeding 0.10 feet per second and the end is determined when the vent gas flow velocity drops below 0.12 feet per second, or when the owner or operator can demonstrate that no more vent gas was combusted based upon the monitoring records of the flare water seal level and/or other parameters as approved by the Executive Officer in the Flare Monitoring and Recording Plan as described in subdivision (f). For flare events that can be attributed to the same process unit(s) or equipment and has more than one start and end within a 24 hour period, it shall be considered a continuation of the same event, and not a separate or unique event. For a flare event that continues for more than 24 hours, each calendar day of venting of gases shall constitute a flare event.~~

Subdivision (c) Definitions – Definition of Planned and Unplanned Flare Events

Update Definition – Planned Flare Event

- Added the term “scheduled”
- Moved the provision to determine “when to consider a startup process as a *planned* event after the end of an *unplanned* event” to Subdivision (d) – Requirements

(15)(20) PLANNED FLARE EVENT is any flaring of Vent Gas as a result ~~from process unit(s) or equipment of scheduled~~ Startup, shutdown Shutdown, turnaround Turnaround, maintenance, clean-up LPG tank cleaning, and or non-emergency flaring of any process unit or equipment. ~~Flaring from the startup of a process unit or equipment that is more than 36 hours after the end of an unplanned flare event of that same process unit shall be considered a Planned Flare Event.~~

New Definition – Unplanned Flare Event

- Unplanned flare event shall exclude flaring during any operation qualified to be reported as “planned flare event”

(32) UNPLANNED FLARE EVENT is any flaring of Vent Gas during operations such as unplanned Shutdown, subsequent Startup, valid breakdown, unforeseen maintenance, customer order kick back, or as a result of any situation beyond the operator’s control including external power curtailment, natural disasters, acts of war or terrorism.

Subdivision (c) Definitions – Definition of “Refinery”

Amended the definition of “Petroleum Refinery” to include a facility that is permitted to process and refine “*Alternative Feedstocks*”

(24) REFINERY is a Facility that is permitted to Refine crude oil, as defined in the Standard Industrial Classification Manual as Industry No. 2911 and/or a facility that is permitted to Refine Alternative Feedstocks All portions of the refining operation, including those at non-contiguous locations operating Flares, shall be considered as one Refinery.

Subdivision (c) Definitions – New Definitions

Staff is proposing to add the following definitions to the rule language:

- Alternative Feedstock
- Facility
- Flare Monitoring and Recording Plan (FMRP)
- Hydrogen Production Capacity
- Performance Target
- Processing Capacity
- Relative Cause
- Unplanned Flare Event

Subdivision (d) Requirements

- Streamlined the rule language to list all operational requirements in paragraph (d)(1)
- Moved all provisions and requirements related to specific cause analysis to a new subdivision
 - Subdivision (e) – Specific Cause Analysis Requirements
- Moved the monitoring and recordkeeping requirements to Subdivision (j)
- Removed outdated provisions
 - Old requirements to prepare and submit scoping document

Subdivision (e) Specific Cause Analysis Requirements

- Provisions and requirements related to specific cause analysis
- Old language moved down from “Requirements Subdivision”
- No new requirement or consideration

(e) Specific Cause Analysis Requirements

- (1) The owner or operator of a Facility shall conduct a Specific Cause Analysis for any Flare Event, excluding planned Shutdown, planned Startup, and Turnarounds, unless the Flare Event resulted from a non-standard operating procedure that occurred during a planned Shutdown, planned Startup, or Turnaround, when any of the following thresholds is exceeded:
 - (A) 100 pounds of VOC Emissions;
 - (B) 500 pounds of sulfur dioxide emissions; or
 - (C) 500,000 standard cubic feet of Vent Gas is combusted.
- (2) The owner or operator of a Facility shall conduct a Specific Cause Analysis for any Flare Event at a Facility when the Smokeless Capacity of the Flare is exceeded and either:
 - (A) The visible emission limits in subparagraph (d)(1)(B) or Rule 401 is exceeded; or
 - (B) The Flare Tip Velocity limit in subparagraph (d)(1)(C) is exceeded.

Subdivision (f) Performance Targets Requirements

- Updated SO₂ performance target requirement to gradually decrease over time
- Staff is proposing to change the reference for facility processing capacity from “calendar year 2004” to “as listed in the California Energy Commission’s list of California Oil Refinery Locations and Capacities for each calendar year, or as reported by the facility” (Attachment D)

Paragraph (f)(1)(A)

TABLE 1 – Performance Target Schedule for Sulfur Dioxide

<u>SO₂ Performance Target</u>	<u>Effective Date</u>
<u>0.5</u>	<u>Calendar Year 2024</u>
<u>0.35</u>	<u>Calendar Year 2025</u>
<u>0.25</u>	<u>Calendar Year 2026 and after</u>

Attachment C

Table C1 – Processing Capacity of Refineries

<u>Facility</u>	<u>Processing Capacity (Million Barrels per Day)</u>
<u>AltAir Paramount</u>	<u>Pursuant to Paragraph (j)(18)</u>
<u>Chevron USA Inc.</u>	<u>269,000</u>
<u>Marathon (Carson, Wilmington, SRP)</u>	<u>363,000</u>
<u>Phillips 66 (Carson, Wilmington)</u>	<u>139,000</u>
<u>Torrance Refining Co.</u>	<u>160,000</u>
<u>Valero</u>	<u>145,000</u>

Subdivision (f) Performance Targets Requirements – cont.

- Staff is proposing to include a performance target of 0.20 Pounds of NOx/MMscf to control emissions from Hydrogen clean service flares
 - Flares that are solely used for vent gas streams from hydrogen production plants
- Attachment C Table C2 lists production capacities for Hydrogen production plants

Attachment C

Table C2 – Production Capacity of Hydrogen Production Plants

<u>Hydrogen Production Plant</u>	<u>Hydrogen Production Capacity (Million Standard Cubic Feet per Day)</u>
<u>Air Liquide</u>	<u>90</u>
<u>Air Product – Carson</u>	<u>96</u>
<u>Air Product - Wilmington</u>	<u>88</u>
<u>Chevron USA Inc.</u>	<u>72</u>

Subdivision (f) Performance Targets Requirements – Mitigation Fees

Updated mitigation fees using Consumer Price Index (CPI) for 2022

Attachment D

3. Calculations for Baseline Mitigation Fees

The baseline mitigation fees shall be calculated according to the following schedule:

- a) If excess sulfur dioxide emissions or NOx Emissions are no more than ten percent of the Facility-specific Performance Target, \$39,000 per ton of the sulfur dioxide emissions or NOx Emissions in excess of the Facility-specific Performance Target;
- b) If excess sulfur dioxide emissions or NOx Emissions are greater than ten percent but no more than twenty percent of the Facility-specific Performance Target, \$79,000 per ton of the sulfur dioxide emissions or NOx Emissions in excess of the Facility-specific Performance Target; or
- c) If excess sulfur dioxide emissions or NOx Emissions are greater than twenty percent of the Facility-specific Performance Target, \$158,000 per ton of the sulfur dioxide emissions or NOx Emissions in excess of the Facility-specific Performance Target.

Subdivision (f) Performance Targets Requirements – Mitigation Fees (cont.)

- Staff transferred requirements on mitigation fees to a new attachment (Attachment D) to include:
 - Calculations of facility-specific performance targets
 - New baseline fees and methodology to adjust the fees annually using CPI

Attachment D

4. Calculations for Adjusted Mitigation Fees

The baseline mitigation fees shall be adjusted for the calendar year that the Performance Target was exceeded to account for any change in the consumer price index (CPI), according to the following equation:

$$\text{Adjusted Mitigation Fees} = \text{Baseline Mitigation Fees} \times \frac{\text{Reporting Year CPI}}{2022 \text{ CPI}}$$

Where:

Adjusted Mitigation Fees = Mitigation fees due to pay to South Coast AQMD for exceeding the Performance Target, in USD

Baseline Mitigation Fees = Mitigation fees, as calculated pursuant to Attachment D, Part (2), in USD

Reporting Year CPI = CPI for the calendar year that the Performance Target was exceeded or the most recently available CPI, as determined by State of California Department of Industrial Relations

2022 CPI = 319.224

Subdivision (g) Non-Hydrogen Clean Service Flares Requirements

New subdivision (g)

- Requirement added for submitting a permit application for owner or operator of LPG flares that have exceeded the proposed throughput threshold in any two consecutive years preceding rule adoption since 2017
 - Proposing annual throughput threshold of 15,000 MMBtu/year
 - Included requirements and schedule to install equipment to reduce flaring emissions
- Requirement added for LPG clean service flares to meet an annual throughput threshold of 15,000 MMBtu/year at least every other year
 - Effective January 1, 2025

(g) Non-Hydrogen Clean Service Flares Requirements

- (1) An owner or operator of a Refinery with a Non-Hydrogen Clean Service Flare that exceeded an annual throughput of 15,000 MMBtu per year for any two consecutive years prior to [Date of Rule Adoption] since 2017 shall:
 - (A) Submit a permit application within 12 months from [Date of Rule Adoption] to install equipment to reduce the amount of combusted Vent Gas in the Non-Hydrogen Clean Service Flare to below the threshold and the schedule to install equipment; and
 - (B) Install equipment in compliance with the schedule pursuant to subparagraph (g)(1)(A) no later than 12 months from the date that the permit is issued.
- (2) Effective January 1, 2025, the owner or operator of a Refinery that exceeds an annual throughput of 15,000 MMBtu per year of Vent Gas in each Non-Hydrogen Clean Service Flare for two consecutive years shall submit a Flare Minimization Plan pursuant to paragraph (h)(2).

Subdivision (h) Flare Minimization Plan Requirements and Schedule

- No new consideration for FMP to be submitted upon performance target exceedance
- Requirement added for submitting a FMP for annual throughput threshold exceedance at non-hydrogen clean service flares

- (2) The owner or operator of a Refinery that exceeds the annual throughput threshold pursuant to paragraph (g)(2) shall:
- (A) No later than 90 days from the end of the second consecutive calendar year, submit a Flare Minimization Plan, or a complete revised Flare Minimization Plan for the owner or operator of a Facility with an existing approved Flare Minimization Plan, for review by the Executive Officer. The Flare Minimization Plan shall list all specific procedure changes to be implemented by the Facility to meet the annual throughput threshold in paragraph (g)(2), and shall include the following information:
- (i) List of corrective action(s), including but not limited to applicable technology(s) or technique(s), that will be used to reduce the amount of combusted Vent Gas in the Non-Hydrogen Clean Service Flare to below the threshold; and
- (ii) the schedule to implement the action(s);
- (B) Implement the corrective action(s) in compliance with the schedule provided pursuant to subparagraph (h)(2)(A).

Subdivision (j) Monitoring, Recordkeeping, and Reporting Requirements

- Staff streamlined MRR-related language from “Requirements” to “MRR” subdivision
- Staff is proposing to:
 - Remove on/off flow indicator (Table 2) for any type of flare
 - Require continuous flow meter for all types of flares
 - Require “Annual Emissions and Throughput Reporting” for a facility that exceeds the applicable Performance Target or the annual throughput threshold

~~(8)~~(9) Effective on [Date of Rule Adoption] for General Service Flares, and effective six months from [Date of Rule Adoption] for Hydrogen and Non-Hydrogen Clean Service Flares, the owner or operator of a Facility ~~All general service flares~~ shall:

- (A) Have a flow meter installed in a manner and at a location that ~~would~~ allows for accurate measurements of the total volume of ~~vent gas~~ Vent Gas to each ~~flare~~ Flare. If the flow meter cannot be placed in the location that ~~would~~ allows for accurate measurement due to physical constraints, the owner or operator shall retrofit or equip the existing flow meter(s) with totalizing capability to indicate the true net volume of gas flow to each ~~flare~~ Flare; and

(12) Annual Emissions and Throughput Reporting

The owner or operator of a Facility that exceeds the applicable Performance Target in subparagraph (f)(1)(A) or (f)(2)(A), or the annual throughput threshold in subdivision (g) for any calendar year shall submit records of annual sulfur dioxide emissions, annual NOx emissions, or annual throughput, as applicable, in an electronic format approved by the Executive Officer using FENS within 30 days after the end of each calendar year.

Subdivision (j) Monitoring, Recordkeeping, and Reporting Requirements – *cont.*

- Staff is proposing a requirement for operators to provide high frequency images or live feed of the flare tip during a flare event for public access
 - Considering to allow for lower quality images (e.g., webcam images)

(8) Effective 12 months from [Date of Adoption], the owner or operator of a Facility shall make the images of the Flare available at the real-time of Flare Event to South Coast AQMD to post on the public website.

- Enclosed/ground flares may be excluded from this requirement due to limited access to the flare tip (see picture →)



Image Courtesy: ZEECO®

Subdivision (j) Monitoring, Recordkeeping, and Reporting Requirements – cont.

- Staff streamlined the rule language and added new reporting requirements
 - Now includes reporting requirements for quarterly and monthly reports, and specific cause analysis reports through Flare Event Notification System
- Staff is proposing the requirement to submit preliminary flare event data monthly and report more detailed flare event data quarterly
 - Making preliminary data available to the public sooner than quarterly data reports
 - Data to be flagged as preliminary
 - Allowing for some flare event details (e.g., cause) not to be reported in preliminary data
 - Allow facilities the ability to go back and update data

(14) Monthly Emissions Reports

The owner or operator of a Facility shall submit a monthly report in an electronic format approved by the Executive Officer using FENS within 30 days after the end of each month, flagged as preliminary data in writing by the responsible Facility official and include all the following information that is available to the best of the owner or operator's knowledge:

- (A) The information required to be monitored under paragraph (j)(3);
- (B) The description of the cause of each Flare Event as analyzed pursuant to paragraphs (d)(7), (e)(1), and/or (e)(2);
- (C) The category of each Flare Event such as Emergency, Shutdown, Startup, Turnaround, Essential Operational Need, or other specific cause(s); and
- (D) The associated emissions.

(15) Specific Cause Analysis Reports

The owner or operator of a Facility shall submit Specific Cause Analysis reports as required by paragraph (e)(1) or (e)(2) in an electronic format approved by the Executive Officer using FENS to the Executive Officer within 30 days of the start of the Flare Event, including all the following:

- (A) The cause and duration of the Flare Event; and
- (B) Any mitigation and corrective actions taken or to be taken to prevent recurrence of a similar event.

Subdivision (j) Monitoring, Recordkeeping, and Reporting Requirements – cont.

- Proposal to require electronic submission of quarterly report, monthly emissions reports, and specific cause analysis reports through FENS or email address
- Requirement added for the owner or operator of facilities to report *Processing Capacity* if no processing capacity is listed in Attachment C Table C1

(16) If FENS is not available, or if functions within FENS do not allow facilities to enter the necessary information required in paragraphs (j)(12) through (j)(15), the owner or operator of a Facility shall provide the information required in paragraphs (j)(12) through (j)(15) by sending to Rule1118@aqmd.gov.

(17) If FENS is not available, or if functions within FENS do not allow facilities to enter the necessary information required in this subdivision, the required information and notifications shall be submitted to South Coast AQMD through Rule1118@aqmd.gov.

(18) For a Facility with no Processing Capacity determined pursuant to Attachment C Table C1, the owner or operator of a Facility shall report to the Executive Officer the Processing Capacity in million barrels for the prior calendar year within 30 days of the end of every calendar year.

Subdivision (k) Testing and Monitoring Methods

- Moved up the subdivision to follow “Monitoring, Recordkeeping and Reporting Requirements”
- Added references to Rule 218.2 and Rule 218.3
 - CEMS subject to Rule 2012 must be certified pursuant to the implementation schedule in paragraph (d)(3) of Rules 218.2 and 218.3

(3) Continuous monitoring systems certified under Rule 2011 – Requirements for Monitoring, Reporting and Recordkeeping of Oxides of Sulfur (SO_x) Emissions, Rule 2012 – Requirements for Monitoring, Reporting and Recordkeeping of Oxides of Nitrogen (NO_x) Emissions, Rule 218.2 – Continuous Emission Monitoring System: General Provisions (Rule 218.2), and Rule 218.3 – Continuous Emission Monitoring System: Performance Specifications (Rule 218.3), may be used for the monitoring of Vent Gases.

Subdivision (I) Flare Event Notifications Requirements

- Staff is proposing to require all flare events (planned and unplanned) to be reported within one hour of the start through Flare Event Notification System
 - Additional notification is still required for any planned flare event at least 24 hours prior to the start
- Staff added the requirement for notification upon:
 - End of a flare event
 - Smokeless capacity exceedance

- (2) The owner or operator of a Facility shall provide notifications ~~Notify the Executive Officer via the Web-Based Flare Event Notification System~~
FENS:
- (A) ~~w~~Within one hour from the start of any ~~unplanned flare event~~ Flare Event ~~with emissions~~ exceeding either the following thresholds:
- (i) 100 pounds of VOC emissions;
 - (ii) 500 pounds of sulfur dioxide emissions; ~~or exceeding~~
 - (iii) 500,000 standard cubic feet of flared ~~vent gas~~ Vent Gas.
- (B) Within one hour of the end of the Flare Event indicating:
- (i) The Flare Event has ended; and
 - (ii) If the Flare Event exceeded the Smokeless Capacity.

Subdivision (I) Flare Event Notifications Requirements – *cont.*

Requirement added for separate flare event notifications through FENS for every calendar day if an unplanned event lasts longer than 24 hours

(4) Unplanned Flare Event Notifications

If the Unplanned Flare Event is anticipated to last longer than 24 hours, the owner or operator of the Facility shall:

(A) End the current Unplanned Flare Event in FENS at the end of the starting calendar day; and

(B) Generate a new Unplanned Flare Event notification in FENS for every calendar day of flaring afterward.

Subdivision (I) Flare Event Notifications Requirements – *cont.*

- Moved all requirements for flare event characterization to this subdivision
 - Current rule language includes these requirements in definition of a flare event
- Moved quarterly reports requirements to MRR Subdivision

(6) Characterizing and Reporting Flare Events

The owner or operator of a Facility shall characterize and report any Flare Event that exceeds any of the thresholds listed in subparagraph (k)(2)(A) as follows:

- (A) A Flare Event due to the Startup of a process unit or equipment that occurs more than 36 hours after the end of an Unplanned Flare Event of the same process unit Shutdown shall be considered a Planned Flare Event.
- (B) Flare Events that can be attributed to same process unit(s) or equipment and has more than one start time and stop time within a 24-hour period, shall be considered a continuation of the same event, and not a separate or unique event.
- (C) For an Unplanned Flare Event that continues for more than 24 hours, each calendar day of flaring Vent Gas shall constitute a separate Unplanned Flare Event.

Attachment B

Staff is proposing to add provisions to Attachment B to allow for data substitution (i.e., flow rate, high heating value, and sulfur concentration) using recorded data during one hour before and one hour after the period that data is not recorded, if it lasts for 15 minutes or less

ii) If total sulfur concentration data is not measured or recorded for a period of time less than or equal to 15 consecutive minutes during any Flare Event, the total sulfur concentration shall be calculated using the equation in Section (2)(c)(i), and maximum total sulfur concentration ($C_{\text{Sulfur.Max}}$) and average total sulfur concentration ($C_{\text{Sulfur.Avg}}$) that were measured and recorded for that Flare Event during the one hour preceding and the one hour following the period of time the sulfur concentration data is not measured or recorded.

Attachment C

- New Attachment
- Updated process capacity for refineries and production capacity for hydrogen plants
- Reference to paragraph (j)(18) for a facility without publicly available processing capacity information

This attachment provides Processing Capacity numbers for Refineries and Hydrogen Production Capacity numbers for Hydrogen Production Plants as of [Date of Rule Adoption].

Effective from [Date of Rule Adoption], the owner or operator of Facilities shall determine the applicable capacity pursuant to either of the following clauses, whichever the latest:

- (i) As listed in Table C1 or Table C2; or
- (ii) As listed in the Facility's Title V permit, the Facility's FMRP, or the California Energy Commission's list of California Oil Refinery Locations and Capacities, if applicable, on [Date of Rule Adoption], or as reported pursuant to paragraph (j)(18).

Table C1 – Processing Capacity of Refineries

<u>Facility</u>	<u>Processing Capacity (Million Barrels per Day)</u>
<u>AltAir Paramount</u>	<u>Pursuant to Paragraph (j)(18)</u>
<u>Chevron USA Inc.</u>	<u>269,000</u>
<u>Marathon (Carson, Wilmington, SRP)</u>	<u>363,000</u>
<u>Phillips 66 (Carson, Wilmington)</u>	<u>139,000</u>
<u>Torrance Refining Co.</u>	<u>160,000</u>
<u>Valero</u>	<u>145,000</u>

Table C2 – Production Capacity of Hydrogen Production Plants

<u>Hydrogen Production Plant</u>	<u>Hydrogen Production Capacity (Million Standard Cubic Feet per Day)</u>
<u>Air Liquide</u>	<u>90</u>
<u>Air Product – Carson</u>	<u>96</u>
<u>Air Product - Wilmington</u>	<u>88</u>
<u>Chevron USA Inc.</u>	<u>72</u>

Attachment D

- New Attachment
- Provides guidelines:
 - For calculating mitigation fees adjusted with consumer price index
 - For calculating new NOx performance targets for hydrogen plants
 - SO₂ performance target for a refinery

ATTACHMENT D

GUIDELINES FOR CALCULATING MITIGATION FEES FOR PERFORMANCE TARGET EXCEEDANCE

This attachment provides the methodology to calculate the mitigation fees that the owner or operator of a Facility shall pay to South Coast AQMD when any Performance Target is exceeded in any single year.

1. Calculations for Facility-Specific Sulfur Dioxide Performance Target

The owner or operator of a Refinery or Sulfur Recovery Plant shall calculate the Facility-specific sulfur dioxide Performance Target based on the Processing Capacity as listed in the California Energy Commission's list of California Oil Refinery Locations and Capacities for that calendar year, or as reported pursuant to paragraph (j)(18), using the following equation:

$$\begin{aligned} &\text{Facility Specific Sulfur Dioxide Performance Target [Tons]} \\ &= 0.25 \left[\frac{\text{Tons}}{\text{Million Barrels}} \right] \times \text{Processing Capacity [Million Barrels]} \end{aligned}$$

2. Calculations for Facility-Specific NOx Performance Target

The owner or operator of a Hydrogen Production Plant shall calculate the Facility-specific NOx Performance Target based on the Hydrogen Production Capacity, using the following equation:

$$\begin{aligned} &\text{Facility Specific NOx Performance Target [Pounds]} \\ &= 0.2 \left[\frac{\text{Pounds}}{\text{Million Standard Cubid Feet}} \right] \\ &\quad \times \text{Hydrogen Production Capacity [Million Standard Cubic Feet]} \end{aligned}$$

3. Calculations for Baseline Mitigation Fees

The baseline mitigation fees shall be calculated according to the following schedule:

- If excess sulfur dioxide emissions or NOx Emissions are no more than ten percent of the Facility-specific Performance Target, \$39,000 per ton of the sulfur dioxide emissions or NOx Emissions in excess of the Facility-specific Performance Target;
- If excess sulfur dioxide emissions or NOx Emissions are greater than ten percent but no more than twenty percent of the Facility-specific

Further Rule Considerations

1

Remove test methods

- Sampling and laboratory methods are no longer allowed
- Sulfur measurements must be taken on a continuous or semi-continuous basis

2

Considering some allowance for when there is missing data as a result of the daily calibrations required by the rule

- Allow for deferring daily calibration during a flare event for up to 48 hours

3

Facilities requested staff to exclude flare events caused by external power curtailment beyond the operator's control (excluding interruptible service agreements), natural disasters, or acts of war or terrorism for the purpose of data substitution requirements

- Such flare events are exempt in the current rule from being included in annual performance target calculations
- Data substitution is used when total sulfur concentration are not measured, analyzed, and recorded pursuant to the rule
- Facilities are still required to use the highest sulfur concentration emission from the last 20 quarters as a default value in data substitution

Next Steps

Release Preliminary Draft Rule Language and Staff Report

Public Workshop Late January 2024

Public Hearing April 2024

Staying Updated with PAR 1118

- Sign up and receive email updates via: <http://www.aqmd.gov/sign-up>

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<input checked="" type="checkbox"/>	Rule 1118	Control of Emissions from Refinery Flares
<input type="checkbox"/>	Rule 1118.1	Control of Emissions from Non-Refinery Flares

Additional Information on Rule 1118

- South Coast AQMD website has further information on Rule 1118 including:

- Link to FENS

- Contact information for the Rule 1118 facilities

- Information on subscription to receive community notifications and information via email

- Supporting documents including files from past rule amendments

- Frequently asked questions

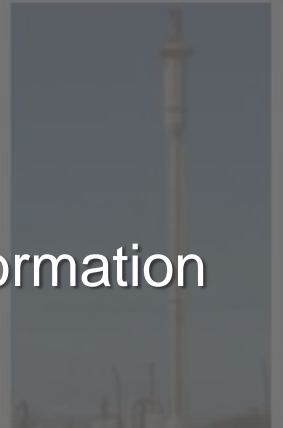
- Access through the following link:

<http://www.aqmd.gov/home/rules-compliance/compliance/r1118>

A gas flare, also known as a flare stack, is a gas combustion device used in a variety of industrial plants. In petroleum refineries, flares are used as safety devices to prevent over pressure of equipment via planned and unplanned flaring.

- Planned Event: Used for scheduled maintenance, plant startup/shutdown, or other activities where the refinery can reasonably anticipate the need to dispose of excess combustible gas.

Unplanned Event: Used for emergencies caused by equipment failure, process upsets, or other participating event which requires the refinery to dispose of the gases in order to prevent harm to workers, the community, or to the



Flares can come in different shapes and sizes. See the example above for a common refinery flare.

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