

PROPOSED RULE 1118.1 Control of Emissions From Non- Refinery Flares

Working Group Meeting #9

November 15, 2018



Rule Status

Stationary Source Committee – October 19th

- Nine stakeholders commented
 - One expressed concerns regarding flare usage at oil production sites
 - Eight expressed concerns regarding limits at minor sources and impacts from digesting food waste

Public Consultation Meeting October 30th and Revised Preliminary Draft Rule Language– October 31st

- New proposed restrictions on flaring at oil production sites
- Higher NOx limits for minor source digester gas and Resolution commitment to perform technology assessment

Set Hearing – November 2nd

- Two stakeholders commented on proposed restriction at oil production sites

Rule Status (con't)

Based on Stakeholder Feedback:
Delaying Public Hearing until January 4th
Return to Stationary Source Committee in December



Revisions to Proposed Rule to Address:

NOx emission limits
for digester gas

Flaring at oil and gas
sites

Rule clarity and
enforceability

Key Issues

Key Issue #1: Usage Limits for New and Existing Flares at Oil and Gas Sites

- At the October Stationary Source Committee Meeting in, a stakeholder commented
 - ✓ Routine flaring should not be allowed at oil and gas sites, and
 - ✓ Proposed Rule 1118.1 should include usage limits for new and **existing** flares

Usage Limits for Flares at Oil and Gas Sites (con't)

Stakeholder Comment

Routine flaring should not be allowed at oil and gas sites, proposed rule should include usage limits for new and **existing** flares

Original Proposal

Released September 21st

Existing Flares:
Lowest capacity threshold (5%) but no usage limit if flare meets low emission limit

New Flares:
Lowest emission limits (0.018#/MMBtu) and no usage limit

Revised Proposal

Released October 31st

Existing Flares:
No proposed change

New Flares:
Limit use to 800 hours/year with certain exceptions

Usage Limits for Flares at Oil and Gas Sites (con't)

- At the November Set Hearing, industry stakeholders commented that the 800 hours may be difficult to maintain because there are certain situations where flaring is needed such as:
 - ✓ Source testing; maintenance, upgrades, or breakdowns of equipment; utility pipeline curtailment; or upsets that lead to safety concerns
- Staff considering a provision that would allow limited, verifiable situations where flaring occurs that would not be counted towards the 800 hours

Usage Limits for Flares at Oil and Gas Sites (con't)

- Staff proposal for new flares at oil and gas sites would be:
 - ✓ New flares at an oil and gas site would be limited to 800 hours;
 - ✓ Operator would be required to notify the Executive Officer if annual operating hours exceeds 800 hours;
 - ✓ Operator can provide information to substantiate that the exceedance of the 800 hours was due to:
 - Source testing;
 - Utility pipeline curtailments;
 - ✓ Information to substantiate activities occurred during the year of the exceedance includes but is not limited to:
 - Invoice from source testing company;
 - Information from utility regarding curtailment

Usage Limits for Flares at Oil and Gas Sites (con't)

- Staff is not proposing further restrictions on existing flares
 - ✓ Only 8 currently permitted
 - ✓ NOx emissions 70% lower than conventional enclosed flare
 - ✓ Based on current throughput (2015 – 2017) ~0.01 tpd NOx
 - ✓ Potential to emit (if they flare 24/7) ~0.04 tpd NOx

Key Issue #2: NOx Emissions for Digesting Food Waste and Thermophilic Digestion

- At the October Stationary Source Committee Meeting, several stakeholders expressed concerns over recent data indicating NOx emission could increase from food waste diversion and thermophilic digestion.
- The stakeholders requested:
 - ✓ Higher limit for minor sources flaring digester gas, and/or
 - ✓ Temporary exemption for food waste digestion and thermophilic digestion

Food Waste and Thermophilic Digestion (con't)

Stakeholder Comment

Digesting food waste and thermophilic digestion requires higher NOx limits and/or an exemption

Original Proposal

Released September 21st

*New Flares Combusting Digester Gas:
0.025 #/MMBtu limit*

Revised Proposal

Released October 31st

New Flares Combusting Digester Gas:

Major Source - 0.025 #/MMBtu

Minor Source - 0.06 #/MMBtu

Include Resolution language to address potential increase in NOx

Food Waste and Thermophilic Digestion (con't)

- Proposed Rule Language (new language in **yellow**)

| | NOx | CO | VOC |
|---------------------------------|--------------|------------|------------|
| Flare Gas | pounds/MMBtu | | |
| Digester gas ¹ | | | |
| Major polluting facility | 0.025 | 0.06 | 0.038 |
| Minor facility | 0.06 | N/A | N/A |

- The Executive Officer shall cause to be performed a technology assessment to determine potential alternative limits appropriate for digester gas generated from food waste diverted from landfills. Table 1 – Emission Limits shall continue to apply until amended or otherwise superseded.

Food Waste and Thermophilic Digestion (con't)

■ Proposed Resolution Language

- ✓ BE IT FURTHER RESOLVED, SCAQMD staff shall work with CAPCOA and the waste management industry to conduct a BACT technical assessment, including possible field testing, and cost assessment and report back to the Stationary Source Committee within 12 months of rule adoption to present findings and recommendations regarding emissions from food waste digestion and thermophilic digestion on current BACT NO_x limits.
- ✓ BE IT FURTHER RESOLVED that the BACT Guidelines shall be amended, if necessary, to reflect the BACT technical and cost assessment.

Other Proposed Rule Changes

New Definitions – subdivision (c)

- Major and Minor Polluting Facility
- Organic Liquid Loading and Unloading
- Organic Liquid Storage
- Percent Capacity – define & include formulas currently in the MRR section
- Defining the notifications in the rule
 - ✓ Notification of Flare Inventory and Capacity – *90 days from rule adoption*
 - ✓ Notification of Annual Percent Capacity Greater Than Capacity Threshold – *30 day notice*
 - ✓ Notification of Intent – *60 day notice*
 - ✓ Notification of Flare Throughput Reduction – *6 month notice*
 - ✓ Notification of Increments of Progress – *annual progress report for throughput reduction*
 - ✓ Notification of Annual Operation Greater than 800 hours – *30 day notice*

Requirements Subdivision (d)

- No change to rule concept but clarifying language
- Separate requirements for new flares (d)(1), flares with pending permit applications (d)(2), and existing flares (d)(3)
- For existing flares, reorganize the requirements
 - ✓ Original Proposal (September 21st): Meet the Table 1 – Emission Limits or determine percent capacity and comply with Table 2 – Capacity threshold
 - ✓ Current Proposal: All existing flares must determine percent capacity to comply with Table 2 – Capacity Threshold but can test out by demonstrating through source test that the flare meets emission limits (Table 1)
 - ✓ Clarify the language that excludes “Other Flaring” from the capacity determination

New Flare Requirement Language – paragraph (d)(1)

An owner or operator that submits an application to install, replace, or relocate a flare or flare station after [*date of adoption*]:

- (A) Shall not operate that flare(s) so as to exceed the applicable NO_x, VOC, and carbon monoxide (CO) emission limits specified in Table 1 – Emission Limits; and
- (B) Shall not operate that flare(s) more than 800 hours per calendar year if it combusts Produced Gas.
 - i. Flaring conducted during source testing; maintenance, upgrades, or breakdowns of equipment; utility pipeline curtailment; or upsets that lead to safety concerns need not be included in the 800 hours.
 - ii. The owner or operator of a flare that exceeds 800 hours shall submit a Notification of Annual Operation Greater than 800 hours and provide documentation substantiating the hours during any of the allowable exceptions pursuant clause (d)(1)(B)(i).

New Flares - Revised Emission Limits

- Corrected the BACT CO limit for Produced gas
- “Other flare gas” further divided
 - ✓ Organic liquid storage (#/MMBtu)
 - ✓ Organic liquid loading and unloading (#/1,000 gallons)
 - ✓ Staff still evaluating limits and categories

Table 1 – Emission Limits

| | NOx | CO | VOC |
|--------------------------------------|------------------------|------|-------|
| Flare Gas | pounds/MMBtu | | |
| Produced gas | 0.018 | 0.01 | 0.008 |
| Other flare gas | 0.06 | N/A | N/A |
| Other organic liquid storage | 0.25 | 0.37 | 0.15 |
| Organic liquid loading and unloading | #/1,000 gallons loaded | | |
| | 0.034 | 0.05 | 0.02 |

Flares with Pending Permit – new paragraph (d)(2)

An owner or operator **with a pending permit application** for a flare or flare station prior to [*date of adoption*] shall comply with paragraph (d)(3).

Existing Flare Requirement Language – paragraph (d)(3)

An owner or operator of an existing flare or flare station **combusting gases identified** in Table 2 – Capacity Thresholds shall **comply with** subparagraph (g)(1)(E) for each flare or flare station **to determine their annual percent capacity.**

- (A) If the flare or flare station's annual percent capacity is **greater than the applicable threshold listed in the Table 2 – Capacity Thresholds, the owner or operator shall** submit a **Notification of Annual Percent Capacity Greater than Capacity Threshold** to the Executive Officer (**sent via email to 1118.1Notifications@aqmd.gov**), no later than 30 days from the end of that calendar year.

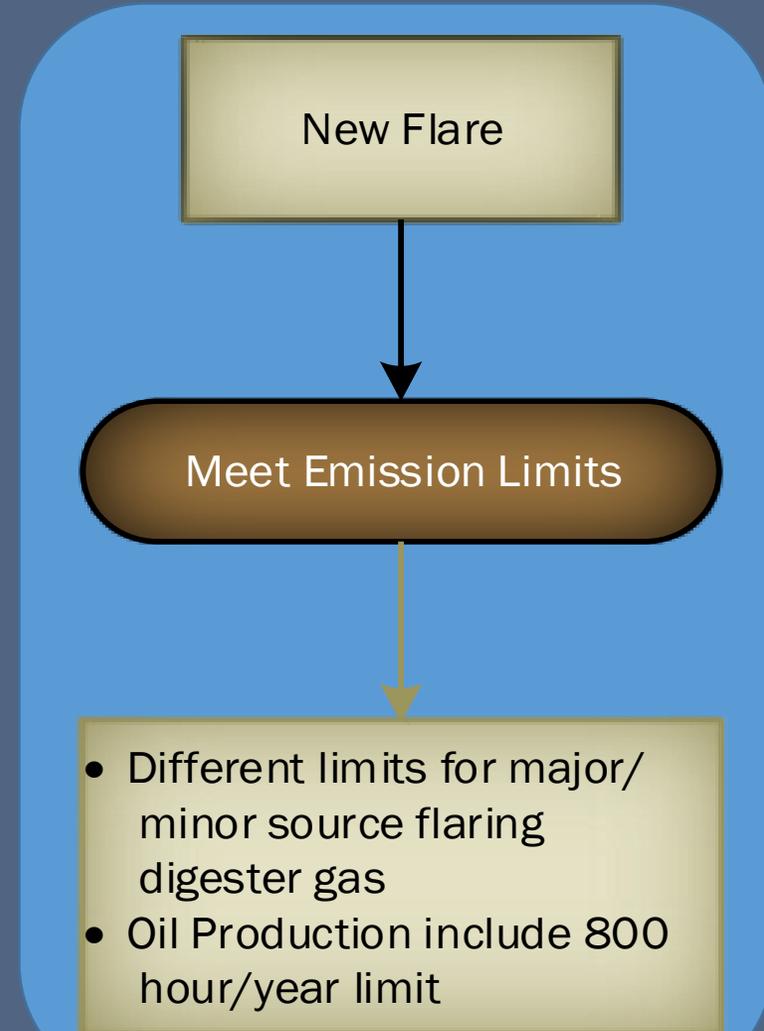
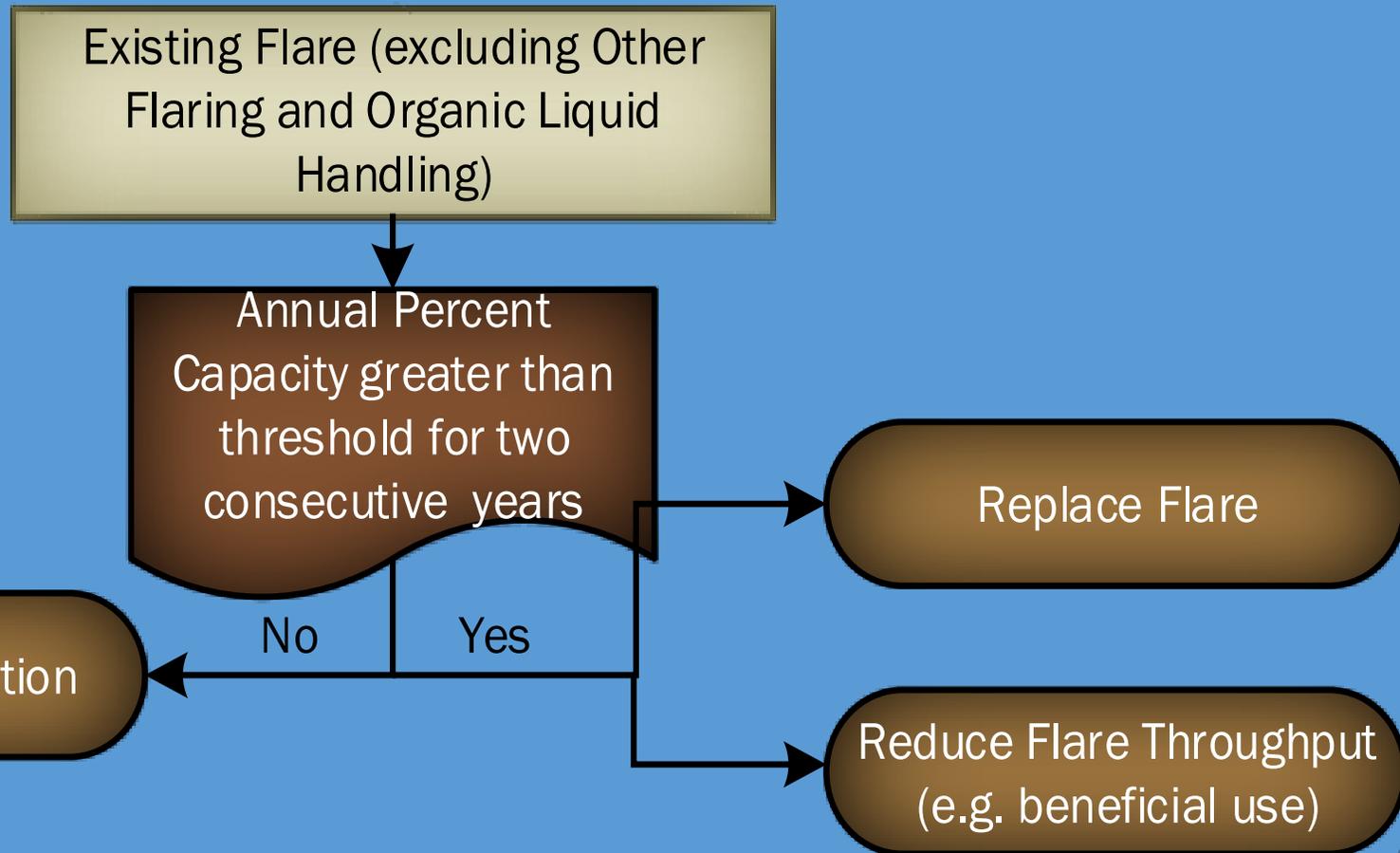
Existing Flare Requirement Language – paragraph (d)(3) (con't)

- (B) If the flare or flare station's annual percent capacity is greater than the applicable threshold listed in Table 2 – Capacity Thresholds for two consecutive calendar years, the owner or operator shall submit a Notification of Intent to the Executive Officer (sent via email to 1118.1Notifications@aqmd.gov), no later than 60 days from the end of the second consecutive calendar year, and shall elect one of the following compliance options:
- (i) Flare or flare station throughput reduction pursuant to paragraph (d)(4), or
 - (ii) Flare or flare station replacement or modification pursuant to paragraph (d)(5).

Existing Flare Requirement Language – paragraph (d)(3) (con't)

- (C) An owner or operator of an existing flare or flare stations shall not be subject to the requirements of paragraph (d)(3) if the flare(s) comply with the applicable emission limits in Table 1 – Emission Limits as demonstrated by a SCAQMD approved source test. The source test shall be conducted pursuant to a SCAQMD approved source test protocol, and shall be conducted every five years thereafter, pursuant to paragraph (f)(4).

Overview of Proposed Rule Requirements



New requirement for Change of Compliance Pathway – paragraph (d)(6)

- Original proposal did not address switching compliance pathway from flare replacement to flare throughput reduction and visa versa
 - ✓ Wanted to add that flexibility
 - ✓ Needed to add language to prevent a facility from electing to switch from one pathway to the other in perpetuity
 - ✓ A facility can switch pathways but implement within 36 months from the end of the second consecutive calendar year the annual percent capacity is greater than the applicable capacity threshold
 - ✓ Extension provision will not be allowed for facilities that elect to change compliance pathway – can seek extension through Hearing Board

New requirement for Change of Compliance Pathway – paragraph (d)(6) (con't)

An owner or operator of a flare or flare station that is required to submit a Notification of Intent pursuant to (d)(3)(B) may revise the Notification of Intent one-time provided the owner or operator:

- Notifies and implements the new compliance pathway no later than 36 months from the end of the second consecutive calendar year; and
- The revision is to change the compliance option from either:
 - ✓ Paragraph (d)(4) for replacing a flare or flare station to (d)(5) to meet applicable Table 1 – Emission Limits; or
 - ✓ Paragraph (d)(5) to meet applicable Table 1 Emission Limit to (d)(4) for replacing a flare or flare station.

Extension Provision – paragraph (e)(1)

- Proposing to limit the extension allowed in the rule:
 - ✓ One 12-month extension for flare replacement
 - ✓ One 24-month extension for flare throughput reduction
- Rule needs a compliance deadline for EPA approval
- Further extension possible through Hearing Board

Source Test – paragraph (f)(1)

- Original proposal required all flares complying with Table 1 – Emission Limits to be source tested within 12 month, unless an approved source test had been conducted
 - ✓ Permits for new installations require source tests within 180 days of installation
- Proposed change:
 - ✓ Existing flares will have 12 months to conduct a source test if demonstrating compliance with Table 1 – Emission Limits
 - ✓ New flares shall conduct initial source test within 180 days of initial startup

Source Test – paragraph (f)(1) (con't)

(f) Source Tests

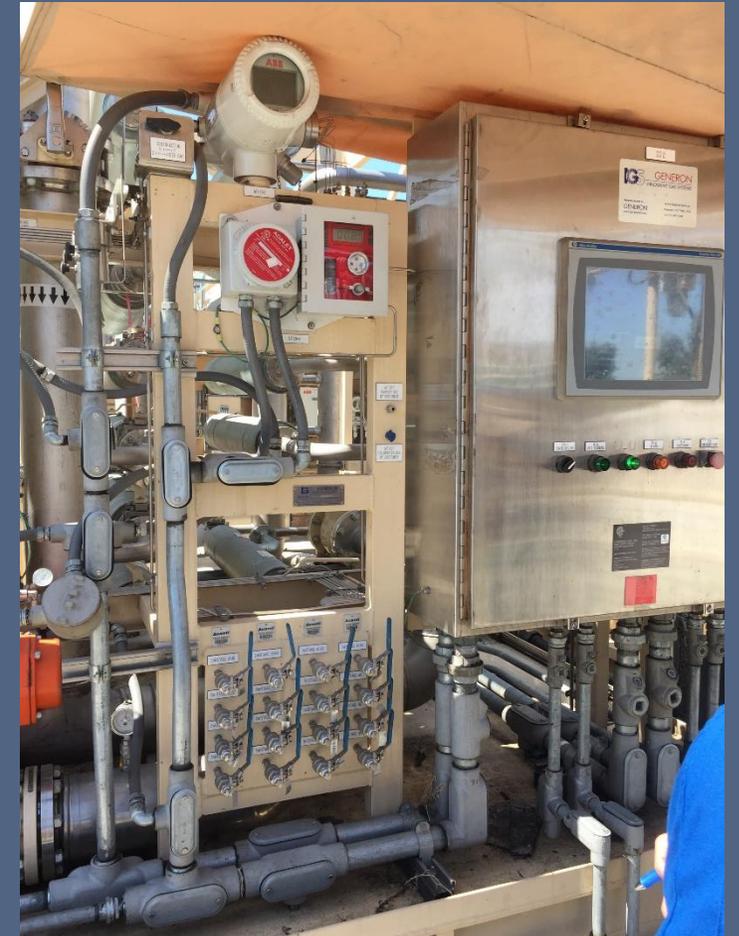
- (1) Within 12 months from *[date of adoption]* an owner or operator of a flare or flare station complying with subparagraph (d)(3)(C) or paragraph (h)(2) shall determine the applicable NO_x, VOC, and CO emissions by conducting an initial source test, and source testing every five years thereafter, pursuant to paragraph (f)(4). **An owner or operator of a flare subject to paragraph (d)(1) shall conduct the initial source test according to the schedule in Table 4 – Flare Replacement, and conduct source testing every five years thereafter, pursuant to paragraph (f)(4).**

Monitoring, Recordkeeping & Reporting (MRR) – Fuel Meter Calibrations (g)(1)(D)

- Original proposal required fuel meter calibration within 90 days of installation or rule adoption, whichever is sooner
 - ✓ Changed to “whichever is later” – meter could have been installed many years before rule adoption
 - ✓ Stakeholder commented
 - Existing calibrations should be accepted
 - Alternative calibration methods should be allowed – some require fuel meter removal and flare to be taken out of service

Monitoring, Recordkeeping & Reporting (MRR) – Fuel Meter Calibrations (g)(1)(D)

Each fuel meter shall be calibrated within 90 days of installation or [*date of adoption*], whichever is **later**, and annual thereafter based on the manufacturer recommended procedures **or an alternative calibration method approved in writing by the Executive Officer**. If the fuel meter was calibrated prior to rule adoption, conduct next calibration within the one year of anniversary date of prior calibration.



MRR Percent Capacity Calculation – clause (g)(1)(E)(iii)

- Amending percent capacity calculation to remove the hard reference to the minutes and hours per year
 - ✓ Addresses the issue of the first year of rule adoption
 - Facilities have 90 days to install fuel meters – will not have a full year of data
 - ✓ Considering moving the equations to subdivision (c) - definitions

MRR Percent Capacity Calculation – clause (g)(1)(E)(iii) (con't)

$$\text{Percent Capacity}_{MMscf} = \frac{\text{Total Annual Throughput} \left(\frac{MMscf}{\text{year}} \right) / x}{\text{Capacity (MMscf/hour)}} \times 100\%$$

$$\text{Percent Capacity}_{MMBtu} = \frac{\text{Total Annual Heat Input} \left(\frac{MMBtu}{\text{year}} \right) / x}{\text{Capacity (MMBtu/hour)}} \times 100\%$$

x = the time period in hours/year that records are required to be maintained and recorded.

MRR - Heat Input for low-emitting flares (g)(2)(A)(iii)

- Stakeholder commented facilities demonstrating they meet the low-emitting exemption (under 30 pounds NO_x/month) should not have onerous requirements
 - ✓ Proposing to allow the portable methane detector, or equivalent detector, approved in writing by the Executive Officer
 - Considering allowing use of portable methane detectors only for landfill and digester gas – will under estimate the heat input for produced gas
 - ✓ Considering use of default factors for heat input in lieu of measuring or testing

MRR - Heat Input for low-emitting flares (g)(2)(A)(iii) (con't)

Heat input of the flare gas shall be measured and recorded at least monthly pursuant to:

- A. Paragraph (f)(6);
- B. Calculated and recorded monthly by measuring the methane concentration of landfill or digester gas using a portable nondispersive infrared detector, or equivalent detector approved in writing by the Executive Officer, calibrated per manufacturer's specifications; or
- C. Estimated using the applicable Table 5 – Default Heat Input.

Table 5 – Default Heat Input

| Flare Gas | Default Heat Input (Btu/scf) |
|--------------|------------------------------|
| Digester gas | 600 |
| Landfill gas | 500 |
| Produced gas | 1,000 |

Exemptions – subdivision (h)

- Revised exemption section to address a few concerns:
 - ✓ Cannot include a reference to a rule that is not adopted. Removed reference to Rule 1109.1 – *Refinery Equipment* and instead listed the facilities that will be subject to Rule 1109.1
 - ✓ Similar facilities are also subject to Rule 1118 – *Control of Emissions from Refinery Flares*, grouped all facilities into one exemption
 - ✓ Included a few new exemptions
 - ❑ Flares combusting only propane or butane, or a combination of the two
 - ❑ Flares combusting regeneration gas
 - No beneficial use for regeneration gas
 - They only exist at facilities pursuing beneficial use

Exemptions – subdivision (h) (con't)

- (1) The provisions of this rule shall not apply to owners or operators of a flare or flare station:
 - (A) At asphalt plants; biodiesel plants; hydrogen production plants fueled in part with refinery gas; petroleum refineries; and sulfur recovery plants;
 - (B) Routing only natural gas directly into the flare burner that are subject to SCAQMD Rule 1147 – NO_x Reductions from Miscellaneous Sources NO_x emission limits;
 - (C) Routing only propane or butane or a combination of propane and butane directly into the flare burner;
 - (D) At a landfill that collects less than 2,000 MMscf of landfill gas per calendar year and has either ceased accepting waste or is classified by CalRecycle as an Inert Waste Disposal Site or an Asbestos Contaminated Waste Disposal Site;
 - (E) Permitted as a Various Location Flare; or
 - (F) Combusting regeneration gas.

Proposed Rule 1118.1 Schedule

Continue to work with stakeholders on key issues

Stationary Source Committee: December (date is TBD)

Public Hearing: Move from December 7th to January 4th to allow time to work with stakeholders