

PROPOSED RULE 1118.1. CONTROL OF EMISSIONS FROM NON-REFINERY FLARES

(a) Purpose

The purpose of this rule is to reduce NO_x and VOC emissions from flaring process gas, digester gas, landfill gas and other combustible gases.

(b) Applicability

(1) This rule applies to owners and operators of flares that require a District permit at facilities, including, but not limited to, oil and gas production, wastewater treatment facilities, landfills, organic liquid loading stations, and tank farms.

(2) This rule does not apply to owners and operators of flares used at petroleum refineries, sulfur recovery plants, and hydrogen production plants subject to District Rule 1118 - Control of Emissions from Refinery Flares.

(c) Definitions

(1) **BENEFICIAL USE** means the use of process gas or biogas, that would otherwise be flared, for power, heat, or steam generation; transportation fuel; pipeline injection, or other uses as approved in writing by the Executive Officer.

(2) **BIOGAS** includes digester gas and landfill gas produced by the breakdown of organic matter in the absence of oxygen.

(3) **BTU** means British thermal unit or units.

(4) **DIGESTER GAS** means a gas produced from either mesophilic or thermophilic digestion of biodegradable waste, consisting of methane, carbon dioxide and traces of other contaminant gases.

(5) **FLARE** means a combustion device, whether at ground level or elevated, that uses a flame to burn combustible gases or vapors with combustion air provided by uncontrolled ambient air around the flame or a controlled combustion air blower.

(6) **FIELD PRODUCTION GAS** means organic compounds that are both gaseous at standard temperature and pressure and are associated with the production, gathering, separation, or processing of crude oil.

- (7) HEAT INPUT means the higher heating value of the fuel to the flare measured as BTU per hour.
- (8) HEAT OUTPUT means the enthalpy of the working fluid output of the flare.
- (9) LANDFILL GAS means any untreated, raw gas derived through a natural process from the decomposition of organic waste deposited in a Municipal Solid Waste landfill from the evolution of volatile species in the waste, or from chemical reactions of substances in the waste.
- (10) NOX EMISSIONS means the sum of the oxides of nitrogen in the flue gas, collectively expressed as nitrogen dioxide.
- (11) ORGANIC LIQUID means any liquid containing VOC.
- (12) OTHER FLARE GAS includes, but is not limited to, gases from regenerative flaring and flaring that occurs at facilities handling organic liquids, such as bulk terminal loading and offloading, or tank farm degassing.
- (13) PROCESS GAS means a naturally occurring mixture of process derivative of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the earth's surface, of which its constituents include, methane, heavier hydrocarbons, and carbon dioxide.
- (14) PROTOCOL means a South Coast Air Quality Management District approved test protocol for determining compliance with emission limits for applicable equipment.
- (15) REGENERATIVE ADSORPTION SYSTEM means a system used to remove impurities from biogas or process gas consisting of several media trains that are regenerated by purging with gas.
- (16) REGENERATIVE FLARE means a combustion device which combusts regeneration gas from a regenerative adsorption system.
- (17) REGENERATION GAS is the purge gas from a regenerative adsorption system.
- (18) RELOCATION means removal from one parcel of land in the District and installation on another non-contiguous parcel of land. RELOCATION does not include a various location flare or a move from one parcel of land to another parcel of land where the two parcels have the same address, are under common ownership, and are separated solely by a public roadway or other public right-of-way.

(19) **VARIOUS LOCATIONS FLARE** means any portable flare permitted to operate at different locations.

(d) Requirements

(1) An owner or operator of a flare subject to this rule that installs a flare after *[date of adoption]* or replaces or relocates an existing flare shall meet the applicable NO_x, VOC, and CO emission limits specified in Table 1.

(2) Effective *[12 months after date of adoption]*, on July 1 of the year a flare becomes 20 years old, an owner or operator of a flare subject to this rule shall meet the applicable NO_x, VOC, and CO emission limits specified in Table 1 where flare age shall be based on the original date of manufacture as determined by:

- (A) Original manufacturer's identification or rating plate permanently fixed to the equipment. If not available, then;
- (B) Invoice from manufacturer for purchase of equipment. If not available, then;
- (C) Information submitted to the District with prior permit applications for the specific flare. If not available, then;
- (D) The flare will be deemed by the District to be 20 years old one year after rule adoption.

Table 1 –Emission Limit

| Flare Fuels | lb/MMBtu | | |
|------------------------------|-----------------|-------|------|
| | NO _x | VOC | CO |
| Biogas | 0.025 | 0.038 | 0.06 |
| Process Gas | 0.018 | 0.008 | 0.06 |
| Other Flare Gas ¹ | 0.025 | 0.038 | 0.06 |

1. Emission limits for flaring Regeneration Gas to be determined when fueled by 100% biogas.

(3) An owner or operator of a flare subject to this rule shall not be required to meet the NO_x, VOC, and CO limits in Table 1 provided the flare:

- (A) Complies with the Beneficial Use Alternate Compliance Option detailed in Appendix A and gas that would have otherwise been flared is captured and is utilized for Beneficial Use according to the following schedule:

Table 2 – Minimum Percent of Beneficial Use Required

| Compliance Date | Beneficial Use of Total Annual Captured Gas |
|-----------------|---|
| 7/1/2019 | 85% |
| 7/1/2022 | 90% |
| 7/1/2025 | 95% |
| 7/1/2028 | 98% |

- (4) An owner or operator of a flare subject to this rule shall not be required to meet the NO_x, VOC, and CO limits in Table 1 provided the owner or operator meets the provisions specified in either subparagraph (d)(4)(A), (d)(4)(B), or (d)(4)(C) and the flare has a permit that specifies conditions that limits the applicable NO_x emissions or the operating hours consistent with the following subparagraphs:
- (A) Operates a flare that emits less than one pound per day of NO_x;
 - (B) Operates a flare that emits less than 30 pounds per calendar month of NO_x; or
 - (C) Operates a flare less than 200 hours per year.
- (5) An owner or operator of a flare subject to this rule that fails to demonstrate compliance with paragraphs (d)(3) or (d)(4), shall:
- (A) Demonstrate compliance with the applicable NO_x, VOC, and CO emission limits in Table 1, pursuant to the requirements of subdivision (d), no later than 1 year from the date the non-compliance occurred, or
 - (B) Submit a new or amended Beneficial Use Alternative Compliance Option plan for approval from the Executive Officer.
- (6) On or after January 1, 2019, an owner or operator of a flare subject to this rule shall:
- (A) Perform maintenance in accordance with the manufacturer's schedule and specifications.
 - (B) Maintain on site at the facility where the flare is being operated a copy of the manufacturer's, distributor's, installer's or maintenance company's written maintenance schedule and instructions and retain a record of the maintenance activity for a period of not less than three years.

- (C) Display in an accessible location on the flare the model number and the rated heat input capacity of the flare on a permanent rating plate for any flare installed after *[Date of Adoption]*.
 - (D) Identify in the source test report(s) that the source test was conducted pursuant to a District approved protocol and clearly identify the model and serial numbers of the specific flare(s) tested.
 - (E) Provide the maintenance instructions, maintenance records, and the source test report(s) to the Executive Officer upon request.
- (e) Source Tests
- (1) On and after *[six months after the Date of Adoption]* an owner or operator of a flare subject to this rule shall conduct a source test once every three years to demonstrate compliance with the NO_x, VOC, and CO limits in paragraphs (d)(1), (d)(2) and subparagraphs (d)(4)(A), (d)(4)(B) using a District approved source test protocol.
 - (2) At least 90 days prior to a scheduled source test pursuant to paragraph (e)(1), the owner or operator of a flare subject to this rule shall submit a source test protocol to the Executive Officer for approval.
 - (3) After the approval of the initial source test, the owner or operator of a flare subject to this rule is not required to resubmit a source test protocol for approval under paragraph (e)(2) if:
 - (A) The flare has not been altered in a manner that requires a permit alteration; and
 - (B) Rule or permit emission limits have not become more stringent since the previous source test.
 - (4) All compliance determinations pursuant to paragraphs (d)(1), (d)(2) and subparagraphs (d)(4)(A), (d)(4)(B) shall be calculated:
 - (A) Using a District approved test protocol averaged over a period of at least 15 minutes of flare operation and no more than 60 consecutive minutes;
 - (B) After flare start up; and
 - (C) In the flare's as-found operating condition.
 - (5) For each flare, a compliance determination shall be made at the heat input at which the flare normally operates.

- (6) Compliance with the NO_x, VOC, and CO emission limits of paragraph (d)(1), (d)(2) and subparagraphs (d)(4)(A), (d)(4)(B) of this rule shall be determined according to the following methods:
- (A) District Method 100.1 – Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling,
 - (B) District Method 25.1 or 25.3 – Determination of VOC Emissions from Stationary Sources;
 - (C) ASTM Method D-3588 – Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels; and
 - (D) ASTM D7833 – Standard Test Method for Determination of Hydrocarbons and Non-Hydrocarbon Gases in Gaseous Mixtures by Gas Chromatography.
- (7) NO_x emissions in pounds per million Btu of heat input shall be calculated using procedures in 40 CFR Part 60, Appendix A, Method 19, Sections 2 and 3.
- (8) All compliance determinations by the owner or operator of the flare shall be made using an independent contractor to conduct source testing, which is approved by the Executive Officer under the Laboratory Approval Program for the applicable test methods.
- (9) Records of source tests shall be maintained for three years and made available to District personnel upon request. Emissions determined to exceed any limits established by this rule through the use of any of the test methods specified in subparagraphs (e)(6)(A) through (e)(6)(D) shall constitute a violation of this rule.
- (f) **Monitoring, Recordkeeping, and Reporting Requirements**
The owner or operator of a flare subject to this rule shall:
- (1) On or after [*90 days after the Date of Adoption*], install and operate a non-resettable, totalizing, ultrasonic fuel meter for each fuel for each flare.
 - (2) Equip each fuel meter, required under paragraph (f)(1), that requires electric power to operate with a permanent supply of electric power that cannot be unplugged, switched off, or reset except by the main power supply circuit for the building and associated equipment or the flare's safety shut-off switch.

- (3) Provide continuous electric power to a fuel meter required under paragraph (f)(1) that shall not be shut off unless the flare is not operating or is shut down for maintenance or safety.
- (4) For each flare demonstrating NO_x emissions less than one pound per day pursuant to (d)(4)(A), maintain daily records documenting average NO_x emissions of less than one pound per day, based on a flare-specific non-resettable ultrasonic fuel meter(s), calculated using the flare's maximum hourly emission rate, as determined by an approved source test, multiplied by the quantity of gas consumed by the flare.
- (5) For each flare demonstrating NO_x emissions are less than 30 pounds per calendar month pursuant to subparagraph (d)(4)(B), maintain monthly records documenting average NO_x emissions of less than 30 pounds per calendar month, based on a flare-specific non-resettable ultrasonic fuel meter(s), calculated using the flare's maximum hourly emission rate, as determined by an approved source test, multiplied by the quantity of gas consumed by the flare.
- (6) For each flare demonstrating operating hours are less than 200 hours per year pursuant to subparagraph (d)(4)(C), maintain monthly recordkeeping of flare use using an installed calibrated non-resettable totalizing time meter.
- (7) Notify the Executive Officer within 72 hours of a flare fails to demonstrate compliance with the provisions in subdivision (d).
- (8) Maintain all records for five years, at least two years onsite.

OUTLINE FOR DISCUSSION ONLY AS WE DEVELOP THIS
CONCEPT

APPENDIX A: Beneficial Use Alternative Compliance Option

- (a) Calculating Annual Baseline Volume for Percent Beneficial Use
 - a. Annual Baseline Volume?
 - b. What will it take to achieve the percent beneficial use by compliant date?
 - i. Facilities to submit plans for approval?
 - ii. Lead time for approval?
 - c. 2019 compliance with 2018 volume or must percent beneficial use for current year volume?
- (b) Testing – fuel meter
- (c) Recording Keeping
- (d) Reporting the Percent Reduction
 - a. Tracking progress through bi-annual and annual reports
- (e) Violations

Preliminary Draft - For Discussion Only