

TBD , 2015

Mr. Chris McWilliams
Plant Manager
Air Products & Chemical, Inc.
23300 S. Alameda St.
Carson, CA 90810

Re: Rule 1118 Flare Monitoring and Recording Plan - Amendment
Application Number: 553861
Plan Owner/Operator: Air Products & Chemical, Inc.
Facility ID: 003417
Facility Address: 23300 S. Alameda St., Carson, CA 90810

Dear Mr. McWilliams:

The South Coast Air Quality Management District (SCAQMD) has reviewed the application (A/N 553861) submitted by Air Products Carson to amend the revised Flare Monitoring and Recording Plan (FMRP) that was issued on February 24, 2011 under A/N 458528. Based on the information contained in the initial plan application (A/N 458528), this application (A/N 553861) and additional information submitted, the compliance plan is approved for reissuance subject to the following conditions. This revised FMRP, as approved, supersedes the plan approved under A/N 458528.

CONDITIONS

1. The owner/operator shall perform monitoring and recording of the operating parameters for the flare in accordance with this approved compliance plan and other applicable requirements of Rule 1118(g). Monitoring and recording of the below flare pursuant to this approved plan shall be performed at all times, except when out of service for reasons described in Rule 1118(g)(5)(A).

| Flare Device ID | Type of Service |
|-----------------|-----------------|
| C33 | Clean |

2. A flare event occurs when the flow velocity of vent gas in the flare equals to 0.10 feet per second or greater. The flare event ends when the flow velocity drops below 0.12 feet per second. The owner/operator may use monitoring records of the flare water seal level and closures of control valves to demonstrate that no more vent gas was combusted in the flare for the purpose of determining when the flare event ends.

3. A flare event lasting 24 hours or less shall be considered a single flare event even when the vent occurs in two consecutive days. When a flare event continues for more than 24 hours, each calendar day shall be a separate flare event.
4. The flow meter used in this flare plan shall meet the requirements of Rule 1118 Attachment A and shall be certified by the AQMD.
5. When the maximum range of the flow meter is exceeded, the flow rate shall be assumed to be the maximum design capacity of the flare.
6. Volumetric flow rates of vent gases shall be corrected to standard conditions of 14.7 psia and 68°F.
7. Except for flare events originating from automatic vent valve PV-165C only (Hydrogen vent gas stream), the owner/operator shall calculate emissions of criteria pollutants for each flare event using the methods described in Attachment B of Rule 1118 and the appropriate HHV and Cs values specified in Section 3.4.2 of the revised FMRP. Whenever two (2) or more automatic vent valves (PV-150, PV-183 and PV-165C) are opened concurrently during a flare event, the owner/operator shall calculate flare emissions using the highest HHV value and sulfur content of these vent streams.
8. The owner/operator shall sample and analyze the Syngas and H₂ vent streams to the flare once a year pursuant to the methods listed in Rule 1118(j). The total sulfur content for these streams can be considered 0 and the analysis shall be for gas composition and HHV only. Samples shall be taken within 30 minutes, but no sooner than 15 minutes, of the start of a flare event.

The owner/operator shall determine the gas composition of the PSA Purge Gas vent stream to the flare by material balance around the PSA process using measured PSA inlet feed (Syngas) and H₂ product flows, along with Syngas and H₂ composition from the sample analyses required above. The HHV of the PSA Purge Gas shall be calculated using the gas composition determined above and known heating value of each individual component. The total sulfur content for PSA Purge Gas can be considered 0.

In the event the HHV of the Syngas, PSA Purge Gas and/or H₂ vent streams deviate by 10% or more from 312 Btu/Scf, 292 Btu/Scf and 324 Btu/Scf, respectively, the owner/operator shall submit an application to the Executive Officer to modify the HHV used to calculate emissions pursuant to Attachment B of Rule 1118.

9. The owner/operator shall calculate emissions for a flare event that occurs even when all three (3) automatic vent valves (PV-150, PV-183 and PV-165C) are in the fully closed position by using Natural Gas emission factors in Attachment B of Rule 1118.
10. For flare events originating from PV-165C only, the operator shall use the below equation and emission factor to calculate NO_x emissions. All other criteria pollutants are presumed to be zero for this hydrogen vent gas stream.

$$E_v = V_v \times \text{HHV} \times \text{EF}$$

Where;

V_v = Volume flow of vent gas in MMScf at 14.7 psia and 68°F

HHV = 324 Btu/Scf for H₂

EF = 0.068 lb/MMBtu

11. The owner/operator shall calculate emissions of pilot gas based on the maximum design capacity of 225 SCFH using the equation for natural gas in Attachment B of Rule 1118.
12. The owner/operator shall monitor the flare at all times for presence of a pilot flame using a thermocouple that will alarm the owner/operator in the event of a flame out. The owner/operator shall reignite the pilot immediately after a pilot flame out occurs.
13. The owner/operator shall notify the Executive Officer within one hour of any unplanned flare event with emissions exceeding either 100 pounds of VOC or 500 pounds of sulfur dioxide, or exceeding 500,000 standard cubic feet of flared vent gas. The owner/operator shall also notify the Executive Officer by telephone at least 24 hours prior to the start of a planned flare event with emissions exceeding either 100 pounds of VOC or 500 pounds of sulfur dioxide, or 500,000 standard cubic feet of combusted vent gas.
14. The owner/operator shall conduct a Specific Cause Analysis for any flare event, excluding planned shutdown, planned startup and turnaround, resulting in any of the followings: (a) 100 pounds of VOC emissions. (b) 500 pounds of sulfur dioxide emissions. (c) 500,000 standard cubic feet of vent gas combusted. The analysis shall identify the cause and duration of the flare event and describe any mitigation and corrective action taken to prevent recurrence of a similar flare event in the future. Unless an extension is granted, the owner/operator shall submit a Specific Cause Analysis to the Executive Officer within 30 days of the event.
15. The owner/operator shall conduct an analysis and determine the relative cause for a flare event that results in combustion of more than 5,000 standard cubic feet of vent gas. A Specific Cause Analysis may be submitted to satisfy this condition.
16. The owner/operator shall maintain records of all the information required to be monitored and make such records available to District personnel upon request.
 - a. Flare event data collected pursuant to paragraphs (g)(3), (g)(4), (g)(5), (g)(6) and (g)(8)(C) of Rule 1118 as applicable.
 - b. Total daily and quarterly emissions of criteria pollutant from the flare and each flare event along with all information specified by Rule 1118(i)(5)(B).
 - c. Monitoring record of automatic vent valves on/off positions pursuant to Condition No. 7, 9 and 10.
 - d. Pilot flame failure report.

- e. Planned and unplanned flare gas flow meter downtime report that includes date, time and explanation for taking the meter out of service.
- f. Sample results for gas composition and HHV pursuant to Condition No. 8.
- g. Specific Cause Analysis completed pursuant to Condition No. 14.
- h. Relative Cause Analysis completed pursuant to Condition No. 15.
- i. Annual acoustical pressure relief device leak survey.
- j. Video records pursuant to Rule 1118(g)(7).

Within 30 days after the end of each calendar quarter, the owner/operator shall submit a quarterly report to the AQMD Refinery Compliance Team at the below address. Item (a) through (h) shall be submitted quarterly in electronic format. Hard copy of item (i) shall be submitted with the quarterly report for the quarter which the survey was conducted. Item (j) shall be made available to the Executive Officer upon request.

All records required by this condition shall be certified for accuracy in writing by the responsible facility official and maintained for at least five years.

SOUTH COAST AIR QUALITY MGMT DISTRICT
REFINERY COMPLIANCE
1500 WEST CARSON STREET, SUITE 115
LONG BEACH, CA 90810

17. The operator/operator shall comply with all provisions of this approved Flare Monitoring and Recording Plan unless the plan is suspended, revoked, modified, reissued, or denied. Violation of any of the terms of the plan is a violation of Rule 1118.

Please review the plan carefully and contact Mr. Thomas Lee at (909) 396-3138 or tlee1@aqmd.gov if you have any questions.

Sincerely yours,

Danny Luong, P.E.
Senior Manager
RECLAIM Admin., Refinery Permitting,
Retail Gasoline Dispensing

cc: Ed Pupka, Compliance
A/N 553861 file