

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
ENGINEERING AND COMPLIANCE
MEMORANDUM**

DATE: August 29, 2013
TO: File
FROM: Thomas Lee
SUBJECT: Addendum to A/N 458580: Exxon Mobil's R1118 revised FMRP - **Reissuance**

ExxonMobil's revised Flare Monitoring & Recording Plan (FMRP) was approved and issued in Section I of their Title V Facility Permit under A/N 458580 on December 13, 2012 with specific conditions that go into effect no later than 6 months from the plan approval date pursuant to subparagraph (g)(1) of Rule 1118. This puts the effective date of the plan conditions on June 13, 2013. In April 2013, EM filed an appeal to this flare plan with the District Hearing Board under Appeal Case no. 1183-474. The items of contention were:

Condition no. 2: Parameters for defining the onset and termination of a flaring event was set at R1118's default definition of vent gas flow rate > 0.1 fps (for the start of a flare event) and < 0.12 fps (for the end of a flare event) for EM's general service flares after EM failed to demonstrate its proposed method (of monitoring water seal and flare header pressure) was reliable, accurate, verifiable and enforceable as an approved alternative method in lieu of using the flow meter for flare event determination.

Condition no. 3: Parameter to use continuous monitoring and recording of valve position indicator to identify the onset and termination of a flaring event based on the opening and closing of the main vent gas valve located on the header that directs flow to EM's ground flare (emergency service).

Condition no. 14: Parameter for installing thermocouples onto EM's general and clean service flare pilots to monitor the presence of the pilot flame by a date specific in lieu of its infrared detection system which was determined to be unreliable, inaccurate, unverifiable and unenforceable.

Shortly after Appeal Case no. 1183-474 was filed, EM also filed a Variance and Title V Alternative Operating Conditions (AOC) with the Hearing Board under Case no. 1183-477 knowing that resolution of the Appeal by the plan condition effective date of June 13, 2013 was unlikely (especially for condition nos. 2 and 3) and sought coverage protection beyond this date to resolve these issues with the District.

The EM Variance/AOC Case no. 1183-477 was heard by the District Hearing Board on June 12, 2013. EM requested and was granted a 90-day Variance/AOC (which expires on 9/12/13) to amicably resolve the issues with the District pursuant to the conditions set forth by the Hearing Board and demonstrate the integrity of the water seal would be intact (no breakthrough) up to 53 inches of static water pressure such that this parameter can be used for flare event determinations. Note that prior to the hearing, EM had made commitments to the District that it would upgrade its Panametrics flow meter to enable more accurate flow measurement in an attempt to comply with the default rule requirement for defining flare events using a flow velocity of 0.1 fps. A copy of the Hearing Board minute order for Variance/AOC Case no. 1183-477 is attached for reference.

The reference tracer gas test in the minute order was initially conducted on 7/12/13 with the presence of District staff. The test failed instantaneously due to leakage through the water seal by-pass valve, as explained by EM, because it was discovered that the valve seat was not seated properly due to 'debris' that was knocked loose from blind fittings that the tester used to insert the test probes. Note that the valve position indicator that is continuously monitored showed that the valve was completely closed during this entire time. A second test, which was conducted on 7/17/13 in accordance with District approved test protocols, demonstrated no tracer gas was detected downstream of the water seal when the flare header pressure was raised and maintained at 53" H₂O for the duration of the test as specified by the protocol. Note that both tests were conducted with the refinery operating in somewhat of an atypical 'steady state' condition where all process units were operating at controlled (below normal) rates and not over pressuring/venting into the flare header system according to EM. In light of such potential problems with the by-pass around the water seal, a new plan condition (no. 4) is being proposed to limit the opening of the water seal by-pass valve. According to EM, the by-pass is frequently used to 'minimize noise complaints from local residences' from the loud sound that is generated by the seal being broken from surging flare header pressure situations.

With the 53" H₂O pressure threshold established from the tracer gas test under a 'steady state' scenario, the District was concerned this threshold alone would not capture flare events under non-steady state operating conditions and requested a flow threshold from EM as well. EM initially proposed a vent gas flow threshold of 2.5 fps to be used as a trigger in addition to the 53" H₂O threshold until the flow meter is upgraded (by 9/12/13), at which point, data would be collected to determine a new low range capability of the meter which the meter manufacturer expected to be ~ 0.5 fps. According to EM, the basis for the interim velocity threshold of 2.5 fps was from past flaring event data. Since the meter will be upgraded by 9/12/13, which coincidentally is the expiration of this Variance/AOC, the District felt the flow threshold should be based on the upgraded meter's manufacturer expected capability (0.5 fps) until its true capability is determined from data analysis after the meter is installed, tested and fully operational and proposed 1.0 fps as the flow threshold instead of 2.5 fps. After reviewing their past flare event data, EM said that many 'false' flare events would be reported if 1.0 fps was used as the threshold. They claimed that as much as 80% of the 'false' flare events would be eliminated if 1.7 fps was used instead and was willing to lower the 53" H₂O header pressure threshold to 24" H₂O if the District agreed to add this additional trigger for flare event determination. The District felt with a 55% drop in pressure threshold for the water seal, the higher proposed velocity threshold of 1.7 fps should not result in actual flaring events provided the bypass valve is closed. This additional trigger was added to proposed condition no. 2 to avoid reporting 'false' flaring events. Note that proposed condition no.

2 has a sunset date of 1/31/14, after which, the rule defined threshold of 0.1 fps will preside as shown in proposed plan condition no. 3 (previously condition no. 2 in the 12/13/12 approved plan) unless EM applies and is issued a modified plan prior to this date. It is hopeful that the new upgraded flow meter will be able to attain accurate net flow down to 0.1 fps according to Mr. Jed Matson at GE Panametrics.

With respect to the changes in proposed revised plan condition no. 5, the District has agreed that continuous monitoring and recording of the on/off stage combustion valve does allow a sufficient level of confidence to detect the onset and end of a flaring event provided that EM install audible and visual alarms to monitor the opening/closing of the main vent gas valve located on the flare that diverts gas to the ground flare. EM has agreed to complete this project by January 31, 2014.

The deadline to install pilot thermocouples for EM's general and clean service flares has been extended as shown in proposed condition no. 16 to accommodate EM's next turnaround schedules.

The reissuance of this revised FMRP for EM, after EPA review, will supersede the December 13, 2012 approved plan under A/N 458580 but will retain the same application no. All applicable documents will be incorporated as an addendum to the A/N 458580 folder that is in the District's ONBASE data base.

MINUTE ORDER

EXXONMOBIL OIL CORPORATION
3700 WEST 190th STREET
TORRANCE, CALIFORNIA 90504

Case No: 1183-477
Facility I.D. 800089

Hearing Date: 06/12/2013

Hearing Type: Short and Alternate Operating Conditions

Action: Granted Starting Date: 06/13/2013 Ending Date: 09/12/2013

203(b)[from Condition No. 2, Section I, Section D, Condition No. H23.35 of Title V of Facility P/O No. 800089]
 221(b)(d)
 1118(g)(1)
 2004(f)(1)[from Condition No. 2, Section I, Section D, Condition No. H23.35 of Title V of Facility P/O No. 800089]
 3002(c)(1)[from Condition No. 2, Section I, Section D, Condition No. H23.35 of Title V of Facility P/O No. 800089]

Flare, Elevated with Steam Injection, West 65F-3	C891
Flare, Elevated with Steam Injection, East 65F-4	C892

1. During the variance period, in addition to using the flare header flow meter (GF-868), petitioner will determine the start and end of a flare event for Flares 65F-3 (C891) and 65F-4 (C892) based on the following indicators.
 - a. When the flare header pressure indicator (P65073) reads greater than the effective water seal level indicators (LC65007 & LC65006), which are continuously monitored by water seal level indicators and pressure transmitter; or
 - b. When the water seal bypass valve (PV-65108) position is opened (<0%), which is continuously monitored by a valve position indicator.
2. During the variance period, if a flaring event occurs pursuant to Condition No. 2, petitioner will timely report the flaring event to the District pursuant to Rule 1118.
3. During the variance period, petitioner shall conduct tracer gas testing on the integrity of flare 65F-3 water seal and bypass flare system and provide the test results to the District according to the following schedule:
 - a. Petitioner shall submit a revised test protocol to the District on or before June 14, 2013.
 - b. Within 1 week of receipt of Districts approval of the protocol, but no sooner than three weeks from submittal of the protocol, petitioner will begin the tracer testing.
 - c. Concurrent to the District's review of the protocol, petitioner shall work with a third party test company to finalize preparations so that petitioner is ready to

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- conduct the tracer testing upon final protocol approval by the District. This includes securing personnel, fabricating testing equipment and obtaining any other necessary materials including the tracer gas.
- d. Within 3 weeks of receipt of District approval of test protocol petitioner shall provide the District with the final written test report.
 - e. Petitioner shall with the final test report, provide flare monitoring data including pressure gas flow, flare video recordings, emissions, etc. for the period of the tracer gas testing.
 - f. Petitioner shall conduct tracer gas testing during District normal business hours (7:00 a.m. through 6:00 p.m., Tuesday through Friday) unless prior written approval has been provided by the Executive Officer.
4. Petitioner shall also notify the District (Attn: Khang Nyguen 909-396-3210) no later than 48 hours prior to the start of the testing to allow District representatives to witness the tracer gas testing.
 5. The Petitioner shall notify the District by telephone when final compliance has been achieved.
 6. The petitioner shall notify the Clerk of the Board in writing within 5 days of achieving final compliance.

1. During the AOC period, in addition to using the flare header flow meter (GF-868), petitioner will determine the start and end of a flare event for Flares 65F-3 (C891) and 65F-4 (C892) based on the following indicators:
 - a. When the flare header pressure indicator (P65073) reads greater than the effective water seal level indicators (LC65007 & LC65006), which are continuously monitored by water seal level indicators and pressure transmitter; or
 - b. When the water seal bypass valve (PV-65108) position is opened (>0%), which is continuously monitored by a valve position indicator.
2. During the AOC period, if a flaring event occurs pursuant to Condition No. 2, petitioner will timely report the flaring event to the District pursuant to Rule 1118.
3. During the AOC period, petitioner shall conduct tracer gas testing on the integrity of flare 65F-3 water seal and bypass flare system and provide the test results to the District according to the following schedule:
 - a. Petitioner shall submit a revised test protocol to the District on or before June 14, 2013.
 - b. Within 1 week of receipt of Districts approval of the protocol, but no sooner than three weeks from submittal of the protocol, petitioner will begin the tracer testing.
 - c. Concurrent to the Districts review of the protocol, petitioner shall work with a third party test company to finalize preparations so that petitioner is ready to conduct the tracer testing upon final protocol approval by the District. This includes securing personnel, fabricating testing equipment and obtaining any other necessary materials including the tracer gas.
 - d. Within 3 weeks of receipt of District approval of the test protocol petitioner shall provide the District with the final written test report.
 - e. Petitioner shall with the final test report, provide flare monitoring data including pressure gas flow, flare video recordings, emissions, etc. for the period of the tracer gas testing.

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- f. Petitioner shall conduct tracer gas testing during District normal business hours (7:00 a.m. through 6:00 p.m., Tuesday through Friday) unless prior written approval has been provided by the Executive Officer.
4. Petitioner shall also notify the District (Attn: Khang Nyguen 909-396-3210) no later than 48 hours prior to the start of the testing to allow District representatives to witness the tracer gas testing.
 5. The Petitioner shall notify the District by telephone when final compliance has been achieved.
 6. The petitioner shall notify the Clerk of the Board in writing within 5 days of achieving final compliance.
 7. In the event U.S. EPA objects to this AOC within 45 day review period or in response to a timely citizen petition, this AOC shall be ineffective to protect petitioner from U.S. EPA or citizen enforcement under the Federal Clean Air Act for any federally enforceable equipment.

[REDACTED]

None

Failure to comply in full with any and all conditions and increments of progress may result in modification or revocation of this order by the Hearing Board, and/or enforcement actions by the SCAQMD.

[REDACTED]

In the event petitioner will be unable to comply with the final compliance date, a petition requesting a regular variance may be filed. To meet notice requirements, the petition must be filed no later than **August 8, 2013**. In the event the hearing is not needed and taken off calendar, petitioner may request a refund of 50% of the filing fee; however, petitioner will be responsible for the publication fee.

[REDACTED] Edward Camarena, Chair
Julie Prussack, Vice Chair
Patricia Byrd
M. Michael Glovsky, M.D.
Marti L. Klein

[REDACTED] Francis Keeler, Attorney at Law

[REDACTED] Joseph Panasiti, Senior Deputy District Counsel

[REDACTED] Craig Sakamoto, Environmental Section Supervisor

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CASE NO. 1183-477

- #1 - RECLAIM/Title V Facility Permit Revision
A/N 511915
- #2 - Current Flare System Diagram
- #3 - Revised Final V Facility Permit Facility I.D.
No. 800089, Application No. 458580 (Received
stamped
1/2/13)
- #4 - Email dated 6/12/12 from Thomas Lee to Lynnea
Hsu, Ref: Rule 1118 Plan Draft Conditions
- #5 - Email dated 7/3/12 from Jay Chen to Craig
Sakamoto Ref: Assistance with the approval of
Rule 1118 Plan
- #6 - Completion Letter dated 7/24/12 Ref: Permit
condition related to Flare Flow/Water Seal
- #7 - Various emails with Jay Chen, Lynnea and Thomas
Lea Ref: Rule 1118 Plan Draft Conditions
- #8 - Email from Catherine Rodriguez dated 10/23/12 to
R9Air Permits with attachments, EPA Cover Letter,
Proposed Title V Permit & Engineering Evaluation
- #9 - Revised Proposed Variance Conditions
- #10- Revised Proposed Variance Conditions

Minutes for Variance Camarena/Glovsky 4-1 Prussack votes no

Meeting for AOC Camarena/Glovsky 4-1 Prussack votes no

Board
Review/Approval

Edward Camarena
Edward Camarena, Chair

Dated

6/26/13

Prepared by Peggy White