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**BEFORE THE HEARING BOARD OF THE
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

In the Matter of

Case No. **1183-494**

SOUTH COAST AIR QUALITY
MANAGEMENT DISTRICT,

Petitioner,

v.

EXXONMOBIL OIL CORPORATION
[Facility ID No. 800089],

Respondent.

FINDINGS AND DECISION

Rules 203, 2004, 3002, 401, 404, 405, 407, 2011,
and 2012; California Health & Safety Code
§41701; and specified Title V Permit Conditions

Hearing Date: April 2, 2016
Time: 9:00 a.m.
Place: Torrance City Hall
Council Chambers
3031 Torrance Boulevard
Torrance, CA 90503

This petition for a Stipulated Order for Abatement was heard on April 2, 2016, pursuant to notice and in accordance with the California Health & Safety Code § 40823 and South Coast Air Quality Management District (“District”) Rule 812.

The following members of the Hearing Board were present: Edward Camarena, Chair; Patricia Byrd, Vice Chair; Julie Prussack; David Holtzman; and Clifton V. Lee, M.D. Petitioner, Executive Officer, was represented by Bayron T. Gilchrist, Assistant Chief Deputy Counsel. Respondent, ExxonMobil Oil Corporation (“ExxonMobil” or “Respondent”), was represented by

1 Frances L. Keeler of Clyde & Co, Attorney at Law. The public was given the opportunity to
2 testify, evidence, including the Stipulated Findings and Decision, was received, and the matter was
3 submitted.

4 The Hearing Board finds and decides as follows:

5 **FINDINGS OF FACT**

6 1. Petitioner is a body corporate and politic established and existing pursuant to Health
7 and Safety Code §40000, *et seq.* and §40400, *et seq.*, and is the sole and exclusive local agency
8 with the responsibility for comprehensive air pollution control in the South Coast Basin.

9 2. Respondent ExxonMobil is in the business of petroleum refining and owns and
10 operates the Torrance Refinery located at 3700 West 190th Street, Torrance, California 90504.
11 Respondent employs approximately 650 employees and 550 contractors at the Torrance Refinery.

12 3. The District has issued to Respondent a RECLAIM/Title V Facility Permit to
13 Operate/Construct (“Title V Permit”) for the Torrance Refinery.

14 4. The fluid catalytic cracking unit (“FCCU”) is one of the central process units at the
15 Torrance Refinery. The FCCU system cracks heavy gas oil into smaller hydrocarbon chains, which
16 forms FCC gasoline blend stock and other fuel products. The FCCU is identified under Process 3
17 in Section D of the Title V Permit and performs feed cracking, products fractionation, energy
18 recovery, and air pollution functions.

19 5. More specifically, this process occurs when oil enters the FCCU 2C-4 Reactor
20 [Device No. D1589], and is cracked using FCCU catalyst in the Reactor Riser Pipe. This process
21 causes a buildup of coke on the catalyst. The catalyst is then sent to the 2C-3 Regenerator [Device
22 No. D151] (“FCCU Regenerator”) where the coke is burned off with air generating flue gas. Once
23 the catalyst has been regenerated it is circulated back to the Reactor Riser Pipe via the FCCU
24 Regenerator Standpipe.

25 6. The flue gas from the FCCU Regenerator passes through air pollution control
26 equipment which consists of the following devices: Third Stage Separator (“TSS”) Cyclone
27 [Device No. C1590]; Fourth Stage Separator (“FSS”) Cyclone [Device No. C2314]; 2F-3 CO
28 Boiler [Device No. C164]; 2D-17 Electrostatic Precipitator (“ESP”) [Device No. C2283]; 2D-18

1 ESP [Device No. C2284]; and the Selective Catalytic Reduction System [C1772] (“SCR”).

2 7. On Wednesday, February 18, 2015, while ExxonMobil was conducting maintenance
3 on the FCCU, an explosion occurred in the ESPs [Device Nos. C2283 and C2284]. The explosion
4 rendered the ESPs totally inoperable. The FCCU has remained completely shut down since the
5 explosion.

6 8. During this time, a turnaround was conducted on the FCCU. The FCCU turnaround
7 maintenance and repairs to the ESPs are now completed and ExxonMobil has begun preparations to
8 re-start the FCCU and associated equipment, including the air pollution control system.

9 9. Unlike past start-ups, Respondent will not be operating its ESPs at all times.
10 Respondent states that this limitation on use is necessary to ensure the safety of the start-up
11 procedure but will minimize excess emissions to the maximum extent feasible.

12 10. Although Respondent is not currently in violation of District rules or the Torrance
13 Refinery’s Title V Permit, the District contends that the imminent re-start of the FCCU is expected
14 to result in a violation of District rules and the facility’s existing Title V permit conditions. These
15 anticipated violations are set forth in detail below.

16 11. **District Rule 203(b)** states that any equipment that is required to have a permit
17 “shall not be operated contrary to the conditions specified in the permit to operate.” Similarly,
18 **District Rules 2004(f)(1) and 3002(c)(1)** reiterate the requirement that a facility must comply with
19 all permit conditions.

20 12. During the start-up of the FCCU Regenerator, Respondent will be in violation of
21 **District Rules 203(b), 2004(f)(1), and 3002(c)(1)** based on its violation of the following Title V
22 Permit Conditions.

23 13. **Permit Condition F9.1 and District Rule 401(b)(1)(A)** state that a person “shall
24 not discharge into the atmosphere from any single source of emission whatsoever any air
25 contaminant for a period or periods aggregating more than three minutes in any one hour which is:
26 (a) [a]s dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by
27 the United States Bureau of Mines.” In addition, **California Health and Safety Code §41701**
28 states that “no person shall discharge into the atmosphere from any source whatsoever any air

1 contaminant . . . for a period or periods aggregating more than three minutes in any one hour which
2 is: (a) [a]s dark or darker in shade as that designated No. 2 on the Ringelmann Chart, as published
3 by the United States Bureau of Mines.”

4 14. During start-up of the FCCU Regenerator, Respondent will not fully energize the
5 ESPs at all times. In addition, some periods of process instability is expected during the start-up.
6 Thus, during the start-up period, there is a strong possibility that visible air contaminants will occur
7 for a period or periods aggregating more than three minutes in any one hour which is as dark or
8 darker in shade as that designated No. 1 or No. 2 on the Ringelmann Chart. Therefore, the
9 Respondent may violate **Permit Condition F9.1, District Rule 401(b)(1), and California Health**
10 **and Safety Code §41701.**

11 15. **Permit Conditions D29.3 and D29.4** require Respondent to conduct an annual
12 source test for various pollutants with the ESPs operating in various modes.

13 16. The last source test was conducted in April 2014, which means that the next annual
14 source test should have been conducted in April 2015. The February 18, 2015 explosion in the
15 ESPs, and subsequent shut down of the Torrance Refinery, put ExxonMobil in violation of **Permit**
16 **Conditions D29.3 and D29.4.**

17 17. **Administrative Condition E.3** states that the permit “does not authorize the
18 emissions of air contaminants in excess of those allowed by Division 26 of Health and Safety Code
19 of California or the Rules and Regulations of the AQMD.” Similarly, the first sentence of
20 **Administrative Condition E.7** provides that the Respondent “shall maintain and operate all
21 equipment to ensure compliance with all emission limits as specified in this facility permit.”

22 18. As discussed above, there is a possibility that during start-up of the FCCU,
23 Respondent may emit air contaminants in excess of the requirements of the Health and Safety
24 Code, District Rules and/or the Permit.

25 19. **Administrative Condition E.4** (first sentence) provides that “[t]he operator shall
26 not use equipment identified in this facility permit as being connected to air pollution control
27 equipment unless they are so vented to the identified air pollution control equipment which is in
28 full use and which has been included in this permit.”

1 20. During the start-up of the FCCU Regenerator, the TSS Cyclone and FSS Cyclone
2 will not be in full use, the CO boiler and SCR will be bypassed, and the ESPs will not be energized
3 at all times; therefore, the flue gas will not be vented to the permitted air pollution control
4 equipment in full use, which is in violation of **Administrative Condition E.4**.

5 21. **Rule 404** prohibits the “discharge into the atmosphere from any source, particulate
6 matter in excess of the concentration at standard conditions, shown in Table 404(a).”

7 22. **Rule 405** prohibits the “discharge into the atmosphere from any source, solid
8 particulate matter . . . in excess of the rate shown in Table 405(a).”

9 23. During start-up of the FCCU Regenerator, the ESPs, which control PM emissions,
10 will not be operating at all times. Thus, during this period, there is a possibility that PM emissions
11 may be greater than allowed by **Rules 404 and 405**. Therefore, the Respondent may violate these
12 rules.

13 24. **Rule 407** prohibits the discharge into the atmosphere from any equipment CO
14 emission exceeding 2,000 ppm by volume measured on a dry basis, averaged over 15 consecutive
15 minutes.

16 25. During start-up of the FCCU Regenerator, the CO boiler, which could control CO
17 emissions, will be bypassed. Additionally, during start-up of the CO boiler, CO emissions may
18 increase. Thus, during this period, there is a possibility that CO emissions may be greater than
19 allowed by **Rule 407**. Therefore, the Respondent may violate this rule.

20 26. **Rule 2011(c)(2)(A), (c)(3)(A), (e)(1), Table 2011-1, and Appendix A, Chapter 2,**
21 **and Attachment C; Rule 2012(c)(2)(A), (c)(3)(A), (g)(1), Table 2012-1, and Appendix A,**
22 **Chapter 2, and Attachment C, and Administrative Conditions F.I.A.4 and F.III.D.1** require the
23 Respondent to install, maintain, and operate the NO_x or SO_x continuous emission monitoring
24 system (CEMS) to continuously measure and report the emissions from the FCCU.

25 27. Prior to the start-up of the FCCU Regenerator, the refractory of various process-
26 related equipment needs to be dried out before the loading and heating of the catalyst. During the
27 refractory dry-out period, some of the exhaust emissions from the 2F-1 FCCU Regenerator start-
28 up/Air Heater [Device No. D2320] are vented through openings at the reactor and the TSS

1 Cyclone, and are not vented though the FCCU main stack where the NO_x and SO_x CEMS are
2 located. Thus, during this period, the Respondent will violate these rules.

3 28. **Administrative Condition E.8** (first sentence) states that “[a]ll equipment operating
4 under the RECLAIM program shall comply concurrently with all provisions of AQMD Rules and
5 Regulations, except those listed in Table 1 of Rule 2001 for NO_x RECLAIM sources and Table 2
6 of Rule 2001 for SO_x RECLAIM sources.”

7 29. During start-up of the FCCU, Respondent will not comply with **District Rules 203,**
8 **2004, 3002, 401, 404, 405, 407, 2011, and 2012.** Consequently, Respondent will also be in
9 violation of **Administrative Condition E.8.**

10 30. Excess emissions are anticipated as a result of the foregoing violations. The parties
11 estimate total unmitigated excess emissions during the entire abatement period as follows:

12	NO _x :	467 pounds;
13	SO _x :	0 pounds;
14	CO:	144 pounds;
15	PM:	848 pounds;
16	PM10:	225 pounds.

17 31. Source tests will be conducted during the FCCU Regenerator start-up period and
18 will improve the accuracy of excess emission estimates during this start-up and future start-ups.
19 Those source tests will also assist the District in correlating excess PM emissions and opacity.

20 32. The excess NO_x, CO, PM, and PM10 emissions are expected to be reduced and
21 mitigated to the maximum extent by Condition 23 of the Order for Abatement.

22 33. In particular, Respondent made drift eliminator upgrades, not otherwise legally
23 required to do so, to the Pretreater, Hydrotreater, Fuel Gas Treater, North, and South Coker
24 Cooling Towers. The Cooling Tower upgrades will result in excess emission reductions during the
25 abatement period of approximately:

26	PM:	137 pounds; and
27	PM10:	96 pounds.

28 34. The Cooling Tower upgrades will last beyond the abatement period, thereby

1 resulting in longer term reductions of PM and PM10 at Respondent's facility.

2 35. Respondent also has agreed to mitigate excess NOx, CO, PM, and PM10 emissions
3 by shutting down Coker Heaters 21F-7 and 22F-3. The shutdown of this equipment will further
4 reduce excess emissions during the abatement period by approximately:

5 NOx: 129 pounds;

6 PM: 25 pounds; and

7 PM10: 23 pounds.

8 36. Respondent also has agreed to mitigate excess PM and PM10 emissions by limiting
9 the throughput of the Refinery's Crude Unit to 100,000 barrels per day. By limiting the
10 throughput of the Crude Unit to 100,000 barrels per day this will further reduce excess emissions
11 during the abatement period by approximately:

12 PM: 54 pounds; and

13 PM10: 51 pounds.

14 37. Respondent also has agreed to mitigate excess PM and PM10 emissions by
15 performing twice daily street sweeping within and outside the Refinery. This twice daily street
16 sweeping will further reduce excess emissions during the abatement period.

17 38. Respondent also has agreed to mitigate remaining excess NOx emissions by retiring
18 an equivalent amount of RECLAIM Tradable Credits.

19 39. Although not quantifiable, Respondent has also agreed to further mitigate CO
20 excess emissions by performing online burner tip cleaning of 15 burners during the abatement
21 period.

22 40. Respondent states it spent approximately \$161 million to repair the ESPs damaged
23 during the February 18, 2015 explosion. In addition, Respondent states it spent approximately
24 \$1.1 million for the drift eliminator upgrades to the Pretreater, Hydrotreater, Fuel Gas Treater,
25 North, and South Coker Cooling Towers.

26 41. Respondent states that if it is not allowed to re-start the FCCU, it will lose
27 approximately \$1-1.5 million per day in gross revenues. In addition, approximately 650
28 employees and 550 contractors could be laid-off if the FCCU cannot be re-started.

- 1 recorded, and clearly displayed on FCCU distributed control system (DCS)
2 start-up screens;
- 3 b. During Console Team Lead Training, emphasize the importance of
4 maintaining FCCU regenerator start-up operating envelopes;
- 5 c. Vacuum all accessible areas and remove all debris from the SCR inlet, ESPs,
6 SCR bypass line, and other equipment where the refractory was repaired or
7 replaced;
- 8 d. Ensure all FCCU stack CEMS (NO_x, SO_x, CO, O₂, Opacity and Flow) and
9 other process monitors are fully conditioned, calibrated, and operational
10 within 30 days prior to start-up. In addition, such CEMS shall be recalibrated
11 within 24 hours prior to start-up; and
- 12 e. Perform all quality assurance and quality control steps, as outlined in the
13 approved Quality Assurance Plan (QAP), dated 11/12/2009 for the NO_x,
14 SO_x, CO and O₂ analyzers at least 72 hours prior to start-up.

15 **FCCU Start-up Conditions**

- 16 4. During start-up, the Respondent shall provide twenty four (24) hours per day
17 engineering coverage to assist with the monitoring of the key regenerator DCS tags and respond to
18 any process deviations.
- 19 5. Respondent shall notify the District (Attn: Mohsen Nazemi [mnazemi1@aqmd.gov])
20 at least twenty four (24) hours in advance of starting-up the 2K-1 Air Train Blower (D1636), as
21 described in Condition 7.a.ii, and within 24 hours of completion of start-up, as described in
22 Condition 7.b.xii.
- 23 6. In order to minimize visible emissions during start-up, the Respondent shall maintain
24 the inlet velocity to the primary internal cyclones of the FCCU catalyst Regenerator at least 20 feet
25 per second (fps) averaged over one hour, during the period starting from Conditions 7.b.iii. In
26 addition, Respondent shall ensure the inlet velocity during the period starting from Condition 7.b.v
27 and ending at 7.b.vii be between 30 and 45 fps averaged over one hour, to the extent possible
28 considering the safe operation of the equipment. The Respondent shall also monitor Secondary

1 Cyclone Dip-leg level and adjust inlet velocity to prevent catalyst build-up and decreased cyclone
2 efficiency.

3 7. To the extent consistent with considerations for the safe operation of the equipment
4 during the start-up, Respondent shall utilize control equipment to the maximum extent possible to
5 minimize emissions of all pollutants, including, but not limited to PM, PM10, CO, NOx and SOx.
6 The Respondent shall notify the public at least 48 hours in advance of its intent to engage in the
7 actions in Conditions 7.b.v. through 7.b.vii., by placing door hangers on all residences and
8 businesses within one (1) mile from the ESPs. That notification shall state that Respondent intends
9 to engage in these activities within about, but no less than, forty-eight (48) hours, and shall inform
10 the recipient of how to sign up for the “Torrance Alerts Program.” The Respondent shall notify the
11 District (1-800-CUT-SMOG [1-800-288-7664]) at least one (1) hour **prior** to each of the following
12 events:

13 a. Refractory Dry-out

14 i. Energize ESPs (2D-17, 2D-18);

15 ii. Start 2K-1 Air Train Blower (D1636), without introducing any air to the
16 Regenerator;

17 iii. Refractory dry-Out (begins when the 2K-1 Air Train Blower is at full
18 speed, knife valve is open, and 2F-1 Heater is utilized);

19 iv. Closure of knife valve and shutdown of 2F-1 Heater (end of refractory
20 dry-out); and

21 v. De-energize ESPs.

22 b. FCCU Start-up

23 i. Loading of equilibrium catalyst into FCCU;

24 ii. Energize ESPs (2D-17, 2D-18);

25 iii. Catalyst Fluidization (begins after loading of equilibrium catalyst and 2K-
26 1 Air Train Blower is at full speed and knife valve open;

- 1 iv. Catalyst Heat Up (begins after loading of equilibrium catalyst and 2K-1
- 2 Air Train Blower is at full speed, knife valve is open and 2F-1 Heater is
- 3 utilized);
- 4 v. De-energize ESPs;
- 5 vi. Introduction of hydrotreated gas oil (as torch oil) to the FCCU;
- 6 vii. Energize ESPs after stable regenerator condition is established and
- 7 continue heating of regenerator with hydrotreated gas oil;
- 8 viii. Commencement of catalyst circulation;
- 9 ix. Introduction of feed to FCCU;
- 10 x. Fully stream regenerator exhaust through Third Stage Separator;
- 11 xi. Anticipated closing of SCR by-pass and venting through the SCR; and
- 12 xii. Anticipated completion of start-up procedure, which is defined as initial
- 13 transfer of Light and Heavy FCC Naptha and Light Cycle Oil into final
- 14 storage tanks and/or downstream process units; and
- 15 xiii. The Respondent shall close the SCR bypass and direct the exhaust
- 16 through the SCR after the TSS is fully in service, as described in
- 17 Condition 7.b.x, and when the exhaust temperature at the SCR inlet is
- 18 above 500 degrees F. The Respondent shall initiate ammonia injection
- 19 when exhaust is directed into the SCR.

20 8. During the start-up, the Respondent shall only use torch oil to the FCCU, with Sulfur
21 content of no more than 250 ppm when the main fractionator (D152) is below 300 degrees F. When
22 the main fractionator temperature is higher than 300 degrees F, the Respondent shall maximize the
23 use of hydrotreated gas oil with no more than 175 ppm Sulfur content and minimize torch oil from
24 storage with no more than 250 ppm Sulfur content to the main fractionator to the extent possible
25 considering the safe operation of the equipment.

26 9. During the start-up, the Respondent shall not use walnut shelling on the FCCU 2K-
27 1E Expander (D2305).

1 10. The Respondent shall limit the refractory dry-out period to no more than a total
2 cumulative of thirty-six (36) hours (starting from initiation of start-up, as described in Condition
3 7.a.iii and ending at closure of knife valve, as described in Condition 7.a.iv). The Respondent shall
4 limit the time the ESPs are not fully energized as in Condition 7.b.v. through 7.b.vii. to no more
5 than six (6) consecutive hours. This six-hour period without the ESPs fully energized shall occur
6 between the hours of 7 p.m. and 7 a.m.

7 11. The Respondent shall keep records, whenever the position of the knife valve
8 changes, of the position of the knife valve (open or closed) and the time of such changes. Such
9 records shall be kept throughout the period identified under Condition 7.

10 12. Until the ESPs are fully energized, as described under Condition 7.b.vii, the
11 Respondent shall not add any additives or constituents to the FCCU catalyst that may increase
12 particulate emissions, shall only use equilibrium catalysts, and shall not recycle any catalyst fines
13 from the ESP hoppers back into the FCCU catalyst system.

14 13. The Respondent shall close the SCR bypass and direct the exhaust through the SCR
15 when the exhaust temperature at the SCR inlet is above 500 degrees F. The Respondent shall
16 initiate ammonia injection when exhaust is directed into the SCR and the exhaust temperature is
17 above 500 degrees F.

18 14. The Respondent shall notify the District (1-800-CUT-SMOG [1-800-288-7664]) as
19 quickly as possible, but in no event no later than thirty (30) minutes of any visible emissions or odor
20 complaints received from the public during the period that this Order of Abatement (“Order”) is in
21 effect.

22 15. The Respondent shall notify the District (1-800-CUT-SMOG [1-800-288-7664])
23 within thirty (30) minutes whenever the opacity readings from the FCCU exceed 40% at any time
24 during the start-up of the FCCU.

25 16. Determination of opacity readings shall be based upon continuous monitoring and
26 recording of opacity using the certified opacity meter that meets Performance Specification 1 in 40
27 C.F.R. Appendix B. Respondent shall notify the District (1-800-CUT-SMOG [1-800-288-7664])
28 within one (1) hour of any opacity meter malfunction or return into operation after a malfunction.

1 During any time of malfunction of the opacity meter, Respondent shall employ a California Air
2 Resources Board (“CARB”) certified reader to conduct and document visible emissions evaluations
3 per United States Environmental Protection Agency (“EPA”) Method 9 every five (5) minutes until
4 the meter is placed back into full service. Prior to start-up, Respondent shall maintain a spare
5 opacity meter that is fully operational and calibrated. Within two (2) hours of any opacity meter
6 malfunction, the Respondent shall make all feasible attempts to complete the repair of the meter
7 including, but not limited to, cleaning the lenses and/or replacing the opacity meter with the spare
8 opacity meter.

9 17. Except as provided for in Condition 18, during the refractory dryout and start-up
10 periods, Respondent shall make best efforts to minimize all opacity exceedances by having the ESP
11 energized, and ensure that opacity, during the start-up period as described in Condition 7.b, from the
12 FCCU stack does not exceed 60% for more than fifteen (15) minutes in any hour, or 75% for more
13 than ten (10) minutes in any hour, or reach 100% for more than two (2) minutes in any hour.

14 18. When the ESPs are not fully energized as described between Conditions 7.b.v and
15 7.b.vii, opacity may exceed 20% for no more than six (6) cumulative hours unless an exceedance is
16 necessary for the safe operation of the equipment or equipment failure beyond the reasonable
17 control of the Respondent.

18 19. Whenever the CO Boiler (2F-3) is in firing mode and when the ESPs are not fully
19 energized as described between Conditions 7.b.v and 7.b.vii, the Respondent shall ensure alternative
20 monitoring equipment capable of accurately measuring CO emissions up to 5000 ppm is
21 implemented.

22 20. During the refractory dryout and start-up periods, Respondent shall make best efforts
23 to minimize CO emissions and shall not exceed 2000 ppm averaged over 15 minutes, except when
24 torch oil is introduced as described in Condition 7.b.vi, CO concentration shall not exceed 2000
25 ppm for more than 90 minutes cumulative.

26 21. The Respondent shall submit to the District (Attn: Cher Snyder
27 [csnyder@aqmd.gov] and Danny Luong [dluong@aqmd.gov]) within seven (7) days after the
28

1 completion of the start-up of the FCCU, as described in Condition 7.b.xii, the following
2 information:

- 3 a) Material Safety Data Sheet of hydrotreated gas oil (as torch oil);
- 4 b) Material Safety Data Sheet of the fresh FCCU catalyst added to the FCCU
5 and a composition analysis of the actual equilibrium catalyst used during the
6 FCCU start up.
- 7 //
- 8 c) Hourly and 15-minute average NO_x, SO_x, and CO monitoring data from the
9 CEMS of the 2F-7 Main Stack (S1739) during start-up;
- 10 d) Hourly and 15-minute average NO_x, SO_x, and CO monitoring data from the
11 CEMS of the 2F-7 Main Stack (S1739) during start-up;
- 12 e) Primary cyclone inlet velocity, secondary cyclone dip-leg levels, temperature,
13 O₂ and CO trend data during start-up. Temperature data shall be provided
14 from temperature monitors located at cyclone outlets (monitor numbers:
15 T02012, T02092, T02009, T02612, T02603, T02611, T02011, T02610,
16 T02819, T02820), regenerator flue gas (T02004), ESP Outlet (T02411A,
17 TC02411), SCR Bypass Flue gas (T02412), SCR Cat Flue Gas (T02056,
18 T02057), Flue Gas from 2F-7(T02105). O₂, CO, and CO₂ data shall be from
19 process monitors, GC-7-A0207124, GC7-A0207125, GC7-A0207126,
20 respectively;
- 21 f) NH₃ injection rates into the ESPs and SCR during Startup;
- 22 g) Date and time of the closing of SCR Bypass ducts (PV-02139 and PV-02134)
23 and the time period for SCR bypass;
- 24 h) Date and time when the TSS and FSS Cyclones became in partial use and full
25 use;
- 26 i) Date and time when the ESPs are energized and de-energized;
- 27 j) Date and time when lighting of pilot of the CO Boiler (2F-3)
- 28

- 1 k) Preliminary PM emissions from source tests, records from the Opacity Meter,
- 2 excess opacity during the start-up period, and, if opacity readings are
- 3 conducted manually, the name(s) and certificate(s) of the opacity reader;
- 4 l) Log of knife valve position;
- 5 m) Hourly injection rate of torch oil, the storage tank of torch oil fed to the
- 6 FCCU and the daily sulfur content of such torch oil;
- 7 n) Hourly injection rate of hydrotreated gas oil and the sulfur content of such
- 8 hydrotreated gas oil from the hydrotreater to FCCU every 12-hour shift; and
- 9 o) Copies of shift console letter kept as part of the operator standard operation
- 10 procedures during the period outlined under Condition 7.b.

11 22. The Respondent shall determine NO_x and SO_x emissions according to RECLAIM
12 Protocols in Rules 2012 and 2011, respectively. Respondent shall submit data and calculations used
13 to determine NO_x and SO_x emissions to the District (Attn: Danny Luong [dluong@aqmd.gov])
14 within seven (7) days of the completion of the start-up of the FCCU, as described in Condition
15 7.b.xiii. NO_x excess emissions shall be determined based on when temperature as recorded by
16 Temperature Monitors (T02056, T02057) exceed 500°F and the SCR is bypassed. Once the
17 calculations have been reviewed and approved, Respondent shall submit an RTC trade registration
18 to retire additional NO_x and SO_x RTCs (beyond that required through the annual reconciliation of
19 NO_x emissions) equal to the calculated excess NO_x and SO_x emissions generated during the entire
20 bypass period.

21 23. The Respondent shall during start-up period, as described in Condition 7.b, minimize
22 excess total NO_x, CO, PM, and PM₁₀ emissions to the maximum extent feasible by:

- 23 a. Operating all drift eliminator upgrades to the Pretreater, Hydrotreater, Fuel
- 24 Gas Treater, North, and South Coker Cooling Towers;
- 25 b. Shutting down Coker Heaters 21F-7 and 22F-3;
- 26 c. Operating at reduced Crude Unit throughput rate of no more than 100,000
- 27 barrels per day;
- 28 d. Conducting twice daily street-sweeping within and outside the Refinery; and

1 e. Conducting online tip cleaning for 15 burners.

2 **Source Test Conditions**

3 24. Start-up Tests shall be conducted to correlate the level of opacity with PM emission
4 during FCCU start-up. A minimum of six (6) Start-up Tests shall be conducted in accordance with
5 approved District source test methods. The number of runs, times of testing, duration of test,
6 operational parameters to be monitored and recorded, and test methodologies, shall be defined in
7 the approved test protocol as described in Condition 1. In addition to PM, data shall also be
8 monitored during Start-up Tests for PM10, NO_x, SO_x, CO, O₂, CO₂, flowrates, and temperatures at
9 the stack 2F-7. The Respondent shall, within seven (7) days of completion of the FCCU start-up, as
10 described in Condition 7.b.xiii, initiate a Compliance Test to determine the actual PM10 (filterable
11 front end and condensable back end pursuant to Method 5.2) and ammonia (NH₃ Slip) emissions
12 from the operation of the FCCU according to Rule 1105.1 in accordance with the District- approved
13 test protocol referenced in Condition 2. The source test shall also be conducted to demonstrate
14 compliance with for Rules 404, 405, 407, 409, NSPS Subpart J, and Consent Decree (CD) Case No.
15 05 C5809 pursuant to an approved test protocol. Source test results shall include the following
16 parameters: FCCU feed rate in bbls/day; catalyst circulation rate in tpd; coke burn rate in lb/hr;
17 oxygen and moisture content of exhaust gases; exhaust flow rate in dscfm; flue gas temperature at
18 the inlet and outlet of the ESPs; ammonia injection rate in lb/hr (at ESPs inlet and SCR inlet); and
19 the average primary and secondary currents in amps, primary and secondary voltages in volts, and
20 spark rate at each of the ESP fields.

21 25. The Respondent shall notify the District (Attn: Cher Snyder [csnyder@aqmd.gov]
22 and Mike Garibay [mgaribay@aqmd.gov]) of the date and time of the test at least forty eight (48)
23 hours prior to the start of the Start-up and Compliance source test. The Respondent shall provide
24 preliminary test results within seven (7) days of the completion of the source test and the complete
25 test report within ten (10) days of providing the preliminary test results to the District (Attn: Cher
26 Snyder [csnyder@aqmd.gov] and Mike Garibay [mgaribay@aqmd.gov]).

27 **Legal and Administrative Terms and Conditions**

28 26. The Hearing Board may modify the Order for Abatement without the stipulation of

1 the parties upon a showing of good cause, and upon making the findings required by Health and
2 Safety Code Section 42451(a) and District Rule 806(a). Any modification of the Order shall be
3 made only at a public hearing held upon 10 days published notice and appropriate written notice to
4 Respondent.

5 27. Respondent remains subject to all rules and regulations of the District, and with all
6 applicable provisions of California law. Nothing herein shall be deemed or construed to limit the
7 authority of the District to issue Notices of Violation, or to seek civil penalties, criminal penalties,
8 or injunctive relief, or to seek further orders for abatement, or other administrative or legal relief.
9 The Hearing Board shall retain jurisdiction over this matter until July 29, 2016, at which time this
10 Order for Abatement, if it has not been properly extended, shall expire.

11 28. Respondent shall notify the Clerk of the Board in writing when final compliance is
12 achieved.

13
14
15 **FOR THE BOARD:** _____

16
17 **DATED:** _____