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WESTERN DISTRICT OF TEXAS

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UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF TEXAS

UNITED STATES OF AMERICA, )  
 and )  
 THE STATE OF OHIO )  
 Plaintiffs, )  
 and )  
 the Memphis Shelby County )  
 Health Department, )  
 Plaintiff-Intervener, )  
 v. )  
 The Premcor Refining Group Inc., and )  
 The Lima Refining Company, )  
 Defendants. )

CIVIL ACTION NO.

**SA07CA0683 RF**

CONSENT DECREE ADDENDUM

WHEREAS, Plaintiff, the United States of America ( "Plaintiff" or "the United States"), on behalf of the United States Environmental Protection Agency ( "EPA"), has simultaneously filed a Complaint against and lodged this Consent Decree Addendum ("Addendum") with The Premcor Refining Group Inc. and the Lima Refining Company (collectively, "Premcor") for alleged environmental violations at petroleum refineries owned and operated by Premcor;

WHEREAS, the United States has initiated a nationwide, broad-based compliance and enforcement initiative involving the petroleum refining industry (the "United States' Refinery Initiative");

WHEREAS, Valero Energy Corporation acquired Premcor Inc. and its subsidiaries via the September 1, 2005, merger of Premcor Inc. with and into Valero Energy Corporation, with Valero

Energy Corporation being the surviving corporation of the merger, and with Valero Energy Corporation becoming the ultimate parent of Premcor;

WHEREAS, on November 23, 2005, this Court entered at Docket No. SA-05-CA-0569-RF a separate Consent Decree ("Consent Decree") between the United States, certain plaintiff-interveners, and certain corporate subsidiaries of Valero Energy Corporation (collectively "Valero"), pursuant to the United States' Refinery Initiative, governing petroleum refineries owned by Valero and not subject to this Addendum;

WHEREAS, the United States' Complaint alleges that Premcor has been and is in violation of certain provisions of the Clean Air Act, 42 U.S.C. §7401 et seq., its implementing regulations, the relevant provisions of applicable State Implementation Plans ("SIPs"), and federally-enforceable permits;

WHEREAS, the United States has identified violations of certain provisions of the Clean Air Act, 42 U.S.C. §7401 et seq., its implementing regulations, the relevant provisions of the Ohio SIP, and federally-enforceable permits related to leak detection and repair ("LDAR") services provided by a third party contractor at the Lima Refinery;

WHEREAS, the United States conducted a lengthy and detailed investigation of emission events at Premcor's refinery in Port Arthur, Texas, including, but not limited to, the emission events listed in Appendix T;

WHEREAS, Premcor has not answered or otherwise responded, and need not answer or otherwise respond, to the Complaint in light of the settlement memorialized in this Addendum;

WHEREAS, Premcor has waived any applicable federal or state requirements of statutory notice of the alleged violations;

WHEREAS, Premcor has denied and continues to deny the violations alleged in the Complaints and maintains its defenses to the alleged violations;

WHEREAS, by entering into this Addendum, Premcor has indicated that it is committed to pro-actively resolving the allegations of environmental concerns related to its operations raised in the Complaints;

WHEREAS, Premcor has, in the interest of settlement, agreed to undertake installation of significant air pollution control equipment and enhancements to air pollution management practices at its refineries to reduce air emissions;

WHEREAS, the parties agree that the installation of equipment and implementation of controls pursuant to this Addendum will achieve major improvements in air quality control, and also that certain actions that Premcor has agreed to take are expected to achieve advances in technology and other methods of air pollution control;

WHEREAS, projects undertaken pursuant to this Addendum are for the purposes of abating or controlling atmospheric pollution or contamination by removing, reducing, or preventing the creation of emission of pollutants ("pollution control facilities"), and as such, may be considered for certification as pollution control facilities by federal, state or local authorities;

WHEREAS, in anticipation of entry of this Addendum, Premcor has commenced or completed installation, operation and/or implementation of certain emission control technologies or work practices at various refineries governed by this Addendum;

WHEREAS, the State of Ohio is co-plaintiff in this action, and the Memphis Shelby County Health Department (collectively referred to herein as "Plaintiff-Interveners") has filed a Complaint in Intervention, alleging that Premcor was and is in violation of the applicable Clean Air Act State Implementation Plan ("SIP") and other state environmental statutory and regulatory requirements;

WHEREAS, Premcor has not answered or otherwise responded, and need not answer or otherwise respond, to the Complaints in Intervention in light of the settlement memorialized in this Addendum;

WHEREAS, the United States, Plaintiff-Interveners, and Premcor have consented to entry of this Addendum without trial of any issues;

WHEREAS, the United States, Plaintiff-Interveners, and Premcor have agreed that settlement of this action is in the best interest of the parties and in the public interest, and that entry of this Addendum without further litigation is the most appropriate means of resolving this matter;

WHEREAS, the objective of this Addendum is substantially to apply, in accordance with the specific provisions contained herein, the requirements of the Consent Decree to Premcor; and

WHEREAS, for ease of reference, each paragraph, part, or section in this Addendum corresponds with the related paragraph, part, or section in the Consent Decree, if any;

NOW, THEREFORE, without any admission of fact or law, and without any admission of the violations alleged in the Complaints, it is hereby ORDERED AND DECREED as follows:

#### **I. JURISDICTION AND VENUE**

1. The Complaints state a claim upon which relief can be granted against Premcor under Sections 113, 167 and 211 of the Clean Air Act, 42 U.S.C. §§ 7413, 7477 and 7545, Section 103(c) of the Comprehensive Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9603(c), Section 325(b) of the Emergency Planning and Community Right-to-Know Act ("EPCRA"), 42 U.S.C. § 11045(b), and 28 U.S.C. § 1355. This Court has jurisdiction of the subject matter herein and over the parties consenting hereto pursuant to 28 U.S.C. § 1345 and pursuant to Sections 113, 167, and 211 of the CAA, 42 U.S.C. §§ 7413, 7545 and 7477, Section 103 of CERCLA, 42 U.S.C. § 9603, and Section 304 of EPCRA, 42 U.S.C. § 11004.

2. Venue is proper under Section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b), and under 28 U.S.C. § 1391(b) and (c).

3. Notice of the commencement of this action has been given to the States of Ohio and Texas and the Memphis Shelby County Health Department in accordance with Section 113(a)(1) of the Clean Air

Act, 42 U.S.C. § 7413(a)(1), and as required by Section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b).

## **II. APPLICABILITY**

4. The provisions of this Addendum shall apply to and be binding upon the United States, the Ohio Environmental Protection Agency ("Ohio EPA"), and the Memphis Shelby County Health Department, and upon Premcor, as well as Premcor's respective successors and assigns, and shall apply to each of the refineries identified herein until the Addendum is terminated with respect to such refinery pursuant to Part XXV (Termination); provided, however, that with respect to any obligation applicable to an individual Premcor Refinery pursuant to Parts IV through XXIV, inclusive, such obligation shall apply only to the specific Premcor corporate entity that owns such Refinery.

5. In the event that Premcor proposes to sell or transfer any of its refineries subject to this Addendum, then Premcor shall advise in writing to such proposed purchaser or successor-in-interest of the existence of this Addendum and provide a copy of the Addendum, and shall send a copy of such written notification by certified mail, return receipt requested, to EPA before such sale or transfer, if possible, but no later than the closing date of such sale or transfer. This provision does not relieve Premcor from having to comply with any applicable state or local regulatory requirement regarding notice and transfer of facility permits.

## **III. FACTUAL BACKGROUND**

6. Among other facilities, Premcor operates four petroleum refineries in the United States for the manufacture of various petroleum-based products, including gasoline, diesel, and jet fuels, and other marketable petroleum by-products. Three of Premcor's refineries are subject to this Addendum, and the fourth is subject to a separate consent decree in United States v. Motiva Enterprises, et al., No. 01-cv-00978 (S.D. Tex.).

7. As more specifically described in Appendix A, Premcor's petroleum refineries subject to this Addendum are located at: Lima, Ohio; Memphis, Tennessee; and Port Arthur, Texas (hereinafter collectively, the "Premcor Refineries").

8. Reserved.

9. Petroleum refining involves the physical, thermal and chemical separation of crude oil into marketable petroleum products.

10. The petroleum refining process at the Premcor Refineries results in emissions of criteria air pollutants, including nitrogen oxides ("NOx"), carbon monoxide ("CO"), particulate matter ("PM"), sulfur dioxide ("SO<sub>2</sub>"), as well as volatile organic compounds ("VOCs") and hazardous air pollutants ("HAPs"), including benzene. The primary sources of these emissions are the fluid catalytic cracking units ("FCCUs"), process heaters and boilers, the sulfur recovery plants, wastewater treatment systems, fugitive emissions, and flares.

11. Reserved.

#### **IV. NOx Emissions Reductions from Heaters and Boilers**

**Program Summary:** Premcor will implement a program to reduce NO<sub>x</sub> emissions from refinery heaters and boilers greater than 40 MMBtu/hr (HHV) by committing to an interim system-wide weighted average concentration emission limit for NO<sub>x</sub> of 0.060 lbs./MMBtu, to be achieved by December 31, 2011, and a final system-wide weighted average concentration emission limit for NO<sub>x</sub> of 0.044 lbs./MMBtu, to be achieved by December 31, 2013.

12. Premcor shall implement at the Premcor Refineries various NO<sub>x</sub> emission reduction measures and techniques to achieve system-wide NO<sub>x</sub> emission levels for certain identified heaters and boilers at the Premcor Refineries. For purposes of this Addendum, "heaters and boilers" shall be defined to include any stationary combustion unit used for the purpose of burning fossil fuel for the purpose of (i) producing power, steam or heat by heat transfer, or (ii) heating a material for initiating or promoting a process or chemical reaction in which the material participates as a reactant or catalyst, but expressly excluding any turbine, internal combustion engine, duct burner, CO boiler, incinerator or incinerator waste heat boiler.

**A. Initial Inventory, Annual Update, and Compliance Plan for Premcor Refineries**

13. Appendix B to this Addendum (the "Initial Inventory") provides an initial list of all heaters and boilers at the Premcor Refineries for which heat input capacity is greater than 40 MMBtu/hr (HHV). For purposes of this Addendum, "Covered Heaters and Boilers" shall include all heaters and boilers with heat input capacity greater than 40 MMBtu/hr (HHV) regardless of any applicable firing rate permit limitations. However, the FCCU startup heaters at the Port Arthur Refinery designated as B-103A and B-103B will not be considered Covered Heaters provided that each heater is fired no more than 500 hours in any calendar year. Premcor will include this limitation in an operating permit pursuant to Paragraph 291.

14. The Initial Inventory identifies previously constructed heaters and boilers at the Premcor Refineries that comprise the initial list of Covered Heaters and Boilers. The Initial Inventory also provides the following information concerning the Covered Heaters and Boilers:

- a. Premcor's designations for each of the Covered Heaters and Boilers;
- b. Identification of heat input capacity, and the source of such identification, for each of the Covered Heaters and Boilers. For purposes of this subparagraph, heat input capacity for each Covered Heater or Boiler shall equal the lesser of any applicable permit limit or Premcor's best then-current estimate of its maximum heat input capacity (hereinafter, "Heat Input Capacity");
- c. Identification of all applicable NOx emission limitations, in pounds per million Btu, for each of the Covered Heaters and Boilers; and
- d. Statement of whether a continuous emission monitoring system ("CEMS") for NOx has been installed on the respective Covered Heater or Boiler.

15. Premcor shall submit to EPA an annual update to the Initial Inventory on or before March 31 of each calendar year from 2008 through 2013, inclusive (the "Annual Update Report"), provided, however, that Premcor shall not be obligated to submit any Annual Update Report after satisfying the provisions of Paragraphs 21 and 27. Premcor shall designate the final Annual Update

Report. The Annual Update Report shall revise any information included in the Initial Inventory or most recent Annual Update Report to the extent appropriate based upon the construction of a Covered Heater or Boiler or any change during the prior year to any of the previously existing Covered Heaters and Boilers, including the date of installation of any CEMS installed during the prior year. The Annual Update Report shall also include for each Covered Heater and Boiler the estimated actual emission rate in pounds of NO<sub>x</sub> per MMBtu heat input (HHV) and tons per year, and the type of data used to derive the emission estimate (i.e., emission factor, stack test, or CEMS data).

**B. Interim Emission Reductions and Timeframes for Premcor Refineries**

16. On or before December 31, 2008, Premcor shall submit to EPA a compliance plan for attainment, by December 31, 2011, of a system-wide weighted average, as determined in accordance with Paragraph 28, for Covered Heaters and Boilers of 0.060 lbs.-NO<sub>x</sub>/MMBtu (the "Interim Compliance Plan"). The Interim Compliance Plan is intended to reflect Premcor's then-current strategy for satisfying the requirements of Paragraph 17. Premcor shall not be bound by the terms of the Interim Compliance Plan.

17. By no later than December 31, 2011, Premcor shall install NO<sub>x</sub> control technologies on, or otherwise limit NO<sub>x</sub> emissions from, certain Covered Heaters and Boilers such that the system-wide weighted average, as determined in accordance with Paragraph 28, for NO<sub>x</sub> emissions from the Covered Heaters and Boilers is no greater than 0.060 lbs.-NO<sub>x</sub>/MMBtu.

17A. In the context of satisfying the requirements of Paragraph 17, Premcor shall install controls at a minimum of three Covered Heaters and Boilers at each of the Premcor Refineries to achieve a NO<sub>x</sub> emission rate of no greater than 0.044 lbs.-NO<sub>x</sub>/MMBtu at each selected heater and boiler by December 31, 2011. At least one of the three controlled Covered Heaters and Boilers at the Lima and Port Arthur Refineries will have a heat input capacity in excess of 150 MMBtu/hr.

18. Premcor shall select from among the Covered Heaters and Boilers those units for which NOx emissions shall be controlled or otherwise reduced so as to satisfy the requirements of Paragraphs 17 and 17A.

19. For the purposes of Paragraphs 17 and 17A and in the event that Premcor permanently ceases operation of any Covered Heaters or Boilers on or before December 31, 2011, then Premcor may include each such shutdown unit in its demonstration of compliance with Paragraphs 17 and 17A if Premcor notifies the appropriate permitting authority that such unit is no longer operational and requests the withdrawal or invalidation of any permit or permit provisions authorizing operation of such unit. For purposes of Premcor's demonstration under Paragraph 28 of compliance with Paragraph 17, the emissions of any such shutdown unit shall be equal to 0.000 lbs/MMBtu NOx, and the heat input attributed to any shutdown Covered Heater or Boiler shall be its Heat Input Capacity prior to shutdown.

**C. Final Emission Reductions and Deadlines for Premcor Refineries**

20. On or before December 31, 2010, Premcor shall submit to EPA a compliance plan for attainment by December 31, 2013, of a system-wide weighted average for Covered Heaters and Boilers of 0.044 lbs.-NOx/MMBtu (the "Compliance Plan"), as determined in accordance with Paragraph 28. The Compliance Plan is intended to reflect Premcor's then-current strategy for satisfying the requirements of Paragraph 21. Premcor shall not be bound by the terms of the Compliance Plan.

21. By no later than December 31, 2013, Premcor shall install NOx control technology on, or otherwise limit NOx emissions from, certain Covered Heaters and Boilers such that the system-wide weighted average, as determined in accordance with Paragraph 28, for NOx emission from the Covered Heaters and Boilers is no greater than 0.044 lbs.-NOx/MMBtu.

22. Premcor shall select from among the Covered Heaters and Boilers those units for which NOx emissions shall be controlled or otherwise reduced so as to satisfy the requirements of Paragraph 21.

23. For the purposes of Paragraph 21 in the event that, on or before December 31, 2013, Premcor permanently ceases operation of any Covered Heaters or Boilers, then Premcor may include each such shutdown unit in its demonstration of compliance with Paragraph 21 if Premcor notifies the appropriate permitting authority that such unit is no longer operational and requests the withdrawal or invalidation of any permit or permit provisions authorizing operation of such unit. For purposes of Premcor's demonstration under Paragraph 28 of compliance with Paragraph 21, the emissions of any such shutdown unit shall be equal to 0.000 lbs/MMBtu NO<sub>x</sub>, and the heat input attributed to any shutdown Covered Heater or Boiler shall be its Heat Input Capacity prior to shutdown.

**D. Reserved**

24. - 26. Reserved.

**E. Compliance Demonstration**

27. By no later than March 31, 2012, Premcor shall submit to EPA a report demonstrating compliance with Paragraph 17. By no later than March 31, 2014, Premcor shall submit to EPA a report demonstrating compliance with Paragraph 21. The compliance reports submitted pursuant to this paragraph shall include the following information for the relevant refineries, as applicable to Premcor's interim or final compliance demonstration:

a. The NO<sub>x</sub> emission limit for each Covered Heater or Boiler at the Premcor Refineries which is the least of the following: (i) the NO<sub>x</sub> emission limit, in pounds per MMBtu at HHV (as a 365-day rolling average if based on CEMS, or as a 3-hour average if based on stack tests) based upon any existing federally enforceable, non-Title V (permanent) permit condition, including such a condition as may be reflected in a consolidated permit (where applicable), of the Covered Heater or Boiler, or (ii) the NO<sub>x</sub> emission limit, in pounds per MMBtu at HHV, reflected in any permit application for a federally enforceable, non-Title V (permanent) permit, including a consolidated permit where such limit would also be permanent, submitted by Premcor for such Covered Heater or Boiler prior to the date of submittal of the Compliance Report. In the event that Premcor identifies a

NOx emission limit, in pounds per MMBtu at HHV, for a Covered Heater or Boiler pursuant to this paragraph based on a NOx emission limit then reflected in a pending permit application, Premcor shall not withdraw such application nor may Premcor seek to modify that application to increase the NOx emission limit reflected in such application without prior EPA approval.

b. Heat Input Capacity, in MMBtu/hr at HHV, for each Covered Heater and Boiler at the Premcor Refineries, including an explanation of any change relative to that reported in the most recent Annual Update.

c. A demonstration of compliance with Paragraph 17 or 21, as applicable, performed in accordance with Paragraph 28.

28. Premcor shall demonstrate compliance with the provisions of Paragraph 17 by the following inequality:

$$0.060 \geq \left[ \sum_i^n (EL_i \times HIR_i) + IVN \right] / \left[ \sum_i^n (HIR_i) + IVD \right]$$

Premcor shall demonstrate compliance with the provisions of Paragraph 21 by the following inequality:

$$0.044 \geq \left[ \sum_i^n (EL_i \times HIR_i) + FVN \right] / \left[ \sum_i^n (HIR_i) + FVD \right]$$

For the purposes of Paragraph 28:

$EL_i$  = The relevant NOx Emission Limit for the Premcor Covered Heater or Boiler "i", in pounds per million Btu (HHV), as reported pursuant to Paragraph 27(a);

$HIR_i$  = Heat Input Capacity of the Premcor Covered Heater or Boiler "i", in million Btu (HHV) per hour, as reported pursuant to Paragraph 27(b);

$n$  = The total number of Covered Heaters and Boilers at the Premcor Refineries.

$IVN$  = The summation, in pounds per hour, of the products of the relevant NOx Emission Limit [in lbs per million Btu (HHV)] and the Heat Input Capacity (in million Btu per hour) for each of the

Covered Heaters and Boilers as reported in the numerator in the interim compliance report (to be submitted by Valero to EPA by March 31, 2010) pursuant to Paragraph 27 of the Consent Decree.

IVD = The summation of the Heat Input Capacities in million Btu (HHV) per hour for all of the Covered Heaters and Boilers as reported in the denominator in the interim compliance report (to be submitted by Valero to EPA by March 31, 2010) pursuant to Paragraph 27 of the Consent Decree.

IVN = The summation, in pounds per hour, of the products of the relevant NOx Emission Limit [in lbs per million Btu (HHV)] and the Heat Input Capacity (in million Btu per hour) for each of the Covered Heaters and Boilers as reported in the numerator in the final compliance report (to be submitted by Valero to EPA by March 31, 2012) pursuant to Paragraph 27 of the Consent Decree.

FVD = The summation of the Heat Input Capacities in million Btu (HHV) per hour for all of the Covered Heaters and Boilers as reported in the denominator in the final compliance report (to be submitted by Valero to EPA by March 31, 2012) pursuant to Paragraph 27 of the Consent Decree.

**F. Monitoring Requirements**

29. By no later than December 31, 2013, for Covered Heaters and Boilers existing on the Date of Lodging for which Premcor takes an emission limit of <0.060 lbs NOx/MMBtu without adding additional controls to meet the requirement of Paragraphs 17 and 21; and beginning no later than 180 days after installing controls on a Covered Heater and Boiler for purposes of compliance with the requirement of Paragraphs 17 and 21, Premcor shall monitor each such Covered Heater or Boiler at the Premcor Refineries as follows:

- a. For a Covered Heater or Boiler at the Premcor Refineries with a Heat Input Capacity of 150 MMBtu/hr (HHV) or greater, Premcor shall install or continue to operate a continuous emission monitoring system ("CEMS") for NOx;
- b. For a Covered Heater or Boiler at the Premcor Refineries with a Heat Input Capacity greater than 100 MMBtu/hr (HHV) but less than or equal to 150 MMBtu/hr (HHV), Premcor shall install or continue to operate a CEMS for NOx, or monitor NOx emissions with a predictive emissions monitoring system ("PEMS") developed and operated pursuant to the requirements of Appendix S of this Addendum;

c. For a Covered Heater or Boiler at the Premcor Refineries with a Heat Input Capacity of less than or equal to 100 MMBtu/hr(HHV), Premcor shall conduct an initial performance test and any periodic tests that may be required by EPA or by the applicable State or local permitting authority under applicable regulatory authority. Premcor shall report the results of the initial performance testing to EPA and the appropriate Plaintiff-Intervener. Premcor shall use Method 7E or an EPA-approved alternative test method to conduct initial performance testing for NOx emissions required by this subparagraph (c).

Nothing in this Addendum shall preclude a facility from converting a 3-hour rolling average limit to the same limit expressed as a 365-day rolling average limit if such demonstration of compliance is based upon CEMS or PEMS.

30. Premcor shall install, certify, calibrate, maintain and operate all NOx CEMS required by Paragraph 29 in accordance with the provisions of 40 C.F.R. Section 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60, Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4., Premcor must conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") on each CEMS required by Paragraph 29 at least once every three (3) years. Premcor must also conduct Cylinder Gas Audits ("CGA") each calendar quarter during which a RAA or a RATA is not performed.

**G. Reserved**

31. - 33. Reserved.

**H. Additional Provisions**

34. Nothing in this Addendum is intended to limit Premcor from satisfying any provisions of this Part IV earlier than the applicable compliance date specified in this part.

**V. NO<sub>x</sub> EMISSION REDUCTIONS FROM FCCUs**

**Program Summary:** Premcor will implement a program to limit NO<sub>x</sub> emissions from its FCCU regenerators by achieving a system-wide average of unit-specific NO<sub>x</sub> concentration emission limits for each of the FCCUs subject to this Part V.

**A. - F. Reserved**

35. - 44. Reserved.

**G. FCCU NO<sub>x</sub> Emission Reductions**

45. Premcor shall attain a system-wide, coke burn-weighted average of NO<sub>x</sub> concentration emission limits for each FCCU at the Premcor Refineries (hereinafter collectively referred to as "Covered FCCUs") in accordance with the provisions of this Section G.

45A. On or before December 31, 2011, Premcor shall complete an optimization study of the oxygen control system (O<sub>2</sub> CS) on the FCCUs at the Lima and Memphis Refineries in an effort to achieve NO<sub>x</sub> concentration emissions of 20 ppmvd (at 0% O<sub>2</sub>) as a 365-day rolling average and 40 ppmvd (at 0% O<sub>2</sub>) as a 7-day rolling average. Within sixty days after the conclusion of each optimization study, Premcor shall submit to EPA and the appropriate Plaintiff-Intervener reports detailing the NO<sub>x</sub> concentration emissions for the FCCUs through the optimization of the O<sub>2</sub> CS.

46. Appendix C to this Addendum (the "Initial FCCU Annual Coke Burn Rates") provides a list of all Covered FCCUs, as of the Date of Lodging. Appendix C also identifies Premcor's best estimate of maximum coke burn rate and any permit limits applicable to maximum coke burn rate for each such FCCU, as of the Date of Lodging.

47. Premcor shall submit to EPA an annual update to Appendix C on or before March 31 of each calendar year from 2009 through 2014, inclusive (the "Annual FCCU Update Report"), provided, however, that Premcor shall not be obligated to submit any Annual Update Report after satisfying the provisions of Paragraphs 55 and 56. The Annual FCCU Update Report shall identify Premcor's best estimate of maximum coke burn rate and any permit limits relating to maximum coke burn rate for

each Covered FCCU as of the date of the report. Premcor shall identify and explain any such differences from the previous report under Paragraph 46 and this Paragraph 47.

48. Premcor shall attain the following system-wide, coke burn-weighted average of NOx concentration emission limits for Covered FCCUs by the following dates: (a) an interim NOx concentration emission limit average of 69.2 ppmvd (at 0% O<sub>2</sub>), as a 365-day rolling average, by December 31, 2010 (the "Interim NOx System-Wide Average"), as determined in accordance with Paragraph 54 and (b) a final NOx concentration emission limit average of 33.4 ppmvd (at 0% O<sub>2</sub>), as a 365-day rolling average, by December 31, 2013 (the "NOx System-Wide Average"), as determined in accordance with Paragraph 56.

49. Premcor shall select from among the Covered FCCUs those units for which NOx emissions shall be controlled or otherwise reduced so that Premcor satisfies the Interim NOx System-Wide Average and the NOx System-Wide Average. Provided however, no Covered FCCU will have a permit limit higher than 80 ppmvd at 0% O<sub>2</sub> on a 365-day rolling average at the time it demonstrates compliance with Paragraph 48(b).

50. For the purposes of Premcor's satisfaction of Paragraph 48(a) and in the event that, subsequent to the Date of Entry of this Addendum and before December 31, 2010, Premcor permanently ceases operation of any Covered FCCU at the Premcor Refineries, then Premcor may include each such shutdown unit in its demonstration of compliance with the Interim NOx System-Wide Average, if Premcor notifies the appropriate permitting authority that such unit is no longer operational and requests the withdrawal or invalidation of any permit or permit provisions authorizing operation of such unit. For purposes of Premcor's demonstration under Paragraphs 53 and 54 of compliance with the Interim NOx System-Wide Average, the emissions rate of any such shutdown unit shall be equal to 20 ppmvd NOx at 0% O<sub>2</sub>, and the maximum coke burn rate attributed to any such shutdown FCCU shall equal the lesser of Premcor's best estimate of maximum coke burn rate or the FCCU's permit limit relating to maximum coke burn rate prior to the FCCU shutdown, provided,

however, that if a new FCCU is also constructed and operated at such refinery, then the maximum coke burn rate and the NOx emission limit of such new FCCU shall be used in lieu of the original Covered FCCU.

51. For purposes of this Section V.G, "maximum coke burn rate" shall mean the lesser of the permitted coke burn rate, if any, or Premcor's best current estimate on an average annual basis.

52. For the purposes of Premcor's satisfaction of Paragraph 48(b) and in the event that Premcor permanently ceases operation of any Covered FCCU subsequent to the Date of Entry of this Addendum and before December 31, 2013, then Premcor may include each such shutdown unit in its demonstration of compliance with the NOx System-Wide Average, if Premcor notifies the appropriate permitting authority that such unit is no longer operational and requests the withdrawal or invalidation of any permit or permit provisions authorizing operation of such unit. For purposes of Premcor's demonstration under Paragraphs 55 and 56 of compliance with the NOx System-Wide Average, the concentration emission limit of any such shutdown unit shall be equal to 20 ppmvd NOx at 0% O<sub>2</sub>, and the maximum coke burn rate attributed to any such Covered FCCU that is shutdown shall equal the lesser of Premcor's best estimate of maximum coke burn rate or the FCCU's permit limit relating to maximum coke burn rate prior to the FCCU shutdown, provided, however, that if a new FCCU is also constructed and operated at such refinery, then the maximum coke burn rate and the NOx emission limit of such new FCCU shall be used in lieu of the original Covered FCCU.

53. Compliance Demonstration: By March 31, 2011, Premcor shall submit to EPA a report demonstrating compliance with the Interim NOx System-Wide Average. The compliance report submitted pursuant to this paragraph shall include the following information for the relevant refineries, as applicable to Premcor's compliance demonstration:

a. The NOx concentration emission limit for each Covered FCCU at the Premcor Refineries which is the least of the following: (i) the allowable NOx concentration emission limit (as a 365-day average), based upon any existing, federally enforceable non-Title V permit condition,

including such a condition as may be reflected in a consolidated permit (where applicable), or (ii) the NOx concentration emission limit reflected in any application for a federally enforceable non-Title V permit, including a consolidated permit, where such limit would also be permanent, submitted by Premcor for such Covered FCCU prior to the date of submittal of the compliance report. In the event that Premcor identifies a NOx concentration emission limit for a Covered FCCU pursuant to this paragraph based on a NOx concentration emission limit then reflected in a pending permit application, Premcor shall not withdraw such application nor may Premcor seek to modify that application, nor request an increase in the NOx concentration emission limit reflected in such application, without prior EPA approval.

b. Reserved.

c. A demonstration of compliance with the Interim NOx System-Wide Average performed in accordance with Paragraph 54.

54. Premcor shall demonstrate compliance with the Interim NOx System-Wide Average by meeting the following inequality:

$$69.2 \geq \frac{[(\sum_i^n (EL_i \times HIR_i)) + IVN]}{[(\sum_i^n HIR_i) + IVD]}$$

Where:

$EL_i$  = The relevant NOx concentration emission limit for the Covered FCCU "i" at the Premcor Refineries, in parts per million, as reported pursuant to Paragraph 53(a);

$HIR_i$  = Maximum coke burn rate of the Covered FCCU "i" at the Premcor Refineries, as reported pursuant to Paragraph 47;

$n$  = The total number of Covered FCCUs at the Premcor Refineries

$IVN$  = The summation of the products of the relevant NOx concentration emission limit (in parts per million) and the Maximum coke burn rate for each Covered FCCU and the Golden Eagle FCCU as reported in the numerator pursuant to Paragraph 53 of the Consent Decree.

IVD = The summation of the Maximum coke burn rates for all Covered FCCUs and the Golden Eagle FCCU as reported in the denominator pursuant to Paragraph 53 of the Consent Decree.

55. Compliance Demonstration: By March 31, 2014, Premcor shall submit to EPA a report demonstrating compliance with the NOx System-Wide Average. The compliance report submitted pursuant to this paragraph shall include the following information for the relevant refineries, as applicable to Premcor's compliance demonstration:

a. The NOx emission limit for each Covered FCCU at the Premcor Refineries which is the least of the following: (i) the allowable NOx concentration emission limit (as a 365-day average), based upon any existing, federally enforceable non-Title V permit condition, including such a condition as may be reflected in a consolidated permit (where applicable), or (ii) the NOx concentration emission limit reflected in any application for a federally enforceable non-Title V permit, including a consolidated permit, where such limit would also be permanent, submitted by Premcor for such Covered FCCU prior to the date of submittal of the compliance report. In the event that Premcor identifies a NOx concentration emission limit for a Covered FCCU pursuant to this paragraph based on a NOx concentration emission limit then reflected in a pending permit application, Premcor shall not withdraw such application nor may Premcor seek to modify that application, nor request an increase in the NOx concentration emission limit reflected in such application without prior EPA approval.

b. Reserved.

c. A demonstration of compliance with the NOx System-Wide Average performed in accordance with Paragraph 56.

56. Premcor shall demonstrate compliance with the NOx System-Wide Average by meeting the following inequality:

$$33.4 \geq \left[ \left( \sum_i^n EL_i \times HIR_i \right) + FVN \right] / \left[ \left( \sum_i^n HIR_i \right) + FVD \right]$$

Where:

$EL_i$  = The relevant NOx concentration emission limit for the Covered FCCU "i", in parts per million, as reported pursuant to Paragraph 55(a);

$HIR_i$  = Maximum coke burn rate of the Covered FCCU "i" at the Premcor Refineries, as reported pursuant to Paragraph 47;

$n$  = The total number of Covered FCCUs at the Premcor Refineries.

$FVN$  = The summation of the products of the relevant NOx concentration emission limit (in parts per million) and the Maximum coke burn rate for each Covered FCCU and the Golden Eagle FCCU as reported in the numerator pursuant to Paragraph 55 of the Consent Decree.

$FVD$  = The summation of the Maximum coke burn rates for all Covered FCCU's and the Golden Eagle FCCU as reported in the denominator pursuant to Paragraph 55 of the Consent Decree.

57. - 58. Reserved.

#### H. Additional Provisions

59. Notwithstanding any provision of this Addendum to the contrary and in lieu of complying with any NOx emission control requirements established pursuant to this Part V, Premcor may elect to achieve NOx concentration emission limits of 20 ppmvd (at 0% O<sub>2</sub>) or less as a 365-day rolling average and 40 ppmvd (at 0% O<sub>2</sub>) or less as a 7-day rolling average by permanently shutting down such FCCU or FCCU-regenerator, or by application of any emission reduction method or technology, including any technology not specified in this Addendum, by the refinery-specific compliance date specified in this Part V. Premcor's election to satisfy its obligations under this Part V through compliance with this paragraph shall not limit the applicability or extent of Part XXIV (Effect of Settlement) with respect to such Covered FCCU.

60. Premcor shall take such action as may be necessary to ensure that each 365-day rolling average NOx emission limit used to demonstrate compliance under Paragraphs 55 and 56 is less than or equal to 80 ppm. In addition and as part of each permit or permit application under Paragraphs 55 and 56, Premcor shall also have or have applied for a 7-day rolling average NOx concentration emission limit that shall be numerically twice the 365-day rolling average NOx concentration emission limit used for that FCCU to demonstrate compliance under Paragraphs 55 and 56.

**I. CEMS**

61. Beginning no later than the Date of Entry for each Covered FCCU, Premcor shall use NO<sub>x</sub> and O<sub>2</sub> CEMS to monitor performance of the FCCU and to report compliance with the terms and conditions of this Addendum.

62. The CEMS will be used to demonstrate compliance with the respective NO<sub>x</sub> concentration emission limits established pursuant to this Part V. Premcor shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Premcor must also conduct CGA each calendar quarter during which a RAA or a RATA is not performed.

63. Reserved.

**VI. SO<sub>2</sub> Emission Reductions from FCCUs**

**Program Summary:** Premcor shall implement a program to reduce SO<sub>2</sub> emissions from their FCCUs, which shall include the commitment to limit SO<sub>2</sub> emissions from the Memphis and Port Arthur FCCUs to specific concentrations and otherwise limit SO<sub>2</sub> emissions from the Lima FCCU through the use of SO<sub>2</sub>-reducing catalyst additives.

**A. - L. Reserved**

64. - 82. Reserved.

**M. Additional Provisions**

83. Provisions for reduction of SO<sub>2</sub> emissions from Premcor refineries.

a. **Memphis.** Upon Date of Entry of this Addendum, Premcor shall comply with SO<sub>2</sub> concentration emission limits at the point of emission from the Memphis Refinery FCCU to the

atmosphere of no greater than 25 ppmvd measured as a 365-day rolling average and 50 ppmvd measured as a 7-day rolling average, both at 0% O<sub>2</sub>, and will continue to operate a wet gas scrubber at the Memphis Refinery FCCU.

b. Port Arthur. Upon Date of Entry of this Addendum, Premcor shall comply with SO<sub>2</sub> concentration emission limits at the point of emission from the Port Arthur Refinery FCCU to the atmosphere of no greater than 25 ppmvd measured as a 365-day rolling average and 50 ppmvd measured as a 7-day rolling average, both at 0% O<sub>2</sub>, and will continue to operate a wet gas scrubber at the Port Arthur Refinery FCCU.

c. Lima. Premcor shall commence implementation of the SO<sub>2</sub> adsorbing catalyst additive protocol described in Appendix E.

84. Reserved.

85. Premcor may elect to submit for approval by EPA, after an opportunity for consultation with the Ohio EPA, a plan for the operation of the Lima FCCU (including associated air pollution control equipment) during hydrotreater outages. Any such plan shall provide for the minimization of emissions during hydrotreater outages to the extent practicable. The plan shall consider, at a minimum, the use of low sulfur feed, storage of hydrotreated feed and an increase in additive addition rate. Any short term emission limits established for the Lima FCCU pursuant to this Addendum shall not apply during periods of hydrotreater outage provided that Premcor is in compliance with any plan submitted by Premcor under this paragraph for the Lima FCCU, and is maintaining and operating the FCCU in a manner consistent with good air pollution control practices. In order for the relief for short-term emission limits afforded by this paragraph to apply to a period of hydrotreater outage, Premcor shall comply with the plan approved by EPA under this paragraph at all times, including periods of startup, shutdown or malfunction of the hydrotreater. In addition, in the event that Premcor asserts that the basis for a specific hydrotreater outage for which Premcor seeks to secure the relief from short term emission limits provided under this paragraph is a shutdown (where no catalyst change out occurs)

required by ASME pressure vessel requirements or applicable state boiler requirements, Premcor shall submit to EPA a report that identifies the relevant requirements and justifies Premcor's decision to implement the shutdown during the selected time period. For the purposes of this Paragraph 85, "hydrotreater" shall include any units that hydrotreat or otherwise desulfurize FCCU feedstocks.

86. Notwithstanding any provision of this Addendum to the contrary, Premcor may elect to limit emissions from the Lima FCCU to SO<sub>2</sub> concentrations of 25 ppmvd or less, measured as a 365-day rolling average, and 50 ppmvd or less, measured as a 7-day rolling average, each at 0% O<sub>2</sub>, including without limitation by permanently shutting down such FCCU or by application of any emission reduction method or technology, including any technology not specified in this Addendum. Notwithstanding any provision of this Addendum to the contrary and in lieu of complying with any specific SO<sub>2</sub> emission control requirements established pursuant to this Part VI for a WGS, Premcor may elect to shut down such Refinery's FCCU. In the event that Premcor elects to demonstrate compliance with this Part VI for the Lima FCCU by complying with this paragraph, then Premcor must achieve compliance with this paragraph for the Lima FCCU by no later than the refinery-specific compliance date for completion of the demonstration period identified in Appendix E or as otherwise specified in this Part VI. Premcor's election to satisfy its obligations under this Part VI for any Premcor Refinery subject to this Addendum through compliance with this paragraph shall not limit the applicability or extent of Part XXIV (Effect of Settlement) with respect to such FCCU.

87. - 88. Reserved.

**N. Monitoring Emissions and Demonstrating Compliance**

89. Beginning no later than the Date of Entry for each covered FCCU, Premcor shall use SO<sub>2</sub> and O<sub>2</sub> CEMS to monitor performance of the FCCU and to report compliance with the terms and conditions of this Addendum.

90. CEMS will be used to demonstrate compliance with the respective SO<sub>2</sub> concentration emission limits established pursuant to this Part VI. Premcor shall make CEMS data available to EPA

and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Premcor must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed.

91. Reserved.

92. All CEMS data collected by Premcor during the effective life of the Addendum shall be made available by Premcor to EPA upon demand as soon as practicable.

93. Reserved.

#### **VII. CO, OPACITY AND PARTICULATE EMISSIONS FROM FCCUs**

**Program Summary:** Premcor shall implement a program to limit CO and particulate emissions from its FCCUs and shall implement monitoring at each FCCU sufficient to demonstrate compliance with emission standards specified in this Part.

94. **CO Emission Standard.** Premcor shall limit CO emissions from the Covered FCCUs at the Premcor Refineries to 500 ppmvd (at 0% O<sub>2</sub>), measured as a one-hour block average, in accordance with the schedule identified herein.

95. **Particulate Emission Standard.** Premcor shall limit particulate emissions from the Covered FCCUs at the Premcor Refineries to one (1) pound per 1,000 pounds of coke burned (front half only according to Method 5B or 5F, as appropriate), measured as a one-hour average over three performance test runs, in accordance with the schedule identified herein.

96. Except as specified in Paragraph 104 and by no later than ninety (90) days from the Date of Entry of this Addendum, Premcor shall ensure that the FCCUs located at the Memphis and

Port Arthur Refineries shall comply with the CO, opacity and particulate emission standards specified in Paragraphs 94 and 95, respectively, and all applicable requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to CO, opacity and particulate emissions from FCCU regenerators.

97. By no later than ninety (90) days from the Date of Entry of this Addendum, Premcor shall ensure that the FCCU located at the Lima Refinery shall comply with the CO emission standard specified in Paragraph 94, and all applicable requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to CO emissions from FCCU regenerators.

98. By no later than December 31, 2013, Premcor shall ensure that the FCCU located at the Lima Refinery complies with the opacity and particulate emission standards specified in Paragraph 95 and all applicable requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to opacity and particulate emissions from FCCU regenerators.

99. Reserved.

100. Lodging of this Addendum shall satisfy any obligation otherwise applicable to Premcor to provide notification in accordance with 40 C.F.R. Part 60, Subparts A and J, including without limitation 40 C.F.R. § 60.7, with respect to the provisions of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to CO, opacity and particulate emissions from FCCU regenerators.

101. CEMS or an EPA approved alternative monitoring plan or monitoring waiver will be used to demonstrate compliance with the respective CO emission limits established pursuant to this Part VII. Premcor shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a

RATA on each CEMS at least once every three (3) years. Premcor must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed. To the extent that Premcor has conducted any performance testing of the relevant unit for PM emissions, and such performance testing was conducted in accordance with the procedures specified in EPA Method 5B or 5F, as appropriate, or 40 C.F.R. Part 63, Subpart UUU, and demonstrated compliance with the emission limits established under this part, then such performance testing shall satisfy any obligation otherwise applicable under this Part to conduct performance testing under 40 C.F.R. Part 60, Subparts A and J. Any future performance testing performed by Premcor to demonstrate compliance with the particulate emission limitations established by this Part shall be conducted in accordance with EPA Method 5B or 5F, as appropriate, set forth at 40 C.F.R. Part 60, Appendix A.

102. The CO, opacity, and particulate limits established pursuant to this Part VII shall not apply during periods of startup, shutdown or malfunction of the FCCUs or malfunction of the applicable CO or particulate control equipment, if any, provided that during startup, shutdown or malfunction, Premcor shall, to the extent practicable, maintain and operate the relevant affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

103. Continuous Opacity Monitoring System (COMS) or an approved AMP will be used to demonstrate compliance with the respective opacity limits established pursuant to this Part VII. Premcor shall make any COMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all COMS required by this paragraph in accordance with the provisions of 40 C.F.R. §60.11, §60.13, and Part 60 Appendix A, and the applicable performance specification test in 40 C.F.R. Part 60 Appendix B.

104. Within 180 days of the Date of Entry of the Addendum, Premcor will have submitted or shall submit to EPA complete opacity alternative monitoring plan ("AMP") applications for the FCCUs located at Memphis and Port Arthur. If such AMPs are not approved, Premcor shall within

ninety (90) days of receiving notice of such disapproval either invoke the dispute resolution provisions of Part XXIII or submit to EPA for approval, with a copy to the appropriate Plaintiff-Intervener, a plan and schedule that provides for compliance with the applicable monitoring requirements under NSPS Subpart J as soon as practicable. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring. These FCCUs shall not be subject to the applicable requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to opacity from FCCU regenerators until EPA approves AMPs for opacity or Premcor complies with the above-identified requirements of this paragraph.

105. Reserved.

106. Nothing in this Addendum shall be interpreted to limit Premcor's opportunity to propose to EPA an alternative compliance monitoring plan (AMP) under 40 C.F.R. Part 60, Subpart A, for CO, opacity or particulate emissions from FCCUs under NSPS Subpart J.

#### **VIII. NSPS APPLICABILITY TO SO<sub>2</sub> EMISSIONS FROM FCCU REGENERATORS**

**Program Summary:** Premcor shall comply with all requirements of 40 C.F.R. Part 60, Subparts A and J, as such provisions relate to SO<sub>2</sub> emissions from FCCU Regenerators, by the deadlines specified in this Part.

107. Premcor's FCCU Regenerators at the following refineries shall be "affected facilities" pursuant to 40 C.F.R. Part 60, Subpart J, and shall comply with all requirements of 40 C.F.R. Part 60, Subparts A and J, as such provisions relate to SO<sub>2</sub> emissions from FCCU Regenerators, on the following dates:

- a. Lima Regenerator – December 31, 2010, or as specified in Paragraph 111
- b. Memphis Regenerator – Upon Date of Entry
- c. Port Arthur Regenerator – Upon Date of Entry

108. Lodging of this Addendum shall satisfy any obligation otherwise applicable to Premcor to provide notification in accordance with 40 C.F.R. Part 60, Subparts A and J, including without

limitation 40 C.F.R. § 60.7, with respect to the provisions of 40 C.F.R. Part 60, Subparts A and J, as such provisions relate to SO<sub>2</sub> emissions from FCCU Regenerators.

109. CEMS will be used to demonstrate compliance with the respective SO<sub>2</sub> emission limits established pursuant to this Part VIII. Premcor shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Premcor must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed.

110. The SO<sub>2</sub> limits established pursuant to this Part shall not apply during periods of startup, shutdown or malfunction of the FCCUs and hydrotreaters, or the malfunction of SO<sub>2</sub> control equipment, if any, provided that during startup, shutdown or malfunction, Premcor shall, to the extent practicable, maintain and operate the relevant affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

111. By December 31, 2008, Premcor shall submit to EPA a complete alternative monitoring plan ("AMP") application for NSPS Subpart J monitoring for SO<sub>2</sub> at the Lima FCCU. If such AMP is not approved, Premcor shall within ninety (90) days of receiving notice of such disapproval either invoke the dispute resolution provisions of Part XXIII or submit to EPA for approval, with a copy to the appropriate Plaintiff-Intervener, a plan and schedule that provides for compliance with the applicable monitoring requirements under NSPS Subpart J as soon as practicable. Such plan may

include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring.

112. Nothing in this Addendum shall be interpreted to limit Premcor's opportunity to propose to EPA an alternative compliance monitoring plan under 40 C.F.R. Part 60, Subpart A, for SO<sub>2</sub> emissions from FCCU regenerators.

#### **IX. SO<sub>2</sub> AND NSPS REQUIREMENTS FOR HEATERS AND BOILERS**

**Program Summary:** Premcor shall undertake the following measures at the Premcor Refineries to reduce SO<sub>2</sub> emissions from heaters and boilers by eliminating or minimizing the burning of fuel oil, and satisfying the provisions of 40 C.F.R. Part 60, Subparts A and J, as such provisions apply to fuel gas combustion devices.

113. By no later than the Date of Entry, Premcor shall discontinue the burning or combustion of Fuel Oil in any of the heaters and boilers at the Premcor Refineries, except as provided in Paragraph

114. For purposes of this Addendum, "Fuel Oil" shall mean fuel that is predominantly in the liquid phase at the point of combustion with a sulfur content of greater than 0.05% by weight.

114. Notwithstanding any provision of this Addendum to the contrary, Fuel Oil may be combusted or burned during periods of natural gas curtailment by suppliers or during periods approved by EPA for purposes of test runs and operator training at any refinery subject to this Addendum. During any such period of natural gas curtailment, test runs or operator training, only low sulfur (0.2% sulfur until December 31, 2009, 0.05 wt % sulfur thereafter) Fuel Oil shall be combusted or burned. Prior to conducting test runs or operator training at a refinery during which Fuel Oil will be burned pursuant to this paragraph, Premcor shall submit proposed schedules for such test runs or training periods to EPA for review and approval. In the event that EPA does not respond to such proposed schedules within thirty (30) days of submission pursuant to this paragraph, then such proposed schedules shall be deemed approved in accordance with the proposals submitted.

115. Except as provided in Paragraph 118, by no later than sixty (60) days after the Date of Entry, Premcor shall ensure that all heaters and boilers located at the Premcor Refineries are "affected facilities" as fuel gas combustion devices, for purposes of 40 C.F.R. Part 60, Subpart J, and shall

comply with all requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements apply to fuel gas combustion devices.

116. - 117. Reserved.

118. By no later than the date specified in Paragraph 115, all heaters and boilers at such refineries shall comply with the applicable requirements of NSPS Subpart A and J for fuel gas combustion devices, except for those heaters or boilers listed in Appendix O, which shall be affected facilities and shall be subject to and comply with the requirements of NSPS Subparts A and J for fuel gas combustion devices by the dates listed in Appendix O. All CEMS installed pursuant to this paragraph shall be installed, certified, calibrated, maintained and operated in accordance with the applicable requirements of 40 C.F.R. §§ 60.11 and 60.13 and 40 C.F.R. Part 60, Appendix F as provided in Paragraph 121 below.

119. Within two (2) years of Entry of the Addendum, Premcor may submit to EPA and the appropriate Plaintiff-Intervener complete alternative monitoring plan ("AMP") applications for NSPS Subpart J monitoring of fuel gas combustion devices. If such AMP is not approved, then within ninety (90) days of receiving notice of such disapproval, Premcor shall submit to EPA for approval, with a copy to the appropriate Plaintiff-Intervener, a plan and schedule that provides for compliance with the applicable monitoring requirements under NSPS Subpart J as soon as practicable. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring. For some heaters and boilers that combust low-flow VOC streams from vents, pumpseals and other sources, it is anticipated that some AMP applications will rely in part on calculating a weighted average H<sub>2</sub>S concentration of all VOC and fuel gas streams that are burned in a single heater or boiler and demonstrating with alternative monitoring that either the SO<sub>2</sub> emissions from the heater or boiler will not exceed 20 ppm or that the weighted average H<sub>2</sub>S concentration is not likely to exceed 162 ppm H<sub>2</sub>S. EPA shall not reject an AMP solely due to the AMP's use of one of these approaches to demonstrate compliance with NSPS Subpart J.

120. Lodging of this Addendum shall satisfy any obligation otherwise applicable to Premcor to provide notification in accordance with 40 C.F.R. Part 60, Subparts A and J, including without limitation 40 C.F.R. § 60.7, with respect to the provisions of 40 C.F.R. Part 60, Subparts A and J, as such requirements apply to fuel gas combustion devices.

121. The CEMS or approved AMPs will be used to demonstrate compliance with the respective H<sub>2</sub>S/SO<sub>2</sub> concentration emission limits established pursuant to this Part IX. Premcor shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Premcor must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed.

122. The SO<sub>2</sub> limits established pursuant to this Part shall not apply during periods of startup, shutdown or malfunction of the heaters and boilers or the malfunction of SO<sub>2</sub> control equipment, if any, provided that during startup, shutdown or malfunction, Premcor shall, to the extent practicable, maintain and operate the relevant affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions.

#### **X. BENZENE WASTE NESHAP PROGRAM ENHANCEMENTS**

**Program Summary:** Premcor shall undertake the following measures to minimize fugitive benzene waste emissions at each of the Refineries that are covered by this Addendum.

123. Premcor agrees to undertake the measures set forth in this Part X, which establish enhancements to applicable requirements of 40 C.F.R. Part 61, Subpart FF ("Benzene Waste

NESHAP" or "Subpart FF"), and which will minimize or eliminate fugitive benzene waste emissions at the Premcor Refineries.

**A. Compliance Status and Schedule**

124. Premcor shall comply with the compliance options specified below:

a. Premcor's Lima and Memphis Refineries shall comply with the compliance option set forth at 40 C.F.R. 61.342(e) (herein referred to as the "6 BQ Compliance Option"), to the extent that either refinery continues to have total annual benzene ("TAB") quantity  $\geq 10$  megagrams per year ("Mg/yr"). Upon completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, the Lima and Memphis Refineries shall comply with the 6 BQ Compliance Option. Prior to completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, the Lima and Memphis Refineries shall continue to operate current controls for purposes of complying with the 6 BQ Compliance Option.

b. Premcor's Port Arthur Refinery shall continue to comply with the compliance option set forth at 40 CFR 61.342(c), utilizing the exemptions set forth in 40 CFR 61.342(c)(2) and (c)(3)(ii) and the aggregation provisions set forth in 40 CFR 61.348(b) (hereinafter referred to as the "2 Mg Aggregate-and-Treat Compliance Option"), to the extent that it continues to have total annual benzene ("TAB") quantity  $\geq 10$  megagrams per year ("Mg/yr"). Upon completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, the Port Arthur Refinery shall comply with the 2 Mg Aggregate-and-Treat Compliance Option. Prior to completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, the Port Arthur Refinery shall continue to operate current controls for purposes of complying with the 2 Mg Aggregate-and-Treat Compliance Option.

124A. Premcor, in its sole discretion, may transition the Port Arthur Refinery from a 2Mg compliance option to the 6BQ Compliance Option in accordance with the provisions of this paragraph and Paragraph 125.

125. On or before the Date of Entry, if Premcor chooses to transition the Port Arthur Refinery, then Premcor shall provide written notice to EPA of Premcor's determination to transition the Port Arthur Refinery to the 6 BQ Compliance Option. Upon completion of all corrective action identified in the plan pursuant to Paragraph 134 for the Port Arthur Refinery, Premcor shall comply with all standards of Subpart FF that are applicable to facilities utilizing the 6 BQ Compliance Option, including the monitoring, recordkeeping and reporting requirements of 40 C.F.R. §§ 61.354, 61.356 and 61.357, respectively, as applicable to facilities utilizing the 6 BQ Compliance Option. Once converted, subparagraph 124(b) shall no longer apply.

**B. Refinery Compliance Status Changes**

126. Commencing on the Date of Entry of the Addendum and continuing through termination, Premcor shall not change the compliance status of the Lima or Memphis Refineries from the 6 BQ Compliance Option to a 2 Mg compliance option. Subsequent to achieving compliance with Paragraph 125, if applicable, Premcor shall not change the compliance status of the Port Arthur Refinery from the 6 BQ Compliance Option to a 2 Mg compliance option. Premcor shall consult with EPA and the appropriate Plaintiff-Intervener before making any change in compliance status not expressly prohibited by this Paragraph 126. Any such change must be undertaken in accordance with the regulatory provisions of the Benzene Waste NESHAP.

**C. One-Time Review and Verification of Each Refinery's TAB and, as Applicable, Each Refinery's Compliance with the Appropriate Compliance Options**

127. On or before June 30, 2008, if Premcor chooses to transition the Port Arthur Refinery, then Premcor shall complete a review and verification of the Refinery's TAB as specified in subparagraphs 128(a) – (d) for the Port Arthur Refinery to determine compliance with the 6 BQ Compliance Option. Premcor shall implement all actions necessary to ensure compliance with the 6

BQ Compliance Option at the Port Arthur Refinery in accordance with Paragraph 125. Notwithstanding any other provisions of this Addendum, if the Port Arthur Refinery is transitioned to the 6BQ Compliance Option, then it shall not be subject to the terms of this Part X applicable to refineries subject to the 6 BQ Compliance Option, nor shall it be subject to the terms of this Part X applicable to refineries subject to a 2 Mg compliance option, prior to Premcor's compliance with this paragraph. Except as set forth in this paragraph, the provisions of Paragraph 128 shall not apply to the Port Arthur Refinery.

128. Phase One of the Review and Verification Process. By no later than six months from the Date of Lodging, Premcor shall complete a review and verification of each Refinery's TAB to determine compliance with the applicable 2 Mg compliance option for the Port Arthur Refinery, to the extent that it is not transitioned to the 6 BQ Compliance Option, and to determine compliance with the 6BQ Compliance Option for the Lima and Memphis Refineries. For each such Refinery, the review and verification process shall include:

- a. an identification of each waste stream that is required to be included in the Refinery's TAB (e.g., slop oil, tank water draws, spent caustic, desalter rag layer dumps, desalter vessel process sampling points, other sample wastes, maintenance wastes, and turnaround wastes);
- b. a review and identification of the calculations and/or measurements used to determine the flows of each waste stream for the purpose of ensuring the accuracy of the annual waste quantity for each waste stream;
- c. an analysis of the benzene concentration in each waste stream, using previous analytical data, documented knowledge of the waste streams or new analytical testing data in accordance with 40 C.F.R. § 61.355(c)(2); and
- d. an identification of whether or not the stream is controlled consistent with the requirements of Subpart FF.

129. By no later than thirty (30) days following the completion of the review and verification process in Paragraphs 127 and 128, Premcor shall submit a Benzene Waste NESHAP Compliance Review and Verification Report ("BWN Compliance Review and Verification Report") that sets forth the results as identified in (a) through (d) of Paragraph 128. At its option, Premcor may submit one BWN Compliance Review and Verification Report that includes the results of all non-converted Refineries or may submit separate BWN Compliance Review and Verification Reports for each Refinery.

130. Phase Two of the Review and Verification Process. Based on EPA's review of the BWN Compliance Review and Verification Report(s), EPA may select up to twenty (20) waste streams at each Refinery for sampling for benzene concentration. Premcor will conduct the required sampling and submit the results to EPA within ninety (90) days of receipt of EPA's request. In the event that a stream for which EPA has required sampling is not available for sampling under normal operating conditions within a timeframe that would allow Premcor to satisfy such schedule, then Premcor shall submit sampling results for the subject refinery without the result for the unavailable stream in accordance with the foregoing schedule, and shall supplement the sampling report as soon as practicable after such sampling result becomes available under representative operating conditions.

131. Premcor will use the results of this sampling under Paragraph 130 to recalculate the TAB and the uncontrolled benzene quantity and to amend the relevant BWN Compliance Review and Verification Report, as needed. To the extent that EPA requires Premcor to sample a waste stream previously sampled, Premcor may average the results of all sampling events occurring after January 1, 2001. Premcor shall submit an amended BWN Compliance Review and Verification Report for the relevant Refinery, if necessary, within ninety (90) days following the date of the completion of the required Phase Two sampling, if Phase Two sampling is required by EPA.

**D. Implementation of Corrective Actions**

132. Amended TAB Reports. If the results of any BWN Compliance Review and Verification Report(s), indicate(s) that a Refinery's most recently-filed TAB report does not accurately reflect the TAB calculation for the Refinery, Premcor shall submit, by no later than sixty (60) days after completion of the BWN Compliance Review and Verification Report(s), an amended TAB report to the appropriate regulatory authority. The BWN Compliance Review and Verification Report(s) shall be deemed an amended TAB report for purposes of Subpart FF reporting to EPA.

133. Reserved.

134. Corrective Action. If the results of any BWN Compliance Review and Verification Report(s) indicate that Premcor is not in compliance with the applicable 2 Mg compliance option at the Port Arthur Refinery, to the extent that it is not converted to the 6 BQ Compliance Option, or the 6BQ Compliance Option at the Lima or Memphis Refineries or at the Port Arthur Refinery, to the extent converted to the 6 BQ Compliance Option, then Premcor shall submit to EPA, to the appropriate EPA Region, and to the appropriate Plaintiff-Intervener, by no later than sixty (60) days after completion of the BWN Compliance Review and Verification Report(s), a plan that identifies with specificity the compliance strategy and schedule that Premcor will implement to ensure that the subject Refinery complies with its applicable compliance option, or an alternative compliance option authorized under Subpart FF and Paragraph 126 as soon as practicable.

135. Review and Approval of Plans Any plans submitted pursuant to Paragraph 134 shall be subject to the approval of, disapproval of, or a request for modification by EPA, which shall act, after an opportunity for consultation with the appropriate Plaintiff-Intervener, consistent with the Benzene Waste NESHAP. Within sixty (60) days after receiving any notification of disapproval or request for modification from EPA, Premcor shall submit to EPA a revised plan that responds to all identified deficiencies. Upon receipt of approval from EPA, Premcor shall commence implementation of the plan according to the schedule approved in the plan. Disputes arising under this Paragraph 135 shall be resolved in accordance with the dispute resolution provisions of this Addendum. Within sixty (60)

days of completion of all requirements above, Premcor shall certify to EPA and the appropriate Plaintiff-Intervener that each Refinery is in compliance with the Benzene Waste NESHAP.

E. Carbon Canisters

136. For each of the Premcor Refineries that is subject to the 6 BQ or 2 Mg compliance options control requirements of the Benzene NESHAP, Premcor shall comply with the requirements of this Section X.E at all locations at such Refineries where a carbon canister(s) is utilized as a control device under the Benzene Waste NESHAP.

137. From the Date of Entry of the Addendum through termination of this Part, Premcor shall not use a single carbon canister for any new units or installations that require control pursuant to the Benzene Waste NESHAP at any Refineries subject to the 6 BQ or 2 Mg compliance options, unless it is technically infeasible or unsafe to use a dual carbon canister system or except as provided for in Paragraphs 138 and 139 for short term installations.

138. For existing carbon canister systems used to control emissions from installations that require control, Premcor shall complete installation of primary and secondary carbon canisters and operate them in series, by no later than 270 days after the Date of Entry of the Addendum. Notwithstanding any other provision of this Part X, Premcor may operate single canisters for short-term operations such as with temporary storage tanks. For all canisters operated for short-term operations as part of a single canister system, "breakthrough" is defined for the purposes of this Decree as any reading of VOCs above background. Beginning no later than the Date of Entry of this Addendum, Premcor shall monitor for breakthrough from a single carbon canister installation no less frequently than on a daily basis.

139. For locations where single canisters are utilized for short term operations, canisters will be replaced when breakthrough is determined within eight (8) hours for canisters with historical replacement intervals of two weeks or less or within twenty-four (24) hours for canisters with a historical replacement interval of more than two weeks. Single carbon canisters can be replaced with a

dual system (in series) at any time, provided single canister monitoring is continued until the second canister is installed.

140. By no later than ninety (90) days following the Date of Entry, Premcor shall submit to EPA a report concerning carbon canisters installed pursuant to Subpart FF at the Premcor Refineries.

The report shall include the following information for each Refinery:

- a. a list of all permanent locations within each Refinery where carbon canisters are installed;
- b. the installation date of each secondary canister installed in accordance with Paragraph 138;
- c. the date that each secondary canister installed in accordance with Paragraph 138 was put into operation;
- d. the identity and location of each engineered carbon canister system, as hereinafter defined;
- e. the capacity in pounds of carbon of each engineered carbon canister system; and
- f. a list of and supporting justification for each instance in which a dual carbon canister system is not installed because of technical infeasibility or the creation of an unsafe condition at a location otherwise requiring a dual carbon canister system under Paragraph 137.

141. From the Date of Entry and through termination of the Addendum, "breakthrough" between the primary and secondary canister is defined as any reading equal to or greater than 100 ppm VOCs or 5 ppm benzene. In the event that Premcor elects to monitor for both VOCs and benzene pursuant to this provision, then "breakthrough" between the primary and secondary canister shall be defined only as a reading greater than 5 ppm benzene, provided that Premcor satisfies the following conditions:

a. Premcor shall collect and analyze the sample for benzene as soon as practical, and in no event later than 24 hours after obtaining the relevant VOC reading; and

b. Premcor shall conduct monitoring for benzene breakthrough between the primary and secondary carbon canisters for the subject dual carbon canister system until such time as it replaces the relevant primary carbon canister with the secondary carbon canister pursuant to Paragraph 143 according to the following schedule: (i) where the design carbon replacement interval for the unit is less than or equal to 30 days, Premcor shall monitor every operating weekday; (ii) where the design carbon replacement interval for the unit is 31 to 60 days, Premcor shall monitor at least twice a week; (iii) where the design carbon replacement interval for the unit is greater than sixty (60) days, Premcor shall monitor at least weekly.

142. By no later than seven (7) days after the Date of Entry of the Addendum (for existing dual canister systems), and by no later than seven (7) days after the installation of each new dual canister system, Premcor shall start to monitor for breakthrough between the primary and secondary carbon canisters at times when the source is connected to the carbon canister, and during periods of normal operation in accordance with the frequency specified in 40 C.F.R. § 61.354(d) (but in no event less frequently than once per month), or alternatively at least once on each operating weekday.

143. Premcor shall replace the original secondary carbon canister with a fresh carbon canister immediately when breakthrough between the primary and secondary canister is detected. The original secondary carbon canister will become the new primary carbon canister and the fresh carbon canister will become the secondary canister.

a. For carbon canisters not qualifying as engineered carbon canister systems pursuant to this paragraph, "immediately" shall mean within twenty-four (24) hours; provided, however, that if breakthrough is determined on a Saturday, Sunday, or holiday, then Premcor shall replace the original primary carbon canister by the end of the next regular work day if Premcor begins monitoring the secondary canister at least once per operating day until the primary canister is replaced.

b. For engineered carbon canister systems, "immediately" shall mean not more than fourteen (14) days if Premcor monitors the secondary canister at least once per operating day until the carbon in the primary canister is replaced and such monitoring of the secondary canister does not reveal "breakthrough", as defined in Paragraph 141. If breakthrough from the secondary canister is revealed, Premcor shall replace the secondary carbon canister within twenty-four hours of securing such monitoring results. For purposes of this Paragraph 143, "engineered carbon canister systems" shall mean carbon systems with fixed vessels for which each vessel has a capacity of carbon in excess of 5000 pounds.

c. In lieu of replacing a primary or secondary carbon canister pursuant to the terms of this paragraph, Premcor may elect to discontinue flow of benzene containing streams to the relevant carbon canister system until such canister is replaced.

144. Premcor shall maintain or otherwise provide for a reasonable supply of fresh carbon and carbon canisters at each of the Premcor Refineries.

145. Records to demonstrate compliance with the requirements of this Section X.E shall be maintained in accordance with 40 C.F.R. § 61.356(j)(10).

**F. Annual Program**

146. Premcor shall establish an annual program of reviewing process information for each of the Premcor Refineries, including but not limited to construction projects, to ensure that all new benzene waste streams are included in each Refinery's waste stream inventory. Premcor may fulfill this requirement by incorporating new benzene waste stream review into its existing "management of change" program.

**G. Laboratory Audits**

147. Premcor shall conduct audits, or secure results of audits conducted by parties other than the laboratories, of all laboratories that perform analyses of benzene waste NESHAP samples collected

at the Premcor Refineries to ensure that proper analytical and quality assurance/quality control procedures are followed.

148. By no later than one (1) year after the Date of Entry of the Addendum, Premcor shall conduct audits, or secure results of audits conducted by parties other than the laboratories, of the laboratories used by the Premcor Refineries. In addition, Premcor shall audit any new laboratory, or secure results of audits conducted by parties other than the new laboratory, used for analyses of benzene waste NESHAP samples prior to use of the new laboratory by a Refinery subject to this Addendum.

149. If Premcor has completed audits of any laboratory in the one year period prior to the Date of Entry of the Addendum, additional audits of those laboratories pursuant to Paragraph 148 shall not be required.

150. During the life of this Addendum, Premcor shall conduct subsequent laboratory audits, or secure results of audits conducted by parties other than the laboratories, as provided above, such that each laboratory serving each Premcor Refinery is audited every two (2) years.

151. As stated above, Premcor may retain third parties to conduct these audits or use audits conducted by others as its own, but the responsibility and obligation to ensure compliance with this Addendum and Subpart FF would remain with Premcor.

#### **H. Benzene Spills**

152. Premcor shall review all spills reportable under applicable federal and state standards that occur after the Date of Entry of this Addendum within each of the Premcor Refineries to determine if aqueous benzene waste was generated. To the extent required by the Benzene Waste NESHAP regulations and not already in the TAB, Premcor shall include benzene generated by such spills in the TAB. To the extent required by the Benzene Waste NESHAP regulations, Premcor shall include benzene generated by such spills in the uncontrolled benzene quantity calculations for each Refinery.

**I. Training**

153. By no later than one hundred twenty (120) days from the Date of Entry of the Addendum, Premcor shall develop an annual (i.e., once each calendar year) training program for employees asked to draw benzene waste samples at the Premcor Refineries.

154. For the Premcor Refineries complying with a 2 Mg compliance option or the 6 BQ Compliance Option, by no later than one hundred eighty (180) days from the Date of Entry of the Addendum, Premcor shall complete the development of standard operating procedures for all control equipment used to comply with the Benzene Waste NESHAP. By no later than two hundred seventy (270) days thereafter, Premcor shall complete an initial training program regarding these procedures for all operators assigned to this equipment. Comparable training shall also be provided to any persons who subsequently become operators, prior to their assumption of this duty. Until termination of this Decree, "refresher" training in these procedures shall be performed on at least a three year cycle.

155. Reserved.

156. If Premcor converts the Port Arthur Refinery to the 6BQ Compliance Option, then the Port Arthur Refinery shall comply with the provisions of Paragraph 154 by June 30, 2008.

157. As part of Premcor's training programs, Premcor must require any contractor hired to perform all or part of the requirements of this Part X to properly train its employees to implement the relevant provisions of this Part X.

**J. Waste/Slop/Off-Spec Oil Management**

158. For each of the Premcor Refineries subject to this Addendum, Premcor shall develop, similar to those in Appendix G in the Consent Decree, a schematic reflecting the movements of waste/slop/off-spec oil streams within each Refinery and shall provide this schematic to EPA on or before the June 30, 2007. Premcor will then certify to the best of its knowledge following reasonable inquiry, that these schematics accurately depict the waste management units (including sewers) located at the Premcor Refineries upon the date of submittal under this paragraph that handle, store and

transfer waste/slop/off-spec oil streams; identify the control status of each waste management unit; and show how such oil is transferred within each Refinery. To the extent that Premcor and EPA determine that any change to a Refinery subject to this Addendum necessitates a revision to a schematic, then Premcor shall update such schematic.

159. Organic Benzene Waste Streams. Upon completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, or in accordance with any compliance strategy approved by EPA pursuant to Paragraph 135, Premcor shall ensure that all waste management units handling "organic" benzene wastes, as defined in Subpart FF, shall meet any control standards applicable to such units under Subpart FF.

160. Aqueous Benzene Waste Streams. Except as otherwise provided by Subpart FF, for purposes of calculating the TAB at each of the Premcor Refineries pursuant to the requirements of 40 C.F.R. § 61.342(a), Premcor shall include all waste/slop/off-spec oil streams that become "aqueous" until such streams are recycled to a process or put into a process feed tank (unless the tank is used primarily for the storage of wastes). For purposes of complying with a 2 Mg or 6 BQ compliance option, to the extent required by Subpart FF, all waste management units handling aqueous benzene waste streams shall either meet the applicable control standards of Subpart FF or shall have their uncontrolled benzene quantity count toward the applicable 2 or 6 megagram limit.

161. Recordkeeping. For each of the Premcor Refineries, Premcor shall maintain records quantifying waste/slop/off-spec oil movements for all benzene waste streams.

162. Disputes under this Section X.J shall be resolved in accordance with the dispute resolution provisions of this Addendum.

**K. End of Line Sampling**

163. The provisions of this Section X.K shall apply to the Premcor Refineries from the Date of Entry through termination of this Part.

164. Valero developed and EPA approved representative end-of-line sampling ("EOL") plans, within Appendix G of the Consent Decree, designed to determine the benzene quantity in uncontrolled waste streams, including sampling locations and methods for flow calculations to be used in quarterly EOL benzene determinations. By June 30, 2007, Premcor shall develop and submit to EPA EOL Plans similar to the EOL plans submitted pursuant to the Consent Decree. EPA shall approve the EOL Plan for each Premcor Refinery provided such plans are consistent with the representative EOL Plans in Appendix G to the Consent Decree.

165. Commencing with the third calendar quarter 2007, Premcor shall conduct quarterly EOL sampling for benzene quantities in uncontrolled waste streams at the Premcor Refineries according to each proposed and/or approved EOL Plan.

166. Once an EOL Plan is approved by EPA, if changes in processes, operations, or other factors cause the approved sampling locations and approved methods for determining flow calculations to no longer provide an accurate measure of a Refinery's EOL benzene quantity, Premcor shall submit a revised EOL Plan to EPA for approval. Any changes to a EOL Plan made by Premcor prior to EPA approval of the original Plan shall be submitted as a revised proposed Plan and may be implemented thereafter.

167. Premcor shall use all sampling results and approved flow calculation methods under the approved sampling plans referenced in Paragraph 164 to calculate a quarterly and estimate a calendar year value for each of the Premcor Refineries. If the quarterly calculation for a refinery made pursuant to this paragraph exceeds (a) 2.5 Mg for a refinery with TAB historically less than 10 Mg/yr, (b) 0.5 Mg for a refinery complying with a 2 Mg compliance option, or (c) 1.5 Mg for a refinery complying with the 6 BQ Compliance Option, but Premcor estimates that the annual benzene quantity for such refinery will remain below the referenced annual quantity, then Premcor shall include within its next report under Paragraphs 176 or 178 comments justifying why, notwithstanding the quarterly

calculation, Premcor estimates that the annual benzene quantity will not exceed the applicable level listed above.

168. If any estimated annual benzene calculation for any facility made pursuant to the preceding paragraph exceeds (a) 2 Mg for a refinery complying with a 2 Mg compliance option, or (b) 6 Mg for a refinery complying with the 6 BQ Compliance Option, then Premcor shall prepare for each such refinery a written summary and schedule of the activities planned to minimize benzene waste at such refinery to ensure that it complies with the Benzene Waste Operations NESHAP. (The estimated annual values in and of themselves, are not the basis for penalties and are not deemed to be instances of non-compliance for purpose of this Addendum.) The summary and schedule are due no later than sixty (60) days after the close of the quarter in which the estimated annual value exceeds the applicable quantity (the "TAB Study and Compliance Review").

169. Reserved.

170. Premcor shall maintain records supporting its quarterly calculations of EOL quantities, including the methodology and data used to identify and calculate flow until termination of the obligations of this Part.

L. Miscellaneous Measures

171. For the Premcor Refineries that have a TAB greater than 10 Mg/yr, Premcor shall manage all groundwater remediation conveyance systems in accordance with, and to the extent required by, the Benzene Waste NESHAP, 40 C.F.R. § 61.342. In accordance with 40 C.F.R. § 61.342, Premcor may exclude from the calculation of a Refinery's TAB the benzene concentration in any waste generated by remediation activities conducted at such Refinery.

172. From the first calendar quarter commencing after the Date of Entry through termination of the Addendum, each Premcor Refinery subject to this Addendum shall:

a. Conduct monthly visual inspections of all water traps within the Refinery's individual drain systems that are controlled under the Benzene Waste NESHAP;

b. Identify and mark all area drains that are segregated stormwater drains;

c. Where installed pursuant to Subpart FF, visually monitor all conservation vents or indicators on process sewers for detectable leaks on a weekly basis and reset any vents where leaks are detected. After two (2) years of weekly inspections, and based upon an evaluation of the recorded results, Premcor may submit a request to the appropriate EPA Region to modify the frequency of the inspections. EPA shall not unreasonably withhold its consent. Nothing in this subparagraph shall require Premcor to monitor conservation vents on fixed roof tanks; and

d. Conduct quarterly monitoring, in accordance with the "no detectable emissions" provision in 40 C.F.R. § 61.347, of oil-water separators controlled in accordance with 40 C.F.R. § 61.347.

173. Reserved.

174. Notwithstanding any other provision in this Addendum or its required sampling, Premcor shall account for and include in the TAB all slop oil recovered from its oil/water separators or sewer systems until recycled or put into a feed tank in accordance with, and only to the extent required by 40 C.F.R. § 61.342(a). In no event shall the benzene content in slop oil be counted more than once towards a facility's TAB calculation.

**M. Recordkeeping and Reporting Requirements for this Part**

175. In addition to the Reports Required under 40 C.F.R. § 61.357. At the times specified in the applicable provisions of this part, Premcor shall submit for the Premcor Refineries the following reports to EPA, to the applicable EPA Region, and to the applicable Plaintiff-Intervener:

a. BWN Compliance Review and Verification Report (§129), as amended, if necessary (§131);

b. Amended TAB Report, if necessary (§132);

c. Plan(s) to comply with Subpart FF, if any BWN Compliance Review and Verification Reports, indicate non-compliance (§134);

- d. Report concerning carbon canister systems (§140); and
- e. TAB Study and Compliance Review, if necessary (§168).

176. In Conjunction with the Reports Required under 40 C.F.R. § 61.357 For each Refinery for which Premcor is required, pursuant to 40 C.F.R. §§ 61.357(d)(6) and (7), to submit quarterly reports ("Section 61.357 Reports"), Premcor shall include the following additional information in the subject Section 61.357 Reports for such Refinery:

- i. Laboratory Audits. Once laboratory audits are required to have been conducted pursuant to the provisions of Section X.G., Premcor shall identify, in each Section 61.357 Report submitted thereafter until termination of this Addendum, all laboratory audits completed for such Refinery pursuant to the provisions of Section X.G during the calendar quarter for which the quarterly report is due. Premcor shall include the identification of each laboratory audited, a description of the methods used in the audit, and a summary of the results of the audit.
- ii. Training. Once Premcor is required to have conducted training at its Refinery pursuant to Section X.I., Premcor shall describe, in each Section 61.357 Report submitted thereafter until termination of this Addendum, the measures that it took to comply with the training provisions of Section X.I for such Refinery, starting from the Date of Entry of the Addendum;
- iii. EOL Sampling Results. Once EOL sampling is required under Section X.K, Premcor shall report the results of the quarterly EOL sampling undertaken at such Refinery pursuant to Section X.K for the calendar quarter. The report shall include a list of all waste streams sampled at such Refinery, the results of the benzene analysis for each sample, the computation of the EOL benzene quantity for the quarter and any other related information required by any plan approved for such Refinery pursuant to Paragraph 164.

177. Reserved.

178. For each Refinery for which Premcor determines a TAB level of less than 10 mg/yr (and for which Premcor is not required to submit a Section 61.357 Report), Premcor shall submit a progress report as part of the report required by Part XVI. For each semi-annual period, Premcor shall submit for such Refinery the information described in Paragraphs 176(i)-(ii), and the following information:

- i. The results of the quarterly EOL sampling undertaken pursuant to Paragraphs 164 - 167.
- ii. A list of all waste streams sampled, the results of the benzene analysis for each sample, and the computation of the EOL benzene quantity for the respective quarters.
- iii. An identification, for each Refinery, of whether the quarterly benzene quantity equals or exceeds 2.5 Mg/yr and whether the projected calendar year benzene quantity equals or exceeds 10 Mg/yr. If either condition is met, Premcor shall include in the Progress Report a plan or determination, if required pursuant to Paragraphs 167 and 168.

179. - 180. Reserved.

**N. Agencies to Receive Reports, Plans and Certifications Required in the paragraph:  
Number of Copies**

181. Unless otherwise specified in this Part, Premcor shall submit all reports, plans and certifications required to be submitted under this Part X to EPA, the appropriate EPA Region and the applicable Plaintiff-Intervener. For each submission, Premcor shall submit two copies to EPA, two copies to the appropriate EPA Region and two copies to the appropriate Plaintiff-Intervener. By agreement between Premcor and each of the offices that are to receive the materials in this Part X, Premcor may submit the materials electronically.

## **XI. LEAK DETECTION AND REPAIR ("LDAR") PROGRAM ENHANCEMENTS**

**Program Summary:** Premcor shall undertake at each Premcor Refinery the following measures to enhance each Refinery's LDAR program and minimize or eliminate fugitive emissions from valves and pumps in light liquid and/or in gas/vapor service.

### **A. Introduction**

182. In order to minimize or eliminate fugitive emissions of volatile organic compounds ("VOCs"), benzene, volatile hazardous air pollutants ("VHAPs"), and organic hazardous air pollutants ("HAPs") from valves and pumps in light liquid and/or in gas/vapor service, Premcor shall undertake at each of the Premcor Refineries the enhancements of this Part XI to each Refinery's LDAR program under Title 40 of the Code of Federal Regulations, Part 60, Subparts VV and GGG; Part 61, Subparts J and V; Part 63, Subparts F, H, and CC; and applicable state and local LDAR requirements that are federally enforceable or implemented by participating Plaintiff-Intervenors (collectively, the "LDAR Regulations"). The terms "in light liquid service" and "in gas/vapor service" shall have the definitions set forth in the applicable provisions of the LDAR Regulations.

183. Reserved.

184. For purposes of this Part XI, "Equipment" shall mean pumps and valves in light liquid or gaseous service at the refineries subject to this Addendum, except for those pumps and valves exempt from standard monitoring frequencies under applicable LDAR Regulations.

### **B. Written Refinery-Wide LDAR Program**

185. By no later than June 30, 2007, Premcor shall develop and maintain, for each Premcor Refinery, a written, Refinery-wide program for compliance by such Refinery with applicable LDAR Regulations. Until termination of this Decree, Premcor shall implement these programs at each Premcor Refinery on a Refinery-wide basis, and shall update each refinery's program as necessary to ensure continuing compliance. Each Refinery-wide program shall include:

1. An overall, Refinery-wide leak rate goal that will be a target for achievement on a process-unit-by-process-unit basis. For purposes of this provision, the overall

Refinery-wide leak rate goal shall constitute a tool for implementation of the Refinery-wide program, but shall not be enforceable or subject to stipulated penalties under Part XX;

2. Identification of all Equipment that has the potential to leak VOCs, HAPs, VHAPs, and benzene within process units that are owned and maintained by each Refinery;
3. Procedures for identifying leaking Equipment within process units that are owned and maintained by each Refinery;
4. Procedures for repairing and keeping track of leaking Equipment;
5. Procedures for identifying and including in the LDAR program new Equipment; and
6. A process for evaluating new and replacement Equipment to promote consideration and installation of equipment that will minimize leaks and/or eliminate chronic leakers.

C. Training

186. By no later than June 30, 2007, Premcor shall implement the following training programs at each of the Refineries:

1. For personnel newly-assigned to LDAR responsibilities, require LDAR training prior to each employee beginning such work;
2. For all personnel with assigned LDAR responsibilities, provide and require completion of annual LDAR training; and
3. For all other Refinery operations and maintenance personnel (including contract personnel), provide and commence implementation of an initial training program, with completion within six (6) months thereafter, that includes

instruction on aspects of LDAR if and to the extent that aspects of LDAR are relevant to the person's duties.

4. Until termination of this Decree, perform "refresher" training in LDAR on a three year cycle.

**D. LDAR Audits**

187. Premcor shall undertake at each of the Premcor Refineries the Refinery-wide audits set forth in Paragraphs 188 and 189, to help ensure each Refinery's compliance with all applicable LDAR requirements. Premcor's LDAR audits shall include comparative monitoring of valves and pumps, records review to ensure monitoring and repairs for valves and pumps were completed as required, tagging review, data management review, and observation of the LDAR technicians' calibration and monitoring techniques.

188. Third-Party Audits. Premcor shall conduct a third-party audit of each Refinery's LDAR program at least once every four years. For purposes of this requirement, "third party" may include a qualified contractor, consultant, industry group, or trade association. The first third-party audit shall be completed no later than one year from the Date of Entry of the Addendum. During the period between the Date of Entry and the date of the first audit for each refinery under this Section, Premcor shall make reasonable efforts to ensure compliance with the requirements of this Addendum and all applicable LDAR regulations.

189. Internal Audits. Premcor shall conduct internal audits of each of the Premcor Refineries' LDAR programs by sending Premcor or Valero personnel familiar with the LDAR program and its requirements to audit a Premcor Refinery. Premcor shall complete the first round of these internal LDAR audits by no later than two years from the date of completion of the first round of third-party audits required in Paragraph 188. Internal audits of each Refinery shall be held every four years thereafter for the life of this Addendum.

190. Frequency. To ensure that an audit at each Refinery subject to this Addendum occurs every two years, third-party and internal audits shall be separated by approximately two years after the initial Third Party Audit.

191. Alternative. As an alternative to the internal audits required by Paragraph 189, Premcor may elect to retain third-parties to undertake one or more of these audits, provided that an audit of each Refinery occurs every two (2) years.

**E. Implementation of Actions Necessary to Correct Non-Compliance**

192. If the results of any of the audits conducted pursuant to Section XI.D at any of the Premcor Refineries identify any areas of non-compliance with the LDAR Regulations, Premcor shall implement, as soon as practicable, all appropriate steps necessary to correct the area(s) of non-compliance, and to prevent, to the extent practicable, a recurrence of the cause(s) of the non-compliance. In the Semiannual LDAR Report submitted pursuant to the provisions of Section XI.R covering the period when an audit was conducted, Premcor shall certify to EPA that the audit has been completed and that the refinery is in compliance or on a compliance schedule.

**F. Retention of Audit Reports**

193. Until termination of the Addendum, Premcor shall retain the audit reports generated pursuant to Section XI.D and shall maintain a written record of the corrective actions taken at each of its Refineries in response to any deficiencies identified in any audits. In the Semiannual LDAR Report submitted pursuant to the provisions of Section XI.R covering the period when an audit was conducted pursuant to Section XI.D, Premcor shall submit the audit reports and corrective action records for audits performed and actions taken during the previous semiannual period.

**G. Internal Leak Definition for Valves and Pumps**

194. Premcor shall utilize the following internal leak definitions for Equipment covered by an applicable LDAR program at the Premcor Refineries, unless a lower leak definition is established for the relevant Refinery under applicable permit(s) or applicable state LDAR Regulations.

195. Leak Definition for Valves. Two years from the Date of Entry, Premcor shall utilize an internal leak definition of 500 ppm VOCs for refinery valves qualifying as Equipment at the Lima and Memphis Refineries. At the Date of Entry of the Addendum, the Port Arthur Refinery shall utilize an internal leak definition of 500 ppm VOCs for refinery valves qualifying as Equipment.

196. Leak Definition for Pumps. Two years from the Date of Entry, Premcor shall utilize an internal leak definition of 2000 ppm for refinery pumps qualifying as Equipment at the Memphis and

Lima Refineries. At the Date of Entry, the Port Arthur Refinery shall utilize an internal leak definition of 2000 ppm for refinery pumps qualifying as Equipment.

**H. Reporting, Recording, Tracking, Repairing and Remonitoring Leaks of Valves and Pumps Based on the Internal Leak Definitions**

197. Reporting. For regulatory reporting purposes, Premcor may continue to report leak rates in valves and pumps against the applicable regulatory leak definition, or may use the lower, internal leak definitions specified in Paragraphs 195 and/or 196.

198. Recording, Tracking, Repairing and Remonitoring Leaks. Premcor shall record, track, repair and remonitor all leaks in excess of the internal leak definitions of Paragraphs 195 and 196 (at such time as those definitions become applicable) in accordance with applicable provisions of the LDAR Regulations, except that Premcor shall have five (5) days to make an initial attempt at repair and thirty (30) days either to make final repairs and remonitor leaks that are greater than the internal leak definitions but less than the applicable regulatory leak definitions or to place the valve on the delay of repair list according to Section XI.Q.

**I. Initial Attempt at Repair on Valves**

199. Beginning no later than ninety (90) days after the Date of Entry of this Addendum, Premcor shall make an "initial attempt" at repair on any valve qualifying as Equipment under Paragraph 184 that has a reading greater than 200 ppm of VOCs, for the life of the Addendum, excluding control valves, orbit valves and other valves that LDAR personnel are not authorized to repair. Premcor or its designated contractor, as applicable, shall make this "initial attempt" and remonitor such valves within five (5) calendar days of identification. Unless the remonitored leak rate is greater than the applicable leak definition, no further action will be necessary.

**J. LDAR Monitoring Frequency**

200. Pumps. When the lower leak definition for pumps becomes applicable pursuant to Paragraph 196, Premcor shall monitor pumps qualifying as Equipment at the lower leak definition on a monthly basis.

201. Valves. When the lower leak definition for valves becomes applicable pursuant to Paragraph 195, Premcor shall monitor valves qualifying as Equipment in accordance with one of the following options on a process unit-by-process unit basis:

a. Quarterly monitoring with no ability to skip periods. This option cannot be chosen for process units subject to the HON or the modified-HON option in the Refinery MACT; or

b. Sustainable skip period program (see attached Appendix I). Previous process unit monitoring results may be used to determine the initial skip period interval provided that each valve has been monitored using the 500 ppm leak definition. Process units monitored in the skip period alternative method may not revert to quarterly monitoring if the most recent monitoring period demonstrates that more than two percent of the valves were found leaking under the internal leak definition.

202. Reserved.

203. For process units complying with the sustainable skip period program set forth in Paragraph 201(b), EPA or the relevant state Intervener agency may require Premcor to implement more frequent monitoring of valves qualifying as Equipment, in accordance with the monitoring frequencies specified in the skip period provisions identified in Appendix I, if the leak rate determined during an EPA or relevant Plaintiff-Intervener inspection demonstrates that more frequent monitoring is appropriate. In evaluating whether the leak rate demonstrates that more frequent monitoring of valves is appropriate, EPA or the relevant Plaintiff-Intervener, as applicable, will determine the leak rate utilizing data generated in accordance with 40 C.F.R. Part 60, EPA Reference Test Method 21, and based on the total number of valves in the process unit, rather than the total number of valves monitored during the inspection.

204. Premcor shall have the option of monitoring affected valves and pumps within process units after completing a documented maintenance, startup or shutdown activity without having the

results of the monitoring count as a scheduled monitoring activity, provided that Premcor monitors according to the following schedule:

- a. Event involving 1,000 or fewer affected valves and pumps – monitor within one (1) week of the documented maintenance, startup or shutdown activity;
- b. Event involving greater than 1,000 but fewer than 5,000 affected valves and pumps – monitor within two (2) weeks of the documented maintenance, startup or shutdown activity; and
- c. Event involving greater than 5,000 affected valves and pumps – monitor within four (4) weeks of the documented maintenance, startup or shutdown activity.

**K. Electronic Monitoring, Storing, and Reporting of LDAR Data**

205. Electronic Storing and Reporting of LDAR Data. For each of the Premcor Refineries, Premcor has and will continue to maintain an electronic database for storing and reporting LDAR data.

206. Electronic Data Collection During LDAR Monitoring. By no later than June 30, 2007, Premcor shall use dataloggers and/or electronic data collection devices during all LDAR monitoring required by this decree. Premcor, or its third party contractor(s), shall use its best efforts to transfer, on a daily basis, electronic data from electronic datalogging devices to the electronic database required pursuant to Paragraph 205. For all monitoring events in which an electronic data collection device is used, the collected monitoring data shall include a time and date stamp, operator identification, and instrument identification. Premcor may use paper logs where necessary or more feasible (e.g., small rounds, remonitoring, or when dataloggers are not available or broken), and shall record the identification of the technician undertaking the monitoring, the date, time, and the identification of the monitoring equipment. Premcor shall transfer any manually recorded monitoring data to the electronic database within seven (7) days of monitoring.

**L. QA/QC of LDAR Data**

207. By no later than ninety (90) days after the Date of Entry of this Addendum, Premcor or its third party contractor(s) shall develop and implement a procedure to ensure a quality assurance/quality control ("QA/QC") review of all data generated by LDAR monitoring technicians.

This QA/QC procedure shall include procedures for:

1. Monitoring technician(s) reviewing the monitoring data daily;
2. Quarterly performing a QA/QC review of Premcor's and any third party contractor's monitoring data which shall include, but not be limited to: number of components monitored per technician, time between monitoring events, and abnormal data patterns.

**M. LDAR Personnel**

208. By no later than the Date of Entry of the Addendum, Premcor shall establish a program for the Premcor Refineries that will hold LDAR personnel accountable for LDAR performance at each Refinery. Premcor shall maintain a position within each Refinery with responsibility for LDAR management and with the authority to implement improvements.

**N. Adding New Valves and Pumps**

209. By no later than one (1) year from the Date of Entry, Premcor shall establish a tracking program for maintenance records (e.g., a Management of Change program) to ensure that valves and pumps qualifying as Equipment added to each Refinery during maintenance and construction are integrated into the LDAR program.

**O. Calibration/Calibration Drift Assessment**

210. Calibration. Premcor shall conduct all calibrations of LDAR monitoring equipment using methane as the calibration gas, in accordance with 40 C.F.R. Part 60, EPA Reference Test Method 21.

211. Calibration Drift Assessment. Beginning no later than sixty (60) days from the Date of Entry of this Addendum, Premcor shall conduct calibration drift assessments of LDAR monitoring equipment at the end of each monitoring shift, at a minimum. Premcor shall conduct the calibration drift assessment using, at a minimum, a 500 ppm calibration gas. If any calibration drift assessment after the initial calibration shows a negative drift of more than 10% from the previous calibration, Premcor shall remonitor all valves at such Refinery qualifying as Equipment that were monitored since the last calibration and that had a reading greater than 100 ppm and all pumps at such Refinery qualifying as Equipment that were monitored since the last calibration and that had a reading greater than 500 ppm.

**P. Chronic Leakers**

212. Premcor shall replace, repack, or perform similarly effective repairs on chronically leaking, non-control valves during the next process unit turnaround after identification. A component shall be classified as a "chronic leaker" under this paragraph if it leaks above 10,000 ppm twice in any consecutive four quarters, unless the component had not leaked in the twelve (12) consecutive quarters immediately prior to the relevant process unit turnaround.

**Q. Delay of Repair**

213. Beginning no later than sixty (60) days from the Date of Entry of the Addendum, for any valves or pumps qualifying as Equipment for which Premcor is allowed under the applicable LDAR Regulations to place on the "delay of repair" list, Premcor shall satisfy the following requirements. Nothing in this provision is intended to limit Premcor's ability to isolate a valve or pump rather than placing it on the "delay of repair" list, to the extent authorized under applicable LDAR Regulations.

**a. For all valves or pumps:**

- I. Require sign-off by the unit supervisor that the valve or pump is technically infeasible to repair without a process unit shutdown, to the

extent that the valve or pump is being placed on the "delay of repair" list for that reason; and

2. Include valves and pumps that are placed on the "delay of repair" list in regular LDAR monitoring.

- b. For valves: For valves, other than control valves, qualifying as Equipment leaking at a rate of 10,000 ppm or greater, require use of a "drill and tap" or equivalent method for fixing such leaking valves, rather than placing the valve on the "delay of repair" list, unless Premcor can demonstrate that there is a safety, mechanical, or adverse environmental concern posed by attempting to repair the leak in this manner. Premcor shall perform the first "drill and tap" (or equivalent repair method) within fifteen (15) days, and a second attempt (if necessary) within thirty (30) days after the leak is detected. After two unsuccessful attempts to repair a leaking valve through the drill and tap method, Premcor may place the leaking valve on its "delay of repair" list. If a new method develops for repairing such valves, Premcor will advise EPA prior to implementing the use of such new method in place of drill and tap for repairs required under this Addendum.

**R. Recordkeeping and Reporting Requirements for this Part**

214. In addition to the Reports Required under 40 C.F.R. § 60.487 and § 63.654.

a. Written Refinery-Wide LDAR Program. No later than July 31, 2007, Premcor shall submit a copy of each of the Premcor Refineries' Written Refinery-Wide LDAR Programs developed pursuant to Paragraph 185 to EPA, the appropriate EPA Region, and the appropriate Plaintiff-Intervener agency.

b. Certification of Use of Electronic Data Collection during LDAR Monitoring.

No later than July 31, 2007, Premcor shall certify that it utilizes at all of the Premcor Refineries

electronic data collection devices during LDAR monitoring, pursuant to the requirements of Paragraph 206.

215. As part of the Reports Required under 40 C.F.R. § 60.487 and § 63.654 (Semi-Annual LDAR Report) Premcor shall submit, for the Premcor Refineries, the following information, at the following times:

a. First Semiannual LDAR Report Due under the Addendum. Premcor shall include the following as part of its report(s), as applicable:

- i. A certification of the implementation of the "initial attempt at repair" program of Paragraph 199;
- ii. A certification of the implementation of QA/QC procedures for review of data generated by LDAR technicians as required by Paragraph 207;
- iii. An identification of the individual, by name or title, at each Refinery responsible for LDAR performance as required by Paragraph 208;
- iv. A certification of the development of a tracking program for new valves and pumps added during maintenance and construction (Management of Change Program) as required by Paragraph 209;
- v. A certification of the implementation of the calibration and calibration drift assessment procedures of Paragraphs 210 and 211;
- vi. A certification of the implementation of the "chronic leaker" and "delay of repair" procedures of Paragraphs 212 and 213; and
- vii. A copy of each refinery's written refinery-wide LDAR program under Paragraph 185.

b. Until termination of this Part XI of the Addendum, Premcor shall include the following information in the Semiannual LDAR Reports:

- i. An identification of each audit, if any, that was conducted pursuant to the requirements of Section XLD. in the previous semiannual period at each of the Premcor Refineries. For each audit identified, the report shall include an identification of the auditors, a summary of the audit results, and a summary of the actions that Premcor took or intends to take to correct all deficiencies identified in the audits.
- ii. Training. Information identifying the measures taken to comply with the provisions of Paragraph 186; and
- iii. Monitoring. The following information on LDAR monitoring:
  - (a) a list of the process units monitored during the reporting period;
  - (b) the number of valves and pumps present in each monitored process unit;
  - (c) the number of valves and pumps monitored in each process unit;
  - (d) the number of valves and pumps found leaking;
  - (e) the number of "difficult to monitor" pieces of equipment monitored;
  - (f) the projected month of the next monitoring event for that unit;
  - (g) a list of all pumps and valves currently on the "delay of repair" list, the date each component was placed on the list, the date each such component was determined to be leaking at a rate greater than 10,000 ppm, the date each drill and tap or equivalent method of repair, its associated monitoring results and whether such activities were completed in a timely manner under Paragraph 213;

- (h) a list of all initial attempts/remonitoring that did not occur in a timely manner under Paragraph 199;
- (i) the number of missed or untimely repairs under Paragraph 198; and
- (j) the number of missed or untimely repairs under Paragraphs 212 and 213.

S. **Agencies to Receive Reports, Plans and Certification Required in this Part XI: Number of Copies**

216. Reserved.

217. Unless otherwise specified in this Part XI, Premcor shall submit all reports, plans and certifications required to be submitted under this Part XI to EPA and to the appropriate EPA Region and Plaintiff-Intervener. For each submission, Premcor shall submit one copy to EPA, two copies to the appropriate EPA Region and two copies to the appropriate Plaintiff-Intervener. By agreement between Premcor and each of the offices that are to receive the materials in this Part XI, Premcor may submit the materials electronically.

T. **Excluded Equipment**

218. Notwithstanding anything to the contrary in this Part XI, the LDAR program shall not apply to valves and pumps exempt under the LDAR Regulations, including but not limited to: pressure relief devices, valves on closed vent systems, valves in vacuum service, leakless valves, and pumps with no mechanism to leak (e.g. canned and mag pumps). In addition, nothing in this Addendum is intended to require Premcor to monitor difficult-to-monitor valves or unsafe-to-monitor valves more frequently than is otherwise required under the LDAR Regulations.

U. **New Monitoring Technologies**

219. In the event that EPA adopts new monitoring technologies (such as infrared imaging) into its LDAR regulations in the future, Premcor may request a modification to this Part XI to take advantage of such new regulations. EPA, after an opportunity for consultation with appropriate

Plaintiff-Interveners, may approve a change to part or all of this Part XI to take advantage of the new leak detection technology. Such a revised protocol must be developed and mutually agreed upon in writing by EPA and Premcor in accordance with Paragraph 381 [Modification].

**XII. PROGRAM ENHANCEMENTS RE: NSPS SUBPARTS A AND J SO<sub>2</sub> EMISSIONS FROM CLAUS SULFUR RECOVERY PLANTS ("SRP") AND FLARING**

**Program Summary:** Beginning immediately upon the lodging of this Addendum, Premcor agrees to take the following measures at all of its SRPs and certain flaring devices at the Premcor Refineries. Premcor will install additional equipment at certain refineries to achieve additional SO<sub>2</sub> emission reductions and further reduce flaring incidents. Premcor will implement procedures for root cause analysis of acid gas and hydrocarbon flaring incidents and tail gas incidents at all refineries.

**A. DEFINITIONS**

220. Unless otherwise expressly provided herein, terms used in this Part shall be interpreted as defined in the Clean Air Act, 42 U.S.C. § 7401 et seq., and the applicable regulations promulgated thereunder. In addition, the following definitions shall apply, for purposes of this Addendum, to the terms contained within this Part of this Addendum:

- (1) "Acid Gas" (AG) shall mean any gas that contains hydrogen sulfide and is generated at a refinery by the regeneration of an amine scrubber solution;
- (2) "AG Flaring" shall mean, for purposes of this Addendum, the combustion of Acid Gas and/or Sour Water Stripper Gas in an AG Flaring Device. Nothing in this definition shall be construed to modify, limit, or affect EPA's authority to regulate the flaring of gases that do not fall within the definitions contained in this Addendum of Acid Gas or Sour Water Stripper Gas.
- (3) "AG Flaring Device" shall mean any device at a refinery that is used for the purpose of combusting Acid Gas and/or Sour Water Stripper Gas, except facilities in which gases are combusted to produce elemental sulfur, sulfuric acid or ammonium thiosulfate. The combustion of Acid Gas and/or Sour Water Stripper Gas occurs in AG Flaring Devices identified in Appendix K. To the extent that the refinery utilizes AG Flaring Devices

other than those identified in Appendix K for purposes of combusting Acid Gas and/or Sour Water Stripper Gas, those Flaring Devices shall be considered AG Flaring Devices under this Addendum.

- (4) "AG Flaring Incident" shall mean the continuous or intermittent flaring/combustion of Acid Gas and/or Sour Water Stripper Gas in an AG Flaring Device that results in the emission of sulfur dioxide equal to, or greater than five hundred (500) pounds in a twenty-four (24) hour period; provided, however, that if five hundred (500) pounds or more of sulfur dioxide have been emitted in a twenty-four (24) hour period and flaring continues into subsequent, contiguous, non-overlapping twenty-four (24) hour period(s), each period of which results in emissions equal to, or in excess of five hundred (500) pounds of sulfur dioxide, then only one AG Flaring Incident shall have occurred. Subsequent, contiguous, non-overlapping periods are measured from the initial commencement of flaring within the AG Flaring Incident.
- (5) "Day" shall mean a calendar day.
- (6) "Hydrocarbon Flaring" shall mean, for purposes of this Addendum, the flaring of refinery hydrocarbon process gases, except for Acid Gas and/or Sour Water Stripper Gas and/or Tail Gas, in a Hydrocarbon Flaring Device. Nothing in this definition shall be construed to modify, limit, or affect EPA's authority to regulate the flaring of gases that do not fall within the definitions contained in this Addendum.
- (7) "Hydrocarbon Flaring Device" shall mean a flare device listed in Appendix N. Premcor shall provide notice to EPA, within the next report to be submitted pursuant to Part XVI, of any new Hydrocarbon Flaring Device which is installed at a Premcor Refinery subsequent to the Date of Entry of this Addendum. To the extent that a Premcor Refinery utilizes a Hydrocarbon Flaring Device other than those specified in Appendix N for the purposes of combusting any excess of a refinery-generated gas other than

Acid Gas and/or Sour Water Stripper Gas, such Hydrocarbon Flaring Device shall be covered under this Addendum.

- (8) "Hydrocarbon Flaring Incident" or HC Flaring Incident, shall mean continuous or intermittent Hydrocarbon Flaring, at a Hydrocarbon Flaring Device that results in the emission of sulfur dioxide equal to, or greater than five hundred (500) pounds in a 24-hour period; provided, however, that if five hundred (500) pounds or more of sulfur dioxide have been emitted in a twenty-four (24) hour period and flaring continues into subsequent, contiguous, non-overlapping twenty-four (24) hour period(s), each period of which results in emissions equal to, or in excess of five-hundred (500) pounds of sulfur dioxide, then only one HC Flaring Incident shall have occurred. Subsequent, contiguous, non-overlapping periods are measured from the initial commencement of Flaring within the HC Flaring Incident.
- (9) "Malfunction" shall mean any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.
- (10) "Root Cause" shall mean the primary cause or causes of a AG or HC Flaring Incident or of a Tail Gas Incident as determined through a process of investigation.
- (11) "Scheduled Maintenance" of an SRP shall mean any shutdown of an SRP that Premcor schedules at least fourteen (14) days in advance of the shutdown for the purpose of undertaking maintenance of that SRP.
- (12) "Shutdown" shall mean the cessation of operation of an affected facility for any purpose.
- (13) "Sour Water Stripper Gas" or "SWS Gas" shall mean the gas produced by the process of stripping or scrubbing refinery sour water.

- (14) "Startup" shall mean the setting in operation of an affected facility for any purpose.
- (15) "Sulfur Recovery Plant" or "SRP" shall mean a process unit that recovers sulfur from hydrogen sulfide by a vapor phase catalytic reaction of sulfur dioxide and hydrogen sulfide.
- (16) "Tail Gas" shall mean exhaust gas from the Claus trains and the tail gas treating unit ("TGTU") section of the SRP.
- (17) "Tail Gas Incident" shall mean the combustion of Tail Gas that:
- a. is combusted in a flare that results in five hundred (500) pounds of sulfur dioxide emissions in a twenty-four (24) hour period; or
  - b. is combusted in a thermal incinerator and results in excess emissions of 500 pounds or more of SO<sub>2</sub> in any 24-hour period. Only those time periods which are in excess of a SO<sub>2</sub> concentration of 250 ppm (rolling 12-hour average) shall be used to determine the amount of excess SO<sub>2</sub> emissions from the incinerator; provided, however, that during periods of maintenance of a monitored incinerator, a Tail Gas Incident shall mean the combustion of Tail Gas in a combustion device other than a monitored incinerator where the amount of sulfur dioxide emissions in excess of 250 ppm on a twenty-four (24) hour period exceeds five hundred (500) pounds, calculated based upon best engineering judgment.
  - c. Reserved
- (18) "Upstream Process Units" shall mean all amine contactors, amine scrubbers, and sour water strippers at the refinery, as well as all process units at the refinery that produce gaseous or aqueous waste streams that are processed at amine contactors, amine scrubbers, or sour water strippers.

(19) "Flaring Device" shall mean an Acid Gas Flaring Device and/or Hydrocarbon Flaring Device.

**B. SRP NSPS Subparts A And J Applicability**

221. Upon the Date of Entry, the SRPs at the Premcor Refineries shall be "affected facilities" pursuant to 40 C.F.R. Part 60, Subpart J, and shall comply with the applicable provisions of 40 C.F.R. Part 60, Subparts A and J, as such requirements apply to SRPs. For emission unit P025 at the Lima Refinery, Premcor shall certify compliance with the applicable provisions of 40 C.F.R. Part 60, Subpart J, to EPA and the applicable Plaintiff Intervenor by no later than April 1, 2008.

222. The SRPs at the Premcor Refineries are as follows:

|             |                 |               |               |
|-------------|-----------------|---------------|---------------|
| Memphis     | Memphis SRP     | Claus #1      | Date of Entry |
|             |                 | Claus #2      | Date of Entry |
| Lima        | Lima SRP        | Claus #1      | Date of Entry |
|             |                 | Claus #2      | Date of Entry |
| Port Arthur | Port Arthur SRP | 543 100 Train | Date of Entry |
|             |                 | 543 300 Train | Date of Entry |
|             |                 | 544 500 Train | Date of Entry |
|             |                 | 544 400 Train | Date of Entry |
|             |                 | 545 100 Train | Date of Entry |
|             |                 | 545 200 Train | Date of Entry |
|             |                 | 546 600 Train | Date of Entry |
|             |                 | 546 700 Train | Date of Entry |

223. Reserved.

224. Upon the Date of Entry, all emission points (stacks) to the atmosphere for tail gas emissions from each of its SRPs will be monitored and reported upon in accordance with 40 C.F.R. §§ 60.7(c), 60.13, and 60.105. This requirement is not applicable to the AG Flaring Devices identified in Appendix K.

225. Nothing in this Addendum shall be interpreted to limit Premcor's opportunity to submit for EPA approval alternative monitoring procedures or requirements pursuant to 40 C.F.R., Part 60, Subpart A, for emissions from SRPs.

226. By no later than one (1) year after the Date of Entry, Premcor shall re-route any SRP sulfur pit emissions from the refineries subject to this Addendum such that all sulfur pit emissions to the atmosphere are either eliminated or included as part of the applicable SRP's emissions subject to NSPS Subpart J limit for SO<sub>2</sub>, as a 12-hour rolling average, of 250 ppmvd SO<sub>2</sub>, or 300 ppm reduced sulfur, each at 0% oxygen, as required by 40 C.F.R. § 60.104(a)(2).

227. During the life of this Addendum and for the purpose of determining compliance with the SRP emission limits, Premcor shall apply the "startup" and "shutdown" provisions set forth in NSPS Subpart A to the SRP but not to the independent startup or shutdown of its corresponding control device(s) (e.g., TGTU). However, the malfunction exemption set forth in NSPS Subpart A shall apply to both the SRP and its control device(s) (e.g., TGTU).

228. With respect to the Port Arthur Refinery, in order to further enhance operations of its SRPs, further reduce emissions of SO<sub>2</sub>, further reduce AG Flaring Incidents and ensure compliance with 40 C.F.R. Part 60, Subparts A and J, Premcor shall implement the following actions at that refinery by the dates listed below:

- a. Construct Additional Claus Trains -- 546-600 and 546-700 by Date of Entry.
- b. Revamp the GFU 241 and 242 Rich Amine Flash drum to include oil skimming facilities and skim oil pumps by December 31, 2009.
- c. Install a rich amine flash drum at GFU 243 by December 31, 2009.
- d. - g. Reserved.

229. Good Operation and Maintenance. Within one year of the Date of Lodging, Premcor shall submit to EPA and the appropriate Plaintiff-Intervener, a summary of plans for the Premcor Refineries to implement enhanced maintenance and operation of their SRPs, any supplemental control

devices, and the appropriate Upstream Process Units that have been or will be implemented. These plans shall be termed Preventive Maintenance and Operation Plans ("PMO Plans"). Each PMO Plan shall be a compilation of Premcor approaches for exercising good air pollution control practices and for minimizing SO<sub>2</sub> emissions at its Refinery(ies). The PMO Plan shall provide for continuous operation of its SRPs between scheduled maintenance turnarounds with minimization of emissions, including the continued use of supplemental control devices (e.g., amine/caustic scrubbers). The PMO Plan shall include, but not be limited to, sulfur shedding procedures, startup and shutdown procedures, hot standby procedures, emergency procedures and schedules to coordinate maintenance turnarounds of the SRP Claus trains and any supplemental control devices with scheduled turnarounds of major Upstream Process Units. The PMO Plan shall have as a goal the elimination of Acid Gas Flaring. Premcor shall comply with the PMO Plan at all times, including periods of Startup, Shutdown and Malfunction of its SRPs. If Premcor makes changes to a PMO Plan related to minimizing Acid Gas Flaring and/or SO<sub>2</sub> emissions, such changes shall be summarized and reported to EPA and the appropriate Plaintiff-Intervener on an annual basis.

229A. In addition, Premcor shall, along with each PMO described above, provide a brief description of the causes of Acid Gas Flaring at each refinery for each Acid Gas Flaring Incident that occurred from January 1, 2002 through December 31, 2006:

- i. The date and time that the AG Flaring Incident started and ended (if available or reasonably determinable);
- ii. An estimate of the quantity of sulfur dioxide emitted and the calculations used to determine that quantity (if available or reasonably determinable); and
- iii. A description of the Root Cause and corrective actions, if any, that were taken and/or should be incorporated into the PMO to reduce the likelihood of a recurrence of such AG Flaring Incident (if reasonably available but only to the extent such Refinery was then owned by Premcor).

230. EPA and the appropriate Plaintiff-Intervener do not, by their review of a PMO Plan and/or by their failure to comment on a PMO Plan, warrant or aver in any manner that any of the actions that Premcor may take pursuant to such PMO Plan will result in compliance with the provisions of the Clean Air Act or any other applicable federal, state, or local law or regulation. Notwithstanding EPA's or appropriate Plaintiff-Intervener's review of a PMO Plan, Premcor shall remain solely responsible for compliance with the Clean Air Act and such other laws and regulations.

C. Flaring Devices - NSPS Applicability

231. In accordance with the schedule in this Section XII.C, Premcor accepts NSPS Subpart J applicability for each Flaring Device at the Premcor Refineries, as currently identified in Appendix N.

232. - 233. Reserved.

234. Good Air Pollution Control Practices. On and after the Date of Entry, Premcor shall at all times and to the extent practicable, including during periods of Startup, Shutdown, and/or Malfunction, implement good air pollution control practices for minimizing emissions consistent with 40 C.F.R. § 60.11(d).

235. For each Flaring Device, Premcor will elect to use one or any combination of the following NSPS Subpart J compliance methods:

- a. Operate and maintain a flare gas recovery system to control continuous or routine combustion in the Flaring Device. Use of a flare gas recovery system on a flare obviates the need to continuously monitor and maintain records of hydrogen sulfide in the gas as otherwise required by 40 C.F.R. §§ 60.105(a)(4) and 60.7;
- b. Operate the Flaring Device as a fuel gas combustion device and comply with NSPS monitoring requirements by use of a CEMS pursuant to 40 C.F.R. § 60.105(a)(4) or with a predictive monitoring system approved by EPA as an alternative monitoring system pursuant to 40 C.F.R. § 60.13(i);

- c. Eliminate the routes of continuous or intermittent, routinely-generated fuel gases to a Flaring Device and operate the Flaring Device such that it receives only process upset gases, fuel gas released as a result of relief valve leakage or gases released due to other emergency malfunctions; or
- d. Eliminate to the extent practicable routes of continuous or intermittent, routinely-generated fuel gases to a Flaring Device and monitor the Flaring Device by use of a CEMS and a flow meter; provided however, that this compliance method may not be used unless Premcor : (i) demonstrates to EPA that the Flaring Device in question emits less than 500 pounds per day of SO<sub>2</sub> under normal conditions; (ii) secures EPA approval for use of this method as the selected compliance method; and (iii) uses this compliance method for five or fewer of the Flaring Devices listed in Appendix N.

236. For the compliance method described in Paragraph 235(b), to the extent that Premcor seeks to use an alternative monitoring method at a particular Flaring Device to demonstrate compliance with the limits at 40 C.F.R. § 60.104(a)(1), Premcor may begin to use the method immediately upon submitting the application for approval to use the method, provided that the alternative method for which approval is being sought is the same as or is substantially similar to the method identified as the "Alternative Monitoring Plan for NSPS Subpart J Refinery Fuel Gas" attached hereto as Appendix D.

237. Compliance Plan for Flaring Devices. For each Covered Refinery, Premcor will submit a Compliance Plan for Flaring Devices to EPA and the applicable Plaintiff-Intervener by no later than December 31, 2009.

238. In each Refinery's Compliance Plan for Flaring Devices, Premcor will:

- a. Certify compliance with one or more of the four compliance methods set forth in Paragraph 235 and accept NSPS applicability for at least (i) 50% of the system-wide Flaring Devices identified in Appendix N, (ii) one Flaring Device per

Refinery where such Refinery has three or more Flaring Devices, and (iii) at the Lima Refinery the FCC (North) flare which serves the coker unit, provided, however, that if the selected compliance method is a flare gas recovery system, as identified in Paragraph 235(a), then Premcor may certify that compliance will be achieved by no later than December 31, 2010;

- b. Identify the Paragraph 235 compliance method(s) used for each Flaring Device that Premcor identifies under Paragraph 237;
- c. Describe the activities that Premcor has taken or anticipates taking, together with a schedule, to meet the objectives of Paragraph 237 at each Refinery; and
- d. Describe the anticipated compliance method(s) and schedule that Premcor will undertake for the remaining Flaring Devices identified in Appendix N.

239. By no later than December 31, 2013, Premcor will certify compliance to EPA and the applicable Plaintiff-Intervener with one or more of the four compliance methods in Paragraph 235 and will accept NSPS applicability for all of the Flaring Devices in Appendix N.

240. Performance Tests. By no later than ninety (90) days after bringing a Flaring Device into compliance by using the methods in Paragraph 235(b) or (d), Premcor will conduct a flare performance test pursuant to 40 C.F.R. §§ 60.8 and 60.18, or an EPA-approved equivalent method unless such performance test has previously been performed. In lieu of conducting the velocity test required in 40 C.F.R. § 60.18, Premcor may submit velocity calculations that demonstrate that the Flaring Device meets the performance specification required by 40 C.F.R. § 60.18.

241. The combustion in a Flaring Device of process upset gases or fuel gas that is released to the Flaring Device as a result of relief valve leakage or other emergency malfunctions is exempt from the requirement to comply with 40 C.F.R. § 60.104(a)(1).

**D. Investigation and Reporting**

241A. Premcor shall conduct a review of each of the three Premcor Refineries for the five (5) years prior to the Date of Lodging in an effort to identify any releases that may have been reportable under Section 103(a) of CERCLA, 42 U.S.C. § 9603(a), and Section 304 of EPCRA, 42 U.S.C. § 11004 or similar or corresponding state reporting regulations. Upon completion of this review, Premcor shall resolve its liability for violations of Section 103(a) of CERCLA and Section 304 of EPCRA or similar or corresponding state reporting regulations with respect to the events identified in its compliance review by completing the following activities no later than December 31, 2007:

- a. submit a CERCLA/EPCRA Compliance Review Report to EPA and Plaintiff-Interveners that identifies potential violations of Section 103(a) of CERCLA and Section 304 of EPCRA or similar or corresponding state reporting regulations for which Premcor seeks a resolution of liability; and
- b. correct and/or update procedures to ensure compliance in future; and
- c. conduct CERCLA/EPCRA training for the environmental compliance staff at each of the three Premcor Refineries.

242. Beginning no later than ninety (90) days after the Date of Lodging, Premcor shall submit a report to EPA and the applicable EPA Regional Office within sixty (60) days following the end of each AG Flaring Incident, Hydrocarbon Flaring Incident or Tail Gas Incident at a Premcor Refinery. Such reports shall set forth the following information concerning the Incident (a "Root Cause Failure Analysis" or "RCFA"):

1. The date and time that the Incident started and ended. To the extent that the Incident involved multiple releases either within a twenty-four (24) hour period or within subsequent, contiguous, non-overlapping twenty-four (24) hour periods, Premcor shall set forth the starting and ending dates and times of each release;

2. An estimate of the quantity of SO<sub>2</sub> that was emitted and the calculations that were used to determine that quantity;
3. The steps, if any, that Premcor took to limit the duration and/or quantity of SO<sub>2</sub> emissions associated with the Incident;
4. A detailed analysis that sets forth the Root Cause of that Incident, to the extent determinable;
5. An analysis of the measures, if any, that are reasonably available to reduce the likelihood of a recurrence of the Incident resulting at the same refinery from the same Root Cause(s) in the future. The analysis shall discuss the alternatives, if any, that are reasonably available, the probable effectiveness and cost of the alternatives, and whether or not an outside consultant should be retained to assist in the analysis. Possible design, operational, and maintenance changes shall be evaluated.
6. Either a description of corrective action(s) under Paragraph 245 and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates, or an explanation that corrective action(s) is (are) not required;
7. For AG Flaring and Tail Gas Incidents at any Premcor refinery and for HC Flaring Incidents at the Port Arthur Refinery, a statement that:
  - a. Specifically identifies each of the grounds for stipulated penalties in Section XII.F of this Decree and describes whether or not such incident falls under any of those grounds;
  - b. Describes whether Paragraph 250 or 251 applies and why, or if such incident falls under Paragraph 252 of this Decree, describes whether subparagraph 252(a), (b), or (c) applies and why; and

- c. States whether or not Premcor asserts a defense to such incident, and if so, a description of such defense.
8. To the extent that investigations of the causes and/or possible corrective actions still are underway on the due date of the report, a statement of the anticipated date by which a follow-up report fully conforming to the requirements of this Paragraph 242 will be submitted; provided, however, that if Premcor, has not submitted a report or a series of reports containing the information required to be submitted under this paragraph within sixty (60) days (or such additional time as EPA may allow) after the due date for the initial report for any incident, the stipulated penalty provisions of Paragraph 260(d) shall apply for failure to timely submit the report. Nothing in this paragraph shall be deemed to excuse Premcor from its investigation, reporting, and corrective action obligations under this Part XII for any incident which occurs after another incident for which Premcor has requested an extension of time under this paragraph; and
9. To the extent that completion of the implementation of corrective action(s), if any, is not finalized at the time of the submission of the report required under this Paragraph 242, then, by no later than thirty (30) days after completion of the implementation of corrective action(s), Premcor shall submit a report identifying the corrective action(s) taken and the dates of commencement and completion of implementation.

243. With respect to HC Flaring Incidents and in lieu of analyzing possible corrective actions under Section XI.E and taking interim and/or long-term corrective action under that section for a Hydrocarbon Flaring Incident attributable to the startup or shutdown of a unit that Premcor previously analyzed under this Section XII.D, Premcor may identify such prior analysis when submitting the report required under Paragraph 242. Prior to the installation of a flare gas recovery system identified

under Paragraph 235(a) but only after notice to EPA under Paragraph 237, Premcor shall not be required to identify or implement corrective action(s) under Paragraphs 242 and 245, for HC Flaring Incidents unless more than 500 lbs. of SO<sub>2</sub> would have been released if such equipment had been installed and in use. If Premcor determines that the Hydrocarbon Flaring Incident is attributable solely to the combustion of refinery fuel gas that contains less than 162 ppm of H<sub>2</sub>S, it shall so demonstrate in its report under Paragraph 242, and no further action shall be required for that Incident under this Section XII.D. In addition, or in the alternative, if Premcor determines that the Hydrocarbon Flaring Incident is attributable to the combustion of a stream or streams of Continuous or Intermittent Routinely-Generated Fuel Gases prior to Premcor's implementing actions to address such stream(s) when and as required by Paragraphs 235 and 238 but only after notice to EPA under Paragraph 237, it shall so demonstrate in its report under Paragraph 242 and no further action shall be required for that Incident under this Section XII.D. Notwithstanding Paragraph 242, Premcor may submit reports for Hydrocarbon Flaring Incidents at the Lima and Memphis Refineries as part of the Semi-annual Progress Reports required pursuant to Part XVI, but Premcor may not submit reports for Hydrocarbon Flaring Incidents at the Port Arthur Refinery as part of the Semi-annual Progress Reports.

244. With respect to Hydrocarbon Flaring Incidents occurring prior to certifying compliance under Paragraph 238 or 239, Premcor may prepare and submit a single RCFA for one or more Root Causes found by that analysis to routinely reoccur. Premcor shall inform EPA and the relevant Plaintiff-Intervener in that RCFA that it is electing to report only once on that (those) Root Cause(s) during the interim period. Unless EPA or the relevant Plaintiff-Intervener objects within thirty (30) days of receipt of the RCFA, such election shall be effective.

**E. Corrective Action**

245. In response to any Incident, Premcor, as expeditiously as reasonably practicable, shall take such interim and/or long-term corrective actions, if any, as are reasonable and consistent with

good engineering practice to minimize the likelihood of a recurrence of the Root Cause of that Incident.

245A. Premcor shall implement the following corrective action at the Port Arthur Refinery:

(1) Delayed Coker 843 Wet Gas Compressor Reliability

- a. Upgrade and install an adequate level of redundancy in the UPS supply serving critical compressor instrumentation and Fail Safe Control systems by December 31, 2009;
- b. Develop for the coker's current cycle and for any subsequent cycle a task schedule similar to Foster Wheeler's task schedule for the 18-hour cycle by June 30, 2007;

(2) SGRU 1242 Sats Gas Compressor Reliability

- a. Retrofit advanced compressor surge and molecular weight control systems on the existing compressor by December 31, 2009;
- b. Integrate the compressor control system with the unit DCS such that the cause of any compressor trip is identified and recorded by December 31, 2009;

(3) Improve Amine Unit Process Control

- a. Install redundant nozzles/level transmitter/indication on D-1250 Cold LP Separator OH KO Drum by December 31, 2009;
- b. Relocate high level alarm on D1260 product stripper reflux drum by June 30, 2007;
- c. Install redundant nozzles/level transmitter/indication on D-1260 product stripper reflux drum by December 31, 2009;
- d. Install differential pressure transmitters across dP indicator on T-1530 at HCU 942 by June 30, 2007;

- e. Install redundant pressure indication on D-1290 Fractionator Feed Flash Drum (stripper bottoms) at HCU 942 by December 31, 2009;
  - f. Install redundant nozzles/level transmitter/indication on D-6850 C3/C4 Amine Settler by December 31, 2009;
  - g. Install redundant nozzles/level transmitter/indication on T-6880 Coker Sponge Absorber by December 31, 2009;
  - h. Automate purge on T-101 Pump-around at ATU 7841 by 06/30/2007;
- (4) Install oil skimming on T-4002 spent amine tank by December 31, 2009; and
- (5) Revamp D-102 Amine/Oil Coalescer at ATU 7841 by December 31, 2007.

246. If EPA does not notify Premcor in writing within sixty (60) days of receipt of the report(s) required by Paragraph 242 that it objects to one or more aspects of Premcor's proposed corrective action(s), if any, and schedule(s) of implementation, if any, then that (those) action(s) and schedule(s) shall be deemed acceptable for purposes of compliance with Paragraph 245 of this Addendum.

247. EPA does not, by its agreement to the entry of this Addendum or by its failure to object to any corrective action that Premcor may take in the future, warrant or aver in any manner that any of Premcor's corrective actions in the future will result in compliance with the provisions of the Clean Air Act or its implementing regulations. Notwithstanding EPA's review of any plans, reports, corrective actions or procedures under this Part XII, Premcor shall remain solely responsible for non-compliance with the Clean Air Act and its implementing regulations. Nothing in this paragraph shall be construed as a waiver of EPA's rights under the Clean Air Act and its regulations for future violations of the Act or its regulations.

248. If EPA does object, in whole or in part, to Premcor's proposed corrective action(s) and/or its schedule(s) of implementation, or, where applicable, to the absence of such proposal(s) and/or schedule(s), it shall notify Premcor of that fact within sixty (60) days following receipt of the

RCFA required by Paragraph 242. EPA shall not, in such notice, amend or modify the schedule of activities identified in Paragraphs 228 and 245a. If EPA and Premcor cannot agree on the appropriate corrective action(s), if any, to be taken in response to a particular Incident, either Party may invoke the Dispute Resolution provisions of Part XXIII of the Addendum.

**F. AG Flaring, Tail Gas Incidents, Port Arthur Hydrocarbon Flaring Incidents And Stipulated Penalties**

249. The provisions of this Section XII.F are intended to implement the process outlined in the logic diagram attached hereto as Appendix F to this Addendum. These provisions shall be interpreted and construed, to the maximum extent feasible, to be consistent with that Appendix. However, in the event of a conflict between the language of those paragraphs and Appendix F, the language of those paragraphs shall control.

250. The stipulated penalty provisions of Paragraph 260(a) shall apply to any Acid Gas Flaring or Tail Gas Incident at a Premcor Refinery, or Hydrocarbon Flaring Incident at the Port Arthur Refinery ("Port Arthur HC Flaring Incident"), for which the Root Cause was one or more of the following acts, omissions, or events:

- a. Error resulting from careless operation by the personnel charged with the responsibility for the Sulfur Recovery Plant, TGU, or Upstream Process Units;
- b. Failure to follow written procedures;
- c. A failure of a part, equipment or system that is due to a failure by Premcor to operate and maintain that part, equipment or system in a manner consistent with good engineering practice;
- d. With respect to the Port Arthur Refinery, a HC Flaring Incident resulting from any of the following root causes once the corresponding corrective action has been completed pursuant to Paragraph 245a:
  - i. Short-term loss of power to critical Coker 843 Wet Gas Compressor instrumentation and fail safe control systems.

- ii. Trips of K-2300 A/B Wet Gas Compressors from surging because of low molecular weight feed streams.
- iii. Lack of capturing and recording operating data generated by SGRU 1242 compressor control system in the distributed control system does not allow troubleshooting the cause of a K-2300 A/B Wet Gas Compressors trips.
- iv. Process upset due to erroneous level indication in D-1250 Cold LP Separator OH KO Drum at HCU 942 caused by plugging of a nozzle.
- v. High elevation of the high level alarm point on D-1260 Product Stripper Reflux Drum at HCU 942 does not allow operators additional time to correct a rising level situation before drum overflow.
- vi. Process upset due to erroneous level indication in D-1260 Product Stripper Reflux Drum at HCU 942 caused by plugging of a nozzle.
- vii. Lack of dP indicator and pressure transmitter on T-1530 at HCU 942 does not provide Operators an early warning of when to inject anti-foam agent into the amine absorber.
- viii. Lack of duplicate pressure transmitters on D-1290 Fractionator Feed Flash Drum (stripper bottoms) at HCU 942 increases the likelihood of erroneous pressure indication due to instrument failure.
- ix. Process upset due to erroneous level indication in D-6850 C3/C4 Amine Settler at ATU 7841 caused by plugging of a nozzle.
- x. Process upset due to erroneous level indication in T-6880 Coker Sponge Absorber at DCU 843 caused by plugging of a nozzle.