



STATE OF DELAWARE
**DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL**

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DOVER, DELAWARE 19901

Office of the
Secretary

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Secretary's Order No. 2005-A-0029

**Re: Premcor Refining Group Inc.- Delaware City Refinery-Approval of the Permits
to Construct the Pollution Control Upgrade Project (Phase II)**

Date of Issuance: May 31, 2005

Effective Date: May 31, 2005

Under the authority vested in the Secretary of the Department of Natural Resources and Environmental Control ("DNREC" or the "Department") under 29 *Del. C.* §§8001 et seq., the following findings, reasons and conclusions are entered as an Order of the Secretary.

Based on the record developed, as reviewed in the Hearing Officer's Report ("Report"), dated May 27, 2005, and appended hereto and incorporated herein, I find and conclude that the record supports approval of the permits, as recommended in the Report. The Report relied upon the review of the public hearing record and the technical expertise of the Department's personnel in its Division of Air and Waste Management, Air Quality Management Section ("AQM"), which prepared the Technical Response Document ("Response Document") attached to the Report.

The Report recommends approval of the permit applications of Premcor Refining Group Inc. ("Premcor") for the issuance of permits, as modified by AQM in response to

its expert technical review of the applications, research, investigation, and the public comments. AQM prepared draft permits in order to allow for public comments at the April 20, 2005, public hearing and post-hearing written comments as the hearing officer allowed. AQM recommends changes to the draft permits based upon the comments, and the revised permits are attached to the Response Document as Appendix C.

The permits approve Premcor's construction of equipment and facilities at its Delaware City Refinery ("DCR"), located near Delaware City, Delaware, subject to such conditions that the Department determines are reasonably necessary and appropriate to protect the environment from potentially harmful air pollutants. The permits approve Premcor's construction of equipment and facilities as part of the Pollution Control Upgrade Project ("PCUP"), which the Department is reviewing in two phases. The two permits that are the subject of this Order are in the Phase II review; while the Department on November 30, 2004, issued five permits in its Phase I review approved in Secretary's Order No. 2004-A-0058.

The two permits to be issued by this Order approve: 1) the construction of changes to the Fluid Catalytic Cracking Unit ("FCCU"), or the cat cracker permit,¹ and 2) the construction and modifications to the petroleum coke handling and storage system, or the coke permit.² For the cat cracker permit, Premcor will install a water-based prescrubber, an amine-based regenerative wet gas scrubber and a caustic polishing scrubber. This equipment is necessary for Premcor to satisfy court approved consent decrees, which also require that the cat cracker permit be issued by May 31, 2005, in order to allow the construction to be completed by December 31, 2006. When

¹ Permit APC-82/0981-C (Amendment 5) (NSPS).

² Permit APC-82/1209-C (Amendment 4)

completed, the PCUP will result in the largest decrease in potentially harmful air pollutants ever undertaken at a single location in Delaware, at a cost estimated of over \$200 million.

Pursuant to the coke permit, Premcor will build a 50,000 square foot warehouse for holding up to 22,000 tons of the coke, along with installing collectors for the coke dust and a conveyor belt system to transport the coke from the Fluid Coke Unit to the storage building. The coke permit is to comply with the Department's enforcement action taken by Secretary's Order No 2002-A-0063 (December 2, 2002), which was to reduce DCR's air emissions from the coke handling process that were in excess of state air quality standards.

The Report reviews the record and recommends the issuance of the permits, subject to the conditions recommended by AQM's technical experts. The Report notes that Premcor opposed many of the conditions in its comments, and that AQM and Premcor resolved many of the issues. Both Premcor and AQM should be complimented for their efforts to resolve their differences.

One issue remains, namely, AQM's recommended Condition 3.1.1 to the cat cracker permit. As noted above, the hearing officer recommends adopting this condition along with the other AQM recommended conditions. Premcor opposes this condition based upon the possible impact to the cat cracker's operations. The condition imposes an operational limit on the cat cracker's coal burn rate, which measures the amount of fuel burned in the cat cracker. The proposed condition would limit the cat cracker's operations to 56,000 pounds per hour ("lb/hr"), as measured over a twelve month rolling average. AQM and the hearing officer recommend this limit as a reasonable, appropriate and

necessary restriction on the cat cracker's operations in order to prevent otherwise higher emissions of certain pollutants. These higher emissions would occur when the PCUP becomes operational in 2007, unless they are controlled by the 56,000 lb/hr operational limit to the cat cracker.

I agree that Condition 3.1.1, with a 56,000 lb/hr limit on the cat cracker's operations, is reasonable, appropriate and necessary in order to restrict the cat cracker's release of harmful pollutants. The restriction is based upon the amount of material used in the cat cracker, and will provide a practical limit to emissions. The specific 56,000 lb/hr limit is based upon the cat cracker's historic operations, and this limit previously was included as a condition in a 1997 permit. The restriction is based upon the fact that the cat cracker's emissions are based, in large part, by the amount of material used in it. The reasoning for this restriction remains the same as the 1997 permit, namely, that the cat cracker's operations require the limit in order to control air emissions that are based on the coke burn rate from the cat cracker's operations.

Premcor seeks no limit on the ability to burn coke in the cat cracker, but it did indicate that it would accept a limit based upon the cat cracker's design rating of 71,000 lb/hr. The possible increase in the cat cracker's operations from its current level of approximately 56,000 lb/hr to 71,000 lb/hr is the very reason that the 56,000 lb/hr restriction is required to keep the cat cracker's emissions at their current levels. The cat cracker's coke burn rate is now restricted to approximately 56,000 lb/hr based upon the sulfur dioxide ("SO₂") limit in the current permit, but this restriction will no longer restrict the operations when the PCUP's wet gas scrubber becomes operational in 2007 and SO₂ emissions are reduced. The decreased SO₂ emissions in 2007 will allow

Premcor to operate the cat cracker above the 56,000 lb/hr level, and operating at any higher level will increase the emission of pollutants. Thus, once the PCUP become operational, there will be no effective limit other than the 71,000 lb/hr design rating to restrict the cat cracker's operations unless the 56,000 lb/hr coke burn rate is imposed as a condition.

The 56,000 lb/hr coke burn rate was first included in a 1997 permit condition, and since then the cat cracker's operations have resulted in a dramatic increase of nitrogen oxide ("NOx") emissions. NOx is a major source of producing ozone. Ozone is harmful to air quality and human health, particularly in an ozone nonattainment region such as Delaware City and northern Delaware. The Department currently is investigating the cause of the NOx increase, which occurred approximately in October 2002. The magnitude of the NOx increase is shown by the baseline NOx emissions, which increased by 658 tons per year, or approximately 145%, over the baseline level that AQM calculated. AQM's effort to acquire information on this increase from Premcor has not been successful to date, which is troubling. The level of NOx emissions are from the cat cracker's carbon monoxide ("CO") boiler, which increased at approximately the same time that the CO boiler's carbon monoxide limit went into effect.

The Department's position is that the Department should have reviewed and approved any operational or equipment change to the CO boiler that may caused the NOx increase. Moreover, the Department's review would have allowed the Department to establish limits, to pursuant to Air Regulation 25, which likely would have required a limit on NOx emissions other than the operating limit imposed by the 1997 permit and its successor SO2 limit. Thus, the Department's position is that Premcor's failure to seek

Department review and approval of the change that caused the NOx increase may have prevented the Department from controlling the NOx emissions. The increase in NOx emissions unquestionably occurred, to the detriment of Delaware air quality and the health of its citizens.

Consequently, the 56,000 lb/hr operating limit is based upon the previously approved 56,000 lb/hr limit, and it is necessary to prevent the cat cracker from emitting even higher NOx emissions in 2007 if Premcor would operate the cat cracker closer to its 71,000 lb/hr limit. In effect, the restriction is to maintain the status quo pending the investigation of the NOx increase. The coke burn rate restriction is the best practical method available to the Department to control the cat cracker's emissions in this permit within the time constraints imposed by the consent decrees. The Department determines, based upon the cat cracker's operating history before NOx increase as well as the available coke burn rate data since then, that the previously established 56,000 lb/hr coke burn rate is a reasonable level to control the cat cracker's emissions to at least maintain the status quo pending the investigation of the cause of NOx increase and prevent an even further NOx increase in 2007. The Department, hopefully working with Premcor's cooperation, will establish limits in the investigation, particularly for NOx. DCR, and its cat cracker in particular, is one of the largest sources of NOx emissions in Delaware. Thus, until the Department completes its investigation, including a possible enforcement action, the protection of the environment requires that a coke burn rate limit of 56,000 lb/hr should be included as the best available practical means to control emissions from the cat cracker and related units.

Premcor's proposed limit of 71,000lb/hr is not acceptable as it would effectively reward the possibly unauthorized past conduct that resulted in a significant increase in NOx emissions. The increase in the cat cracker's operations from 56,000 lb/hr to 71,000 lb/hr will increase emissions, and is exactly the kind of operational change that could occur absent the 56,000 lb/hr limit. An increase to 71,000 lb/hr coke burn rate could send NOx emissions even higher than they have already have, to the detriment of Delaware's air quality and the health of its citizens. Thus, the coke burn rate of 56,000 lb/hr is necessary to maintain the status quo pending the investigation of the cause of the NOx increase and the establishment of additional emission limits, particularly on NOx.

In conclusion, the record supports approval of the applications for the permits, as modified by AQM's conditions that are reasonable, supported by expert technical analysis, consistent with the applicable law and regulations and appropriate to protect the environment from potentially harmful emissions. Moreover, the Department used operational controls to control emissions in the Phase I permits. Operating limits are necessary absent a better means to control emissions when the primary purpose of PCUP should be to reduce emissions. The PCUP permits should not sanction an increase in harmful emissions, particularly NOx, over current levels and the restriction provides the best practical way to limit emissions in the cat cracker permit. The Department included similar operating conditions in the Phase I permits to provide assurance that emissions would be limited based upon a fixed level of a readily measurable material, and the same reasoning applies to the cat cracker permit.

Consequently, the following findings, conclusions and directives are entered:

1. The Department has jurisdiction under its statutory authority to make a determination in this proceeding;

2. The Department provided adequate public notice of the pending action on the applications and the public hearing in a manner required by the law and its regulations;

3. The Department held a public hearing in a manner required by the law and its regulations;

4. The Department considered all timely and relevant public comments in making its determination;

5. The record supports the issuance of the cat cracker and coke permits, subject to such reasonable, necessary and appropriate conditions that the Department determines should be included to protect the environment;

6. The Department's authorized delegated official shall issue permits consistent with this Order, and shall include such reasonable conditions necessary and appropriate to protect the public and the environment from any environmental harm that is within the Department's jurisdiction to regulate.

s/ *John A. Hughes*

John A. Hughes
Secretary

HEARING OFFICER'S REPORT

TO: The Honorable John A. Hughes
Secretary, Department of Natural Resources and Environmental Control

FROM: Robert P. Haynes, Esquire
Hearing Officer, Office of the Secretary
Department of Natural Resources and Environmental Control

RE: Premcor Refining Group Inc. - Delaware City Refinery - Air Quality Management
Construction Permits for the Pollution Control Upgrade Project (Phase II)

DATE: May 27, 2005

I. BACKGROUND

This Hearing Officer, delegated authority by the Secretary of the Department of Natural Resources and Environmental Control (“DNREC” or “Department”) pursuant to 29 Del. C. §§6606 and 8003, presided over a duly noticed public hearing held April 20, 2005, commencing at 6:00 p.m., at the Department’s Grass Dale Conference Center in Delaware City, Delaware. The hearing was held for the public to provide the Department with comments on the proposed issuance of two air pollution control permits to the Premcor Refining Group Inc. (“Premcor”)¹ in order to construct new equipment and facilities at its Delaware City Refinery (“DCR”).

One permit, described as the cat cracker permit, is for the construction of equipment for DCR’s Fluid Catalytic Cracking Unit (“FCCU”).² The equipment includes a wet gas scrubber, which is being installed as part of Premcor’s effort to comply with state consent decrees, which were based upon enforcement actions taken to reduce DCR’s air emissions in excess of federal and state air quality standards.³ These consent decrees impose time deadlines for certain actions,

¹ Motiva Enterprises LLC, the refinery’s former owner, filed one permit application on March 30, 2004, which Premcor assumed, with the Department’s approval, when it acquired certain of DCR’s assets and liabilities on May 1, 2004. Unless otherwise noted, all references herein to DCR’s owner shall be to Premcor.

² Draft Permit APC-82/0981-C (Amendment 5) (NSPS).

³ The federal consent decree was approved December 24, 2002 in *United States of America et al v. Motiva Enterprises LLC* in Civil Action H-01-0978 (US D.C.S.D. Texas) and the state consent decree was approved March 22, 2001 in *DiPasquale v. Motiva Enterprises LLC* in New Castle County Superior Court, Civil Action No. 18750 (t).

including Premcor filing a permit application by March 31, 2004, and the Department issuing a cat cracker permit fourteen months after the March 29, 2004 filing of the cat cracker permit application. Thus, the Department must act by May 31, 2005.

The other permit, described as the coke permit, is for the construction of facilities for the handling and storage of petroleum coke.⁴ Premcor requires the coke permit to comply with an enforcement action taken by Secretary's Order No 2002-A-0063 (December 2, 2002), which is to reduce the coke handling system's air emissions of coke dust in excess of state air quality standards. Premcor submitted the application for the coke permit on December 2, 2004.

The Department, for administrative purposes, included both the cat cracker and coke permits as part of DCR's Pollution Control Upgrade Project ("PCUP"), which the Department determined, again for administrative purposes, to review in two phases. Phase I was the subject of five permits issued pursuant to Secretary's Order No 2005-A-0058 (November 30, 2004). The same Secretary's Order also approved a Coastal Zone Act permit, which reflected increased production, include coke, at DCR and the offsetting reduced emissions from the PCUP as environmental benefits. Premcor appealed Secretary's Order No 2004-A-58 and its Phase I permits to the Environmental Appeals Board docket numbers 2004-4 through 2004-8 and to the Coastal Zone Industrial Control Board at docket number CZ2004-02.

On February 20, 2005, the Department's Division of Air and Waste Management, Air Quality Management section ("AQM") prepared draft permits and an in-depth Technical Memorandum, dated February 7, 2005. On March 24, 2005, Premcor submitted written comments to both draft permits. Based on the Secretary's determination of the public interest in the pending action, the Department provided public notice of a public hearing on March 20, 2005 in order to hear from the public on the draft permits.

⁴ Draft Permit APC-82/1209-C (Amendment 4)

The draft cat cracker permit approves the installation of a water-based prescrubber, an amine-based regenerative wet gas scrubber and a caustic polishing scrubber. *See* discussion of Fluid Catalytic Cracking Unit (Unit 23) in Department's Technical Memorandum at 6-8. The draft coke permit approves the construction of a 50,000 square foot warehouse for holding up to 22,000 tons of the coke, along with installing collectors for the coke dust and a conveyor belt system to transport the coke from the Fluid Coke Unit to the storage building. *See* discussion of Coke Handling and Storage System (Unit 22) in AQM's Technical Memorandum at 9-11.

The consent decrees require Premcor to install the cat cracker equipment by December 31, 2006. Premcor estimates that the PCUP equipment and facilities will cost \$200 million. The PCUP Phase II is designed to reduce DCR's annual emissions of particulate matter ("PM") from 973 to 311 tons, or a 68% reduction, and of sulfur dioxide ("SO₂") from 13,996 to 361 tons, or a 97% reduction. In addition, the coke handling system will bring this aspect of DCR's operations into compliance with *Delaware Regulations Governing the Control of Air Pollution*.

II. SUMMARY OF THE PUBLIC HEARING RECORD

The public hearing record contains a seventy-two page verbatim transcript of the public hearing, and includes documents, marked as exhibits ("Ex."), which were admitted into the record as hearing exhibits, including post-hearing written comments as allowed by this Hearing Officer. In addition to representatives of Premcor and the Department, seven members of the public attended the public hearing, and two presented comments for the record.

Premcor made a presentation by John Deemer, its environmental engineer, who reviewed the applications and addressed the areas in the proposed draft permits that particularly concerned Premcor. A copy of Premcor's slide presentation at the hearing is also in the public hearing record as Premcor Ex. No. 1 and Premcor's written comments, dated March 24, 2005, on the coke and cat cracker draft permits are in the public hearing record as Premcor Ex. Nos. 2 and 3,

respectively. Premcor's post-hearing comments, dated April 27, 2005, and its responses to Department questions are in the public hearing record as Premcor Ex. Nos. 4 and 5, respectively. Premcor Ex. 2 raises thirty objections to the draft coke permit's conditions, and Premcor Ex. 3 raises forty-three objections to the draft cat cracker conditions. In addition, Premcor also raised objections in its post-hearing submission in Premcor Ex. 4, and in a May 26, 2005, letter, which is included as Premcor Ex. 5. This letter indicates Premcor's review of the draft permits, as set forth in Appendix C, and that all issues were resolved except for the coke burn limit.

Ravi Rangan, P.E. and Bruce Steltzer, of the Division of Air and Waste Management's ("DAWM") Air Quality Management ("AQM"), section made presentations on the draft permits and introduced the Department's hearing exhibits into the record. DNREC's exhibits were: DNREC Ex. 1, the cat cracker permit application, dated March 29, 2004; DNREC Ex. 2, the coke permit application, dated December 2, 2004; DNREC Ex. 3, the draft permit and supporting documents; DNREC Ex. 5, the legal notices of the pending applications and for the public hearing; DNREC Ex. 6, the affidavits of publication of the legal notices; and DNREC Ex. 7, a copy of DNREC's slide presentation at the hearing.

Alan Muller, Executive Director of Green Delaware, presented oral comments that addressed the coke dust air quality standards and the past performance of DCR's repowering project. The repowering project was installed to replace the use of petroleum coke as a boiler fuel with its gasification into syngas, which is a cleaner burning fuel. Mr. Muller commented that the draft permit's production of coke would be 2,500 tons per day, which was an increase over current levels of approximately 1,200 tons per day. In response, Mr. Rangan explained that the higher figure was based upon the Fluid Coker Unit ("FCU"), or coker, operating closer to its 57,000 barrel per day design capacity, which he stated was the "potential to emit" used to calculate the draft permit's emission limits. Mr. Muller also suggested requiring the installation

of an on-line system to access the current continuous monitoring system used to measure DCR's emissions, and DNREC indicated that it would consider this change in the future. Mr. Muller also inquired about whether the coke was used by DuPont's Edge Moor plant, and Premcor stated that its petroleum coke was not sold to DuPont.

Al Denio made comments concerning the possible presence of lead in the DCR's soils from the coke. James Bryant made comments about groundwater contamination concerns around DCR.

III. DISCUSSION AND REASONS

AQM prepared a ("Response Document"), dated May 17, 2005, which is attached hereto as Appendix A and incorporated herein. This document provides technical advice from the Department's experts and comprehensively addresses Premcor's comments.⁵ At the hearing, Premcor raised the following issues: 1) the inclusion of consent decree limits in the draft cat cracker permit; 2) a coke burn rate limit of 56,000 pounds per hour ("lb/hr"); 3) limit for Volatile Organic Compounds ("VOCs"); 4) limits for sulfuric acid mist emissions; and 5) the sulfur compound emissions. For the draft coke permit, Premcor raised the following issues: 1) the requirement to maintain a negative pressure within the storage building, 2) the requirement of daily readings; and 3) the time period to submit ambient monitoring data. The Response Document includes as Appendix C revised draft permits that elected many of Premcor's comments at the hearing and in its post-hearing comments.

A. Cat Cracker Permit

AQM's revised draft cat cracker permit includes conditions in the following categories: "1. General Provisions" (with seven subparts 1.1 through 1.7); "2. Emissions Limitations" (with

⁵ The Response Document is not in the public hearing record, but in response to the public hearing record to assist the Hearing Officer in reviewing the record and providing technical advice and AQM's revised draft permits based upon its review of the record. It is included as part of this report to benefit the public.

four subparts 2.1 through 2.4); “3. Operational Limitations” (with six subparts Conditions 3.1 through 3.6); “4. Compliance Methodology” (with eight subparts Conditions 4.1 through 4.8); “5. Testing and Monitoring Requirements” (with twelve subparts Condition 5.1 through 5.12); “6. Record Keeping Requirements” (with two subparts with Conditions 6.1 and 6.2); “7. Reporting Requirements” (with seven subparts 7.1 through 7.7); and “8. Administrative Conditions” (with two subparts 8.1 and 8.2). Similarly, AQM’s revised draft cat cracker permit accepts numerous of Premcor’s comments, including those on Conditions Nos. 1.1, 1.7, 2.1.1.1, 2.1.9, 2.1.10, 3.1.4, 3.2, 3.3, 3.5, 4.4, 5.1.1, 5.4 in part, 5.6 in part, 5.10, 5.13, 6.1.11, and 6.2.

The Response Document provides reasons that support the conditions that Premcor opposes, and these reasons are adopted as reasonable and well supported by the Department’s regulations and practice. The conditions are necessary and appropriate to ensure that the equipment performs properly and that the air quality is protected from potentially harmful emissions. The Response Document’s reasoning is adopted and incorporated into this discussion, and further discussion will address the most controversial remaining issue.

The issue of most concern is the proposed Condition 3.1.1 to the cat cracker permit. This condition imposes a limit on the coke burn rate of 56,000 lb/hr, as measured over a rolling twelve month period. Premcor objects to this condition and cites that a prior permit imposed a 56,000 lb/hr limit on the cat cracker in a 1997,⁶ but removed when this condition was challenged on appeal. Premcor is correct that the Department imposed a 56,000 lb/hr coke burn rate to control the cat cracker’s emissions in a 1997 permit, but Premcor is incorrect that the Department abandoned the limit in the settlement of the appeal. The Department recognized then and now that the coke burn rate of 56,000lb/hr is appropriate absent a better means to control emissions

⁶ APC-90/0264-Construction-Amendment 1-NSPS for the Sulfur Recovery Unit, issued June 5, 1997, which was appealed to the Environmental Appeals Board in docket no. 97-05.

from the cat cracker. The coal burn rate is based upon the coke burn rate data relied upon in the 1997 permit, which remains approximately the same rate as in the most recent coke burn rate.

The settlement of prior coke burn rate condition also require the reinstatement of the coke burn rate because the Department replaced the coke burn rate control limit with a sulfur dioxide limit in a permit issued on November 24, 1997. This permit included a sulfur dioxide (“SO₂”) limit of 18,100 tons per year on the cat cracker, which effectively regulated its operations and emissions in the same manner as the 56,000 lb/hr coke burn rate limit. Premcor states that the settlement reflected the Department’s agreement that the coke burn rate limit was improper. A review of the settlement finds no support for Premcor’s assertion that the Department conceded that the 56,000 lb/hr coke burn rate was improper. The Department maintains that the 56,000 lb/hr limit was proper then, and is proper now as a way to control the cat cracker’s emissions based upon the single most important cause of the cat cracker’s emissions, namely, the unit’s coke burn rate.

AQM’s Response Document justifies the 56,000 lb/hr limit as needed because of the differences between Premcor’s use of a fifteen month baseline period from October 1, 2002 through December 31, 2003, and AQM’s use of a twenty-four month baseline time period from January 1, 2001 through December 31, 2003. The differences in the baseline periods result in differing potential to emit (“PTE”) levels, particularly in the NO_x and CO levels. AQM asserts that these differences were caused by changes to the cat cracker that were done without a permit. AQM believes that the changes may have been intended to bring the CO boiler into compliance with CO limits that went into effect, but the result was a 659 ton per year increase in Premcor’s NO_x emissions baseline over AQM’s baseline. This dramatic increase has occurred in an ozone non-attainment area and DCR’s release of more NO_x emissions, and ozone producing agent, in a

non-attainment area may have potentially caused more ozone, which threatens the health of Delaware's citizens.

AQM proposes the 56,000 lb/hr coke burn rate limit to prevent the release of even more NOx than already has occurred. AQM considers the NOx releases to have been unauthorized and the 56,000 lb/hr limit essentially maintains the status quo to prevent further increased NOx emission pending an enforcement investigation of the possible unlawful conduct that may have caused the NOx increase. AQM proposes to address NOx limits in the context of a future enforcement action based upon the alleged operational changes that were made, without any required regulatory approval, apparently in order to reduce CO emissions from the CO boiler. If the operational change had been subject to its regulatory review, then AQM asserts that the change would have subject to Regulation 25's requirement to install the lowest achievable emission rate technology and offsets. Nevertheless, pending the outcome of an enforcement action, the 56,000 lb/hr limit is appropriate and necessary to maintain the status quo to prevent even further increases of NOx emissions while the Department investigates the cause of the increase.

AQM proposes the 56,000 lb/hr coke burn rate limit again because the current sulfur dioxide control will no longer be an effective control for the cat cracker's operations when the sulfur removal equipment is installed, specifically, the wet gas scrubber. Hence, to prevent even more NOx emissions when the wet gas scrubber becomes operational, the 56,000 lb/hr cke urn rate is needed to reinstate the same control over the cat cracker's operations that the Department established in the 1997 permit. AQM submits that the 56,000 lb/hr limit is appropriate based on the assumption, as stated in the Technical Memorandum, that "[e]missions of criteria pollutants from the FCCU vary with the unit throughput, coke burn rate and sulfur and nitrogen content of the feed, and other process operating parameters." Thus, the support for the 56,000 lb/hr limit is

based upon the prior permit when the limit was first established as a method to control emissions that may not otherwise be controlled by specific limits.

Premcor does not want any operating limit established, and if one is established, then Premcor seeks one based upon the cat cracker's maximum design coke burn rate of 71,000 lb/hr. Premcor asserts that any lower limit would unjustifiably limit production to levels below the current capacity of the unit. Premcor proposes the following language for Condition 3.1.1:

The FCCU coke burn rate shall not exceed a maximum rate of 71,000 lb/hour as a 12 month rolling average, except as provided by this Condition. In the event that Premcor determines that the FCCU coke burn rate may exceed 71,000 lb/hour as a 12 month rolling average, without any "modification" to the FCCU, as such term is defined under Delaware Air Quality Regulation No. 1, then Premcor shall submit a notification to the Department in advance of achieving a coke burn rate in excess of the level identified in this condition. The notification shall include a demonstration that the proposed coke burn rate would be achieved without any modification to the FCCU. If the Department approves such demonstration, Premcor may operate the FCCU at the coke burn rate value addressed in the notification made under this condition.

The most recent actual coke burn rate data provided by Premcor in its application shows that the cat cracker averaged 56,222 lb/hr, or approximately the same rate as AQM's proposed 56,000 lb/hr limit. This data means is that a 56,000 lb/hr limit should not adversely impact the DCR's current operations in a material manner. Moreover, AQM's concern with an authorized operational change also supports the exercise of control over emissions by limiting the coke burn rate to a level supported by historic levels. Otherwise, Premcor may benefit from the dramatic increase in the NOx emissions, which may have occurred unlawfully. Thus, some limit on the coke burn rate is appropriate and necessary to act as a practical control to control an even further increase in NOx pending the resolution of the Department's investigation into the cause of the NOx increase.

In sum, Department has supported a limit based upon a 56,000 lb/hr coke burn rate, and the support is sound based upon the 1997 permit's same condition. The purpose of the condition is also supported as a reasonable effort to prevent further increases in NOx emissions once the SO2 limit is effectively eliminated as a control on the cat cracker's operations when the PCUP becomes operational. Thus, the 56,000lb/hr coke burn rate is reasonable and adequately supported to achieve a necessary environmental purpose to protect the air quality and public health from increased released of harmful and ozone producing NOx. This is an appropriate limit until it can be modified or eliminated by the establishment of NOx and other emission limits, which cannot be determined within the time constraints imposed by the Department's review under the schedule established by consent decrees.

B. Coke Permit

The draft coke permit in Appendix C has the following categories of conditions: "1. General Provisions" (with seven subparts 1.1 through 1.7); "2. Emissions Limitations" (with four subparts 2.1 through 2.5); "3. Operational Limitations" (with sixteen subparts 3.1 through 3.16); "4. Compliance Methodology, Testing and Monitoring Requirements" (with eight subparts 4.1 through 4.8); "5. Record Keeping Requirements" (with two subparts 5.1 and 5.2); "6. Reporting Requirements" (with five subparts 6.1 through 6.5); and "7. Administrative Conditions" (with two subparts 7.1 and 7.2).

The draft coke permit in Appendix C accepts many of Premcor's comments, including those on Condition Nos. 1.6, 2.1 in part, 2.1.1, 3.13.2 in part, 3.3, 3.5, 3.12, the deletion of the former 3.19, 4.1 in part, 4.2.1, 4.3, 4.5.1, 6.4 and 1.1. The most significant change was the elimination of the requirement to maintain a negative pressure in the storage building. The Response Document provide the reasons for the conditions and the reasons are adequately supported and reasonable to control the air emissions and protect the environment consistent

with the Secretary's Order on the enforcement, and the law and Department regulations. The Response Document's reasoning is adopted and incorporated into this report to support the issuance of the draft coke permit as set forth in Appendix C.

C. Public Comments

I have considered the public comments on the presence of lead in the soil and possible groundwater contamination and conclude that they are outside the reasonable scope of this proceeding, which entails regulating air emissions. The draft permits do impose stricter controls on air emissions, including contaminants that may appear in the groundwater and the soils. The comments do not challenge the proposed limits of air emissions, and the Department has sufficient regulatory authority to protect the water and soils from pollution, including requiring remediation by all responsible parties involved in any past conduct that has caused any water or soil pollution at DCR.

IV. RECOMMENDED FINDINGS AND CONCLUSIONS

Based on the record developed, and the reasons discussed above, I find and conclude that the record supports approval of the draft permits, as attached to the Response Document:

In conclusion, I recommend the Secretary adopt following findings and conclusions:

- 1.) The Department, acting through its Secretary, has jurisdiction under its statutory authority to make a decision on the proposed Department action that was the subject of the public hearing;
- 2.) The Department provided adequate public notice of the proposed Department action and the public hearing in a manner required by the law and regulations;
- 3.) The Department held a public hearing in a manner required by the law and its regulations;

4.) The Department considered all timely and relevant public comments in making its determination;

5.) The Department's technical experts reviewed the permit applications, investigated their scientific and technical support for them, and concluded that certain reasonable conditions should be included in the permits in order to protect the environment from certain air emissions that would, if not abated, harm the health and welfare of Delaware's citizens and the State's air quality.

6.) The issuance of the draft cat cracker permit and the coke permit, in the form recommended by the Department's technical experts, subject to the Secretary's determination of the appropriate coke burn rate of 56,000 lb/hr, is consistent with the Department's statutory purpose to protect the environment and constitutes a reasonable exercise of the Department's regulatory authority that is based upon sound and reasoned support in the record.

s/ Robert P. Haynes

Robert P. Haynes, Esquire
Hearing Officer

Appendix A
Division Response Document

DATE

**DRAFT Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)
Fluid Catalytic Cracking Unit (FCCU), FCCU Carbon Monoxide Boiler, and
Wet Gas Scrubber System**

The Premcor Refining Group, Inc.
Delaware City Refinery
4550 Wrangle Hill Rd.
Delaware City, DE 19706

ATTENTION: Michael Pollauf,
Refinery Manager

Dear Mr. Pollauf:

Pursuant to the State of Delaware “**Regulations Governing the Control of Air Pollution**”, Regulation No. 2, Section 2, approval of the Department of Natural Resources and Environmental Control (the Department) is hereby granted for the construction of a Belco Pre-scrubber and an amine-based Cansolv Regenerative Wet Gas Scrubber (WGS) with caustic polisher to be installed downstream of the Fluid Catalytic Cracking Unit (FCCU) Carbon Monoxide Boiler (COB) at the Delaware City Refinery, 4550 Wrangle Hill Road in Delaware City, Delaware, in accordance with the following documents:

- Application submitted on Form No. AQM-4 dated February 15, 2004 signed by Franklin R. Wheeler;
- Letter dated March 17, 2004 addressed to Secretary John Hughes and signed jointly by Franklin R. Wheeler for Motiva Enterprises (Motiva) and Bruce Jones for The Premcor Refining Group, Inc. (Premcor) requesting transfer of all Motiva’s permits to Premcor;
- Letter dated April 23, 2004 addressed to Franklin Wheeler of Motiva Enterprises, LLC and Bruce Jones of The Premcor Refining Group, Inc. and signed by Secretary John Hughes; and
- ~~Civil Action No. H-01-0978 lodged in the United States Court for the Southern District of Texas on March 21, 2001 (the federal CD);~~

DRAFT Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)
The Premcor Refining Group, Inc.
Fluid Catalytic Cracking Unit (FCCU), FCCU COB and Wet Gas Scrubber (WGS)
DATE
Page 2

- Consent Decrees, including all addenda thereto, lodged with the United States Court for the Southern District of Texas in Civil Action No. H-01-0978, to the extent applicable to the Delaware City Refinery (Consent Decree)
- Secretary's Order No. 2005-A-00-- issued on DATE.

This permit is issued subject to the following conditions:

1. General Provisions

- 1.1 This permit expires three (3) years from the date of issue. The construction of the Belco pre-scrubber and amine-based Cansolv regenerative WGS shall be constructed in accordance with the relevant schedules identified in the Consent Decree
- 1.2 The project shall be constructed in accordance with the application described above. If any changes are necessary, revised plans must be submitted and supplemental approval issued prior to actual construction.
- 1.3 Representatives of the Department may, at any reasonable time, inspect this facility.
- 1.4 The applicant shall, upon completion of the construction, installation, or alteration, request that the Department grant approval to operate.
- 1.5 A separate application to operate pursuant to Regulation No. 2 does not need to be submitted to the Department for the equipment or process covered by this construction permit. Upon a satisfactory demonstration by an on-site inspection that the equipment or process complies with all of the terms and conditions of this permit, the Department shall issue a Regulation No. 2 Operation Permit for this equipment or process. The conditions in the existing operation permit shall remain in effect until construction authorized by this permit is completed.
- 1.6 The provisions of Regulation No. 2 Sections 2.1 and 11.3 shall not apply to the operation of equipment or processes for the purposes of initially demonstrating satisfactory performance to the Department following construction, installation, modification, or alteration of the equipment or processes. The applicant shall notify the Department sufficiently in advance of the demonstration and shall obtain the Department's prior concurrence of the operating factors, time period, and other pertinent details relating to the demonstration.
- 1.7 The owner or operator shall not initiate construction, install, or alter any equipment or facility or air contaminant control device which will emit or

prevent the emission of an air contaminant prior to submitting an application to the Department pursuant to Regulation No. 2, and, when applicable Regulation No. 25, and receiving approval of such application from the Department; except as authorized by this permit or exempted in Regulation No. 2 Section 2.2 of the State of Delaware “**Regulations Governing the Control of Air Pollution.**”

2. Emission Limitations

2.1 Air contaminant emission levels shall not exceed those specified in the State of Delaware “**Regulations Governing the Control of Air Pollution**” and the following¹:

2.1.1 Volatile Organic Compound (VOC) Emissions

2.1.1.1 . The Company shall propose a VOC emission limit within 90 days of completion of the stack test conducted pursuant to Condition 5.2.2 for incorporation into this permit.

2.1.1.2 The leak detection and repair requirements to control fugitive VOC emissions from the FCCU shall be in accordance with the requirements in 40 CFR 60, Subpart GGG for existing components in light liquid and gaseous service and in accordance with 40 CFR part 63 subpart CC for new components in light liquid and gaseous service. . The leak detection and repair requirements to control fugitive emissions from the FCU shall be in accordance with the Consent Decree for both new and existing components in light liquid and gaseous service.

2.1.2 Nitrogen Oxide (NO_x) Emissions Reserved.

2.1.3 ———**Particulate Matter with an Aerodynamic Diameter Less than 10 Microns (PM₁₀) Emissions** 2.1.3.1 Within 180 days of issuance of this permit, the Company shall conduct stack tests to determine the ammonia concentration in the uncontrolled stack gas stream, the oxidation factor for conversion of SO₃ to H₂SO₄, the organic condensable matter per AP-42, the sulfate/bisulfate formed and the reduction in the potential H₂SO₄ formation due to competing formation of sulfate/bisulfate. The company shall propose short term (lb/hr) and long term (ton/year) emission limits within 90 days of completion of this test. The proposal shall take into consideration the reduction in the SO₃ that is

¹ Tons per year (TPY) is defined as “tons per rolling twelve months”.

available for conversion to H₂SO₄ and include a revised H₂SO₄ PTE based on the test data.

2.1.3.2 TSP emissions from the FCCU WGS shall not exceed 1lb/1000 lb of coke burned.

2.1.3.3 The company shall propose short term (lb/hr) and long term (ton/year) PM₁₀ emission limits (inclusive of H₂SO₄) following the proposal required pursuant to Condition 2.1.4.1

2.1.4 Sulfuric Acid (H₂SO₄) Emissions

H₂SO₄ emissions shall meet one of the following standards:

(1) H₂SO₄ emissions shall be reduced by at least 40% across the wet gas scrubber system; or

(2) The outlet concentration of H₂SO₄/SO₃ from the stack shall be no greater than 10 ppmvd.

2.1.5 Sulfur Dioxide (SO₂) Emissions

SO₂ emissions from the FCCU WGS shall not exceed 25 ppmvd @ 0% O₂ on a rolling 365 day average, 50 ppmvd @ 0% O₂ on a rolling 7 day average, and 361 TPY.

2.1.6 Carbon Monoxide (CO) Emissions

2.1.7.1 CO emissions from the FCCU WGS shall not exceed 500 ppmv and 3768 TPY.

2.1.7.2 The Company shall not cause or allow the emission of carbon monoxide from the FCCU unless it is burned at no less than 1300°F for 0.3 seconds in the FCCU COB.

2.1.7 Lead (Pb) Emissions

Pb emissions from the FCCU WGS shall not exceed 4.37 E-04 pounds per thousand pounds of coke burned.

2.1.9

2.1.9 Hazardous Air Pollutant (HAP) Emissions

The Company shall comply with all the applicable requirements of 40 CFR Part 63, subpart UUU.

2.2 The opacity from the FCCU WGS stack shall not be greater than twenty (20%) percent opacity for an aggregate of more than three (3) minutes in any one (1) hour or more than fifteen (15) minutes in any twenty-four (24) hour period.

- 2.3 Odors from this source shall not be detectable beyond the plant property line in sufficient quantities such as to cause a condition of air pollution.
- 2.4 In the event that the FCCU COB is to be shut down for a period longer than 24 hours, Premcor shall promptly begin necessary process changes to provide for the complete combustion of carbon monoxide. Full CO combustion operation shall be achieved within 24 hours.

3. Operational Limitations

- 3.1 The owner or operator shall comply with the following operational limits:
 - 3.1.1 The FCCU coke burn rate shall not exceed 56,000 lb/hour on a rolling twelve month basis.
 - 3.1.2 The Company shall not burn any fuel that contains hydrogen sulfide (H₂S) in excess of 0.10 gr/dscf (162 ppm);
 - 3.1.3 Except as provided in Condition 3.1.4, the COB, Belco pre-scrubber, the amine-based Cansolv regenerative WGS, and the caustic polishing scrubber shall be operating properly at all times when the FCCU is operating.
 - 3.1.4 The Company shall submit for the Department's consideration and incorporation at its discretion into the operating permit alternative operating scenarios for AQM's approval that address startup, shutdown and malfunction conditions. These shall be submitted at least six (6) months prior to the startup of the WGS.
- 3.2 During periods when the Belco prescrubber and the WGS have to be bypassed, the Company shall take steps to immediately respond to safely reduce the FCCU throughput to a level that does not cause a violation of any ambient air quality standard. No later than 6 months prior to start up of the WGS the Company shall submit a proposed turndown factor for the Department's approval that will establish the FCCU feed throughput limit for periods of atypical operations. The reduced throughput level shall continue to be applicable during the entire duration of the bypassed operation.
- 3.3 .
 - 3.3 There shall be no emissions of uncondensed VOCs from the condensers, hot wells or accumulators of any vacuum producing system.
- 3.4 During process unit the Company shall provide for the following:
 - 3.4.1 Depressurization venting of the process unit or vessel to a vapor recovery system, flare, or firebox.

- 3.4.2 No emission of VOC from a process unit or vessel until its internal pressure is 136 kiloPascals (kPa) (19.7 pounds per square inch atmospheric [psia]) or less.
- 3.5 At all times, including periods of startup, shutdown, and malfunction, the Company shall, maintain and operate the equipment and process covered by this Permit including all structural and mechanical components of all equipment and processes and all associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.
- 3.7
- 3.6 Within thirty (30) days of completion of construction of the Belco pre-scrubber, the amine-based Cansolv regenerative WGS, and the caustic polishing scrubber, the Company shall submit to the Department copies of the operating procedures governing normal operations of the equipment.

4. Compliance Methodology

- 4.1 Compliance with Conditions 2.1.1.1 (VOCs) , 2.1.3 (PM10), 2.1.4 (H₂SO₄), 2.1.7 (Pb) and 2.1.8 (HAPs) shall be based on stack testing to be conducted in accordance with Section 5 of this permit. The Company shall ensure adequate test ports are provided to carry out such testing in accordance with Regulation No. 17 section 2.3. Test ports shall be located upstream of the Belco pre-scrubber in accordance with EPA RM 1 of 40 CFR Part 60, Appendix "A" to ensure representative isokinetic sampling.
- 4.2 Compliance with Condition 2.1.1.2 for new components in light liquid and gaseous service shall be based on compliance with the standards in 40 CFR 63.162 through 63.177.
- 4.3 Compliance with Conditions 2.1.5., 2.1.6, and 3.1.2 shall be based on continuous monitoring systems .
- 4.4 The Company shall submit a proposal to calculate SO₂ emissions during periods when the COB is bypassed to AQM for its approval and incorporation into the permit, at least 60 days prior to the startup of the FCCU WGS. The Company shall also supply documentation supporting its calculations sufficient to demonstrate their effectiveness and applicability.
- 4.5 Compliance with Conditions 3.1.1, and 3.1.3, shall be based on the monitoring/testing and recordkeeping requirements.

- 4.6 Compliance with Conditions 3.4 and 3.5 shall be based on either piping the uncondensed vapors to a firebox or incinerator. Alternately, the vapors may be compressed and added to the refinery fuel gas. During process unit turnarounds, the Company shall conduct depressurization venting of the process unit or vessel to a vapor recovery system, flare or firebox. The Company shall monitor the pressure in each process or vessel until its internal pressure is 136 kPa or less. These actions shall be documented.
- 4.7 Compliance with the standards in 40 CFR subpart GGG shall be based on the test methods and procedures in 40 CFR 60.592 and compliance with the requirements of 40 CFR Part 63 subpart CC shall be based on the standards in 40 CFR 63.648.
- 4.8 Compliance with Condition 3.6 shall be based on information available to the Department concerning the Company's actions with respect to such events, and shall include the Department's review of all available facts and circumstances including, but not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

5. Testing and Monitoring Requirements

- 5.1 Within sixty (60) days after achieving the maximum production rate at which the facility will be operated, but not later than 180 days after initial startup the WGS, the Company shall conduct performance tests for the pollutants listed in Conditions 2.1.1.1 (VOCs), 2.1.3 (PM10), 2.1.4 (H2SO4), 2.1.7 (Pb) and 2.1.8 (HAPs) and furnish the Department with a written report of the results of such performance test(s) in accordance with the following general provisions:
- 5.1.1 One (1) original and two (2) copies of the test protocol shall be submitted a minimum of thirty (30) days in advance of the tentative test date to the address in Condition 6.3. The tests shall be conducted in accordance with the State of Delaware and Federal requirements.
- 5.1.2 The test protocol shall be approved by the Department prior to initiating any testing. Upon approval of the test protocol, the Company shall schedule the compliance demonstration with the Air Surveillance Branch. The Department must observe the test for the results to be considered for acceptance unless the Department determines in advance, in writing, that the test need not be observed. Further, the Department may in its discretion determine based on its observation of the test that it need not observe the entire test.

- 5.1.3 The final results of the testing shall be submitted to the Department within sixty (60) days of the test completion.
- 5.1.4 The final report of the results shall be submitted in a format approved by the Air Surveillance Branch, and signed by a corporate official, or his designee, whose signature shall constitute his own, and employer's certification of compliance, clearly indicating each applicable term and condition of the permit, and whether the test(s) fulfilled the permit condition. The results must demonstrate that the emission unit is operating in compliance with the applicable regulations and conditions of this permit; if the final report of the test results shows non-compliance the owner or operator shall propose corrective action(s). Failure to demonstrate compliance through the test may result in enforcement action.

- 5.2 The SO₂ CEMS shall be installed and certified by satisfying the requirements of Performance Specifications No. 2 in Appendix "B" of 40 CFR Part 60. The flow CEMS shall be installed and certified by satisfying the requirements 40 CFR part 75, Appendix "A". The QA/QC procedures for the SO₂ CEMS shall be established in accordance with the procedures in Appendix "F" of 40 CFR Part 60. For the purpose of determining the Relative Accuracy of the CEMS, the applicable standard shall be 25 ppmvd.

- 5.3 NO_x: NO_x emissions shall be monitored by CEMS. The CEMS shall be installed and certified by satisfying the requirements of the applicable Performance Specifications in Appendix "A" of 40 CFR part 75. The QA/QC procedures for the CEMS shall be established in accordance with the procedures in Appendix "B" of 40 CFR Part 75.

- 5.4
- 5.5
- 5.4 Compliance with PM₁₀ emissions limits shall be based on performance testing conducted in accordance with Condition 5.1 and annually thereafter, as follows:
 - 5.4.1 H₂SO₄: Compliance with Conditions 2.1.3.1 and 2.1.4 shall be based on testing in accordance with Reference Method 8 in Appendix "A" of 40 CFR part 60, or other testing methodology approved by the Department.
 - 5.4.2 TSP: Compliance with Conditions 2.1.3.2 shall be based on testing in accordance with Reference Method 5 B in Appendix "A" of 40 CFR part 60, or other testing methodology approved by the Department.
 - 5.4.3 PM₁₀: Compliance with Condition 2.1.3.3 shall be based on testing in accordance with Methods 5B/202, or other testing methodology approved by the Department.

- 5.5 CO: Compliance testing shall be based on CEMS. The CEMS shall be installed and certified by satisfying the requirements of Performance Specifications No. 4 in Appendix "B" of 40 CFR Part 60. The QA/QC procedures for the CEMS shall be established in accordance with the procedures in Appendix "F" of 40 CFR Part 60.
- 5.6 VOC as CH₄: Compliance testing shall be based on an initial Reference Method 25 A in Appendix "A" of 40 CFR Part 60, and every three years thereafter. The Company may petition the Department to decrease the frequency of VOC performance tests based on the results of any performance testing.
- 5.7 Pb: Compliance testing shall be based on an initial Reference Method 12 testing in Appendix "A" of 40 CFR Part 60. Future compliance shall be based on the stack test based emission factor in terms of lb/1,000 lb coke burn rate. The Company shall conduct additional performance testing in accordance with this condition every three years, unless the Department approves less frequent testing.
- 5.10
- 5.8 The Company shall continuously monitor the temperature of the FCCU COB firebox.
- 5.9 The Company shall monitor the FCCU coke burn rate.
- 5.10 The Company shall develop an alternate monitoring plan for evaluating visual emissions and submit it to AQM for its approval at least 6 months prior to startup of the FCCU WGS.
- 5.11 All monitor certifications shall be conducted within 60 days of the unit attaining maximum production but not later than 180 days after unit start up. A "Source Sampling Guidelines and Preliminary Survey Form" must be submitted and found acceptable to the Department at least thirty (30) days prior to the performance testing. Results of the Performance Specification testing shall be submitted to the Department, in triplicate, within 60 days after completion of the testing.
- 5.12. The Company shall submit a proposal to calculate SO₂ emissions during bypass operations to AQM for its approval and incorporation into the permit, at least 60 days prior to the startup of the FCU WGS. The Company shall also supply documentation supporting its calculations sufficient to demonstrate their effectiveness and applicability.

6. Record Keeping Requirements

- 6.1 The Company shall maintain all records necessary for determining compliance with this permit in a readily accessible location for five (5) years and shall make these records available to the Department upon written or verbal request. These records shall include:
- 6.1.1 CEMS data;
 - 6.1.2 Calibration and audit results;
 - 6.1.3 Stack test results;
 - 6.1.4 The daily COB fuel usage;
 - 6.1.5 The coke burn rate on a 12 month rolling average basis;
 - 6.1.6 COB firebox temperature;
 - 6.1.7 Detailed daily records of observations of visible emissions or the absence of visible emissions, or daily visible emissions observations and any other records identified in an approved alternative plan;
 - 6.1.8 Date of each FCCU process unit or vessel turnaround;
 - 6.1.9 Internal pressure of the process unit or vessel immediately prior to venting to the atmosphere;
 - 6.1.10 VOC leak repair records required by 40 CFR 60.592 for existing components in light liquid and gaseous service and 40 CFR 63.654 for new components in light liquid and gaseous service; and
 - 6.1.10
 - 6.1.12 Bypass stack SO₂ emissions as calculated according to Condition 5.12 measured by approved alternative methodology during atypical operations and FCCU turndown showing FCCU throughput rates.
- 6.2 The rolling twelve (12) month total emissions for each pollutant shall be calculated and recorded each month in an easily accessible format for each pollutant listed in Condition 2.1.

7. Reporting Requirements

- 7.1 Emissions in excess of any permit condition or emissions which create a condition of air pollution shall be reported to the Department immediately upon discovery by calling the Environmental Emergency Notification and Complaint number, (800) 662-8802, or from outside the State of Delaware, (302) 739-5072.
- 7.2 In addition to complying with Condition 7.1 of this permit, the Company shall satisfy any reporting required by the “**Reporting of a Discharge of a Pollutant or an Air Contaminant**” Regulation, , within thirty (30) calendar days of becoming aware of an occurrence subject to reporting pursuant to Condition 7.1. Further the Department may in its discretion require the

Company to submit reports not otherwise required by the Regulation. All reports submitted to the Department pursuant to this Condition shall be submitted in writing and shall include the following information:

- 7.2.1 The name and location of the facility;
 - 7.2.2 The subject source(s) that caused the excess emissions;
 - 7.2.3 The time and date of the first observation of the excess emissions;
 - 7.2.4 The cause and expected duration of the excess emissions;
 - 7.2.5 For sources subject to numerical emission limitations, the estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions; and
 - 7.2.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions.
 - 7.2.7 Emissions on the same day from the same emission unit may be combined into one report. Emissions from the same cause that occur contemporaneously may also be combined into one report.
 - 7.2.8 The Company shall submit an electronic copy of all required reports to the Department's compliance engineer assigned to the Refinery.
- 7.3 Semiannual reports for the preceding six month period shall be submitted to the Department by January 31 and July 31 of each calendar year. The semiannual reports required by this section shall be increased in frequency to quarterly reports at the Department's discretion and shall become effective upon request of the Department after reasonable notice to the Company. An electronic copy of all required reports shall be sent to the Department's compliance engineer assigned to the Refinery. The required reports shall contain the following information:
- 7.3.1 A summary of all excess emissions for the quarter;
 - 7.3.2 A CEMS report to include system calibration and audit results, the actual daily data capture for the period, and details of out of control periods and during periods when the FCCU WGS is bypassed;
 - 7.3.3 Periods when the FCCU COB firebox temperature fell below 1300 deg. F.;
 - 7.3.4 Exceedances of the rolling 30 day limits of FCCU coke burn rates identified in Condition 3.1.1;
 - 7.3.5 A summary of all periods when the FCCU WGS has been bypassed;
 - 7.3.6 Actual hourly SO₂ emissions during periods when the was FCCU WGS bypassed;
 - 7.3.7 The duration and magnitude of all periods of excess opacity;

- 7.3.8 VOC leak repair records required by 40 CFR 60.592 for existing components in light liquid and gaseous service and 40 CFR 63.654 for new components in light liquid and gaseous service.
- 7.4 Quarterly CEMS reports for the preceding quarter shall be submitted to the Department for the CEMS required by this permit by January 31, April 30, July 31 and October 31 of each calendar year and shall include a report of excess emissions, quarterly audit results, data capture for the period and details of out of control periods.
- 7.5 Annual compliance test reports shall be submitted to AQM within 90 days of completion of the test.
- 7.6 One (1) original of all required reports shall be sent to the address below:

Air Quality Management Section
Division of Air and Waste Management
156 South State Street
Dover, DE 19901

One (1) copy of all required reports shall be sent to the address below:

Compliance Engineer.
Engineering & Compliance Branch
715 Grantham Lane
New Castle, DE 19720

8. Administrative Conditions

- 8.1 This permit shall be made available on the premises.
- 8.2 Failure to comply with the provisions of this permit may be grounds for suspension or revocation.

Sincerely,

DRAFT

Program Manager
Engineering & Compliance Branch

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DRAFT Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)
The Premcor Refining Group, Inc.
Fluid Catalytic Cracking Unit (FCCU), FCCU COB and Wet Gas Scrubber (WGS)
DATE
Page 13

pc: Dover Title V File

**Response to Premcor’s Comments on
DRAFT Permit: APC-82/1209-CONSTRUCTION (Amendment 4) – Coke Storage and Handling System
May 16, 2005**

Permit Condition	Premcor Comment	AQM Response
Condition 1.4 (renumbered as Condition 1.5)	Premcor has commented that Condition 1.4 is ambiguous and should be consolidated with Condition 1.3.	AQM believes the language of this condition is clear. This condition is standard in every construction permit and has not been appealed by Premcor in the other six PCUP permits. AQM does not recommend changing this condition.
Condition 1.5 (renumbered as Condition 1.6)	Premcor has commented that Condition 1.4 is in conflict with Condition 1.5.	AQM disagrees. The condition states that the “provisions of Regulation No. 2 Sections 2.1 <u>and 11.3</u> shall not apply to the operation” of the equipment for the purposes of initially demonstrating satisfactory performance to the Department following construction. AQM does not recommend changing this condition.
Condition 1.6 (renumbered as Condition 1.7)	Premcor has commented that Condition 1.7 is overly broad and can be construed to require further approval from DNREC prior to construction or installation of sources authorized under the permit.	AQM proposes to address Premcor’s concern by amending this condition to read as follows: <i>The owner or operator shall not initiate construction, install, or alter any equipment or facility or air contaminant control device which will emit or prevent the emission of an air contaminant prior to submitting an application to the Department pursuant to Regulation No. 2, and, when applicable Regulation No. 25, and receiving approval of such application from the Department; except as authorized by this permit or exempted in Regulation No. 2 Section 2.2 of the State of Delaware “<u>Regulations Governing the Control of Air Pollution</u>.”</i>
Condition 2.1 (comment 1)	Premcor has commented that the draft permit should specifically state which sections of the regulations apply.	AQM disagrees. Condition 2.1 is a boiler plate condition that applies to all facilities and provides the basis for the applicability of all applicable requirements even though a specific regulation or applicable requirement may not have been identified as being applicable.
Condition 2.1 (comment 2)	This condition specifies that annual limits in tons per year shall be defined a tons on emitted in any twelve month period. Premcor has pointed out that the draft permit does not any annual mass emission limits.	AQM agrees that the permit does not include any mass emission limitations and will recommend removing this sentence from this condition. However, as stated in Condition 2.1.1.2, because it is doing so, the Department believes it is important to explicitly reserve the right to establish emission limits for the baghouses. AQM proposes a modification to this condition as follows: <i>Air contaminant emission levels from coke handling system inclusive of the baghouses on Transfer Towers 2, 3, and 4, the railcar loading station, and the coke storage silo, shall not exceed the following and those specified by the State of Delaware “<u>Regulations Governing the Control of Air Pollution</u>”.</i> Through discussions with Premcor, AQM has learned that the Company is exploring

Response to Premcor's Comments

DRAFT Permit: APC-82/1209-C (A4) – Coke Storage and Handling System

May 16, 2005

Page 2

		<p>the option of installing an additional baghouse to control emissions from the pugmill. AQM understands that the baghouse is going to vent within the warehouse. In the event Premcor changes this design such that the baghouse vent discharges to the atmosphere (outside the warehouse) supplemental approval must first be granted by AQM. AQM further explicitly reserves the right to establish an emission limit, require testing, and accompanying requirements thereof.</p>
Condition 2.1.1 & 3.3	<p>Premcor states that AQM makes a subjective statement in the technical memorandum that Premcor's proposal for the storage warehouse meets the Secretary's goals. AQM offers no technical information or rationale to augment this statement.</p> <p>Premcor has determined that their proposal for the coke handling system and construction of the total enclosure (building) are sufficient to satisfy the Secretary's Order.</p> <p>Premcor has commented that there is no regulatory or statutory requirement for the coke storage warehouse to be maintained under negative pressure. The intent of the project was to eliminate all ongoing and potential violations of the Delaware TSP Ambient Air Quality Standards. Premcor believes it is burdensome to submit a design plan to maintain the warehouse under negative pressure within 30 days of permit issuance</p>	<p>AQM is willing to delete the requirement to maintain the warehouse under negative pressure and be vented to a pollution control device. It was a condition intended to further ensure the problems with TSP emissions are controlled. Having done so, if after construction of the warehouse exceedances of the TSP Ambient Air Quality Standards continue, AQM explicitly reserves the right to require further control measures that will prevent the ongoing exceedances of the TSP AAQS. (See Condition 1.8)</p> <p>AQM has also recommended amending Condition 3.3 to allow the warehouse exhaust fans to be equipped with a filtering media to minimize the emission of coke dust. The filters must be replaced per the manufacturer's recommendations.</p>
Condition 2.1.1.2	<p>Premcor has commented that this condition is too vague and fails to provide sufficient notice to Premcor as to the standard by which DNREC will make such determinations.</p>	<p>AQM disagrees. This condition has been established as a placeholder for TSP and PM₁₀ emission limitations to be established at AQM's discretion after all design considerations have been completed.</p>

Response to Premcor's Comments

DRAFT Permit: APC-82/1209-C (A4) – Coke Storage and Handling System

May 16, 2005

Page 3

Condition 3.1	Premcor has commented that there is no applicable statute or regulation that would require or support the imposition of an operating limit based upon the initial stack test data.	AQM recognizes that the initial stack tests may not be representative of the unit operations. It recommends modifying this condition to require the baghouses to operate in accordance with manufacturer's specifications. The manufacturer's specifications should detail each unit's proper operating parameters and may be used as credible evidence.
Condition 3.2	Premcor has commented that it is unduly burdensome to submit a plan to AQM that details how the baghouses will be maintained in proper operating condition. While Premcor will supply the required information, Premcor would like to be able to submit the information no later than 30 days prior to construction.	AQM has proposed to modify this condition to allow Premcor to submit this information within 180 days of issuance of the permit.
Condition 3.5	Premcor states there is no regulatory requirement to cover the trucks before leaving the warehouse. This condition is unreasonable because it will increase the amount of time each truck is indoors and increases the amount of diesel exhaust in the building. Premcor suggests covering the trucks in the warehouse "or as close to the warehouse as practical."	AQM agrees that it seems reasonable to accept Premcor's proposal and has proposed to modify this condition to allow the trucks to be covered in "the coke warehouse or as close to the warehouse as practicable."
Condition 3.9	Premcor states there is no regulatory requirement that specifies the need for maintaining the grounds where coke routinely accumulates with asphalt paving. Premcor also states they provided emissions calculations in the permit application were not based upon the use of paved areas.	<p>AQM believes maintaining paved roadways and surfaces around the coke storage area is a reasonable measure that would decrease the potential to cause further exceedances of the TSP AAQS by allowing Premcor for greater ease of cleaning those surfaces where fugitive coke may lie. There is regulatory precedence for such a requirement as it is based upon a rule from California's South Coast Air Quality Management District (SCAQMD)¹.</p> <p>AQM recognizes that paving could be effective in areas where coke is handled and stored. AQM is cognizant that it is impracticable to pave the rail car loading area but truck loading areas can be paved. Therefore, AQM proposes to amend this condition to read as follows:</p> <p><i>The Company shall pave and maintain all roads and truck movement areas within the</i></p>

¹ Rule 1158(d)(5) for "Storage, Handling, and Transport of Coke, Coal, and Sulfur".

Response to Premcor's Comments

DRAFT Permit: APC-82/1209-C (A4) – Coke Storage and Handling System

May 16, 2005

Page 4

		<i>facility that are used in transporting or moving petroleum coke.</i>
Condition 3.10	Premcor commented that there is no regulatory basis for the need to clean roadways and all other open areas, making it broad, ambiguous, and inappropriate. The emissions provided for in the application were not based upon the use of a street sweeper. The requirement to submit a cleaning plan is burdensome.	AQM disagrees. Secretary's Order No. 2002-A-0063 requires the Company to "provide at least two vacuum trucks to continuously sweep and recover coke dust." AQM believes it is appropriate and critical that Premcor carries out good housekeeping practices to eliminate the ongoing violations. AQM believes this control measure is reasonable because it has been successfully employed by other regulatory agencies within the country. Nonetheless, AQM proposes to modify this condition to require the Company to propose a cleaning frequency for the Department's approval within ninety (90) days of issuance of this permit.
Condition 3.12	Premcor has commented that the phrases "uncontaminated natural soil" and "uncontaminated additives" are not defined in any applicable regulation or in the permit.	AQM disagrees. However, AQM is willing to delete this condition from this construction permit because this condition is an existing requirement in the facility's current operating permit which has not been superseded by this permit.
Condition 3.15.4 (renumbered as Condition 3.13.4)	Submitting TSP monitoring results weekly during removal of the berm is not feasible or practical.	AQM disagrees. AQM believes the highest potential for continuing ambient exceedances to occur will likely coincide with the berm removal. Therefore, it is imperative to receive and review timely reports and monitored data. AQM is aware that the lab analysis time could take up to 3 weeks. Therefore, AQM proposes to modify this condition to require submittal of this data within 3 weeks.
Condition 3.16 (renumbered as Condition 3.14)	Premcor has commented this condition is redundant to Condition No. 3.18.	AQM disagrees. A goal of this project is to eliminate all ongoing and potential violations of the Delaware TSP Ambient Air Quality Standards. However, Premcor has not proposed controls or detailed how emissions will be minimized from some points in the coke handling system. Premcor's application failed to mention how emissions will be controlled during emergency stacking. AQM is requiring the Company to propose a plan to control emissions within 180 days (increased from 30 days) of issuance of this permit. AQM believes a consideration of the historical operations and the history of non-compliance is important because the owners of this unit have not, in the Department's opinion, been successful in operating and maintaining it "in a manner consistent with good air pollution practice for minimizing emissions." Moreover, 8 violations of the TSP Ambient Air Quality Standards occurred within in the first 8 months of Premcor's ownership of the Refinery
Condition 3.17 (renumbered as Condition 3.15)	Premcor has commented this condition is redundant to Condition No. 3.18.	AQM disagrees for the same reasons as enunciated in the response to Condition 3.16. The condition has been amended to allow the Company to submit a plan for the Department's approval within 90 days (increased from 30 days) of the issuance of

Response to Premcor’s Comments

DRAFT Permit: APC-82/1209-C (A4) – Coke Storage and Handling System

May 16, 2005

Page 5

		this permit.
<p>Condition 3.18 (renumbered as Condition 3.16)</p>	<p>Premcor has commented that the term “acceptable operating procedures” is too vague and fails to provide sufficient notice to the Company as to the standard by which DNREC will make such determinations. Any such determinations of “acceptable operating procedures” may be potentially inconsistent with other compliance methodologies.</p>	<p>AQM notes that Premcor had made similar comments on the conditions in the PCUP Phase I permit. AQM disagreed with Premcor then because this regulatory requirement is a boiler plate permit condition that applies to every piece of equipment associated with any emissions unit. Premcor appealed this condition in the final Phase I permits. AQM continues to point to the facility’s history of non-compliance caused by failure to maintain structural and mechanical components in proper operating condition. It was because of the past problems associated with structural and mechanical components that the facility negotiated the Mechanical Integrity CD with the State. Furthermore, Regulation 2, Section 11.6 states: <i>No permit shall be issued by the Department unless the applicant shows to the satisfaction of the Department that the equipment, facility, or air contaminant control device is designed to operate or is operating without causing a violation of the State implementation Plan, or any rule or regulation of the Department, and without interfering with the attainment or maintenance of National and State ambient air quality standards, and without endangering the health, safety, and welfare of the people of the State of Delaware. The Department may, from time to time, issue or accept criteria for the guidance of applicants indicating the technical specifications which it deems will comply with the performance standards referenced herein.</i> However, since then AQM has entered a settlement agreement with Premcor to resolve similar language in the coker permit, pending receipt of public comment, and that AQM believes for the sake of consistency it is appropriate to include those provisions, when applicable, in the other permits. In the coker permit, AQM addressed this requirement by incorporating the necessity of maintaining all structural and mechanical components in proper operating condition in Condition 3.6 of that permit. Therefore, AQM is making a similar change here, so that condition 3.6 will read as follows: <i>At all times, including periods of startup, shutdown, and malfunction, the Company shall maintain and operate the equipment and processes covered by this Permit, including all structural and mechanical components of all equipment and processes and all associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.</i></p>
<p>Condition 3.19 (renumbered as Condition 3.17)</p>	<p>Premcor has commented that the phrase “proper operating condition” is not defined and that this requirement is</p>	<p>AQM disagrees for the same reasons as enunciated in the response to Condition 3.18.</p>

Response to Premcor's Comments

DRAFT Permit: APC-82/1209-C (A4) – Coke Storage and Handling System

May 16, 2005

Page 6

	redundant with Condition 3.18.	
Condition 4.1 (comment 1)	Premcor has commented that EPA Reference Method 5 is sufficient to demonstrate compliance with the particulate emission limitation and that testing for PM ₁₀ is unnecessary. There is no regulatory requirement that stack tests be used to establish emission limits.	AQM agrees and will recommend that the permit not require testing for PM ₁₀ . AQM disagrees with Premcor's comment regarding stack testing to establish emissions limits. However, AQM will not include a yearly PM ₁₀ emission rate for the baghouses in the construction permit.
Condition 4.1 (comment 2)	Premcor has commented that there is not applicable statute or regulation that requires the imposition of stack testing the baghouses every 3 years.	Regulation 17, Section 2.2 requires that: <i>Upon written request of the Department, an owner or operator of an air contaminant source shall, at his expense, sample the emissions of, or fuel used by, that source, maintain records and submit reports to the Department on the results of such sampling. The Department may make such data available to the public as reported and as correlated with any applicable emission standards or limitations.</i> The emissions being controlled have caused numerous violations of Delaware's Ambient Air Quality Standards and the continued need to ensure compliance (i.e., testing) is imperative. AQM has proposed to amend this condition allow the Company to petition relief in the future.
Condition 4.1 (comment 3)	Premcor has commented that this condition requires a Source Sampling form be submitted at least 30 days prior to stack testing while Condition 4.4.1 requires the test protocol 45 days in advance of the testing.	AQM has proposed to clarify these conditions and change the test protocol requirement to be submitted at least 30 days prior to any stack testing.
Condition 4.2.1 (renumbered as Condition 4.2)	Premcor has commented that conducting visual emission observations each shift is unduly burdensome.	AQM has proposed to modify this condition to require observations on a daily basis.
Condition 4.2.2 (comment 1) (renumbered as Condition 4.2)	Premcor has commented that the baghouses will be installed with broken bag detectors and pressure drop indicators to indicate that they are being continuously operated in accordance with the manufacturer's design values. Conducting EPA Reference Method 9	AQM disagrees. Monitoring the pressure drop and using broken bag detectors are adequate means to monitor that the baghouses are operating properly and Premcor is encouraged to do this. Besides operating a Continuous Opacity Monitoring System (COMS), EPA Reference Method 9 is the only other means to measure opacity and ensure compliance with Condition 2.2. AQM has proposed to modify this condition to require a visible emissions observation be conducted anytime visible emissions are observed from the system and at least one qualitative observation shall be conducted

Response to Premcor's Comments

DRAFT Permit: APC-82/1209-C (A4) – Coke Storage and Handling System

May 16, 2005

Page 7

	observations is unnecessary.	semi-annually.
Condition 4.2.2 (comment 2)	There are 2 conditions labeled as "4.2".	AQM has proposed to renumber these conditions in the construction permit.
Condition 4.2 (renumbered as Condition 4.3)	Premcor has commented that sampling from the storage pile and from coke loaded into trucks is a conflicting requirement. Coke should only be sampled from the storage pile.	AQM disagrees that this is a conflicting requirement. However, AQM is cognizant that both sampling locations (the storage pile and the trucks) are located within the warehouse. Therefore, AQM has proposed to amend this condition to require moisture samples be collected from the storage pile(s).
Conditions 4.4.1 (renumbered as Condition 4.5.1)	This requirement to submit stack test protocol 45 days prior to the testing conflicts with AQM's Source Sampling Guidelines requiring the protocol be submitted at least 30 days prior to testing. Also, Condition 5.1.1 is unduly burdensome.	AQM has proposed to amend this condition to require the test protocol be submitted at least 30 days prior to any stack testing to remain consistent with the Source Sampling Guidelines. AQM believes Premcor's reference to Condition 5.1.1 is an error. The permit does not contain Condition 5.1.1. AQM can not determine what condition Premcor might be referencing.
Condition 4.4.2 (renumbered as Condition 4.5.2)	Premcor has commented that this condition is inconsistent with the Department's policy and more stringent that required by applicable law.	AQM disagrees. If Premcor submits the test protocols in the timeframe referred to, the Department will be able to agree upon dates to witness the testing that is acceptable to all concerned parties. The Department's Source Sampling Guidelines & Preliminary Sampling Form Instruction # 3 states that: <i>"Departmental approval must be given before the start of actual sampling. Our office must be given the opportunity to observe all stack tests under normal business hours. Unobserved testing will not be considered valid by the Department."</i> This requirement is applied state-wide and has not been arbitrarily applied to Premcor. This is to insure the integrity of the compliance testing being conducted by a contractor who is being paid by the Company or testing being conducted by the Company's employees. The Department witnesses all compliance testing completed in the state. 40 CFR Part 60.8 (d) states "The owner or operator of an affected facility shall provide the Administrator at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the Administrator the opportunity to have an observer present." Nonetheless, AQM proposes to modify the permit to mirror language agreed to be incorporated into the Coker permit, pending public comment, on the proposal.
Conditions 4.4.4 (renumbered as	Premcor has commented that it is not aware of a basis for the requirement for	Regulation 17, Section 2.6 requires that: <i>Reports required by this Regulation shall be submitted in a form approved by the Department and shall be signed by a corporate</i>

Response to Premcor's Comments

DRAFT Permit: APC-82/1209-C (A4) – Coke Storage and Handling System

May 16, 2005

Page 8

Condition 4.5.4)	final test reports to be signed by a corporate official.	<i>officer or his designee whose signature shall constitute his own and employer's certification that the data are accurate and complete.</i>
Conditions 5.2	Premcor has commented that the record keeping requirements of this condition are unnecessary and the term “handled” is vague.	AQM disagrees that that this requirement is unnecessary. Premcor estimated the emissions generated from the handling system were based on the amount of coke processed. In fact, Premcor already tracks this because the coke conveyed offsite by trucks and railroad cars is sold by the ton. The term “handled” is meant to encompass the number of ways Premcor processes the coke. Premcor is expected to track the amount loaded into railcars and trucks, the amount directed to the coke storage warehouse, emergency stacking, reclaim, and the powerhouse storage silos.
Condition 6.1	Premcor has commented that the requirement to report emissions in excess of any permit condition or emissions that create a condition of air pollution immediately to the Department’s hotline is contrary to the purpose of the hotline. Premcor, citing guidance from DAWM’s Director’s office have proposed reporting of permit exceedances that do not involve reportable quantities, via fax or phone call, to the EPOs instead of the hotline.	AQM disagrees. Premcor has misunderstood the verbal guidance given by the Division. Premcor has a continuing obligation to report all permit exceedances immediately upon discovery by calling the Environmental Emergency Notification and Complaint Number (800) 662-8802 or from outside the State of Delaware, (302) 739-5072.
Condition 6.2	Premcor has commented that there is no authority for this condition requiring submission of written reports within 30 days for any reports required by <u>Reporting of a Discharge of a Pollutant or an Air Contaminant</u> Regulation and any other reporting requirements mandated by the State of Delaware.	AQM disagrees. In accordance with the provisions of Section 2.5 (B) of the <u>Reporting of a Discharge of a Pollutant or an Air Contaminant</u> Regulation: <i>The Department reserves the right to require a written follow-up report for any environmental release, regardless of the substance or quantity, if there is concern for public health and safety or environmental welfare has been adversely affected. At the Department’s discretion, the Department may require said person to file a written follow-up report, within 30 days or any shorter time as required by validly issued state or federal permits or by any pertinent regulations, setting forth all details contained in Sections 2.4 and 2.5.</i> Given this facility’s track record of numerous exceedances of permitted levels, and wide public concern, AQM is exercising its discretion and requiring Premcor to submit written reports for all exceedances of permitted levels within 30 days of becoming aware of such exceedances. However, AQM has proposed some modifications to the condition for the sake of clarity and consistency.
Condition 6.3	Premcor has commented that that the reporting obligations should be consistent	Given this facility’s track record of numerous exceedances of permitted levels, and wide public concern, AQM is exercising its discretion and requiring Premcor to

Response to Premcor's Comments

DRAFT Permit: APC-82/1209-C (A4) – Coke Storage and Handling System

May 16, 2005

Page 9

	with those required by the Title V permit (i.e., semi-annual reporting).	submit written reports on a quarterly basis. AQM will propose to amend this condition to require Premcor to report the exceedances of the coke moisture content requirement on a semi-annual basis.
Condition 6.4	Premcor has commented that they are unable to submit the air sampling results within 10 days because of the time involved in collecting, analyzing and reviewing the samples.	AQM is aware of the time required to collect, analyze, and quality assure the monitored samples. Therefore, AQM proposes to amend this condition to require Premcor to submit the quality assured data to AQM within 15 days of their receipt.
Condition 7.2 (moved to Condition 1.1)	Premcor states the expiration date of the permit should allow for a term of 3 years as allowed by Regulation 2, section 11.10.	AQM is disappointed that Premcor's initial 10-month construction period (as stated in the application) is now being projected to 18 months. AQM believes it is crucial that the warehouse and other system modifications become operational as expeditiously as possible to eliminate the on-going ambient air quality violations. Premcor's Coke Storage and Handling Plan, submitted in accordance with the Secretary's transfer letter, and subsequent application indicated that the system would be operational within 10 months of the issuance of the construction permit. Nonetheless, AQM will recommend to extend the term of this permit to 3 years as allowed by Regulation 2 but will require the coke storage and handling system be operational within 10 months.

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Ravi Rangan, P.E.
Bruce Steltzer

**Response to Premcor's Comments on
DRAFT Permit: APC-82/0981-C (A5)(NSPS) – Fluid Catalytic Cracking Unit
May 10, 2005**

Permit Condition	Premcor Comment	AQM Response
Condition 1.1	Premcor has commented that the absence of a permit expiration date plus the incorporation of deadlines derived from the consent decree, without reference to the entire consent decree, is ambiguous and not entirely consistent with Premcor's interpretation.	AQM notes that Premcor had made similar comments on the conditions prescribing expiration dates in the PCUP Phase I permits. AQM disagreed with Premcor then because its intent was to mandate the CD requirements in the draft permits and fully expected Premcor to comply with these requirements thereby making the compliance dates for the scrubber to be installed independent of the CD. Premcor appealed this condition in the final Phase I permits. Since then AQM has entered a settlement agreement with Premcor to resolve similar language in the coker permit, pending receipt of public comment, and AQM believes for the sake of consistency it is appropriate to include those provisions, when applicable, in the other permits. In this permit, AQM has accepted Premcor's suggested modified language that addresses their concern that unforeseen and unanticipated events may change the dates in the CD. AQM is satisfied that the regulatory provisions of Regulations 2 and 25 remain uncompromised. Furthermore, AQM is cognizant that the only way any of the mandated compliance dates are allowed to change will be by court action amending the CD. Therefore, AQM recommends amending this condition to read as follows: <i>This permit expires on May 31, 2007. The Belco pre-scrubber, amine-based Cansolv regenerative WGS shall be constructed in accordance with the relevant schedules identified in the Consent Decree.</i>
Condition 1.7	Premcor has commented that Condition 1.7 is overly broad and can be construed to require further approval from DNREC prior to construction or installation of sources authorized under the permit.	AQM concurs and recommends amending this condition to read as follows: <i>The owner or operator shall not initiate construction, install, or alter any equipment or facility or air contaminant control device which will emit or prevent the emission of an air contaminant prior to submitting an application to the Department pursuant to Regulation No. 2, and, when applicable Regulation No. 25, and receiving approval of such application from the Department; except as authorized by this permit or exempted in Regulation No. 2 Section 2.2 of the State of Delaware "<u>Regulations Governing the Control of Air Pollution.</u>"</i>
Condition 2.1	Premcor has commented that the draft permit should specifically state which sections of the regulations apply.	AQM disagrees. Condition 2.1 is a boiler plate condition that applies to all facilities and provides the basis for the applicability of all applicable requirements even though a specific regulation or applicable requirement may not have been identified as being applicable or may not have been stated in its entirety. Consequently, AQM believes it is very important to maintain this condition in the permit.
Condition 2.1.1.1	Premcor has commented that the draft	AQM notes that Premcor has not specifically objected to the requirement to complete

Response to Premcor's Comments

DRAFT PERMIT APC-82/0981-C (A5)(NSPS) – Fluid Catalytic Cracking Unit

May 10, 2005

Page 2

	<p>permit requires it to conduct a stack test by May 31, 2005 under representative operating conditions that are likely to indicate the highest emission rate. Premcor has further commented that there is no regulatory authority for this requirement and that testing under representative operating conditions may not result in the highest emission rate from the unit. Finally, Premcor has commented that because the FCCU is subject to the MACT II standards under 40 CFR 60, subpart UUU, which establishes a CO emissions limit of 500 ppmv as a surrogate for HAP emissions, the imposition of a separate VOC emission limit is unnecessary, inconsistent with EPA requirements and burdensome.</p>	<p>the test by May 31, 2005. However, because AQM does not anticipate issuing the final permit before May 31, 2005, AQM is willing to establish an alternative deadline to complete the testing. AQM disagrees with Premcor that it lacks the regulatory authority to prescribe conditions under which the testing activity should be carried out. Compliance with emission limits for various unit operations are often based on fuel usage and stack test derived emissions factors. Performance tests should therefore be conducted during a period of operation that constitutes a “worst case scenario” for air emissions. The permit usually defines a maximum firing/process rate which constitutes the “worst case scenario.” Under 40 CFR 60.8 Section (c) “Performance tests shall be conducted under such conditions as the Administrator shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of the performance tests.” The completion of a stack test program ensures compliance at a certain firing/process rate and will not be representative of emissions at higher firing/process rates. Thus, it is necessary to ensure that the tests are conducted in accordance with the State of Delaware and federal requirements. AQM will incorporate this requirement under the testing requirements in Condition 5.1. Finally, AQM disagrees with Premcor that because the FCCU is subject to the MACT II standards for HAPs, a separate VOC standard is unnecessary, inconsistent with EPA requirements and burdensome. AQM is cognizant of CO emissions levels being used as a surrogate to assess the quality of combustion at equivalence ratios close to the stoichiometric condition. However, with partial burn units (such as the FCCU at the DCR) process off gas from the regenerator is oxygen deficient. Under scenarios when the COB has to be bypassed, the unburned hydrocarbon content in the flue gas may not have a meaningful correlation with the CO concentration. Additionally, Premcor has not supported their position by any meaningful testing to establish a relationship between the FCCU’s VOC emission rates at the corresponding NSPS CO emission limit of 500 ppmv. Therefore AQM recommends amending this condition to read as follows: <i>The Company shall propose a VOC emission limit within 90 days of completion of a stack test conducted pursuant to Condition 5.1 for incorporation into the permit.</i></p>
<p>Condition 2.1.1.2 (comment 1)</p>	<p>Premcor has commented that it is inappropriate for AQM to include the more stringent CD driven LDAR</p>	<p>AQM disagrees. First, AQM notes that the CD does not establish any time period. Thus, at a minimum, the more stringent CD LDAR levels are applicable requirements. Second, AQM notes that the primary thrust of the CD was to undertake</p>

	<p>requirements because these limits are only applicable for the period of time established in the CD.</p>	<p>enhancements to the refinery LDAR program by implementing refinery wide measures to minimize or eliminate fugitive emissions from components in light liquid and gaseous service. Third, AQM believes the CD required enhancements support the goals of implementing good air pollution control practices that are consistent with the requirements in 40 CFR 60.11(d) and 40 CFR 63.6(e). AQM believes by allowing in the future, the less stringent regulatory LDAR thresholds for pumps and valves would represent a regression that is contrary to the principles of the CD and Delaware's State Implementation Plan. However, AQM does not intend to specify the leak detection thresholds in the permit because the LDAR audit program is ongoing. Therefore, although AQM will remove the specific leak detection thresholds for pumps and valves, it will continue to require the leak detection and repair requirements to control fugitive emissions from the FCCU to be in accordance with the Consent Decree for both new and existing components in light liquid and gaseous service.</p>
<p>Condition 2.1.5</p>	<p>Premcor has commented that the 40 % reduction efficiency together with the mass emission limits of 70.5 lb/hour and 309 TPY create potentially conflicting emission limits by establishing reduction limits and mass emission caps.</p>	<p>AQM disagrees. The PTE figures in Premcor's application were derived from stack testing data dating back to 1994. As explained in the technical review memorandum AQM did not witness this testing activity and because contemporary research indicates this calculation overestimated the PTE, AQM believes a more meaningful PTE should be established after renewed testing. Furthermore, because Premcor has submitted a revised spreadsheet showing increased particulate matter emissions, which is predominantly sulfate species, attributable to the reaction between SO₃ and the ammonia exiting the regenerator, it would appear reasonable to expect the H₂SO₄ PTE to reduce proportionately, because that amount of SO₃ which reacted to form the sulfate species will now not be available to form H₂SO₄. Since the testing has not been done, AQM is willing to make a provision in the permit to revise the PM₁₀ and the H₂SO₄ emissions limits after the testing is carried out, in the operation permit. AQM believes the testing should also be carried out before the WGS is installed to determine the ammonia concentration in the flue entering the pre-scrubber that is expected to be instrumental in the formation of sulfate particulate matter. AQM has revisited the netting transaction in the application and verified that the project will continue to result in a net reduction. AQM recommends renumbering this condition as Condition 2.1.3 because it consolidates all the emissions limitations relating to particulate matter and recommends amending it to read as follows:</p> <p>2.1.3 <i>Particulate Matter with an Aerodynamic Diameter Less than 10 Microns (PM₁₀) Emissions</i></p> <p>2.1.3.1 <i>Within 180 days of issuance of this permit, the Company shall</i></p>

		<p><i>conduct stack tests to determine the ammonia concentration in the uncontrolled stack gas stream, the oxidation factor for conversion of SO₃ to H₂SO₄, the organic condensable matter per AP-42, the sulfate/bisulfate formed and the reduction in the potential H₂SO₄ formation due to competing formation of sulfate/bisulfate. The company shall propose short term (lb/hr) and long term (ton/year) emission limits within 90 days of completion of this test. The proposal shall take into consideration the reduction in the SO₃ that is available for conversion to H₂SO₄ and include a revised H₂SO₄ PTE based on the test data.</i></p> <p>2.1.3.2 <i>TSP emissions from the FCCU WGS shall not exceed 11b/1000 lb of coke burned.</i></p> <p>2.1.3.3 <i>The company shall propose short term (lb/hr) and long term (ton/year) PM₁₀ emission limits (inclusive of H₂SO₄) following the proposal required pursuant to Condition 2.1.3.12.1.3.1</i></p>
<p>Condition 2.1.7.2</p>	<p>Premcor has commented that since Condition 2.1.7.1 establishes a CO emissions limit (of 500 ppmv) derived from the NSPS, the imposition of the additional requirement to comply with destruction at 1,300 deg F for at least 0.3 seconds is unnecessary and redundant.</p>	<p>AQM disagrees. The Department's intent is to issue a permit that is consistent with and incorporates applicable regulatory requirements. Regulation 11 requires a minimum firebox operating temperature of 1300 deg F. Unless revoked, this regulation continues to be an applicable requirement. However, AQM believes it is pertinent to clarify that the regulation requires CO at not less than 1,300 deg. F rather than at 1,300 deg. F as stated in the regulation, and recommends modifying this condition accordingly.</p>
<p>Condition 2.1.8</p>	<p>Premcor has commented that because Pb emissions from the FCCU exit the unit in the form of particulate matter, compliance with any applicable PM standard is sufficient to ensure adequate control of Pb emissions. Premcor further cites the applicable MACT standard in 40 CFR 63, subpart UUU as the applicable regulation for HAP metals.</p>	<p>AQM concurs that Pb emissions from the FCCU exit the unit in the form of particulate matter and that the cited applicable MACT standard in 40 CFR 63, subpart UUU is the applicable regulation for HAP metals. However, AQM does not agree that compliance with any applicable PM standard, such as the MACT standard in subpart UUU is sufficient to ensure adequate control of Pb emissions. AQM's disagreement is based on the unit's PTE being the driver that determines the emissions limit. In this case, emissions based on the MACT standard (1 lb PM/1,000 lb of coke burned) is 2,288 times the PTE based on the application (4.37 E-04 lb/1,000 lb of coke burn). Furthermore, recent stack testing done at the facility suggest the calculated PTE is approximately 40 times the actual emissions level, thus providing an adequate margin of safety for ensuring compliance. Therefore, AQM does not recommend changing this condition.</p>
<p>Condition 2.1.9</p>	<p>Premcor commented that there is no</p>	<p>AQM disagrees. Regulation 1 defines an air contaminant as "particulate matter, dust,</p>

Response to Premcor's Comments

DRAFT PERMIT APC-82/0981-C (A5)(NSPS) – Fluid Catalytic Cracking Unit

May 10, 2005

Page 5

	regulatory basis for the establishment of a H ₂ S/RSC emission limitation.	fumes, gas, mist, smoke, or vapor of any combination thereof, exclusive of uncombined water.” Since H ₂ S/RSC are air contaminants, AQM has the authority to prescribe an emission limit. Having said that, AQM has since researched a technical paper describing the formation of COS and CS ₂ in partial burn units ¹ , which states 100 % of the sulfur species in the FCCU regenerator flue gas is oxidized to CO ₂ and H ₂ O in the downstream COB. Therefore, AQM recommends deleting this condition.
Condition 2.1.10	Premcor commented that the requirement to comply with all applicable requirements of 40 CFR Part 63, subpart UUU is a general reference that is vague, confusing and fails to provide Premcor with specific notice of its compliance options.	AQM disagrees. 40 CFR Part 63, subpart UUU provides 4 different compliance options. However, Premcor’s application does not identify the specific compliance option of the 4 it intends to implement. Although, Premcor has informed AQM and EPA that it will exercise Option 4 of subpart UUU as the standard until December 31, 2006, it has only recently indicated that this option will be relevant only until December 31, 2006 - the deadline for the FCCU WGS to be installed; thereafter, Premcor will likely comply with Option 1. Because of the uncertainty associated with the selected compliance option, AQM believes the existing condition remains relevant at this time. AQM recommends renumbering this condition as Condition 2.1.9.
Condition 2.2	Premcor has commented that the opacity limit in the draft permit does not specify whether this limit is exclusive of uncombined water vapor. Premcor has requested that the condition specifically exclude uncombined water vapor.	AQM is cognizant of the fact that opacity measurements done in accordance with EPA RM 9 require visible emissions to be observed beyond the point in the plume at which condensed water vapor is no longer visible. Therefore, AQM finds it unnecessary to specify that the opacity limitation is exclusive of uncombined water vapor.
Condition 3.1.1 (comment 1)	Premcor has commented that it is improper to impose a coke burn rate limit of 56,000 lb/hour on a rolling twelve month basis and that the imposition of any limit other than the maximum design coke burn rate, unjustifiably limits production to levels below the current capacity of the unit. Premcor also provided a brief history of the development of the existing SO ₂ emissions limit of 18,100 TPY in the	AQM disagrees. First, as discussed in the supporting technical review memorandum, AQM did not agree with Premcor’s use of an alternative 15 month baseline period and Premcor’s position of this alternative period being more representative of normal source operation because it reflected operation of the FCCU under conditions that require compliance with another CD requirement, i.e., the requirement to comply with the 40 CFR Part 60, subpart J carbon monoxide limit of 500 ppmvd. AQM does not agree with the use of the time period beginning October 2002 through December 2003 as being representative of normal operations and consequently finds the baseline calculations provided in the application to be erroneous. Second, AQM’s review of the annual inventory data shows that the Delaware City

¹ TRI Guidance for Estimating COS and CS₂ from SRUs and Partial Combustion Units; Equilon Enterprises LLC., Westhollow Technology Center, Houston, TX

	<p>facility's SRA permit, in lieu of the coke burn rate limit of 56,000 lb/hour and that DNREC agreed this limit was improper when it amended the SRA permit within 5 months of initial issuance. Finally, Premcor commented that compliance with emission levels identified in the permit application is ensured through the imposition of emission limits through the permit. Premcor commented that such compliance is monitored directly, including through the use of numerous CEMS and/or unit specific performance testing in accordance with established federal testing protocols. Therefore, according to Premcor, the imposition of a coke burn limit is not necessary to ensure that the proposals contained in the permit application are met.</p>	<p>Refinery reported NOx emissions of 490 tons in 2001 and 411.7 tons in 2002 resulting in an average of 450.8 tons during the baseline period. On the other hand, Premcor's PCUP application using the October 2002 through December 2003 baseline shows the average NOx emissions to be 1,109 tons. The difference between the two baselines shows an increase of annual NOx emissions of 659 tons allegedly caused by the operational changes made to comply with the NSPS limitation for CO. It is AQM's assessment that the operational changes in 2002 should have been subject to review under NSR and the appropriate permitting thereof. Third, during the regulatory review of the aforementioned SRA permit, AQM established a coke burn rate of 56,000 lb/hour and the average feed sulfur content to 2.12 percent, both on a twelve month rolling average basis², as a practically enforceable mechanism to prevent impacted upstream units, such as the FCCU, from having unpermitted emissions increases, thereby not triggering regulatory review (of the SRU III project) under Delaware's NSR provisions under Regulation No. 25. At no point, did AQM agree with Premcor's predecessors that such a restriction was unnecessary or improper. These limits were replaced by an FCCU SO₂ emission limit of 18,100 TPY³ because of a representation by Premcor's predecessors that such a restriction will be no less restrictive than AQM's prescribed conditions in the SRA permit. Therefore, AQM amended the SRA permit by incorporating the FCCU SO₂ emission limit of 18,100 TPY as a surrogate control measure that would give the facility the desired operational flexibility without compromising AQM's concerns with respect to potential NSR violations. Once construction of the WGS is complete, the SO₂ limitation will no longer serve this purpose and such a restriction will be rendered moot. However, because NO_x emissions have increased by approximately 650 TPY over the baseline period, AQM finds it necessary to reinstate the coke burn rate as a practically enforceable measure. Finally, throughput changes and the accompanying higher coke burn rates through the FCCU will result in consequential changes in other downstream unit throughputs because the FCCU is a unit operation that affects the operating levels of other unit operations such as the hydro desulfurizer trains, the hydrotreater, the hydrogen plant and hydrocracker, reformer trains, the sulfur recovery area and the power plant, which are sources that may not have emission limits for all of the pollutants they emit, resulting from failure to apply for permits covering all the pollutants they emit.</p>
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² Permit: APC-90/0264-CONSTRUCTION (Amendment 1)(NSPS) dated June 5, 1997.

³ Permit: APC-90/0264-OPERATION (Amendment 2)(NSPS) dated July 29, 2004.

Response to Premcor's Comments

DRAFT PERMIT APC-82/0981-C (A5)(NSPS) – Fluid Catalytic Cracking Unit

May 10, 2005

Page 7

		AQM cannot prescribe an emission limit that is higher than a unit's PTE. Therefore, AQM finds it necessary to reinstate the coke burn rate as a practically enforceable measure.
Condition 3.1.1 (comment 2)	Premcor commented that the emissions from the coker have limitations proposed that are sufficiently protective of the environment.	As AQM testified during the hearing, by imposing a throughput restriction, AQM's action is consistent with its regulatory authority and also consistent with permitting actions by other agencies in the country. For the reasons given above, AQM believes the throughput and coke burn rates are appropriate for inclusion in the permit.
Condition 3.1.4	Premcor has commented that the requirement to develop and submit alternative operating scenarios for start ups and shut downs should also allow Premcor to develop alternative operating scenarios for malfunction conditions.	AQM concurs.
Condition 3.2	Premcor has commented that the requirement to "immediately" reduce the FCCU throughput to a level that does not cause a violation of any ambient air quality standard may cause the potential for further upsets because the FCCU is a complex unit that requires gradual changes.	AQM concurs. It recommends modifying this conditions to read as follows: <i>During periods when the Belco prescrubber and the WGS have to be bypassed, the Company shall take steps to immediately respond to safely reduce the FCCU throughput to a level that does not cause a violation of any ambient air quality standard . No later than six months prior to startup of the WGS, the Company shall submit a proposed turndown factor for the Department's approval that will establish the FCCU feed throughput limit for periods of atypical operations. The reduced throughput level shall continue to be applicable during the entire duration of the bypassed operation.</i>
Condition 3.3	Premcor has commented that to the extent this condition is warranted, it should be consistent with the regulatory standard.	AQM concurs. However, AQM believes it is pertinent to clarify that the regulation requires CO to be burned at not less than 1,300 deg. F rather than at 1,300 deg. F as stated in the permit. (Also see AQM's response to Condition 2.1.7.2)
Condition 3.5	Premcor has commented that the word "turnarounds" is missing after "process unit" in the opening sentence.	AQM concurs.
Condition 3.7	Premcor has commented that there is no regulatory basis for requiring all structural and mechanical components to be maintained in proper operating condition.	AQM notes that Premcor had made similar comments on the conditions in the PCUP Phase I permit. AQM disagreed with Premcor then because this regulatory requirement is a boiler plate permit condition that applies to every piece of equipment associated with any emissions unit. Premcor appealed this condition in the final Phase I permits. AQM continues to be surprised by Premcor's comment (as expressed in its Phase I response document) because this facility has a history of non-compliance caused by failure to maintain structural and mechanical components in proper

		<p>operating condition. It was because of the past problems associated with structural and mechanical components that the facility negotiated the Mechanical Integrity CD with the State. Furthermore, Regulation 2, Section 11.6 states: <i>No permit shall be issued by the Department unless the applicant shows to the satisfaction of the Department that the equipment, facility, or air contaminant control device is designed to operate or is operating without causing a violation of the State implementation Plan, or any rule or regulation of the Department, and without interfering with the attainment or maintenance of National and State ambient air quality standards, and without endangering the health, safety, and welfare of the people of the State of Delaware. The Department may, from time to time, issue or accept criteria for the guidance of applicants indicating the technical specifications which it deems will comply with the performance standards referenced herein.</i> However, since then AQM has entered a settlement agreement with Premcor to resolve similar language in the coker permit, pending receipt of public comment, and that AQM believes for the sake of consistency it is appropriate to include those provisions, when applicable, in the other permits. In the coker permit, AQM addressed this requirement by incorporating the necessity of maintaining all structural and mechanical components in proper operating condition in Condition 3.6 of that permit. Therefore, AQM is recommending making a similar change here, so that condition 3.6 will read as follows: <i>At all times, including periods of startup, shutdown, and malfunction, the Company shall maintain and operate the equipment and processes covered by this Permit, including all structural and mechanical components of all equipment and processes and all associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.</i></p>
<p>Condition 3.8</p>	<p>Premcor has commented that there is no regulatory definition for “proper operation of the system” and is therefore, too vague to be implemented. Premcor also commented that the requirement to submit vendor/manufacturer recommended operating parameters that will be indicative of proper operation of the system imposes obligations beyond those required by applicable law and is potentially inconsistent with other</p>	<p>AQM disagrees. The operating ranges and parameters asked for in the draft permit (e.g. the scrubber liquid pH and gas to liquid (G/L) ratio) are intrinsic requirements to air pollution controls such as wet gas scrubbers. This data is normally required to be submitted as part of the application. Additionally, pursuant to Regulation 2, Section 11.2 (f) DNREC has the authority to require Premcor to submit any additional information, evidence or documentation required by the Department to show what the proposed equipment or apparatus will do. While Premcor has alluded to this condition being potentially inconsistent with other provisions of the permit, it has not identified a single affected condition in the draft permit nor has it supported its claim by any meaningful engineering analysis. Again, the Department’s requirement that the equipment be operated within the manufacturer’s recommended ranges, is a logical</p>

	<p>provisions of the permit. Finally, Premcor has commented that parameters “indicative of proper operation of the system” must be determined based upon a review of actual operating conditions and stack test results.</p>	<p>conclusion to ensure the unit is designed to operate or is operating without causing a violation of the State implementation Plan, or any rule or regulation of the Department, and without interfering with the attainment or maintenance of National and State ambient air quality standards, and without endangering the health, safety, and welfare of the people of the State of Delaware. However, because, AQM recognizes much of this data is still in the process of being developed, it has acquiesced to Premcor being allowed to submit it at a future date. Therefore, AQM proposes amending Condition 3.8 to read as follows: <i>Within thirty (30) days of completion of construction of the Belco pre-scrubber, the amine-based Cansolv regenerative WGS, and the caustic polishing scrubber, the Company shall submit to the Department copies of the operating procedures governing normal operations of the equipment.</i></p>
<p>Condition 4.1</p>	<p>Premcor has cross referenced their earlier comments regarding Conditions 2.1.1.1 and 2.1.8 through 2.1.10 and cite those comments as the basis for Condition 4.1 being inappropriate. Premcor has also commented that there is no regulatory basis for the draft permit requiring annual testing.</p>	<p>AQM disagrees based on the reasons provided above in response to Conditions 2.1.1.1, 2.1.8 and 2.1.10. With respect to the annual testing requirement, AQM reminds Premcor that Regulation 17, Section 2.2 requires that: <i>Upon written request of the Department, an owner or operator of an air contaminant source shall, at his expense, sample the emissions of, or fuel used by, that source, maintain records and submit reports to the Department on the results of such sampling. The Department may make such data available to the public as reported and as correlated with any applicable emission standards or limitations.</i> The emissions being controlled are HAPs and the continued need to ensure compliance (i.e., annual testing) is imperative. <i>Compliance with Conditions 2.1.1.1 (VOCs), 2.1.3 (TSP), 2.1.4 (PM₁₀), 2.1.5 (H₂SO₄), 2.1.8 (Pb) and 2.1.9 HAPs) shall be based on stack testing to be conducted in accordance with Section 6 of this permit. The Company shall ensure adequate test ports are provided to carry out such testing in accordance with Regulation No. 17, section 2.3.</i></p>
<p>Condition 4.4</p>	<p>Premcor has commented that the requirement to measure SO₂ emissions during bypass operations is impractical because flow through the bypass stack is infrequent, and the accuracy of any measurement cannot be reasonably ascertained. Premcor has proposed using accepted engineering calculation methods</p>	<p>AQM concurs. Therefore, AQM is proposing to amend this condition to read as follows: <i>The Company shall submit a proposal to calculate SO₂ emissions during bypass operations to AQM for its approval and incorporation into the permit, at least 60 days prior to the startup of the FCCU WGS. The Company shall also supply documentation supporting its calculations sufficient to demonstrate their effectiveness and applicability.</i></p>

	instead.	
Condition 4.8	Premcor has commented that the compliance methodology in this draft permit condition to determine whether “acceptable operating procedures” are being used is too vague to be implemented and fails to provide sufficient notice to Premcor as to the standard by which DNREC will make such determinations. Premcor also commented that DNREC is exceeding its authority by imposing any restrictions in addition to the operational limitations in Condition 3. Finally, Premcor commented that any such determinations of “acceptable operating procedures” may be potentially inconsistent with the compliance methodologies identified in the permit.	AQM disagrees. First, AQM notes that Premcor has not objected to the requirements of Condition 3.6 which requires the Company to maintain and operate the facility including air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including periods of start up, shut down and malfunctions. Indeed, every source has an obligation to comply with this condition pursuant to the requirements of 40 CFR 60.11 (d) and 40 CFR 63.6 (e)(1). This condition merely establishes the guidelines the Department will use in assessing whether acceptable operating procedures are being used as examples of credible evidence used by regulatory agencies for compliance verification. Second, while Premcor has alluded to this condition being potentially inconsistent with other provisions of the permit, it has not identified a single affected condition in the draft permit nor has it supported its claim by any meaningful engineering analysis. Therefore, AQM will propose to amend this condition to read as follows: <i>Compliance with Condition 3.6 shall be based on information available to the Department concerning the Company’s actions with respect to such events, and shall include the Department’s review of all available facts and circumstances including, but not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.</i>
Condition 5.1.1	Premcor has commented that the requirement to submit the test protocol a minimum of 45 days before the tentative test date is inconsistent with the Department’s Source Sampling Guidelines.	AQM concurs. Thus, it recommends that this condition be amended to read as follows: <i>One (1) original and two (2) copies of the test protocol shall be submitted a minimum of thirty (30) days in advance of the tentative test date to the address in Condition 6.3. The tests shall be conducted in accordance with the State of Delaware and Federal requirements.</i>
Condition 5.1.2	Premcor has commented that the Department’s requirement that it must observe a stack test for it to be considered as acceptable is not supported by any statutory or regulatory standard. Premcor has also commented that this condition is inconsistent with the requirements of Condition 5.1.1.	AQM disagrees. However, if Premcor submits the test protocols in the timeframe referred to, the Department will be able to agree upon dates to witness the testing that is acceptable to all concerned parties. The Department’s Source Sampling Guidelines & Preliminary Sampling Form Instruction # 3 states that: <i>“Departmental approval must be given before the start of actual sampling. Our office must be given the opportunity to observe all stacking tests under normal business hours. Unobserved testing will not be considered valid by the Department.”</i> This requirement is applied state-wide and has not been arbitrarily applied to Premcor. This is to insure the integrity of the compliance testing being conducted by a contractor who is being paid by the Company or testing being conducted by the

		<p>Company’s employees. The Department witnesses all compliance testing completed in the state. 40 CFR Part 60.8 (d) states “The owner or operator of an affected facility shall provide the Administrator at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the Administrator the opportunity to have an observer present.” Therefore, AQM is recommending changing this condition to read s follows: <i>The test protocol shall be approved by the Department prior to initiating any testing. Upon approval of the test protocol, the Company shall schedule the compliance demonstration with the Air Surveillance Branch. The Department must observe the test for the results to be considered for acceptance unless the Department determines in advance, in writing, that the test need not be observed. Further, the Department may in its discretion determine based on its observation of the test that it need not observe the entire test.</i></p>
Condition 5.1.4	Premcor has commented that neither Regulation 17 nor any other regulation requires that emissions reports be signed by a corporate official.	<p>AQM disagrees. Regulation 17, Section 2.6 requires that: <i>Reports required by this Regulation shall be submitted in a form approved by the Department and shall be signed by a corporate officer or his designee whose signature shall constitute his own and employer's certification that the data are accurate and complete.</i></p>
Condition 5.4	Premcor has commented that compliance with the TSP limit should be based on Reference Method 5B and not RM 5 as stated in the draft permit. Premcor also commented that it is unduly burdensome to require annual stack testing.	<p>AQM concurs with respect to the compliance testing methodology. AQM disagrees with respect to the comment on the testing frequency being unduly burdensome. Therefore, AQM will propose amending this condition to read as follows: <i>PM₁₀: Compliance with PM₁₀ emission limits shall be based on performance testing conducted in accordance with Condition 5.1 and annually thereafter, as follows:</i></p> <p style="margin-left: 40px;">5.4.1 <i>H₂SO₄: Compliance with Conditions 2.1.3.1 and 2.1.4 shall be based on testing in accordance with Reference Method 8 in Appendix “A” of 40 CFR parts 60, or other testing methodology approved by the Department.</i></p> <p style="margin-left: 40px;">5.4.2 <i>TSP: Compliance with Condition 2.1.3.2 shall be based on testing in accordance with Reference Method 5B in Appendix “A” of 40 C.F.R. Part 60, or other testing methodology approved by the Department.</i></p>
Condition 5.5	Premcor has commented that that it is unduly burdensome to require annual stack testing to demonstrate compliance with the H ₂ SO ₄ limit.	<p>AQM disagrees. (Also see AQM’s response to Condition 5.4 above)</p>
Condition 5.6	Premcor has commented that compliance	AQM concurs with respect to the compliance testing methodology. AQM disagrees

Response to Premcor’s Comments

DRAFT PERMIT APC-82/0981-C (A5)(NSPS) – Fluid Catalytic Cracking Unit

May 10, 2005

Page 12

	with the PM ₁₀ limit should be based on Reference Method 5B/202 and not 201/202 as stated in the draft permit. Premcor also commented that it is unduly burdensome to require annual stack testing.	with respect to the comment on the testing frequency being unduly burdensome. (Also see AQM’s response to Condition 5.4 above)
Condition 5.8	Premcor has commented that that it objects to the imposition of a VOC emissions limit as discussed in their comment on Condition 2.1.1. and that the annual stack testing requirement is unwarranted.	AQM disagrees for the reasons provided in AQM’s response to Condition 2.1.1.
Condition 5.9	Premcor has commented that the stack testing requirement to establish future compliance demonstrations for Pb emissions is unnecessary since Pb emissions are adequately controlled and measured through permit conditions governing PM standards. Premcor has also objected to the Department’s reserving its right to require more frequent testing.	AQM disagrees for the reasons provided in AQM’s response to Condition 2.1.8. Furthermore, AQM believes periodic testing requirements are an essential element of a good permitting program that provides practically enforceable limitations which are verifiable from time to time. Therefore, AQM will propose to amend this condition to read as follows: <i>Compliance shall be based on an initial Reference Method 12 testing in Appendix “A” of 40 CFR parts 60. Future compliance shall be based on the stack test based emission factor in terms of lb/Mlb coke burn rate. The Company shall conduct additional performance testing in accordance with this condition every three years, unless the Department approves less frequent testing.</i>
Condition 5.10	Premcor has cross referenced Condition 2.1.9 and commented that it objects to the stack testing requirement for H ₂ S/RSC on the same basis.	AQM’s response to this comment is the same as its response to Condition 2.1.9., i.e. AQM disagrees. Regulation 1 defines an air contaminant as “particulate matter, dust, fumes, gas, mist, smoke, or vapor of any combination thereof, exclusive of uncombined water.” Since H ₂ S/RSC are air contaminants AQM has the authority to prescribe an emission limit. Having said that, AQM has since researched a technical paper describing the formation of COS and CS ₂ in partial burn units ⁴ , which states 100 % of the sulfur species in the FCCU regenerator flue gas is oxidized to CO ₂ and H ₂ O in the downstream COB. Therefore, AQM is proposing to delete this condition.
Condition 5.11	Premcor has commented that it is unduly burdensome to continuously monitor the COB firebox temperature. Premcor also	AQM disagrees. Regulation 11 requires a minimum firebox operating temperature of 1300 deg F. Unless revoked, this regulation continues to be an applicable requirement. However, AQM believes it is pertinent to clarify that the regulation

⁴ TRI Guidance for Estimating COS and CS₂ from SRUs and Partial Combustion Units; Equilon Enterprises LLC., Westhollow Technology Center, Houston, TX

Response to Premcor's Comments

DRAFT PERMIT APC-82/0981-C (A5)(NSPS) – Fluid Catalytic Cracking Unit

May 10, 2005

Page 13

	commented that because the permit separately imposes a CO emissions limit and requires Premcor to continuously monitor CO emissions through CEMS, any requirement to monitor operational parameters of the FCCU COB firebox, including temperature, are redundant, unnecessary and unduly restrictive.	requires CO at not less than 1,300 deg. F rather than at 1,300 deg. F as stated in the regulation. Thus, AQM is proposing language to that effect.
Condition 5.13	Premcor has commented that the CD requires an alternative method for opacity monitoring and that the requirements in the draft permit are inconsistent with the CD.	AQM concurs. However, Premcor has neglected to address this requirement. The compliance methodology proposed by AQM is feasible and should Premcor fail to offer an acceptable alternative, AQM's proposal should be required. However, AQM does not believe it inappropriate to change this condition to allow Premcor to develop and submit an alternative monitoring plan for AQM's approval, and is proposing such language.
Condition 6.1.5	Premcor has commented that the requirement to maintain the rolling 365 day coke burn rate and FCU throughput have no regulatory basis.	AQM disagrees. This data is necessary to demonstrate compliance with this limitation.
Condition 6.1.6	Premcor has commented that it is unduly burdensome to keep records of the COB firebox temperature	AQM disagrees for the reasons described in responses to Conditions 2.1.7.2 and 5.11 above.
Condition 6.1.7	Premcor has commented that for the reasons set forth in their comment on Condition 5.13, it objects to the record keeping requirements of a log of daily visible emissions observations.	AQM disagrees. The FCCU is a unit that presently has a continuous opacity monitoring system installed to provide continuous measurements of opacity data. This unit also has the distinction of being the only emissions unit in the entire state that has an alternate regulatory opacity limit of 50 % as against 20 percent for all other sources. However, AQM recognizes that COMS will be incompatible with WGS systems, after it is installed. It is because of this incompatibility that the CD provides for the submission of an alternative plan. AQM is convinced the alternative plan must provide for adequate recordkeeping requirements to ensure meaningful and credible compliance determinations can be made, to the extent that the log of visible emissions should even indicate the absence of visible emissions. Therefore, AQM is proposing amending this condition to read as follows: <i>Detailed daily records of observations of visible emissions or the absence of visible emissions, or other records identified in an approved alternative plan.</i>
Condition 6.1.11	Premcor has commented that there is no	AQM disagrees. These parameters are intrinsic to the proper operation of air pollution

Response to Premcor's Comments

DRAFT PERMIT APC-82/0981-C (A5)(NSPS) – Fluid Catalytic Cracking Unit

May 10, 2005

Page 14

	regulatory basis for requiring records of pre-scrubber and WGS operating parameters such as pH of the scrubbing liquid, the pressure drop, the G/L ratio and the amine regeneration temperature.	control equipment such as WGSs and are, therefore, relevant. However, as discussed in AQM's response to Premcor's comment regarding Condition 3.8, because AQM recognizes much of this data is still in the process of being developed, it has acquiesced to Premcor being allowed to submit it at a future date. Therefore, AQM is proposing deleting this record keeping requirement at this time but reserves its right to incorporate these operating parameters in the operating permit.
Condition 6.1.12	Premcor has commented that it is not technically feasible to measure the FCCU bypass SO ₂ emissions.	AQM notes that Premcor has not specifically objected to this recordkeeping requirement. Rather its comment (in response to Condition 4.4) is that instead of measuring SO ₂ emissions during bypass operations it will calculate SO ₂ emissions using engineering estimates. AQM finds the proposed method to calculate SO ₂ emissions during bypass operations to be acceptable. Therefore, it is proposing to amend this condition to read as follows: <i>Bypass stack SO₂ emissions as calculated according to Condition 4.4.</i>
Condition 6.2	Premcor has commented that the requirement to maintain the rolling 12 month emissions for pollutants listed in Condition 2.1 in a log should be clarified to allow Premcor to utilize any effective recordkeeping method.	AQM concurs. Therefore, AQM will propose to amend this condition to read as follows: <i>The rolling twelve (12) month total emissions for each pollutant shall be calculated and recorded each month in an easily accessible format for each pollutant listed in Condition 2.1.</i>
Condition 7.1	Premcor has commented that the requirements of this condition are inconsistent with and more stringent than the reporting practices required by DNREC in specific written guidance to the refinery and inconsistent with the objectives of the regulation and therefore are unduly burdensome.	AQM disagrees. Premcor has a continuing obligation to report all permit exceedances immediately upon discovery by calling the Environmental Emergency Notification and Complaint Number (800) 662-8802 or from outside the State of Delaware, (302) 739-5072.

<p>Condition 7.2</p>	<p>Premcor has commented that the reference to the <u>Reporting of a Discharge of a Pollutant or an Air Contaminant</u> Regulation is confusing and inappropriate. Premcor has also commented that any reporting requirement applicable to the refinery for the FCCU must be specifically identified in the permit to provide Premcor with sufficient notice of its compliance obligations. Additionally, Premcor has commented that the requirements in Conditions 7.2.1 through 7.2.6 for each occurrence is not defined by any applicable regulatory standard and is therefore too vague to be implemented.</p>	<p>AQM disagrees. In accordance with the provisions of Section 2.5 (B) of the <u>Reporting of a Discharge of a Pollutant or an Air Contaminant</u> Regulation: <i>The Department reserves the right to require a written follow-up report for any environmental release, regardless of the substance or quantity, if there is concern for public health and safety or environmental welfare has been adversely affected. At the Department's discretion, the Department may require said person to file a written follow-up report, within 30 days or any shorter time as required by validly issued state or federal permits or by any pertinent regulations, setting forth all details contained in Sections 2.4 and 2.5.</i> Given this facility's track record of numerous exceedances of permitted levels, and wide public concern, AQM finds it necessary to reiterate that even in cases where a reporting requirement pursuant to Section 6028 is not triggered, AQM has the right to exercise its discretion and require additional reporting. AQM is also taking this opportunity to recommend a clarification that reports for emissions on the same day from the same emission unit may be combined into one report and emissions from the same cause that occur contemporaneously may also be combined into one report. Additionally, in an effort to timely track such reports, AQM is recommending requiring Premcor to submit an electronic copy of all required reports to the Department's compliance engineer assigned to the Refinery.</p>
<p>Condition 7.3</p>	<p>Premcor has commented that quarterly reports exceed the reporting procedures outlined in applicable regulations and are unduly burdensome.</p>	<p>AQM disagrees. However, AQM is willing to consider semi-annual reporting as a viable alternative contingent upon AQM having the discretion to increase the reporting frequency to quarterly reports which shall become effective upon request of the Department after reasonable notice to the Company. It is proposing such language.</p>
<p>Condition 7.4</p>	<p>Premcor has objected to the submission of annual compliance test reports within 90 days of completing the tests. Premcor's objection specifically refers to the stack testing requirements that it commented on earlier in this document.</p>	<p>To the extent AQM agreed to waive a specific testing requirement, a report will obviously not be required. However, reports for all other annual compliance tests shall be submitted within 90 days of completion of the test.</p>

May 31, 2005

**Permit: APC-82/1209-CONSTRUCTION (Amendment 4)
Coke Storage and Handling System**

The Premcor Refining Group, Inc.
Delaware City Refinery
4550 Wrangle Hill Road
Delaware City, DE 19706

ATTENTION: Michael Pollauf,
Refinery Manager

Dear Mr. Pollauf:

Pursuant to the State of Delaware “**Regulations Governing the Control of Air Pollution**”, Regulation No. 2, Section 2, approval of the Department of Natural Resources and Environmental Control (the Department) is hereby granted for the construction of a petroleum coke storage and handling system that includes five (5) baghouses, conveyor belts, a coke storage warehouse, and the removal of the coke storage pile berm located at the Delaware City Refinery, 4550 Wrangle Hill Road in Delaware City, Delaware, in accordance with the following documents:

- Notice of Conciliation and Secretary’s Order No. 2002-A-0063 dated December 4, 2002;
- Application submitted on Form No. AQM-4 dated February 15, 2004 signed by Franklin R. Wheeler;
- Letter dated March 17, 2004 addressed to Secretary John Hughes and signed jointly by Franklin R. Wheeler for Motiva Enterprises (Motiva) and Bruce Jones for The Premcor Refining Group, Inc. (Premcor) requesting transfer of all Motiva’s permits to Premcor;
- Letter dated April 23, 2004 addressed to Franklin Wheeler of Motiva Enterprises, LLC and Bruce Jones of The Premcor Refining Group, Inc. and signed by Secretary John Hughes;
- Application dated December 2, 2004 addressed to Robert J. Taggart submitted on Form No. AQM-4 signed by Michael J. Pollauf; and
- Secretary’s Order No. 2005-A-00xx dated May 31, 2005.

Permit: APC-82/1209-CONSTRUCTION (Amendment 4)

**The Premcor Refining Group, Inc.
Coke Handling and Storage System**

May 31, 2005

Page 2

This permit is issued subject to the following conditions:

1. General Provisions

- 1.1 This permit expires three (3) years from the date of issue. The coke storage warehouse and handling system shall be operational within ten (10) months from the date of issue of this permit.
- 1.2 The project shall be constructed in accordance with the application described above. If any changes are necessary, revised plans must be submitted and supplemental approval issued prior to actual construction.
- 1.3 Representatives of the Department may, at any reasonable time, inspect this facility.
- 1.4 The Company shall, upon completion of the construction, installation, or alteration, request that the Department grant approval to operate.
- 1.5 A separate application to operate pursuant to Regulation No. 2 does not need to be submitted to the Department for the equipment or process covered by this construction permit. Upon a satisfactory demonstration, by an on-site inspection, that the equipment or process complies with all of the terms and conditions of this permit, the Department shall issue a Regulation No. 2 Operation Permit for this equipment or process. The conditions in the existing operation permit shall remain in effect until construction authorized by this permit is completed.
- 1.6 The provisions of Regulation No. 2 Sections 2.1 and 11.3 shall not apply to the operation of equipment or processes for the purposes of initially demonstrating satisfactory performance to the Department following construction, installation, modification, or alteration of the equipment or processes. The applicant shall notify the Department sufficiently in advance of the demonstration and shall obtain the Department's prior concurrence of the operating factors, time period, and other pertinent details relating to the demonstration.
- 1.7 The Company shall not initiate construction, install, or alter any equipment or facility or air contaminant control device which will emit or prevent the emission of an air contaminant prior to submitting an application to the Department pursuant to Regulation No. 2, and, when applicable Regulation No. 25, and receiving approval of such application from the Department; except as authorized by this permit or

Permit: APC-82/1209-CONSTRUCTION (Amendment 4)

**The Premcor Refining Group, Inc.
Coke Handling and Storage System**

May 31, 2005

Page 3

exempted in Regulation No. 2 Section 2.2 of the State of Delaware “**Regulations Governing the Control of Air Pollution.**”

2. Emission Limitations

- 2.1 Air contaminant emission levels from the coke handling system inclusive of the baghouses on Transfer Towers 2, 3, and 4, the railcar loading station, the pugmill feed system, and the coke storage silo shall not exceed the following and those specified by the State of Delaware “**Regulations Governing the Control of Air Pollution.**”
- 2.1.1 For the baghouses on Transfer Towers 2, 3, and 4, the railcar loading station, the pugmill feed system and the coke storage silo:
- 2.1.1.1 The Total Suspended Particulate (TSP) emissions shall not exceed 0.2 grains per standard cubic foot.
- 2.1.1.2 The Department reserves the right to establish TSP and PM₁₀ emission limitations.
- 2.2 The opacity of any emission from any point in the coke handling and storage system such as a baghouse or conveyor drop point, shall not be greater than twenty (20%) percent opacity for an aggregate of more than three (3) minutes in any one (1) hour or more than fifteen (15) minutes in any twenty-four (24) hour period.
- 2.3 Odors from this source shall not be detectable beyond the plant property line in sufficient quantities such as to cause a condition of air pollution.
- 2.4 The Company shall not cause or allow visible particulate emissions of any petroleum coke, loaded at the refinery that is being transported by a motor vehicle.
- 2.5 The Company shall not cause or allow stockpiling or other storage of material or transport to or from a storage facility in such a manner as may cause a condition of air pollution.

3. Operational Limitations

- 3.1 Each baghouse shall be operated in accordance with the manufacturer’s recommendations.
- 3.2 Within 180 days of issuance of this permit, the Company shall submit a plan for the Department’s approval to maintain the baghouses in proper operating condition. The

Permit: APC-82/1209-CONSTRUCTION (Amendment 4)

**The Premcor Refining Group, Inc.
Coke Handling and Storage System**

May 31, 2005

Page 4

- plans shall include the appropriate indicators used to determine the presence of broken bags, excess pressure drop and a monitoring schedule.
- 3.3 Ventilation fans shall be operated at all times during warehouse operations. The ventilation fans shall be equipped with filter media to minimize the discharge of particulate matter. Filter media must be replaced per the manufacturer's recommendations.
- 3.4 The coke moisture content of the coke being loaded into trucks shall be at least 8 percent by percent by weight on an annual average basis.
- 3.5 Truck loading operations shall be conducted within the warehouse. All trucks must be covered before leaving the coke storage warehouse or as close to the warehouse as practicable.
- 3.6 After being loaded in the storage warehouse, all trucks must be washed to remove coke and coke dust from the outside of the trucks. The truck wash station shall be situated in the storage warehouse or as close to the warehouse as practicable.
- 3.7 The material removed by the truck cleaning operation shall be collected and disposed of in a manner so as not to create a condition or air pollution.
- 3.8 Railcar Loading
- 3.8.1 During railcar loading, all hatches within the compartment being loaded shall remain closed except for the hatch through which the hatch is being loaded.
- 3.8.2 The coke loading chute shall be operated with a dust recovery mechanism that completely covers the hatch's annular space.
- 3.9 The Company shall pave and maintain as paved all roads and truck movement areas within the facility that are used in transporting or moving petroleum coke.
- 3.10 The Company shall use a street sweeper or other approved method to clean the railcar loading area and all paved areas where coke accumulates. The Company shall propose a cleaning frequency for the Department's approval within ninety (90) days of completion of this project.
- 3.11 All conveyors and drop points shall be fully covered at all times when coke is being conveyed or dropped.

Permit: APC-82/1209-CONSTRUCTION (Amendment 4)

**The Premcor Refining Group, Inc.
Coke Handling and Storage System**

May 31, 2005

Page 5

- 3.12 Primary and secondary scrapers shall be properly installed and maintained on conveyor belts A, B, C, E, F, and the pugmill feed system to minimize fugitive coke emissions.
- 3.13 Berm Removal
- 3.13.1 The Company shall submit a detailed berm removal plan for the Department's approval thirty (30) days before the project begins. This plan shall include measures that will be taken for controlling emissions during the berm removal and warehouse construction process.
- 3.13.2 The Company shall not cause or allow the demolition of the berm unless methods are employed to control dust and coke emissions. Such methods may include the application of water, wind screens, tarpaulins, or other techniques approved by AQM.
- 3.13.3 The Company shall not cause or allow land clearing and land grading unless methods are employed to control dust emissions.
- 3.13.4 The results of the ambient air monitoring required by Condition 4.6 shall be submitted within three weeks during the berm removal.
- 3.14 Control measures shall be taken to control coke dust in the event emergency (outdoor storage) stacking takes place. The Company shall submit a detailed emergency stacking plan for the Department's approval within 180 days after issuance of this permit.
- 3.15 Control measures shall be taken to control coke dust when feeding the reclaim hopper. The Company shall submit a detailed control plan for Department's approval within ninety (90) days after issuance of this permit.
- 3.16 At all times, including periods of startup, shutdown, and malfunction, the Company shall maintain and operate the equipment and processes covered by this permit, including all structural and mechanical components of all equipment and processes and all associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions.

4. Compliance Methodology, Testing and Monitoring Requirements

- 4.1 Initial stack tests for TSP shall be conducted at each baghouse in accordance with the appropriate testing methods from 40 CFR Part 60 Appendix A – Reference Test Methods and at 5 year intervals thereafter. The stack test based emissions factors shall be used to establish annual (rolling twelve-month) limits and to demonstrate

Permit: APC-82/1209-CONSTRUCTION (Amendment 4)

**The Premcor Refining Group, Inc.
Coke Handling and Storage System**

May 31, 2005

Page 6

- compliance with Condition No. 2.1.1.1. A “Source Sampling Guidelines and Preliminary Survey Form” shall be submitted and found acceptable by the Department at least thirty (30) days prior to the stack emission testing. Results of the stack emission testing shall be submitted to AQM.
- 4.2 Compliance with Condition No. 2.2 shall be based upon conducting daily qualitative visible emissions evaluations of each baghouse. If any opacity is observed, the Company shall conduct a quantitative visible emissions evaluation in accordance with Regulation 20, section 1.5(c). A minimum of one (1) quantitative visible emissions evaluation shall be conducted for each baghouse on a semi-annual basis.
- 4.3 Compliance with Condition 3.4 shall be maintained by collecting samples of coke from the storage pile(s) each day that petroleum coke is loaded into trucks and analyzing the samples to determine the moisture content.
- 4.4 Compliance with Condition No. 3.1 shall be based on continuously monitoring the pressure drop across each baghouse or other method approved by the Department.
- 4.5 Within sixty (60) days after achieving the maximum production rate at which the facility will be operated, but not later than 180 days after initial startup, the owner or operator shall conduct performance tests and furnish the Department with a written report of the results of such performance tests in accordance with the following general provisions:
- 4.5.1 One (1) original and two (2) copies of the test protocol shall be submitted a minimum of forty-five (45) days in advance of the tentative test date to the address in Condition 6.5. The tests shall be conducted in accordance with the State of Delaware and Federal requirements.
- 4.5.2 The test protocol shall be approved by the Department prior to initiating any testing. Upon approval of the test protocol, the Company shall schedule the compliance demonstration with the Air Surveillance Branch. The Department must observe the test for the results to be considered acceptable, unless the Department determines in advance, in writing, that the test need not be observed. Further, the Department may in its discretion determine based on its observation of the test that it need not observe the entire test.
- 4.5.3 The final results of the testing shall be submitted to the Department within ninety (90) days of the test completion.
- 4.5.4 The final report of the results shall be submitted in a format approved by the Air Surveillance Branch, and signed by a corporate official, or his designee, whose signature shall constitute his own, and employer’s certification of

Permit: APC-82/1209-CONSTRUCTION (Amendment 4)

**The Premcor Refining Group, Inc.
Coke Handling and Storage System**

May 31, 2005

Page 7

compliance, clearly indicating each applicable term and condition of the permit, and whether the test(s) fulfilled the permit condition. The results must demonstrate that the emission unit is operating in compliance with the applicable regulations and conditions of this permit; if the final report of the test results shows non-compliance the Company shall propose corrective action(s). Failure to demonstrate compliance through the test may result in enforcement action.

- 4.6 The Company shall conduct daily ambient TSP monitoring in accordance with the “Quality Assurance Project Plan & Standard Operation Procedures for the Ambient Continuous Particulate Air Quality Monitoring Program at the Motiva Delaware City Power Plant and Coke and Flux Handling/Storage Facility”, dated April 2002. If no exceedance of the secondary Delaware TSP 24-hour AAQS is monitored for any one year period after the issuance of this operating permit, the Company may petition the Department to approve ceasing monitoring operations.

5. Record Keeping Requirements

- 5.1 The Company shall maintain all records necessary for determining compliance with this permit in a readily accessible location for five (5) years and shall make these records available to the Department upon written or verbal request.
- 5.2 The following records shall be maintained:
- 5.2.1 The amount of coke processed daily;
 - 5.2.2 The amount of coke loaded into railcars and trucks daily; and
 - 5.2.3 Detailed daily records of observations of visible emissions for each baghouse and for any other point in the handling system where visible emissions are observed or a statement that no visible emissions were observed.
 - 5.2.4 Petroleum coke moisture sample results.

6. Reporting Requirements

- 6.1 Emissions in excess of any permit condition or emissions which create a condition of air pollution shall be reported to the Department immediately upon discovery by calling the Environmental Emergency Notification and Complaint number, (800) 662-8802, or from outside the State of Delaware, (302) 739-5072.
- 6.2 In addition to complying with Condition 6.1 of this permit, reporting the Company shall satisfy any required by the “**Reporting of a Discharge of a Pollutant or an Air Contaminant**” Regulation, within thirty (30) calendar days of becoming aware of an

Permit: APC-82/1209-CONSTRUCTION (Amendment 4)

**The Premcor Refining Group, Inc.
Coke Handling and Storage System**

May 31, 2005

Page 8

occurrence subject to reporting pursuant to Condition 6.1. Further, the Department may in its discretion require the Company to submit reports not otherwise required by the Regulations. All reports submitted to the Department pursuant to this Condition shall be submitted in writing and shall include with the following information:

- 6.2.1 The name and location of the facility;
 - 6.2.2 The subject source(s) that caused the excess emissions;
 - 6.2.3 The time and date of the first observation of the excess emissions;
 - 6.2.4 The cause and expected duration of the excess emissions;
 - 6.2.5 For sources subject to numerical emission limitations, the estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions; and
 - 6.2.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions.
 - 6.2.7 Emissions on the same day from the same emission unit may be combined into one report. Emissions from the same cause that occur contemporaneously may also be combined into one report.
 - 6.2.8 The Company shall submit an electronic copy of all required reports to the Department's compliance engineer assigned to the Refinery.
- 6.3 Moisture sampling results showing non-compliance shall be submitted to the Department on a semi-annual basis. Reports shall be submitted by the 30th day of January and July.
- 6.4 The Company shall submit the ambient air sampling monitoring results as required by Condition 4.6 for each month within fifteen (15) days of receiving the quality assured data.
- 6.5 One (1) original of all required reports in hard copy format shall be sent to the address below:

Air Quality Management Section
Division of Air and Waste Management
156 South State Street
Dover, DE 19901

One (1) copy of all required reports in hard copy format shall be sent to the address below:

Permit: APC-82/1209-CONSTRUCTION (Amendment 4)

**The Premcor Refining Group, Inc.
Coke Handling and Storage System**

May 31, 2005

Page 9

Compliance Engineer
Engineering & Compliance Branch
715 Grantham Lane
New Castle, DE 19720

7. Administrative Conditions

- 7.1 This permit shall be made available on the premises.
- 7.2 Failure to comply with the provisions of this permit may be grounds for suspension or revocation.

Sincerely,

Nancy E. Terranova
Acting Program Manager
Engineering & Compliance Branch

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pc: Dover Title V File
Ravi Rangan, P.E.
Bruce Steltzer

May 31, 2005

**Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)
Fluid Catalytic Cracking Unit (FCCU), FCCU Carbon Monoxide Boiler, and
Wet Gas Scrubber System**

The Premcor Refining Group, Inc.
Delaware City Refinery
4550 Wrangle Hill Rd.
Delaware City, DE 19706

ATTENTION: Michael Pollauf,
Refinery Manager

Dear Mr. Pollauf:

Pursuant to the State of Delaware “**Regulations Governing the Control of Air Pollution**”, Regulation No. 2, Section 2, approval of the Department of Natural Resources and Environmental Control (the Department) is hereby granted for the construction of a Belco Pre-scrubber and an amine-based Cansolv Regenerative Wet Gas Scrubber (WGS) with caustic polisher to be installed downstream of the Fluid Catalytic Cracking Unit (FCCU) Carbon Monoxide Boiler (COB) at the Delaware City Refinery, 4550 Wrangle Hill Road in Delaware City, Delaware, in accordance with the following documents:

- Application submitted on Form No. AQM-4 dated February 15, 2004 signed by Franklin R. Wheeler;
- Letter dated March 17, 2004 addressed to Secretary John Hughes and signed jointly by Franklin R. Wheeler for Motiva Enterprises (Motiva) and Bruce Jones for The Premcor Refining Group, Inc. (Premcor) requesting transfer of all Motiva’s permits to Premcor;
- Letter dated April 23, 2004 addressed to Franklin Wheeler of Motiva Enterprises, LLC and Bruce Jones of The Premcor Refining Group, Inc. and signed by Secretary John Hughes;
- Consent Decrees, including all addenda thereto, lodged with the United States Court for the Southern District of Texas in Civil Action No. H-01-0978, to the extent applicable to the Delaware City Refinery (Consent Decree); and
- Secretary’s Order No. 2005-A-00xx issued on May 31, 2005.

Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)
The Premcor Refining Group, Inc.
Fluid Catalytic Cracking Unit (FCCU), FCCU COB and Wet Gas Scrubber (WGS)
May 31, 2005
Page 2

This permit is issued subject to the following conditions:

1. General Provisions

- 1.1 This permit expires three (3) years from the date of issue. The construction of the Belco pre-scrubber and amine-based Cansolv regenerative WGS shall be constructed in accordance with the relevant schedules identified in the Consent Decree
- 1.2 The project shall be constructed in accordance with the application described above. If any changes are necessary, revised plans must be submitted and supplemental approval issued prior to actual construction.
- 1.3 Representatives of the Department may, at any reasonable time, inspect this facility.
- 1.4 The applicant shall, upon completion of the construction, installation, or alteration, request that the Department grant approval to operate.
- 1.5 A separate application to operate pursuant to Regulation No. 2 does not need to be submitted to the Department for the equipment or process covered by this construction permit. Upon a satisfactory demonstration by an on-site inspection that the equipment or process complies with all of the terms and conditions of this permit, the Department shall issue a Regulation No. 2 Operation Permit for this equipment or process. The conditions in the existing operation permit shall remain in effect until construction authorized by this permit is completed.
- 1.6 The provisions of Regulation No. 2 Sections 2.1 and 11.3 shall not apply to the operation of equipment or processes for the purposes of initially demonstrating satisfactory performance to the Department following construction, installation, modification, or alteration of the equipment or processes. The applicant shall notify the Department sufficiently in advance of the demonstration and shall obtain the Department's prior concurrence of the operating factors, time period, and other pertinent details relating to the demonstration.
- 1.7 The owner or operator shall not initiate construction, install, or alter any equipment or facility or air contaminant control device which will emit or prevent the emission of an air contaminant prior to submitting an application to the Department pursuant to Regulation No. 2, and, when applicable Regulation No. 25, and receiving approval of such application from the Department; except as authorized by this permit or exempted in Regulation No. 2 Section 2.2 of the State of Delaware "**Regulations Governing the Control of Air Pollution.**"

2. Emission Limitations

2.1 Air contaminant emission levels shall not exceed those specified in the State of Delaware “**Regulations Governing the Control of Air Pollution**” and the following¹:

2.1.1 Volatile Organic Compound (VOC) Emissions

2.1.1.1 The Company shall propose a VOC emission limit within 90 days of completion of the stack test conducted pursuant to Condition 5.2.2 for incorporation into this permit.

2.1.1.2 The leak detection and repair requirements to control fugitive VOC emissions from the FCCU shall be in accordance with the requirements in 40 CFR 60, Subpart GGG for existing components in light liquid and gaseous service and in accordance with 40 CFR part 63 subpart CC for new components in light liquid and gaseous service. . The leak detection and repair requirements to control fugitive emissions from the FCU shall be in accordance with the Consent Decree for both new and existing components in light liquid and gaseous service.

2.1.2 Nitrogen Oxide (NO_x) Emissions Reserved.

2.1.3 Particulate Matter with an Aerodynamic Diameter Less than 10 Microns (PM₁₀) Emissions

2.1.3.1. Within 180 days of issuance of this permit, the Company shall conduct stack tests to determine the ammonia concentration in the uncontrolled stack gas stream, the oxidation factor for conversion of SO₃ to H₂SO₄, the organic condensable matter per AP-42, the sulfate/bisulfate formed and the reduction in the potential H₂SO₄ formation due to competing formation of sulfate/bisulfate. The company shall propose short term (lb/hr) and long term (ton/year) emission limits for H₂SO₄ within 90 days of completion of this test. The proposal shall take into consideration the reduction in the SO₃ that is available for conversion to H₂SO₄ and include a revised H₂SO₄ PTE based on the test data.

2.1.3.2 TSP emissions from the FCCU WGS shall not exceed 11b/1000 lb of coke burned.

¹ Tons per year (TPY) is defined as “tons per rolling twelve months”.

Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)

The Premcor Refining Group, Inc.

Fluid Catalytic Cracking Unit (FCCU), FCCU COB and Wet Gas Scrubber (WGS)

May 31, 2005

Page 4

2.1.3.3 The company shall propose short term (lb/hr) and long term (ton/year) PM₁₀ emission limits (inclusive of H₂SO₄) following the proposal required pursuant to Condition 2.1.3.1 and in consideration of the estimated organic condensable matter per AP-42.

2.1.4 Sulfuric Acid (H₂SO₄) Emissions

H₂SO₄ emissions shall meet one of the following standards:

2.1.4.1. H₂SO₄ emissions shall be reduced by at least 40% across the wet gas scrubber system; or

2.1.4.2. The outlet concentration of H₂SO₄/SO₃ from the stack shall be no greater than 10 ppmvd.

2.1.5 Sulfur Dioxide (SO₂) Emissions

SO₂ emissions from the FCCU WGS shall not exceed 25 ppmvd @ 0% O₂ on a rolling 365 day average, 50 ppmvd @ 0% O₂ on a rolling 7 day average, and 361 TPY.

2.1.6 Carbon Monoxide (CO) Emissions

2.1.6.1 CO emissions from the FCCU WGS shall not exceed 500 ppmv and 3768 TPY.

2.1.6.2 The Company shall not cause or allow the emission of carbon monoxide from the FCCU unless it is burned at no less than 1300°F for 0.3 seconds in the FCCU COB.

2.1.7 Lead (Pb) Emissions

Pb emissions from the FCCU WGS shall not exceed 4.37 E-04 pounds per thousand pounds of coke burned.

2.1.8 Hazardous Air Pollutant (HAP) Emissions

The Company shall comply with all the applicable requirements of 40 CFR Part 63, subpart UUU.

2.2 The opacity from the FCCU WGS stack shall not be greater than twenty (20%) percent opacity for an aggregate of more than three (3) minutes in any one (1) hour or more than fifteen (15) minutes in any twenty-four (24) hour period.

2.3 Odors from this source shall not be detectable beyond the plant property line in sufficient quantities such as to cause a condition of air pollution.

Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)

The Premcor Refining Group, Inc.

Fluid Catalytic Cracking Unit (FCCU), FCCU COB and Wet Gas Scrubber (WGS)

May 31, 2005

Page 5

- 2.4 In the event that the FCCU COB is to be shut down for a period longer than 24 hours, Premcor shall promptly begin necessary process changes to provide for the complete combustion of carbon monoxide. Full CO combustion operation shall be achieved within 24 hours.

3. Operational Limitations

- 3.1 The owner or operator shall comply with the following operational limits:
- 3.1.1 The FCCU coke burn rate shall not exceed 56,000 lb/hour on a rolling twelve month basis.
 - 3.1.2 The Company shall not burn any fuel that contains hydrogen sulfide (H₂S) in excess of 0.10 gr/dscf (162 ppm);
 - 3.1.3 Except as provided in Condition 3.1.4, the COB, Belco pre-scrubber, the amine-based Cansolv regenerative WGS, and the caustic polishing scrubber shall be operating properly at all times when the FCCU is operating.
 - 3.1.4 The Company shall submit for the Department's consideration and incorporation at its discretion into the operating permit alternative operating scenarios for AQM's approval that address startup, shutdown and malfunction conditions. These shall be submitted at least six (6) months prior to the startup of the WGS.
- 3.2 During periods when the Belco prescrubber and the WGS have to be bypassed, the Company shall take steps to immediately respond to safely reduce the FCCU throughput to a level that does not cause a violation of any ambient air quality standard. No later than 6 months prior to start up of the WGS the Company shall submit a proposed turndown factor for the Department's approval that will establish the FCCU feed throughput limit for periods of atypical operations. The reduced throughput level shall continue to be applicable during the entire duration of the bypassed operation.
- 3.3 There shall be no emissions of uncondensed VOCs from the condensers, hot wells or accumulators of any vacuum producing system.
- 3.4 During process unit turnarounds, the Company shall provide for the following:
- 3.4.1 Depressurization venting of the process unit or vessel to a vapor recovery system, flare, or firebox.
 - 3.4.2 No emission of VOC from a process unit or vessel until its internal pressure is 136 kiloPascals (kPa) (19.7 pounds per square inch atmospheric [psia]) or less.

Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)

The Premcor Refining Group, Inc.

Fluid Catalytic Cracking Unit (FCCU), FCCU COB and Wet Gas Scrubber (WGS)

May 31, 2005

Page 6

- 3.5 At all times, including periods of startup, shutdown, and malfunction, the Company shall, maintain and operate the equipment and process covered by this Permit including all structural and mechanical components of all equipment and processes and all associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.
- 3.6 Within thirty (30) days of completion of construction of the Belco pre-scrubber, the amine-based Cansolv regenerative WGS, and the caustic polishing scrubber, the Company shall submit to the Department copies of the operating procedures governing normal operations of the equipment.

4. Compliance Methodology

- 4.1 Compliance with Conditions 2.1.1.1 (VOCs), 2.1.3 (PM10), 2.1.4 (H₂SO₄), 2.1.7 (Pb) and 2.1.8 (HAPs) shall be based on stack testing to be conducted in accordance with Section 5 of this permit. The Company shall ensure adequate test ports are provided to carry out such testing in accordance with Regulation No. 17 section 2.3. Test ports shall be located upstream of the Belco pre-scrubber in accordance with EPA RM 1 of 40 CFR Part 60, Appendix "A" to ensure representative isokinetic sampling.
- 4.2 Compliance with Condition 2.1.1.2 for new components in light liquid and gaseous service shall be based on compliance with the standards in 40 CFR 63.162 through 63.177.
- 4.3 Compliance with Conditions 2.1.5, 2.1.6, and 3.1.2 shall be based on continuous monitoring systems.
- 4.4 The Company shall submit a proposal to calculate SO₂ emissions during periods when the COB is bypassed to AQM for its approval and incorporation into the permit, at least 60 days prior to the startup of the FCCU WGS. The Company shall also supply documentation supporting its calculations sufficient to demonstrate their effectiveness and applicability.
- 4.5 Compliance with Conditions 3.1.1 and 3.1.3 shall be based on the monitoring/testing and recordkeeping requirements.
- 4.6 Compliance with Conditions 3.4 and 3.5 shall be based on either piping the uncondensed vapors to a firebox or incinerator. Alternately, the vapors may be compressed and added to the refinery fuel gas. During process unit turnarounds, the

Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)

The Premcor Refining Group, Inc.

Fluid Catalytic Cracking Unit (FCCU), FCCU COB and Wet Gas Scrubber (WGS)

May 31, 2005

Page 7

Company shall conduct depressurization venting of the process unit or vessel to a vapor recovery system, flare or firebox. The Company shall monitor the pressure in each process or vessel until its internal pressure is 136 kPa or less. These actions shall be documented.

- 4.7 Compliance with the standards in 40 CFR subpart GGG shall be based on the test methods and procedures in 40 CFR 60.592 and compliance with the requirements of 40 CFR Part 63 subpart CC shall be based on the standards in 40 CFR 63.648.
- 4.8 Compliance with Condition 3.6 shall be based on information available to the Department concerning the Company's actions with respect to such events, and shall include the Department's review of all available facts and circumstances including, but not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

5. Testing and Monitoring Requirements

- 5.1 Within sixty (60) days after achieving the maximum production rate at which the facility will be operated, but not later than 180 days after initial startup the WGS, the Company shall conduct performance tests for the pollutants listed in Conditions 2.1.1.1 (VOCs), 2.1.3 (PM10), 2.1.4 (H2SO4), 2.1.7 (Pb) and 2.1.8 (HAPs) and furnish the Department with a written report of the results of such performance test(s) in accordance with the following general provisions:
 - 5.1.1 One (1) original and two (2) copies of the test protocol shall be submitted a minimum of thirty (30) days in advance of the tentative test date to the address in Condition 6.3. The tests shall be conducted in accordance with the State of Delaware and Federal requirements.
 - 5.1.2 The test protocol shall be approved by the Department prior to initiating any testing. Upon approval of the test protocol, the Company shall schedule the compliance demonstration with the Air Surveillance Branch. The Department must observe the test for the results to be considered for acceptance unless the Department determines in advance, in writing, that the test need not be observed. Further, the Department may in its discretion determine based on its observation of the test that it need not observe the entire test.
 - 5.1.3 The final results of the testing shall be submitted to the Department within sixty (60) days of the test completion.
 - 5.1.4 The final report of the results shall be submitted in a format approved by the Air Surveillance Branch, and signed by a corporate official, or his designee, whose signature shall constitute his own, and employer's certification of compliance, clearly indicating each applicable term and condition of the

Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)

The Premcor Refining Group, Inc.

Fluid Catalytic Cracking Unit (FCCU), FCCU COB and Wet Gas Scrubber (WGS)

May 31, 2005

Page 8

permit, and whether the test(s) fulfilled the permit condition. The results must demonstrate that the emission unit is operating in compliance with the applicable regulations and conditions of this permit; if the final report of the test results shows non-compliance the owner or operator shall propose corrective action(s). Failure to demonstrate compliance through the test may result in enforcement action.

- 5.2 The SO₂ CEMS shall be installed and certified by satisfying the requirements of Performance Specifications No. 2 in Appendix "B" of 40 CFR Part 60. The flow CEMS shall be installed and certified by satisfying the requirements 40 CFR part 75, Appendix "A". The QA/QC procedures for the SO₂ CEMS shall be established in accordance with the procedures in Appendix "F" of 40 CFR Part 60. For the purpose of determining the Relative Accuracy of the CEMS, the applicable standard shall be 25 ppmvd.
- 5.3 NO_x: NO_x emissions shall be monitored by CEMS. The CEMS shall be installed and certified by satisfying the requirements of the applicable Performance Specifications in Appendix "A" of 40 CFR Part 75. The QA/QC procedures for the CEMS shall be established in accordance with the procedures in Appendix "B" of 40 CFR Part 75.
- 5.4 Compliance with PM₁₀ emissions limits shall be based on performance testing conducted in accordance with Condition 5.1 and annually thereafter, as follows:
 - 5.4.1 H₂SO₄: Compliance with emission limits set in accordance with Conditions 2.1.3.1 and 2.1.4 shall be based on testing in accordance with Reference Method 8 in Appendix "A" of 40 CFR Part 60, or other testing methodology approved by the Department.
 - 5.4.2 TSP: Compliance with Conditions 2.1.3.2 shall be based on testing in accordance with Reference Method 5 B in Appendix "A" of 40 CFR Part 60, or other testing methodology approved by the Department.
 - 5.4.3 PM₁₀: Compliance with emission limits set in accordance with Condition 2.1.3.3 shall be based on testing in accordance with Methods 5B/202, or other testing methodology approved by the Department.
- 5.5 CO: Compliance testing shall be based on CEMS. The CEMS shall be installed and certified by satisfying the requirements of Performance Specifications No. 4 in Appendix "B" of 40 CFR Part 60. The QA/QC procedures for the CEMS shall be established in accordance with the procedures in Appendix "F" of 40 CFR Part 60.

Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)

The Premcor Refining Group, Inc.

Fluid Catalytic Cracking Unit (FCCU), FCCU COB and Wet Gas Scrubber (WGS)

May 31, 2005

Page 9

- 5.6 VOC as CH₄: Compliance testing shall be based on an initial Reference Method 25 A in Appendix "A" of 40 CFR Part 60, and every three years thereafter. The Company may petition the Department to decrease the frequency of VOC performance tests based on the results of any performance testing.
- 5.7 Pb: Compliance testing shall be based on an initial Reference Method 12 testing in Appendix "A" of 40 CFR Part 60. Future compliance shall be based on the stack test based emission factor in terms of lb/1,000 lb coke burn rate. The Company shall conduct additional performance testing in accordance with this condition every three years, unless the Department approves less frequent testing.
- 5.8 The Company shall continuously monitor the temperature of the FCCU COB firebox.
- 5.9 The Company shall monitor the FCCU coke burn rate.
- 5.10 The Company shall develop an alternate monitoring plan for evaluating visual emissions and submit it to AQM for its approval at least 6 months prior to startup of the FCCU WGS.
- 5.11 All monitor certifications shall be conducted within 60 days of the unit attaining maximum production but not later than 180 days after unit start up. A "Source Sampling Guidelines and Preliminary Survey Form" must be submitted and found acceptable to the Department at least thirty (30) days prior to the performance testing. Results of the Performance Specification testing shall be submitted to the Department, in triplicate, within 60 days after completion of the testing.
- 5.12. The Company shall submit a proposal to calculate SO₂ emissions during bypass operations to AQM for its approval and incorporation into the permit, at least 60 days prior to the startup of the FCU WGS. The Company shall also supply documentation supporting its calculations sufficient to demonstrate their effectiveness and applicability.

6. Record Keeping Requirements

- 6.1 The Company shall maintain all records necessary for determining compliance with this permit in a readily accessible location for five (5) years and shall make these records available to the Department upon written or verbal request. These records shall include:

Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)

The Premcor Refining Group, Inc.

Fluid Catalytic Cracking Unit (FCCU), FCCU COB and Wet Gas Scrubber (WGS)

May 31, 2005

Page 10

- 6.1.1 CEMS data;
 - 6.1.2 Calibration and audit results;
 - 6.1.3 Stack test results;
 - 6.1.4 The daily COB fuel usage;
 - 6.1.5 The coke burn rate on a 12 month rolling average basis;
 - 6.1.6 COB firebox temperature;
 - 6.1.7 Detailed daily records of observations of visible emissions or the absence of visible emissions, or daily visible emissions observations and any other records identified in an approved alternative plan;
 - 6.1.8 Date of each FCCU process unit or vessel turnaround;
 - 6.1.9 Internal pressure of the process unit or vessel immediately prior to venting to the atmosphere;
 - 6.1.10 VOC leak repair records required by 40 CFR 60.592 for existing components in light liquid and gaseous service and 40 CFR 63.654 for new components in light liquid and gaseous service; and
 - 6.1.11 Bypass stack SO₂ emissions as calculated according to Condition 5.12 measured by approved alternative methodology during atypical operations and FCCU turndown showing FCCU throughput rates.
- 6.2 The rolling twelve (12) month total emissions for each pollutant shall be calculated and recorded each month in an easily accessible format for each pollutant listed in Condition 2.1.

7. Reporting Requirements

- 7.1 Emissions in excess of any permit condition or emissions which create a condition of air pollution shall be reported to the Department immediately upon discovery by calling the Environmental Emergency Notification and Complaint number, (800) 662-8802, or from outside the State of Delaware, (302) 739-5072.
- 7.2 In addition to complying with Condition 7.1 of this permit, the Company shall satisfy any reporting required by the “**Reporting of a Discharge of a Pollutant or an Air Contaminant**” Regulation, , within thirty (30) calendar days of becoming aware of an occurrence subject to reporting pursuant to Condition 7.1. Further the Department may in its discretion require the Company to submit reports not otherwise required by the Regulation. All reports submitted to the Department pursuant to this Condition shall be submitted in writing and shall include the following information:
- 7.2.1 The name and location of the facility;
 - 7.2.2 The subject source(s) that caused the excess emissions;

Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)

The Premcor Refining Group, Inc.

Fluid Catalytic Cracking Unit (FCCU), FCCU COB and Wet Gas Scrubber (WGS)

May 31, 2005

Page 11

- 7.2.3 The time and date of the first observation of the excess emissions;
 - 7.2.4 The cause and expected duration of the excess emissions;
 - 7.2.5 For sources subject to numerical emission limitations, the estimated rate of emissions (expressed in the units of the applicable emission limitation) and the operating data and calculations used in determining the magnitude of the excess emissions; and
 - 7.2.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions.
 - 7.2.7 Emissions on the same day from the same emission unit may be combined into one report. Emissions from the same cause that occur contemporaneously may also be combined into one report.
 - 7.2.8 The Company shall submit an electronic copy of all required reports to the Department's compliance engineer assigned to the Refinery.
- 7.3 Semiannual reports for the preceding six month period shall be submitted to the Department by January 31 and July 31 of each calendar year. The semiannual reports required by this section shall be increased in frequency to quarterly reports at the Department's discretion and shall become effective upon request of the Department after reasonable notice to the Company. An electronic copy of all required reports shall be sent to the Department's compliance engineer assigned to the Refinery. The required reports shall contain the following information:
- 7.3.1 A summary of all excess emissions for the quarter;
 - 7.3.2 A CEMS report to include system calibration and audit results, the actual daily data capture for the period, and details of out of control periods and during periods when the FCCU WGS is bypassed;
 - 7.3.3 Periods when the FCCU COB firebox temperature fell below 1300 deg. F.;
 - 7.3.4 Exceedances of the rolling 30 day limits of FCCU coke burn rates identified in Condition 3.1.1;
 - 7.3.5 A summary of all periods when the FCCU WGS has been bypassed;
 - 7.3.6 Actual hourly SO₂ emissions during periods when the was FCCU WGS bypassed;
 - 7.3.7 The duration and magnitude of all periods of excess opacity;
- 7.4 Quarterly CEMS reports for the preceding quarter shall be submitted to the Department for the CEMS required by this permit by January 31, April 30, July 31 and October 31 of each calendar year and shall include a report of excess emissions, quarterly audit results, data capture for the period and details of out of control periods.

Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)

The Premcor Refining Group, Inc.

Fluid Catalytic Cracking Unit (FCCU), FCCU COB and Wet Gas Scrubber (WGS)

May 31, 2005

Page 12

- 7.5 Annual compliance test reports shall be submitted to AQM within 90 days of completion of the test.
- 7.6 VOC leak repair records required by 40 CFR 60.592 for existing components in light liquid and gaseous service and 40 CFR 63.654 for new components in light liquid and gaseous service.
- 7.7 One (1) original of all required reports in hard copy format shall be sent to the address below:

Air Quality Management Section
Division of Air and Waste Management
156 South State Street
Dover, DE 19901

One (1) copy of all required reports in hard copy format shall be sent to the address below:

Compliance Engineer
Engineering & Compliance Branch
715 Grantham Lane
New Castle, DE 19720

8. Administrative Conditions

- 8.1 This permit shall be made available on the premises.

Permit: APC-82/0981-CONSTRUCTION (Amendment 5)(NSPS)

The Premcor Refining Group, Inc.

Fluid Catalytic Cracking Unit (FCCU), FCCU COB and Wet Gas Scrubber (WGS)

May 31, 2005

Page 13

- 8.2 Failure to comply with the provisions of this permit may be grounds for suspension or revocation.

Sincerely,

Nancy E. Terranova
Acting Program Manager
Engineering & Compliance Branch

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pc: Dover Title V File
 Ravi Rangan, P.E.
 Bruce Steltzer
 Mark Lutrzykowski, P.E.
 Thomas Doherty, P.E.

MEMORANDUM

TO: Robert P. Haynes, *Esq.*

THROUGH: James Werner
Ali Mirzakhali, P.E.
Nancy Terranova

FROM: Ravi Rangan, P.E.

SUBJECT: Response to Request for Additional Technical Assistance Regarding Premcor's Pollution Control Upgrade Project (PCUP) Phase II Draft Permit for the Fluid Catalytic Cracking Unit (FCCU)

Date: May 26th, 2005

This memorandum is in response to your request for further technical assistance regarding the support for determining the 56,000 lb/hr coke burn rate included in the draft FCCU permit Condition 3.1.1. Specifically, you have raised 3 questions:

- 1) What analysis and assumptions support this level, as opposed to a different level?
- 2) What are the environmental benefits associated with this level as opposed to the higher/no limit sought by Premcor; ie, the harm that will be protected.
- 3) Will this restriction impact the output of the refinery from its current, authorized operating limits, and if so, by how much?

Responses:

1. In 1996, the Delaware City Refinery (owned by Star Enterprises at that time) submitted a permit application for the construction of a new sulfur recovery unit (SRU III). The sulfur recovery area has historically been a bottleneck to upstream operations. As a result of the construction of the new SRU III, the tailgas treatment unit's capacity would have increased from an actual of 376 long tons per day (LTPD) to 450 LTPD, which in turn would have had the potential to trigger upstream emissions increases from the FCU and FCCU. To prevent these upstream increases, it was necessary to establish restrictions. SO₂ emissions were used as a surrogate measure to assess baseline emissions. For the FCCU, baseline SO₂ emissions were computed on the basis of testing program developed by Star Enterprise to correlate SO₂ emissions to various operating parameters, such as the coke burn-off rate and weight percent sulfur in the feed. This approach was consistent with the basis for the NSPS standard for FCCU SO₂ emissions which is by either controlling the coke burn-off rate (9.8 kg./1000 kg. of coke burn-off) or by limiting the sulfur content of the fresh feed to be no greater than 0.3 % by weight. AQM researched a report submitted by Star Enterprise in response to the

United States EPA's Section 114 letter dated March 4, 1996 asking for information regarding weight percent sulfur in the cracker feed and the average coke burn-off during the baseline period used in that application. AQM reviewed the data from January 1, 1994 to August 31, 1995 and calculated the average coke burn-off rate to be 56 M lb./hour. The average sulfur content in the feed during the same period was 2.12 weight percent.

2. As discussed in AQM's technical memorandum, the FCCU saw unpermitted increases in annual NO_x emissions of approximately 650 tons beginning in the fall of 2002. Although, AQM is investigating this increase as a separate enforcement action, it has asked Premcor and Motiva (Premcor's predecessor) repeatedly to provide additional information on the cause of this increase and to assist AQM in developing a meaningful NO_x emission limit in the context of this permitting action. However, both Premcor and Motiva have not provided any additional input. New Castle County is in severe non-attainment of the NAAQS for ozone and NO_x is a pre-cursor to the formation of ozone. The environmental harm from a potential increase of 650 tons annual increase in NO_x emissions will be substantial. After the FCCU wet gas scrubber is constructed, the SO₂ emissions limit will no longer be restrictive with regard to the throughput. The only responsible option available to the Department, other than denial of the permit, is to condition the permit in a way that there will be no net emissions increase from the refinery, and that is by imposing the coke burn limit of 56,000 lb/hour.
3. During the baseline period (October 2002 through December 2003) used by Premcor in the PCUP application, the average coke burn rate was 56,222 lb/hour. Therefore, AQM does not anticipate this restriction to adversely impact the refinery. AQM also researched Premcor's Investor Relations web page and determined the Company realized net revenues of \$ 478 million in 2004 and a gross margin of \$ 9 per barrel of crude.