



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. 2007-A-0022

Re: Approval of Final Regulation, 7 DE Admin. Code 1142, Section 2, "Control of Nitrogen Oxides Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries," in Delaware Regulations Governing Control of Air Pollution

Date of Issuance: June 15, 2007
Effective Date: July 11, 2007

Under the authority vested in the Secretary of the Department of Natural Resources and Environmental Control ("Department" or "DNREC") under *29 Del. C. §§8001 et seq.*, *29 Del. C. §§10111 et seq.* and *7 Del. C. §6010(a)*, the following findings, reasons and conclusions are entered as an Order of the Secretary in the above-referenced rulemaking proceeding.

On January 11, 2006, the Department opened a rulemaking proceeding in Start Action Notice ("SAN") 2005-13, which was to develop a proposed regulation for the purpose of regulating and reducing the air emission of nitrogen oxides ("NOx") from industrial boilers and process heaters at petroleum refineries. Delaware's only petroleum refinery is located near Delaware City, New Castle County, and the Department identified its boilers and process heaters as significant sources of emissions of NOx oxides. NOx is a harmful air pollutant and a precursor to the formation of ground-level ozone, which is a major cause of adverse human health consequences, particularly for the young, the elderly and anyone with impaired breathing ability. Ozone also adversely

impacts agriculture. The Department's regulatory action was taken in order to comply with federal air quality requirements, notably, the Environmental Protection Agency's ("EPA") 8 Hour Ozone National Ambient Air Quality Standard ("NAAQS"). Delaware is within the EPA's Philadelphia-Wilmington-Atlantic City ozone non-attainment area, which means that Delaware must take regulatory actions to improve air quality to meet the NAAQS by 2010.

The Department published the proposed regulation on February 1, 2007 in the *Delaware Register of Regulations*, and held a public hearing on March 6, 2007 before the Department's hearing officer, Robert P. Haynes, who issued a report dated June 12, 2007 recommending approval of the proposed regulation as a final regulation. This report include the Department's response to the public comments, as prepared by the Division of Air and Waste Management, Air Quality Management Section ("AQMS"), notably, Frank Gao and Ravi Rangan. Based upon the record developed by the Department, including all the public comments, I adopt the report and incorporate it into this order. I elaborate on some of the issues raised.

First, this Order and its approval of the proposed regulation as a final regulation will allow the Department and Delaware to fulfill its federal regulatory responsibilities, along with the other regulatory actions already taken and that will be taken, as outlined in the Department's ozone State Implementation Plan ("SIP"). The SIP, as periodically revised and updated, is a federal regulatory requirement imposed on Delaware by the federal Clean Air Act and EPA's regulations issued under the CAA. The SIP must demonstrate to EPA Delaware's regulatory actions that will result in Delaware's air quality attaining the NAAQS by 2010. The Department supports the attainment of

NAAQS as it will bring cleaner air and better health to Delaware's citizens and visitors. The regulation approved by this Order will result in significantly lower air emissions of harmful pollutants.

Second, the regulation also is supported by the considerable scientific evidence developed by the Department's experts and in a collaborative manner with interested participants. AQMS drafted the proposed regulation based upon currently available and economically feasible control technologies, and worked in a cooperative manner with the owner of the petroleum refinery, Premcor Refining Group. In addition, the American Lung Association, Green Delaware and the Mid-Atlantic Environmental Law Center participated and contributed. These groups supported the proposed regulation in general, but they also expressed positions that the Department did not go far enough in this regulation and would require even more stringent air quality controls. The Department's approval of the final regulation is made based upon careful consideration of all the comments, and the expert opinion that the proposed regulation provides a reasonable and well-supported basis to improve air quality and allow Delaware to attain cleaner air in order to meet the NAAQS by 2010. The Department compliments all the participants in the regulatory development process for their participation and cooperation, even if a regulation could not satisfy all the interests.

I find that the record developed during the public hearing process, including the Department's response, provides ample support for the Department to adopt this final regulation. The justification is that it will result in cleaner air quality though reasonably

available air pollution controls. The regulation approved by this Order will result in the reduction of NOx from significant sources of such emissions, which are not subject to control under other air quality regulations.

In conclusion, the following findings and conclusions are entered:

1. The Department, acting through this Order of the Secretary and *29 Del C. §10118(d)*, hereby approved the final regulation in Appendix A to the Report,
2. The Department shall have this Order published in the *Delaware Register of Regulations* and in newspapers in the same manner as the notice of the proposed regulation;
3. The Department shall provide notice to the persons affected by the Order, as determined by the Department, including all those who submitted comments to the Department, who otherwise participated in the public hearing, and who requested to receive notice of all actions on proposed regulations.

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
Senior Hearing Officer, Office of the Secretary
Department of Natural Resources and Environmental Control

RE: Proposed Regulation, 7 DE Admin. Code 1142, Section 2, "Control of Nitrogen Oxides Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries" to Regulations Governing the Control of Air Pollution

DATE: June 12, 2007

I. BACKGROUND AND PROCEDURAL HISTORY

This report considers a proposed regulation entitled "Control of Nitrogen Oxides Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries," which the Department of Natural Resources and Environmental Control ("Department") proposes to add as Section 2 to Regulation 1142, *7 DE Admin. Code 1142*, of *Regulations Governing the Control of Air Pollution*.

On January 11, 2006, the Department issued Start Action Notice ("SAN") 2005-13, which opened a rulemaking proceeding to develop a regulation to reduce the air emission of nitrogen oxides ("NOx") from industrial boilers and process heaters at petroleum refineries. The Department invited interested participants to work on the proposed regulation. The Department formed a committee moderated by Frank Gao, Ron Amirikian and Ravi Rangan with the Department's Division of Air and Waste Management, Air Quality Management Section ("AQMS"). The committee met on March 15, 2006, April 19, 2006, June 21, 2006, July 19, 2006, and August 23, 2006. A

duly noticed public workshop was held October 5, 2006. The Department published the proposed regulation on February 1, 2007 in the *Delaware Register of Regulations*, and held a public hearing on March 6, 2007. The public comment period for participants at the hearing was held open until March 23, 2007. The Department received one additional post-hearing comment from Premcor Refining Group, Inc. (“Premcor”), a Valero Company. Premcor owns and operates the only petroleum refinery in Delaware, which is located near Delaware City in New Castle County and is known as the Delaware City Refinery (“DCR”). Consequently, Premcor’s boilers and heaters at DCR would be the only units subject to the regulation at this time, if adopted.

Following the hearing, I requested technical assistance from the experts within AQMS to provide their expertise in considering the technical public comments, including a response to them and whether revisions should be made to the proposed regulation based upon the public comments. AQMS prepared a comprehensive response to the public comments, which is attached hereto as Appendix A.

The proposed regulation, if adopted, would only apply NO_x emission limits to nine large NO_x emitting boilers and heaters at the DCR. The Department’s experts identified that these units targeted by the proposed regulation were significant sources of NO_x emissions. First, the large boilers and process heaters at the DCR contribute to approximately 17% of all the point-source NO_x emissions in New Castle and Kent Counties and approximately 83% of all the NO_x emissions from the DCR. Second, there exists pollution control technology and equipment that can be technically feasibly installed to reduce the NO_x emissions, including the installation of ultra low NO_x burners and flue gas recirculation systems.

The reduction of NO_x levels emitted into the air is important because NO_x is a harmful air pollutant. It is a precursor to the formation of ground-level ozone, which is a major cause of adverse human health consequences, particularly for the young, the elderly and anyone with impaired breathing ability. The American Lung Association indicated that approximately 100,000 persons in Delaware suffer from chronic pulmonary symptoms, which symptoms may be caused by and severely worsened by ozone. Ozone also adversely impacts agriculture.

The Department's action to propose a regulation to reduce NO_x emissions at DCR also was taken in order to comply with federal air quality requirements, notably, the Environmental Protection Agency's ("EPA") regulation that established National Ambient Air Quality Standards ("NAAQS") for eight hour ozone levels and fine particulate matter ("PM_{2.5}"). The ozone NAAQS applies to Delaware because EPA has classified Delaware as within the Philadelphia-Wilmington-Atlantic City moderate non-attainment area for ozone, which means that Delaware must take regulatory actions to improve air quality to meet the NAAQS by 2010 or face the loss of federal funds and other adverse consequences. Thus, the proposed regulation is one of several other regulatory actions that the Department is undertaking to comply with NAAQS, as set forth in the State Implementation Plan required by the EPA, which together will ensure that Delaware will comply with NAAQS by 2010.

II. SUMMARY OF PUBLIC HEARING

The public hearing record contains a verbatim transcript of the March 6, 2007 public hearing, and documents, marked as Exhibits ("Ex"). AQMS supported the proposed regulation through the proposed regulation's project leader, Frank Gao, Ph.D.,

P.E., who introduced into the record the Department exhibits identified as DNREC Ex. Nos. 1-5. These documents set forth the notices and in DNREC Ex. 4 the large number of correspondence during the regulatory development process among the committee members.

Premcor submitted written comments at the hearing and post-hearing comments that sought to make the proposed regulation less stringent. Kevin Stewart spoke on behalf of the American Lung Association and presented a written statement that voiced concerns that the proposed regulation did not go far enough to reduce NOx emission from the DCR. Alan Muller spoke on behalf of Green Delaware and supported the amendments advocated by the American Lung Association's comments. Finally, Michael Fiorentino spoke on behalf of the Mid-Atlantic Environmental Law Center ("MAELC"). He advocated more stringent limits and controls over the DCR's boilers. At the request of Mid-Atlantic Environmental Law Center, the public comment period remained open until March 23, 2007, but only Premcor submitted an additional comment via e-mail on March 16, 2007.

As noted earlier, AQMS provided an excellent summary of the public comments that is set forth in Appendix A. The technical response document is adopted insofar as it explains the reasoning and technical explanation for the proposed regulation.

III. DISCUSSION AND REASONS

The Department developed the proposed regulation after extensive meetings and comments from interested persons, as evident from the vast number of documents included in the public hearing record of the committee meetings and communications. The regulatory development process was a collaborative effort, and many of the issues

raised during the public hearing process were thoroughly discussed and debated during the formal and informal committee processes. Based upon the public comments, it is evident that not everyone was satisfied with the proposed regulation.

The purpose of the proposed regulation is to reduce NO_x emissions from sources that emit significant levels of this harmful air pollutant. Clearly the Department has a reasonable basis for the proposed regulation and its purpose is consistent with the Department's statutory duties to protect the environment and public health.

The proposed regulation is directed at large industrial boilers and heaters at petroleum refineries.¹ The proposed regulation applies to the following DCR's units, which are identified by the unit, description and their 2002 NO_x emissions levels as stated in tons per day ("tpd"): 1) Unit 21-H-2 (crude unit vacuum heater)-0.24 tpd; 2) Unit 21-H-701 (crude unit atmospheric heater)- 0.21 tpd, 3) Unit 22-H-3 (Fluid Coking Unit Carbon Monoxide ("CO") Boiler)-1.79 tpd, 4) Unit 37-H-1 (Steam Methane Reformer Heater)-0.24 tpd, 5) Unit 42-H-1,2,3 (Continuous Catalyst Regenerator Reformer Heater)-0.51 tpd, 6) Unit 80-1 (Boiler 1)-1.0 tpd, 7) Unit 80-2 (Boiler 2)-0.6 tpd, 8) Unit 80-3 (Boiler 3)-0.97 tpd, 9) Unit 80-4 (Boiler 4)- 1.14 tpd.

One major issue raised in the public comments was the units at DCR that should be regulated by the proposed regulation. The Department's proposed regulation reserved establishing limits for DCR's Fluid Coking Unit ("FCU") CO boiler, or unit 22-H-3. This unit is one of the largest NO_x emitters at DCR,² and it had been included in the Department's prior drafts considered by the committee. The earlier drafts of the proposed regulation would have imposed a 0.04lbmmBTU NO_x limit to the FCU CO

¹ The proposed regulation applies to units with a maximum heat capacity of 200 million BTU per hour ("mmBtu/hr"). .

² This unit emits 1.79 tpd of NO_x.

boiler. The Department, upon consideration of Premcor's information on its scheduling of planned maintenance at DCR,³ the Department determined to not set a NOx limit for this unit in the published proposed regulation. The proposed regulation's treatment of the FCU CO's boiler was the subject of harsh criticism by the American Lung Association, Green Delaware and MAELC, and the American Lung Association's spokesperson described the exclusion as "the elephant in the room" during the hearing.

AQMS' response set forth the rationale that it wanted to study further the appropriate emission standard for the FCU CO boiler because AQMS recognized that installing the pollution controls on the FCU CO boiler may not be feasible until the next turnaround at DCR, which may go beyond the target dates in this regulation. The exclusion is based upon the balancing of the operating practicalities of DCR, which has an important role in the Delaware economy and the Nation's energy supply. I find that the rationale for excluding the unit as set forth in the technical response document is reasonable and recommend the proposed regulation's exclusion of the FCU CO boiler be maintained in the final regulation.

The Department's experts also recommend that the final regulation reflect a change, which would defer establishing a NOx limit at this time for the Fluid Catalytic Cracking Unit's CO boiler. The Department's experts explained in their response document that this change is appropriate when it became apparent during ongoing enforcement negotiations with Premcor that this unit would be covered in the settlement

³ The DCR periodically schedules what are described as 'turnarounds,' which is when DCR has no or reduced production for extended periods in order to undertake major projects, to change the product being produced and to conduct maintenance. The Department in developing regulations that impact DCR attempts to cooperate with DCR so that the installation of pollution control equipment can occur when DCR is in a turnaround because the Department desires to reduce the impact on DCR's production so long as the public health and the environment can still be protected.

of the enforcement action. Consequently, the FCCU CO boiler's compliance with the proposed regulation's limits was addressed in the enforcement action, and there was no need to include this unit in the proposed regulation. The status of the negotiations allowed the Department to remove this unit because the administrative order of consent effective imposed equally stringent limits as the proposed regulation would if adopted. The administrative order of consent was signed July 6, 2006. Thus, the end result should satisfy the environmental interests, and it will allow the Department to enforce any violations faster than if a new enforcement action was commenced for a violation of a regulation if the unit had been included in the proposed regulation.

Premcor's comments also seek to remove the Steam Methane Reformer ("SMR") Heater, unit 37-H-1, from the proposed regulation. Premcor contends that the proposed 0.07 lb/mmBtu NO_x limit for the SMR, as measured over a rolling 24 hour average, relies on an incorrect application of Premcor's technical and economic data. Premcor suggests a longer averaging time period of 24 months.

The Department's experts recommend rejecting this longer averaging time period. Nevertheless, they recommend further study of the MR's limits based upon Premcor's comments on the cost effectiveness of the pollution controls. Consequently, the Department's experts recommended not prescribing a standard at this time until after further discussions and analysis of the cost effectiveness of proposed controls. The cost effectiveness analysis was predicated on obtaining emissions reductions from the SMR Heater's present level of 0.07 lb/mmBtu to the proposed level of 0.04 lb/mmBtu on a 24 hour rolling average basis. Indeed, the Department did not incorporate the proposed level of 0.04 lb/mmBtu for the SMR Heater because it took into consideration Premcor's

comment that the cost effectiveness of reducing emissions from 0.07 lb/mmBtu to the proposed 0.04 lb/mmBtu would not be reasonable given the fact that the SMR Heater is equipped with over 500 burners. If as Premcor now suggests, this unit is not be able to operate in compliance with the proposed standard of 0.07 lb/mmBtu on a rolling 24 hour average basis, then AQMS' experts recommend that the cost effectiveness analysis be redone in order to reduce the SMR heater's current Reasonable Achievable Control Technology ("RACT") standard to of 0.20 lb/mmBtu to the proposed standard of 0.04 lb/mmBtu on a rolling 24 hour basis. Therefore, AQMS recommended deferring establishing a limit on this unit at this time until it has conducted more research on the cost effectiveness analysis.

I agree that it is prudent to defer establishing a limit for the SMR unit at this time and thereby allow the Department's experts to review additional information on the cost effectiveness. To reflect the deferral of this portion of the proposed regulation, the Department could leave section 2.3.2 empty or indicate that is reserved. The public is better served by the indication that this matter is still under consideration at this time as part of a phased consideration of the proposed regulation. Procedurally this change is not a substantive change because the Department has not made a final decision on proposed Section 2.3.2 if the Secretary adopts this recommendation. The Secretary could adopt the proposed standard or reject any standard as a final decision, but I recommend that proposed section 2.3.2 be reserved and addressed in an order issued in the near future. Department's experts determined not to adopt a standard in 2.3.2 at this time, but the rest of the proposed regulation should not be delayed for this one unit's limit. Under these circumstances, I agree that further review and evaluation is warranted in response to

Premcor's concerns, but that a decision should be made soon as the environmental interests reasonable expect some limit established in 2.3.2 based upon the proposed regulation. In sum, I agree to recommend reserving 2.3.2 until such time in the near future when the Department's experts determine if the 0.07 limit is appropriate or whether there should be a new notice and hearing to propose a new limit. When the Department has not made a decision on a pending portion of a proposed regulation, but elects to defer its decision in order to gather more information and research the issues raised by the public comments, such action is a phased review of the proposed regulation. I find that proposed regulation 2.3.2 remains pending as published and could be adopted as a final regulation in the future, or could be revised and adopted if revised in a non-substantive manner or the revision fell within the Administrative Procedure Act's other exemptions, or adopted if revised in a substantive manner after further public notice and public hearing.

The other issue that warrants more discussion was Premcor's post-hearing comment that sought to establish a credit for the planned shutdown by May 1, 2011 of Boilers 3 and 4 (units 80-3 and 80-4). The proposed regulation Section 2.3.3 adopted Premcor's shutdown decision and timetable. First, Premcor offer no specific language for the revision, which was raised long after the stakeholder meetings and only after the hearing. Indeed, the comment was allowed in the record only due to another participant's request to extend the public comment period. Second, the shutdown of these units was negotiated as part of the Department's decision to remove the May 1, 2009 compliance deadline for these units. Premcor agreed to shutdown these units and this agreement was shown in Premcor's turnaround schedules as submitted to the Department. The July 6,

2006, Administrative Order of Consent provided Premcor with ample emissions credits to use as Premcor chooses in the future, subject to the Department's permitting procedures. Thus, Premcor has emissions credits and the Department's proposed regulation merely reflected Premcor's decision to shutdown these units to build new ones that will meet the proposed regulation's limits.⁴

The technical response document addressed this new issue and the Department's experts found that any crediting was not warranted. I agree with the technical assessment and adopt its reasoning. Moreover, I find such a revision to the proposed regulation would be a substantive change and, as such, would require further notice and a public hearing, which would unduly delay the proposed regulation. Such a revision is not like the phasing of the Department's decision with proposed section 2.3.2, but would entail new and possible complex regulatory language on the crediting.

The impact of the proposed regulation will significantly reduce the 2002's 8.71 tons per day of NO_x emitted from the affected units. The current emissions represent approximately 17.8 percent of all the point source NO_x emissions in Kent and New Castle Counties. The Department's experts determined that technically feasible methods were available to reduce the NO_x emissions from these units. As shown in the extensive documentation of the committee's development of the proposed regulation, the Department considered various limits on the NO_x emissions. The Department ultimately decided that 0.04 lb/mmBtu of NO_x emission would be a reasonable limit in the proposed regulation. Other participants, notably, the American Lung Association, Mid-Atlantic

⁴ The technical response document indicates that the Department already issued Premcor permits in 2004 to construct two package boilers as replacement units, but Premcor has not built them and has indicated they may not be needed.

Environmental Law Center and Green Delaware, advocated lower limits, including 0.03 lb/mmBtu limit. Premcor advocate higher limits than the 0.04 limit.

I find that the record developed during the public hearing process, including the Department's response, provides ample support for the Department's determination that the 0.04 lb/mmBtu limit is a reasonable limit that will achieve significant NO_x air emission reductions, is technically feasible to implement, and will satisfy the goal of Delaware meeting NAAQS air quality by 2010 along with the other regulatory action taken in the SIP. As stated in AQMS' responses, the Department reserves the regulatory authority to revisit this regulation, and other relevant regulations, in the future and to set up new and lower emission limits to meet the needs for attaining and maintaining existing and new air quality standards.

The justification for the limit is that known and proven technology exists and can be installed in a technically feasible manner. The Department's experts agree with the proponents of a lower emission limit also would be reasonable, but I agree with them that the SIP modeling allows Delaware to adopt the 0.04 lb/mmBtu limit at this time. The end result will be a significant step towards cleaning the air in Delaware through reasonably available air pollution controls. The proposed regulation if approved will result in the reduction of NO_x from significant sources of such emissions, which are not subject to control under other air quality regulations.

IV. RECOMMENDED FINDINGS AND CONCLUSIONS

Based on the record developed, including careful consideration of all public comments and research of the issues raised by them, I find and conclude that the record supports approval of the proposed regulation, as set forth in Appendix B hereto, as

a final regulation. In conclusion, I recommend the Secretary adopt the following findings and conclusions as an Order of the Department:

1. The Department, acting through this Order of the Secretary and *29 Del C. §10118(d)*, hereby approves the final regulation in Appendix B to the Report,
2. The Department shall have this Order published in the *Delaware Register of Regulations* and in newspapers in the same manner as the notice of the proposed regulation;
3. The Department shall provide notice to the persons affected by the Order, as determined by the Department, including all those who submitted comments to the Department, who otherwise participated in the public hearing, and who requested to receive notice of all actions on proposed regulations.

Robert P. Haynes, Esquire
Senior Hearing Officer



Appendix A
DAWM/AQMS Technical Response Document
Division of Air and Waste Management
Air Quality Management Section



156 South State Street, Dover, DE 19901
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Program Administrator
Ali Mirzakhali

Branch Program Managers:

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Engineering and Compliance Branch
Paul Foster *

Technical and Analytical Services
Joe Martini*

TO: Robert P. Haynes, Esquire, Senior Hearing Officer

THRU: Ali Mirzakhali, Administrator
Ron Amirikian, Planning Branch Program Manager

FROM: Frank Gao, AEP Environmental Engineer

SUBJECT: Responses to Comments Received at the Public Hearing, March 6, 2007, on the proposed Regulation 1142 Section 2: Control of NOx Emissions from Industrial Boilers/Process Heaters at Petroleum Refineries.

DATE: June 6, 2007

* Located in the New Castle Office at:
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New Castle, DE 19720
Phone 302-323-4542
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A public hearing was held on March 6, 2007 on the proposed regulation mentioned above. Four participating parties submitted either written or oral comments during the public comment period: Premcor Refining Group, Mr. Kevin Stewart on behalf of American Lung Association of Delaware, Mr. Alan Muller on behalf of Green Delaware, and Mr. Michael Fiorentino on behalf of Mid-Atlantic Environmental Law Center.

The attached document provides the responses of Air Quality Management (AQM) Section of the Department (hereafter identified as either AQM or the Department) to this public comment.

M

Memorandum

**Responses to Comments Received at the Public Hearing,
March 6, 2007, on the proposed Regulation 1142 Section 2:
Control of NO_x Emissions from
Industrial Boilers/Process Heaters at Petroleum Refineries**

Part 1. Responses to Premcor's written comments submitted on March 6, 2007 at the hearing (as Premcor Refining Group Exhibit 1 of the hearing record), and to Premcor's post-hearing comment.

1. The proposed NO_x emission limit for the SMR Heater of 0.07 lb/mmBtu, on a 24-hour rolling basis, reflects an incorrect application of the technical and economic data submitted by Premcor to DNREC.

Premcor commented that their October 5, 2006 report and analysis (see Attachment 1 to this response document) specifically identified the baseline NO_x emission rate of 0.071 lb/mmBtu from the Steam Methane Reformer (SMR) Heater, based on CEMS data, as the average emission rate over a period of approximately 33 months from January 2004 through September 2006. Premcor commented that because the 0.071 lb/mmBtu figure was based upon an average of data obtained over more than 2 years, it would be incorrect to conclude, based upon the October 5, 2006 report, that the SMR Heater can achieve a 0.07 lb/mmBtu NO_x emission rate on a 24 hour basis. Premcor performed a statistical evaluation of actual NO_x emissions from January 1, 2004 through December 31, 2006 and recommends a limit of 0.07 lb/mmBtu as a 24-month rolling average be established. Premcor has also suggested that to the extent DNREC prefers a short term limit on a 24 hour rolling average basis, this limit should be revised to 0.11 lb/mmBtu on a 24 hour rolling basis.

Department responses

The Department disagrees with this comment for the following reasons:

- AQM has reviewed Premcor's statistical analysis and accompanying raw data. Premcor's analysis of the raw data included 24,622 values of the 24 hour rolling average NO_x emissions rate from the SMR Heater. Based on this data set, Premcor has proposed an upper tolerance limit of 0.11 lb/mmBtu that will assure that 99 % of the observations will have a 95 % confidence coefficient. However, AQM notes that the majority of the readings in the data set were observed values when there was no regulatory driver requiring optimal performance at a level below the proposed standard of 0.07 lb/mmBtu on a 24 hour rolling average basis. The development of this regulation began in the spring of 2006, and the only applicable regulatory consideration from January 2004 was the RACT based limit of 0.2 lb/mmBtu on a 24 hour rolling average. Indeed, despite the fact that there was no regulatory driver requiring optimal performance at a level below the proposed standard of 0.07 lb/mmBtu on a 24 hour rolling average basis, both the

mean and median values of Premcor's data set show compliance with the proposed standard. Therefore, if the SMR Heater is operated in conformance with good air pollution control practices it is reasonable to expect it to comply with the proposed standard.

- AQM notes that during the stakeholder review process the discussions and analysis conducted to determine the cost effectiveness of proposed controls were predicated on obtaining reductions commensurate with operating the SMR Heater from the present level of 0.07 lb/mmBtu to the proposed level of 0.04 lb/mmBtu on a 24 hour rolling average basis. Indeed, the Department did not incorporate the proposed level of 0.04 lb/mmBtu for the SMR Heater because it took into consideration Premcor's comment that the cost effectiveness of reducing emissions from 0.07 lb/mmBtu to the proposed 0.04 lb/mmBtu would not be reasonable given the fact that the SMR Heater is equipped with over 500 burners. If as Premcor now suggests, this unit will be unable to operate in compliance with the proposed standard of 0.07 lb/mmBtu on a rolling 24 hour average basis, AQM believes the cost effectiveness analysis will have to be redone based on obtaining reductions from the current potential to emit of the SMR heater of 0.20 lb/mmBtu to the proposed standard of 0.04 lb/mmBtu, both on a rolling 24 hour basis. Therefore, AQM recommends deferring from incorporating a limit on this unit at this time and revisiting the cost effectiveness analysis in the future, as necessary.

Consequently, AQM recommends changing Section 2.3.2 to read as "Reserved".

2. The Coker CO Boiler should be excluded from this regulation

Premcor has commented that the proposed Regulation 1142, Section 2 while excluding the fluid catalytic cracking unit carbon monoxide boiler (FCCU COB), does not exclude the fluid coking unit carbon monoxide boiler (FCU COB). Rather it separately notes that Section 2.3.1 is "Reserved". Premcor also commented that its October 5, 2006 report demonstrates that no additional NOx controls are technically and economically feasible for further reduction of NOx emissions from the FCU COB. Premcor has commented that Regulation 1142 should be modified to eliminate identification of the FCU COB as an affected source.

Department responses

The Department disagrees for the following reasons:

- AQM intends the FCU COB to be an affected unit under this regulation. Indeed, AQM's initial draft had also included the FCCU COB as an affected unit. However, AQM agreed to remove the FCCU COB from the purview of Regulation 1142 because its upgrade to meet the proposed regulatory standard was being separately addressed via an Administrative order of Consent. This Administrative order of Consent was executed as a final agreement on July 6, 2006.
- Throughout the stakeholder review process, AQM has repeatedly emphasized the technical and economical feasibility of controlling the FCU COB to meet a

proposed standard of 20 ppmvd corrected to 0 % oxygen. It is also noteworthy that the Coker is the unit that enables the refinery to process the sour crude. While the cost to control this unit on a \$/ton basis is likely higher than other units at the refinery, the Coker is an extremely high profit generating unit which allows Premcor to obtain greater yields from each barrel of crude. The coker also gives the refinery the ability to process inferior quality sour crude slates which in turn enhance the profit margins. These inherent advantages of the coker as a processing unit must be viewed in the context of it also being one of the highest NOx emitting units in the State. After promulgation of this regulation, the FCU COB will be the largest non-EGU NOx emitter in the state and the second largest in the entire OTC, until it is properly controlled. It is a “low hanging fruit” and one for which controls are both technically and economically feasible.

- However, AQM has deferred from prescribing an emission standard for the FCU COB at this time because AQM recognizes that installing controls on the FCU COB may not be feasible until the next turnaround which may go beyond the target dates in this regulation. Therefore, AQM has “reserved” Section 2.3.1 for the FCU COB in preparation to prescribe an emission standard for that unit under this regulation in the future. This action will have the benefit of not holding up promulgation of the regulation as it applies to the remaining affected units.
- Premcor’s comment that this unit is already controlled by a Selective Non-catalytic Reduction (SNCR) System as required by the federal consent decree and therefore should not be required for additional control is misleading. As AQM pointed out several times and Premcor agreed in the rule-making process (see Exhibit 4 of the hearing records), the SNCR merely served to restore the status quo with respect to NOx emissions increases following a profit improvement project that accompanied the Pollution Control Upgrade Project in 2004. The total NOx emission from this unit has not reduced after installation of the SNCR.

Therefore, AQM is not recommending any changes to the proposed regulation regarding the FCU COB.

3. The recordkeeping, compliance certification and excess emission reporting requirements impose duplicative, inconsistent and overly-burdensome requirements, and thereby redirect resources away from pollution control efforts.

Premcor has commented that the proposed regulation includes extensive interim reporting requirements that do not bear on Premcor’s ultimate compliance obligation, that the certification requirement is not consistent with typical regulatory practice and that the excess emissions reporting obligations are inconsistent with the reporting requirements under Regulation 1203 and Delaware’s Title V Program.

Department responses

The Department disagrees for the following reasons:

- AQM believes these requirements are neither duplicative nor unduly burdensome. It is a commonly accepted practice for a new regulation to require reporting,

notifications and certifications that allow the agency to timely track affected facilities' progress towards compliance. Such tracking activities aid in the agencies' planning strategies. Indeed, AQM has required similar reporting, notifications and certification requirements in Regulations 12 and 24 – the NO_x RACT and VOC RACT requirements. Furthermore, these requirements are not inconsistent with the requirements of Delaware's Title V Program (see for example Section 6(h) of Regulation 30 regarding operational flexibility).

Therefore, AQM is not recommending any changes to the proposed regulation regarding this topic.

4. Post-hearing comment requesting a portion of the shutdown emissions associated with Boilers 3 and 4 be allowed for use in permitting of their cleaner replacements

During the post hearing comment period, Premcor commented that although the refinery is committed to taking Boilers 3 and 4 out of service by the compliance date specified in the draft rule (i.e., May 1, 2011), the new replacement package boilers, will be permitted under the state's New Source Review program. As a result, a portion of the shutdown emissions from Boilers 3 and 4 would be used to offset the emissions from the new boilers. However, the draft rule as currently written implies that all emissions associated with Boilers 3 and 4 will be surrendered. In order to permit the replacement boilers the refinery will need to provide NO_x offsets of around 60 - 80 TPY. Premcor has requested that the regulatory language be modified to clarify that a portion of the shutdown emissions associated with Boilers 3 and 4 be allowed for use in permitting of their cleaner replacements (see Attachment 2 to this document).

Department responses

The Department disagrees for the following reasons:

- AQM concurs with Premcor that the replacement package boilers will be subject to review under the NSR program and will likely require 60 to 80 TPY as offsetting emissions reductions. However, AQM and Premcor executed an agreement in the form of an Administrative Order of Consent dated July 6, 2006, for the FCCU COB which sets aside 250 tons of creditable NO_x reductions for use as offsets for precisely these sorts of projects.
- Premcor has been issued natural minor permits in 2004 for the construction of two package boilers (each with a design capacity of 216 mmbtu/hour) that are expected to perform at a level well below the proposed standards in Regulation 1142, Section 2 as part of the Pollution Control Upgrade Project. Premcor has not initiated construction of these two units and has indicated these two units may not be required. Consuming the reductions obtained from implementation of Regulation 1142 Section 2 for use as offsetting reductions for future projects without consideration of other steam generating unit operations and their permits thereof, will only serve to dilute the effectiveness of the proposed regulation and will adversely impact the state's attainment/maintenance strategy for the 8-hour ozone standard.

Therefore, AQM is not recommending any changes to the proposed regulation regarding this topic.

Part 2. Responses to Mr. K. Stewart's written comments (as American Lung Association (ALA) Exhibit 1 of the hearing record).

ALA entered into the hearing record six comments. Each comment is responded to below:

1. ALA entered into the record their comments dated October 24, 2006, to the extent those comments continue to have relevance to the Proposed Regulation. The October 24, 2006 submittal has 12 comments, as listed below, followed by the Department responses.

Comment 1) on cost effectiveness of controls. The ALA provided an analysis of the cost effectiveness of SCR by comparing the typical cost for coal-fired EGU boilers (estimated from data AQM's provided during the review committee meetings) to Premcor's DCR units as described data Premcor provided during the review committee meetings. This data showed that the Premcor cost estimates are approximately an order of magnitude greater than those estimated values that would be consistent with SCR controls applied to EGUs. The ALA questions, "Is it realistic that cost-effectiveness estimates for SCR controls for the Premcor units should be so much higher than for EGUs?"

Department Response: The Department conducted research and analysis on this issue as much as practical and to the extent its resources allowed. Please see DNREC Exhibit 4 of the hearing record, e.g., handouts of Review Committee Meeting #4 and its meeting minutes; Review Committee Meeting #5 minutes and AQM's responses to Premcor's comments of August 23, 2006. In general, we agree with the ALA that Premcor's cost estimates are much higher than those estimated for SCR controls for EGUs. The EGUs covered by Delaware's multi-pollutant regulation (Reg. # 46) are much larger units and they were estimated for over \$20 million capitals to install SCR's. For smaller refinery boilers, the capital should be smaller for installing SCR's. We have stated that we do not agree with the way Premcor based SCR cost for their units on cost estimates made by the Department relative to the much larger EGU units. Due to the significant difference in size, relating the refinery boilers with the large EGU boilers does not provide a meaningful comparison.

Comment 2) on emission rates. The ALA provided an analysis of heat input and emission rate information based on data provided by AQM during the committee process. The analysis showed that a large number of units representing units from at least 8 states are regulated to below the general 0.04 lb NO_x/mmBtu that the Department has proposed. In addition, the ALA points out that the 0.07 lb NO_x/mmBtu level that the Department has proposed for the Steam Methane

Reformer Heater is higher than all of the units in the data that was analyzed. The ALA requests that AQM demonstrate that the proposed rates are not excessive.

Department Response: AQM is cognizant of several states having promulgated rate limits lower than 0.04 lb/mmBtu. However, AQM believes its proposed limit of 0.04 lb/mmBtu will be adequate to generate the reductions needed for meeting its planning goals at this time, when combined with all other planned reductions. During the rule-making process, and based on discussions and suggestions from the review committee meetings, the Department once proposed a 0.03 lb/mmBtu rate limit on an all-units average basis (see Meeting #4 Minutes, Draft 2 of the proposed regulation, as of August 16, 2006, and Meeting #5 Minutes). Later, the Department concerned that the all-units average approach might leave some big emitters intact, and therefore decided not to take this approach. Regarding the 0.07 lb/mmBtu rate for the SMR, the Department agrees that the rate is higher than those set for the other units. After careful consideration of all available information and the stakeholders' comments, including the ALA's comment, the Department decided to obtain more technical and cost-effectiveness information before setting up an appropriate rate limit for this unit (see the Department's response to Premcor Comment 2 above). The Department intends revisiting the regulatory applicability of this rule to the SMR heater at a suitable time in the future.

Comment 3) on significant digits: The ALA commented that expressing the regulatory limits at two decimal places allows for too much ambiguity as to what actual emission rate limit the facility or unit will be required to meet. They provided an example that "0.044" could be regarded as meeting a "0.04" standard, even though it is ten percent higher than what a "0.040" standard would require. The ALA recommends that the standards be expressed at three decimal places.

Department Response: The Department understands ALA's concerns on setting up rate limit with more decimals. The current rate limit with 2 decimals (x.xx) is chosen based on practical requirements on the group of units covered by the proposed regulation, and it will cover both rounding-down and rounding-up. In addition, the Department believes that using a 0.040 rate in the regulation would complicate and delay the rule-making process. For example, under a 0.040 rate limit, the crude charge heater (21-H-701) would likely be out of compliance and would need further control. Given that this unit is currently controlled with a ULNB+SNCR system, attempting additional control(s) to reduce its current rate from 0.043 lb/mmBtu to 0.040 lb/mmBtu will not be cost effective. Therefore, in order to fulfill this rule-making to meeting Delaware's SIP timeline, the Department believes that the current rate limit with 2 decimals is appropriate.

Comment 4) on Boiler 80-2: The ALA requested a clarification that Boiler 80-2 is to be included with the purview of the proposed regulation.

Department Response: The Department hereby clarifies that Boiler 80-2 is included in the proposed regulation (see the proposed regulation, as published on February 1, 2007 in Delaware Register of Regulations).

Comment 5) on facility-wide average emission rate scheme: The ALA provided several cases of facility-wide average emission rate values, and suggested for some discussions on possible reductions. In particular, ALA's estimates on facility-wide average emission rates provided an encouraging range of average emission rate values, between 0.027 and 0.037 lb NO_x/mmBtu.

Department Response: This comment, made on a previous version of draft regulation, no longer has relevance as the Department did not provide for any facility-wide emission-averaging scheme amongst units in their proposal (see the proposed regulation, as published on February 1, 2007 in Delaware Register of Regulations). The Department believes that the facility-wide rate averaging scheme is essentially the same as the facility-wide mass approach proposed by Premcor. In a later comment, ALA expressed its strong objection to the mass approach (see ALA comment 10 later). The Department has provided the major reason why the facility-wide rate average approach is not proposed (see the Department's response to ALA comment 1-2 above).

Comment 6) on covering seriously polluting units. The ALA stated that it opposed any scenario in which seriously polluting units are left inadequately controlled or even completely uncontrolled. The Coker CO boiler and the SMR Heater were specifically cited.

Department Response: The Department understands and agrees with the ALA's position. The two units mentioned in ALA's comment are not to be left inadequately controlled or uncontrolled. Although the Department is not recommending emission rate limits for these two units at this time, the Department fully intends revisiting these units in the future. See AQM's responses to Premcor Comments 1 and 2 above for additional discussion.

Comment 7) on crude charge heater (unit 21-H-701). The ALA identified that the Crude Charge Heater currently emitted at a permitted rate of 0.043 which was very close to an emission rate of 0.040 lb NO_x/mmBtu, and was willing to offer possible support for an exemption from further control for this unit if (1) a facility-wide average rate limit of 0.034 lb NO_x /mmBtu or less for non-CO boiler units be adopted, and (2) the Coker CO Boiler be required to be controlled to the 20 ppmv level.

Department Response: First, the proposed regulation does not exempt this unit (21-H-701), although it is currently controlled at a level consistent to the proposed rate limit (see the Department's response to ALA's comment 3 above for more discussions). The Department believes that including relevant units under the same regulatory rule will enable AQM to implement the rule more effectively.

Second, regarding facility-wide average rate, the Department has decided not to purpose this approach (see the Department's response to ALA's comment 5 above). Third, regarding the CO boiler, please see the Department response to Comment 8) below, and the Department's response to Premcor Comment 2 above.

Comment 8) on coker CO boiler. The ALA suggested that the Coker CO Boiler be controlled, and Premcor and AQM work together to seek and identify the most cost-effective control possible. The ALA provided specific thoughts on Premcor's argument that a control technology "has never been proven in practice with respect to such a source category [as the FCU CO Boiler]" as not being convincing, and that ALA did not support what in effect would be the permanent grandfathering of rare or even unique large sources of air pollution with respect to requirements for improved air pollution controls.

Department Response: The Coker CO boiler was extensively discussed among the Department, Premcor and other committee members (see DNREC Exhibit 4 of the hearing record, e.g., Meeting #4 minutes, Meeting #5 minutes). The Department agrees with ALA that Premcor's argument of no proven technology is not a convincing and valid one for not installing control on such a unique and huge emitter. However, the Department has taken into consideration the need to balance this unit's turnaround schedule vis-à-vis the Department's time constraints in developing its timely SIP requirements for the 2009 ozone season. Therefore, the Department has proposed to place this unit in a reserved position. Please see AQM's response to Premcor Comment 2 above.

Comment 9) on turnaround schedule: The ALA respects Premcor's concerns about practical realities associated with turnaround schedules and management of resources in order to comply with this regulation, but gives credence only to the extent that "Premcor formally demonstrates, to the satisfaction of AQM and other reasonable observers, that a certain schedule of work is the best that can be achieved."

Department Response: The ALA's concern on Premcor's turnaround schedule was shared with the Department. In fact, the implementation schedule in the proposed regulation was drawn partially on an operational turnaround schedule provided by Premcor.

Comment 10) on a mass approach versus a rate approach. The ALA indicated that they prefer a mass approach (tpd) as a supplement to a rate approach (lb/mmBtu) because it prevents increasing the emissions total from that expected to achieve if heat input to each unit were held constant. The ALA indicated that relying solely on a rate approach could allow slippage in term of a unit's mass emissions, just as we have seen in the case of the Coker CO Boiler's increase in heat input on the order of 25%, cancelling out most of the anticipated benefit of the SNCR controls. However, the ALA pointed out that when proposing the mass approach Premcor

failed to provide comparisons at other-than-45% capacities, and that the mass approach would lead to a smaller overall emission reduction compared to the 0.040 lb/mmBtu average limit. Due to those shortcomings, the ALA concluded that the mass approach was weak and strongly recommended that the Department reject it.

Department Response: The Department agrees with the ALA's comments. In fact, the Department analyzed the mass approach along the similar lines to reach its decision of not adopting the mass approach in the proposed regulation. In addition, the Department stresses its concern that an averaging approach may leave some emitters intact or improperly controlled, which is constantly objected by various stakeholders during the rule-making process.

Comment 11) on subsection 2.2.1 language. The ALA commented that Section 2.2.1 includes language identifying the regulation as applicable to certain units any of "which is operated within a petroleum refinery facility on the effective date of this section." They requested that the language be made unambiguous (perhaps by changing "operated" to "permitted to operate") so that the regulation is clearly applicable to all of the units currently permitted to operate.

Department Response: This comment is no longer relevant, as the ALA's suggestion was accepted and the language was modified in the proposed regulation (see the proposed regulation, as published on February 1, 2007 in Delaware Register of Regulations).

Comment 12) on CEM data. The ALA recommended that continuous simultaneous public display of the CEM data should be included within section 2.3.3 as a requirement, with appropriate interpretive treatment, access to archival datasets, suitable caveats about the need for validation of posted data, and a clearly delineated process for handling responses from citizens and the regulated entity with respect to the emissions data.

Department Response: The Department will continue its requirements on monitoring and CEM data reporting based on EPA's standards, as specified in subsection 2.4 of the proposed regulation.

2. Comments on emission reduction necessary to help meet ozone air quality standard.

The ALA expressed concerns that the degree of emission reductions and the rate at which implementation of this regulation would progress are insufficient to achieve the emission reductions originally indicated by the Department as necessary to help meet air quality standards in Delaware. They indicated they were especially concerned that the levels of nitrogen oxide (NOx) emissions produced by the Delaware City Refinery will be lowered neither with the speed nor to the extent public health warrants.

Department response: The proposed regulation has been included as a control measure in Delaware's 8-hour ozone SIP revision proposed recently. The SIP revision indicates that

all existing and proposed controls, including the proposed Reg. 1142 Sec. 2, will help Delaware meet the 8-hour ozone standard in 2009. In addition, the Department commits to revisit controls and reductions from the Coker CO boiler and the SMR heater, as indicted in response to Premcor comments 1 and 2 above, and to ALA's comment 1-8 above. Further, the Department will continue to require reductions from Premcor and other stationary, area, and mobile sources as needed to attain and maintain compliance with air quality standards.

The proposed 8-hour ozone SIP revision is available for public review and comment in the May 1, 2007 issue of Delaware Register of Regulations.

3. Comments on individual unit emission and reduction estimates. The ALA presented a review based on data gathered during the review committee process. The review compared annual emissions and emission rates as proposed to those the ALA feels are achievable. The ALA also noted that for the decommissioning of boilers 3 and 4 leaves many questions unanswered, such as any new boiler capacity that is created must meet the most stringent air pollution standards.

Department response: The Department appreciates the efforts of calculating those estimates. However, the Department believes based on its professional judgment that a change in the rate limit from the current RACT standard of 0.20 lb/mmBtu to 0.04 lb/mmBtu in general, with the exception for units like the Coker CO boiler, the SMR heater, and the Crude charge heater as discussed already in the responses to ALA's comment 1 above, is appropriate at this time. This issue has been discussed extensively in the rule-making process and the Department has provided ample explanations (see DNREC Exhibit 4 of the hearing record, e.g., Meeting #4 minutes, Meeting #5 minutes, Meeting #5 post meeting e-mails). Regarding any replacement units for boilers 3 and 4, the Department believes that these new units would be subject to the requirements of Regulation No. 25, Preconstruction Review. For Example, LAER technology would be required if these new units were identified as major sources. If they were not major sources, then BAT controls would be required under Regulation No. 25, Section 4, Minor NSR.

4. Comments on emission calculations based on PTE. The ALA notes that the Premcor units subject to this regulation have a total emission rate of 8.71 tpd or about 3,180 tpy at a weighted average NO_x emissions rate of 0.1923 lb NO_x / MMBtu, and that reducing the average emissions rate to 0.04 lb NO_x / MMBtu, and maintaining total heat input constant, would result in 661 tpy of NO_x emissions. The ALA also points out that the PTE of these units after compliance with the proposed regulation is as much as 2,872 tpy, which is not much of a change from the 2002 total. The ALA indicted that their recommendation (see comment 3 above) would result in a facility-wide PTE of about 714 tpy.

Department response: The Department believes that the ALA's emission calculations based on units' PTE are correct, although not realistic. According to Section 182 of CAA and relevant EPA's guidance documents, the SIP planning calculations are based on the

2002 actual emissions and the related data. As mentioned previously, Delaware's 8-hour ozone SIP revision has proposed numerous controls, including the proposed Reg. 1142 Sec. 2, which should help Delaware meet Clean Air Act's requirements on ozone air quality improvement. If the worst case would happen (i.e., all units would emit at their PTEs), the SIP contingency measures would be activated. In addition, such an increase in emissions would provide the rationale for the Department to reopen and revise this regulation and seek for more stringent standards.

5. Comments on holding to the lower maximum emission level. The ALA indicates that regarding the analysis discussed under comments 3 and 4 above, an objection might be that all of these units would never simultaneously be operating at or near their PTE levels. The ALA agrees with this, but requests that the proposed regulation include facility-wide absolute limits on the total tonnage of NOx emitted to ensure this, and the refinery be legally held to the lower maximum emission levels.

Department responses

Please see the Department responses to ALA's comment 4 above. In addition, it should be pointed out that when the overall emission reduction targets are set in the SIP, the entire state is under the cap of the targets. The Department assumes the responsibility to ensure meeting the targets to attain and maintain the air quality standards, to activate necessary contingency controls, and to reassess emission reductions and tighten the emission standards whenever necessary. This is true not only for the units to be covered by the proposed Reg. 1142 Sec. 2, but also for all other emission sources in stationary and mobile sectors.

6. Comments on Future tightening of the 8-hour ozone standard. The ALA commented that it is important to recognize that on October 24, 2006, the United States Environmental Protection Agency's (EPA's) Clean Air Scientific Advisory Committee (CASAC), a body of independent science and medical experts, wrote to EPA Administrator Stephen L. Johnson as follows: "It is the unanimous opinion of the CASAC that the current primary [standard] for ozone is not adequate to protect human health," and "There is no scientific justification" for keeping the current standard. The ALA advised that the Department should be aware that the CASAC has also recently decided to recommend that the EPA Administrator set the new primary health standard at no higher than 0.070 ppm, a clear strengthening of the standard from the current effective level of 0.085 ppm. The ALA further advised that the Department would do well to keep in mind that this regulation, if it is best to serve Delawareans' health, should be written to envision meeting what will in all likelihood be a more stringent ozone standard in the not too distant future.

Department response: The Department agrees with the ALA comment. The Department wants to point out that control measures like this proposed regulation will help reduce ozone concentrations and will help attain both the current 8-hour standard and any new standard that EPA may promulgate. Further, the Department will continue to require reductions in air pollutants as necessary to attain and maintain compliance with all air quality standards, including any future-promulgated standards.

Part 3. Responses to Mr. A. Muller's oral comments (as recorded in the hearing transcript).

1. Concerns about coker CO boiler, page 21 of the hearing transcript: Mr. Muller had a particular concern "about the failure to include the Coker CO boiler in this regulation", and asked if they could support the regulation, "although it is a step forward, is much less of a step forward than it might be." Mr. Muller was also concerned, as the ALA was in its comments above, that if this regulation went into effect it would essentially establish the status quo for many years in the future. Mr. Muller would like to see that this regulation was an incremental step and a further tightening of the screws at some known time in the future.

Department response

As indicated in the Department's responses to Premcor and ALA comments above, this unit (coker CO boiler) was extensively discussed among the Department, Premcor and other committee members. The Department would like to reiterate: (1) The coker CO boiler is not excluded from the proposed regulation. Instead, the proposed regulation placed it in a reserved position due to various reasons (as listed in the Department's responses to Premcor's comment 2 above, and to ALA's comment 1-8 above). This reserved position will allow the Department to come back to this unit for appropriate and practical rate limit in the future. (2) The proposed regulation has its own incremental schedule, with reductions in 2009, in 2011 and 2012. As discussed in the Department's response to ALA's comment 2 above, Delaware's 8-hour ozone SIP revision has included the proposed Reg. 1142 Sec. 2 as one of the many control measures for attaining the 8-hour ozone standard in 2010 and for maintaining the standard thereafter. The incremental schedule of the proposed Reg. 1142 Sec. 2 should meet Delaware's ozone SIP timeline. (3) At this point, the Department is unable to forecast a known future time for tightening all emission rates for all covered units.

2. Comments on health impacts of NOx, page 22 of the hearing transcript: Mr. Muller stated that there are many direct health impacts of NOx itself, aside from its role as ozone precursor, and he expressed his concern that the committee members from Delaware Division of Public Health did not appear to have made significant effort to assert the significance of these NOx emissions in terms of public health for Delawareans.

Department response

Although this proposed regulation is driven by reducing NOx emissions to attain the ozone standard, the Department believes that the ultimate purpose of NOx reduction is to reduce its overall adverse impacts on human beings and the environment, which is consistent with what Mr. Muller stated regarding the health effects of NOx.

3. Comments on NOx emission reduction magnitude, pages 34 and 35 of the hearing transcript: Mr. Muller commented that this proposed regulation was to cut the refinery NOx emissions in half, which was certainly a valuable step that contribute to health and

air quality, but we had an opportunity to cut the refinery emission to about 25% of what they are now, according to the estimates from the ALA and another hearing audience. Therefore, this proposed regulation was to allow the refinery to emit twice as much as it would if available controls were fully implemented.

Department responses

The Department understands the logic behind Mr. Muller's comment. However, the Department does not agree with what Mr. Muller made upon the magnitudes of emissions and reductions. The proposed Reg. 1142 Sec. 2 is not to allow the refinery NOx emission twice as much as they should be. Instead, the proposed regulation is to set practical control standards and implementing schedule for the covered units, and to make the refinery reductions contribute in a timely manner to Delaware's overall efforts to attain and maintain the 8-hour ozone standard. The Department believes that with relevant rules combined together, controls on all affected units at the refinery will lead to a significant overall NOx reduction, which is at this time consistent with the other SIP efforts to attain/maintain the 8-hour ozone standard in 2010 and thereafter.

4. Comments on public participation in rule-making process, pages 35 and 36 of the hearing transcript: Mr. Muller stated that the proposed regulation essentially set up emission standard as originally proposed by the Department, and that raised the question in his mind of what was the impact of (his) coming to the (review committee) meetings. Mr. Muller commented that he was a little disappointed to see the limited impact on the project as proposed.

Department responses

It is true that the 0.04 lb/mmBtu rate limit was the initial starting point and was finally proposed in the proposed regulation. The Department, however, wants to point out: (1) The 0.04 rate was initially proposed based on AQM staff's investigation and study, review of current situations, and on the needs for emission reductions for meeting Delaware ozone SIP requirements. It was not a number randomly picked up by AQM. (2) During the entire rule-making process, the 0.04 rate, and other rates, were extensively discussed among the committee members including members from the public sector. For example, in the second draft regulatory language, a 0.03 lb/mmBTU all-unit average rate limit was proposed. This 0.03 rate was selected mainly based on Mr. Muller's suggestion and supported by some other stakeholders (see DNREC Exhibit 4, e.g., Meeting #3 minutes, Meeting #4 minutes). Although this average approach was not finally adopted, it reflected the significant contribution of individual stakeholders to the rule-making. For reasons of not adopting the average approach, see the Department's responses to ALA comments 1-2, 1-5 and 1-10. (3) The 0.04 rate limit was determined and proposed in the regulation after AQM's careful consideration of inputs from all stakeholders. The Department believes that participation of the public has affected effectively in the whole process of this rule-making. The Department values very much the participation and input from members of the public, and hopes future rule making efforts get similar public participation.

Part 4. Responses to Mr. M. Fiorentino's written comments (as MAELC Exhibit 1 of the hearing records) and oral comments (as recorded in the hearing transcript).

1. Written comments provided to the Department on October 25, 2006, and resubmitted to the hearing records as MAELC Exhibit 1.

1) The concessions made by DNREC in Draft 3 are excessive and/or not well-supported: Mr. Fiorentino herein made three specific comments: (1) Regarding Subsection 2.3.1.1, Mr. Fiorentino commented that the Department abandoned the 0.03 lb/mmBtu due to opposition from Premcor. (2) Regarding Subsections of 2.3.1.3 and 2.3.2.2, Mr. Fiorentino commented that the phase-in schedule contemplated in Draft 3 with the major reductions not obtained until 2012 would leave Delaware very vulnerable to violations of the NAAQS. (3) Regarding Subsection 2.3.1.2, Mr. Fiorentino commented that the proposed 0.07 lb/mmBtu rate for the SMR heater was excessive. He also commented that there is a vast gulf between the cost-effectiveness numbers estimated by EPA and the cost-effectiveness numbers provided by Premcor to the review committee.

Department response

(1) Regarding the Subsection 2.3.1.1 abandoning the 0.03 lb/mmBtu facility-average rate limit, the Department wants to point out that the major reason of not adopting the 0.03 facility-average rate limit was not Premcor's opposition. Instead, the reason was the concern that a facility-wide average scheme would lead to possibility of leaving some units intact and uncontrolled. Please also see the Department's responses to ALA comments 1-2 and 1-5. (2) Regarding the phase-in schedule for compliance, the Department believes that the proposed schedule, along with implementation of other controls, will help Delaware attain the 8-hour ozone NAAQS in 2009 and to maintain the standard thereafter. This assessment has been recently done in Delaware's 8-hour ozone SIP revision, which is available for public review and comments on May 1, 2007 issue of Delaware Register of Regulations (see also the Department response to ALA comment 2 above. (3) Regarding the comment on the 0.07 rate limit for the SMR heater, this comment is no longer valid since the 0.07 rate limit is removed from the proposed regulation. Instead, this unit is to be in a reserved position, and the Department will come back to this unit for appropriate rate limit(s) in the future. Also see the Department responses to Premcor comment 1 above, and to ALA comment 1-2 above.

2) DNREC should conduct its own investigation of costs of controls and cost-effectiveness review: Mr. Fiorentino commented that he had advocated that the Department conduct a thorough investigation of Premcor's cost effectiveness numbers and collect data about the costs of comparable projects from other refineries.

Department response

The Department conducted research and analysis on the cost-effectiveness issue as much and practical as its resources allowed. In addition to some cost information provided in the committee meeting 4 (see handouts and Meeting #4 minutes), the

Department did investigate some other projects, and provided relevant information and comments during the committee discussions (e.g., Meeting #5 minutes). The Department has stated several times that it agreed that Premcor's cost numbers were overestimated due to its evaluation method (also see the Department response to ALA comment 1-1 above). With such a consistent conclusion, the Department decided not to spend extra resources to gather further cost information in the later stage of this rule-making process.

3) Cost estimate for coker CO boiler: Mr. Fiorentino commented that Premcor's cost estimate for this unit reflected a "dual train" SCR system, with the redundant system necessary to avoid unnecessary coker unit shutdown, and the cost number appeared to be far out of range of what was reasonable. Mr. Fiorentino urged that the likelihood that the SCR system could be installed on this unit for considerably less than what Premcor projected be further explored.

Department response

The Department agrees that Premcor's cost numbers for installing SCR on the coker CO boiler were overestimated. This was one of the reasons that the Department rejected Premcor's request for excluding the coker CO boiler from the proposed regulation. The Department is continuing its efforts towards assessing different technologies as viable control options for the coker.

4) Reaction to Premcor comments of 10/20/06: First, Mr. Fiorentino commented that his center was completely unpersuaded by Premcor's argument on technical feasibility (for installing controls on the coker CO boiler). He pointed out that Premcor was trying to mislead to a conclusion that LoTOX was unproven and therefore unavailable for this unit, while avoiding further discussion on SCR. Mr. Fiorentino stated that his center believed that the inquiry regarding technical availability was resolved and in the affirmative. Second, Mr. Fiorentino expressed a strong opposition to incorporating in the proposed regulation Premcor's mass-based approach because it would fail to achieve the reduction objective for which it was needed.

Department response

The Department agrees with Mr. Fiorentino's first comment. Regarding his second comment on Premcor's mass-based approach, the Department evaluated the approach along similar lines and reached the similar conclusion. Based on comments and suggestions from all stakeholders (e.g., see ALA comment 1-10 above), the proposed regulation did not adopt this mass-based approach (see the proposed regulation, as published in Delaware Register of Regulations on February 1, 2007).

5) Regarding facility-wide averaging rate limit: Mr. Fiorentino commented that although his center generally preferred unit-specific limitations to ensure that older units would not continually escape regulation, the center would be willing to consider facility-wide averaging rate limit if the limit could remain quite low, such as 0.034

lb/mmBtu. He indicated that the averaging would not include the coker CO boiler, which should separately be required to be controlled at 20 ppmv NOx rate.

Department response

The Department appreciates Mr. Fiorentino and his center's flexibility on the formats of emission rate limits, and shares the same concern regarding the weakness of the facility-wide averaging scheme. However, as the Department explained earlier (see the Department responses to ALA comments 1-2, 1-5 and 10, to Mr. Muller's comment 4), due the same concern, the Department did not adopt the facility-wide averaging approach in the proposed regulation see the proposed regulation, as published in Delaware Register of Regulations on February 1, 2007).

2. Oral comments on the Department's analysis of additional controls and cost effectiveness, pages 25 and 26 of the hearing transcript: Mr. Fiorentino commented that during the review committee meetings the Department was requested several times to engage in additional cost estimates required to perform the add-on controls to the affected units, that the request was essentially ignored, and that ignorance was disturbing because it was important for a regulatory agency to engage in some independent analysis prior to making a judgment on appropriate controls and standards.

Department responses

The Department has addressed a similar comment from Mr. Fiorentino earlier (see the Department response to his comment 1-2 above).

3. Comments on lack of emission data other than 2002, pages 26 and 27 of the hearing transcript: Mr. Fiorentino commented that the data shared with the review committee from Premcor was essentially 2002 data, and that we should have had more recent data to get a sense of what the refinery was capable of in the present. He further commented that we (the review committee) had imperfect information on which to carry out this discussion.

Department response

The Department agrees that more recent data may give a sense of what the facility is capable of (doing controls) in the presence. This issue was in fact discussed briefly during the rule-making process (see DNREC Exhibit 4 of the hearing records, e.g., Meeting #2 minutes for 2003/04 data, Meeting #3 minutes for most recent monitoring data, Meeting #4 minutes for post-2004 emission data for Boiler 80-2). The Department indicated several times in the committee meetings that (1) the 2002 is the base year required under CAA and EPA's implementation rule for the 8-hour ozone attainment planning, and (2) the attainment and maintenance of the 8-hour ozone standard, and thus improving ambient air quality and protecting public health and environment, are the major mandatory foundation for proposing this regulation (see DNREC Exhibit 4 of the hearing records, e.g., AQM presentations for Meeting #1, Meeting #3 and Meeting #4, Meeting #2 minutes). Therefore, using the 2002 emission data to formulate the proposed regulation is both logical and mandatory. Using emission data other than 2002 is not consistent with CAA and EPA's requirements for the 8-hour ozone attainment planning.

4. Comments on coker CO boiler, pages 27 and 28 of the hearing transcript: Mr. Fiorentino commented that it was disturbing that the coker CO boiler was essentially punted. He commented that this unit should have been controlled in this regulation and we should have achieved significant NOx reductions. He further commented that additional NOx reduction would be necessary in Delaware to achieve the attainment of the 8-hour ozone standard. He pointed out that “at that point you will be looking around again, and it’s always easier to work with the process that has in front of you than trying to restate the process from scratch.”

Department responses

As indicated in DNREC Exhibit 4 of the hearing records, and discussed in the Department’s responses to numerous earlier comments, this unit was extensively discussed among the Department, Premcor and other committee members in the rule-making process (See DNREC Exhibit 4, e.g. Meeting #2 minutes, Meeting #4 minutes, Meeting #5 minutes, Premcor 08/23/2006 comments and AQM’s responses; Also see the Department responses to Premcor comment 2 above, the Department responses to ALA comments 1-6 and 1-8 above, the Department response to Mr. Muller’s comment 1 above, and the Department response to Mr. Fiorentino’s comment 1-3 above). The Department believes that placing this unit in the proposed regulation at a reserves position is appropriate at this point to meet Delaware’s SIP planning timeline.

5. Comments on relation of the proposed regulation and the Consent Decree, page 28 of the hearing transcript: Mr. Fiorentino commented that he noted that a significant amount of the reductions that were being shown in this regulation were essentially rates that were guaranteed to happen already through the federal Consent Decree. He commented that it made it more difficult to look at what’s in this regulation with any degree of enthusiasm, given that we did not have any progress on the Coker CO Boiler and that we were looking at a steam methane reformer here rate of .07. He repeated that if .07 should be granted to the SMR heater, when it showed in the past it’s capable of achieving rates, it seemed to be very counterintuitive.

Department responses

Although some of the affected units could potentially be affected under the 2001 consent decree (CD), the Department wants to point out that the CD itself is a different legal instrument that prescribes a control scheme requiring NOx reductions across multiple refineries located in several states. Therefore, any reductions required pursuant to the CD are not germane to this discussion. The Department believes that the proposed regulation is a significant further step to control NOx emissions from individual units at the refinery, especially beyond the time scope of the Consent Decree to attain and maintain the 8-hour ozone standard in and after 2010. Regarding the coker CO boiler, please see the Department response to Mr. Fiorentino’s comment 4 above. For the SMR heater, the Department has proposed to place it in a reserved position in the regulation to allow further study on cost-effective numbers and evaluation on more appropriate rate limit (see the Department response to Premcor comment 1 above).

6. Comments on boilers 3 and 4, pages 29 and 30 of the hearing transcript: Regarding the boilers 3 and 4 shutdowns proposed for mid 2011, Mr. Fiorentino questioned what was the viable lifespan of these units going forward. He commented that his understanding was that those units were approximately 50 years old, and without major upgrades, it was not clear to him how much longer they could have operated. He further commented that if they would have had to come in for major upgrades, they would have been facing a new source review and, therefore, would have been facing achievable emission reductions.

Department response

The Department believes that the shutdown of these two boilers in 2011 will provide a significant overall NO_x reduction benefits. It is the mutual understanding of the Department and Premcor that these old boilers will not be upgraded in 2011, but replaced with new units. The Department will handle the shutdown and replacement in 2011 according to relevant federal/state NSR rules and other relevant rules to ensure the emission reduction benefits. For example, if the replacement units would be identified as major sources, they would be subject to the requirements of Regulation No. 24, Preconstruction Review, and LAER technology would be required. If they were not major sources, then BAT controls would be required under Regulation No. 25, Section 4, Minor NSR.

7. Comments on timing and rate limit of the continuous catalyst regenerator reformer heater (unit 42-H-123), pages 30 and 31 of the hearing transcript: Mr. Fiorentino commented that the compliance of this unit to the 0.04 lb/mmBtu rate was not going to happen for approximately five and a half, closer to six years, from the present date. He commented that the 04 standard for this unit did not appear to be very aggressive, particularly. Mr. Fiorentino cited Premcor's October 5, 2006 data and concluded that for the relatively modest increase in cost effectiveness, an additional 40 tons, approximately, could have been attained. Therefore, his center would urge the Department to take a second look at the issue and revise the proposal to seek a .02 rate requirement for this unit such that SCR would be the control option of choice.

Department responses

The Department understands Mr. Fiorentino's concern regarding the 5-1/2-year window. The compliance timing of this unit (May 2011) was proposed based on (1) the size of the unit, which is about the half of other larger units, and (2) the facility's turnaround schedule, (3) short-term and long-term SIP planning needs for emission reductions to attain and maintain the 8-hour ozone standard. At this point, the Department believes that the compliance time of this unit (May 2011) is both reasonable and practical.

Regarding Mr. Fiorentino's urge of revising the rate limit to a 0.02 lb/mmBtu for this unit, the Department disagrees since it is not consistent with the requirement for other units. The Department, however, wants to point out that it has the legal authority to revise existing limits in the future when new federal/state laws and air quality standards make such revision necessary.

8. Comments on rate limit lower than 0.04 lb/mmBtu, pages 31 and 32 of the hearing transcript: Mr. Fiorentino commented that the 0.04 lb/mmBTU rate limit appeared to be the number that was the target number in the federal Consent Decree. He noted that the Consent Decree suggested that in order for a unit to be controlled, it would have to have either current or next-generation ultra low NOx burners, SNCR or SCR, and that it appeared that the inclusion of the ULNB and the SCR technology in there really raised the bar in terms of what was reasonably feasible and reasonably available for boilers and heaters at refineries over time. Therefore, Mr. Fiorentino commented that there were some grounds to say that we had the ability to take it further, and the notion of going to .03, at least on a facility wide averaging basis. He further commented that the Department should continue to look hard at whether or not going below .04 for some of these units would be, still be appropriate.

Department responses

The reasons for proposing a 0.04 lb/mmBtu rate limit have been extensively discussed and argued in the rule-making process (See DNREC Exhibit 4 of the hearing records, e.g., Meeting #2 minutes, Meeting #3 minutes, Meeting #4 minutes; Also see the Department responses to ALA's comments 1-2 and 1-3 above, and the Department response to Mr. Muller's comment 4 above). Regarding the 0.03 lb/mmBTU facility-wide rate limit, the Department has addressed this issue in its earlier responses to the similar comments (e.g., see the Department responses to ALA's comments 1-2 and 1-10 above, and the Department response to Mr. Muller's comment 4 above). In summary, the Department believes that the 0.04 rate limit is both reasonable and practical to meet Delaware SIP planning requirements for attainment and maintenance of the current 8-hour ozone standard at this stage. Again, the Department wants to point out that it will revise existing limits in the future when new federal/state laws and air quality standards make such revision necessary.

9. Request for two additional weeks for comments: Mr. Fiorentino requested that the Department, the hearing officer, consider to have an additional two weeks for public comment following this public hearing so that citizens who might not have been able to make it tonight, other organizations and entities would have the opportunity to comment, and if the people on this table chose to do so, they could supplement their comments.

Department response

Mr. Fiorentino's request was accepted and the comment period was in fact extended to April 6, 2007. No additional comment was received by the Department during the extended comment period.

CC: Ravi Rangan
Bruce Steltzer
Penny Gentry

Attachment 1

Premcor's comments and analysis submitted in the public workshop on October 5, 2006.

Hard copy attached.

Attachment 2

Premcor's comments on Regulation 1142-Boiler 3 and Boiler 4 language, March 16, 2007.

From: Chelpaty, Heather A [Heather.Chelpaty@valero.com]
Sent: Friday, March 16, 2007 9:02 AM
To: Gao Frank F. (DNREC); Amirikian Ronald A. (DNREC)
Cc: Covert, Patrick; Godlewski, Thomas; Arnosky, David; Bourbon, Elizabeth; Rangan Ravi (DNREC); Mirzakhali Ali (DNREC); Werner James D. (DNREC)
Subject: Regulation 1142 -- comment on Boilers 3 & 4 language

Frank,

Per our conversation yesterday, The Premcor Refining Group Inc. (Premcor) hereby submits an additional comment for the record on Regulation 1142.

As the Department is aware, the refinery is committed to taking Boilers 3 and 4 out of service by the compliance date specified in the draft rule (i.e., May 1, 2011). This was premised on the fact that we would be replacing these boilers with new package boilers, which would be permitted under the state's New Source Review program. In addition, a portion of the shutdown emissions from Boilers 3 and 4 would be used to offset the emissions from the new boilers. However, the draft rule as currently written implies that all emissions associated with Boilers 3 and 4 will be surrendered. In order to permit the replacement boilers we will need to provide NOx offsets of around 60 - 80 tpy. Premcor respectfully requests that the regulatory language be modified to clarify that a portion of the shutdown emissions associated with Boilers 3 and 4 be allowed for use in permitting of their cleaner replacements.

Thank you for your continued support with this effort. If you would like to discuss this matter, I can be reached at 302-834-6488.

Heather Chelpaty
Environmental Engineering Manager
The Premcor Refining Group Inc.
Delaware City Refinery
4550 Wrangle Hill Road
Delaware City, De 19706

Appendix B
Proposed Regulation as Recommended (marked-up version with post-hearing change and
complete Final versions)

Post hearing change

2.3.2 For the Steam Methane Reformer (SMR) Heater (Unit 37-H-1), ~~[0.07 lb/mmBTU, on a 24-hour rolling average basis.]~~ [Reserved.]

Complete Final Version

REGULATION NO. 1142 SPECIFIC EMISSION CONTROL REQUIREMENTS

2.0 Control of NO_x Emissions from Industrial Boilers and Process Heaters at Petroleum Refineries

2.1 Purpose

The purpose of Section 2.0 of this regulation is to reduce NO_x emissions from Delaware's large industrial boilers and process heaters that are located at petroleum refineries.

Under the 8-hour ozone national ambient air quality standard (NAAQS), the state of Delaware is part of the Philadelphia-Wilmington-Atlantic City, PA-DE-MD-NJ moderate non-attainment area (NAA). The entire NAA, including Delaware, is required by the Clean Air Act (CAA) to attain the 8-hour ozone NAAQS by 2010. After attainment, the area must maintain compliance with the NAAQS. By implementing Section 2.0 of this regulation, NO_x emission reductions from the affected boilers and heaters shall contribute to (1) attainment and maintenance of the 8-hour ozone standard, and (2) improvement of the ambient air quality, in both Delaware and the entire NAA.

Additionally, New Castle County of Delaware is a part of the Philadelphia-Wilmington-Camden, PA-DE-NJ NAA for the annual fine particulate matter (PM_{2.5}) NAAQS, and is required by the CAA to attain the NAAQS by 2010. Since NO_x is a significant precursor to PM_{2.5} formation, reducing NO_x emissions will also assist in attainment and maintenance of the PM_{2.5} standard.

2.2 Applicability and Compliance Dates

2.2.1 Section 2.0 of this regulation applies to any industrial boiler or process heater with a maximum heat input capacity of equal to or greater than 200 million BTUs per hour

(mmBTU/Hour) (except for any Fluid Catalytic Cracking Unit carbon monoxide (CO) boiler), which is operated or permitted to operate within a petroleum refinery facility on the effective date of this section. This comprises the following nine (9) units at the Delaware City refinery:

- 2.2.1.1** Crude Unit Vacuum Heater (Unit 21-H-2)
- 2.2.1.2** Crude Unit Atmospheric Heater (Unit 21-H-701)
- 2.2.1.3** Fluid Coking Unit Carbon Monoxide boiler (Unit 22-H-3)
- 2.2.1.4** Steam Methane Reformer Heater (Unit 37-H-1)
- 2.2.1.5** Continuous Catalyst Regenerator Reformer Heater (Unit 42-H-1,2,3)
- 2.2.1.6** Boiler 1 (Unit 80-1)
- 2.2.1.7** Boiler 2 (Unit 80-2)
- 2.2.1.8** Boiler 3 (Unit 80-3)
- 2.2.1.9** Boiler 4 (Unit 80-4)

2.2.2 The requirements of Section 2.0 of this regulation are in addition to all other state and federal requirements.

2.2.3 The following units shall be in compliance with the requirements of Section 2.0 of this regulation on and after (insert the effective date of this regulation): Crude Unit Atmospheric Heater (Unit 21-H-701), Steam Methane Reformer Heater (Unit 37-H-1) and Boiler 2 (Unit 80-2).

2.2.4 The following units shall be in compliance with the requirements of Section 2.0 of this regulation as soon as practicable, but not later than:

- 2.2.4.1** December 31, 2008: Boiler 1 (Unit 80-1) and Crude Unit vacuum Heater (Unit 21-H-2).
- 2.2.4.2** May 1, 2011: Boiler 3 (Unit 80-3) and Boiler 4 (Unit 80-4).

2.2.4.3 December 31, 2012: Continuous Catalyst Regenerator Reformer Heater (Unit 42-H-1, 2, 3).

2.3 Standards.

The owner or operator of any industrial boiler or process heater identified in Section 2.2.1 of this regulation shall not allow NO_x to be emitted at a rate that exceeds the following:

2.3.1 For the Fluid Coking Unit Carbon Monoxide boiler (Unit 22-H-3), Reserved.

2.3.2 For the Steam Methane Reformer (SMR) Heater (Unit 37-H-1), Reserved.

2.3.3 Boiler 3 (Unit 80-3) and Boiler 4 (Unit 80-4) shall not operate after May 1, 2011. On or before May 1, 2011 the owner or operator of Boiler 3 and Boiler 4 shall request that any operating permit issued by the Department be cancelled.

2.3.4 For any unit not covered by 2.3.1, 2.3.2, or 2.3.3, 0.04 lb/mmBTU, on a 24-hour rolling average basis,

2.4 Monitoring Requirements. Compliance with the NO_x emission standards specified in 2.3.1, 2.3.2, and 2.3.4 of this regulation shall be determined based on CEM data collected in accordance with the appropriate requirements set forth in 40 CFR, Part 60, Appendix B, Performance Specification 2, and the QA/QC requirements in 40 CFR Part 60, Appendix F.

2.5 Recordkeeping and Reporting Requirements

2.5.1 Not later than 180 days after the effective date of Section 2.0 of this regulation, any person subject to Section 2.0 of this regulation shall develop, and submit to the Department, a schedule for bringing the affected emission unit(s) identified in Section 2.2.4. into compliance with the requirements of Section 2.3 of this regulation. Such schedule shall include, at a minimum, all of the following:

2.5.1.1 The method by which compliance will be achieved.

2.5.1.2 The dates by which the affected person plans to complete the following major increments of progress, as applicable:

- 2.5.1.2.1** Completion of engineering
- 2.5.1.2.2** Submission of permit applications
- 2.5.1.2.3** Awarding of contracts for construction and/or installation
- 2.5.1.2.4** Initiation of construction
- 2.5.1.2.5** Completion of construction
- 2.5.1.2.6** Commencement of trial operation
- 2.5.1.2.7** Initial compliance testing
- 2.5.1.2.8** Submission of compliance testing reports
- 2.5.1.2.9** Commencement of normal operations (in full compliance)

2.5.2 Any person subject to Section 2.0 of this regulation shall submit to the Department an initial compliance certification by (insert 60 days after the effective date of this regulation) for units identified in Section 2.2.3 of this regulation and, for units identified in Section 2.2.4, by the compliance date specified in Section 2.2.4. The initial compliance certification shall include, at a minimum, all of the following information:

- 2.5.2.1** The name and the location of the facility.
- 2.5.2.2** The name, address and telephone number of the person responsible for the facility.
- 2.5.2.3** Identification of the subject source(s).
- 2.5.2.4** The applicable standard.
- 2.5.2.5** The method of compliance.
- 2.5.2.6** Certification that each subject source is in compliance with the applicable standard.

2.5.3 Any person subject to Section 2.0 of this regulation shall, for each occurrence of excess emissions above the standards of Section 2.3 of this regulation, within thirty (30) calendar

days of becoming aware of such occurrence, supply the Department with the following information:

2.5.3.1 The name and location of the facility.

2.5.3.2 The subject source(s) that caused the excess emissions.

2.5.3.3 The time and date of first observation of the excess emissions.

2.5.3.4 The cause and expected duration of the excess emissions.

2.5.3.5 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.

2.5.3.6 The proposed corrective actions and schedule to correct the conditions causing the excess emissions.

2.5.4 Any person subject to Section 2.0 of this regulation shall maintain all information necessary to determine and demonstrate compliance with the requirements of this section for a minimum period of five (5) years. Such information shall be immediately made available to the Department upon verbal and written request.