



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

89 KINGS HIGHWAY  
DOVER, DELAWARE 19901

PHONE: (302) 739-9000  
FAX: (302) 739-6242

OFFICE OF THE  
SECRETARY

**Secretary's Order No 2014-A-0014**

**RE: APPROVAL OF REVISION TO THE DELAWARE STATE IMPLEMENTATION  
PLAN FOR MEETING REASONABLY AVAILABLE CONTROL TECHNOLOGY  
REQUIREMENTS UNDER THE FEDERAL CLEAN AIR ACT**

Date of Issuance: July 18, 2014  
Effective Date: July 18, 2014

This Order of the Secretary of the Department of Natural Resources and Environmental Control (Department) approves a proposed revision to the Delaware State Implementation Plan (SIP), which is issued as a state-wide air management plan under 29 Del. C. Section 6010.

**Background**

The United States Environmental Protection Agency (EPA) delegated authority to the Department to administer certain parts of the federal Clean Air Act (CAA) authority, including the establishment and management of a SIP. Delaware's SIP sets forth the methods for Delaware to attain and maintain air quality that conforms to EPA's primary and secondary National Ambient Air Quality Standards (NAAQS). The SIP sets forth the regulations, source specific requirements, and non-regulatory items, such as plans and emission inventories that will allow Delaware to meet the CAA standards. The current revision is to meet the requirements of the 2008 Ozone NAAQS, which established a ground-level ozone standard of 0.075 parts per million (ppm) in order to protect the environment and public health from the

risk of excessive ozone levels. EPA in May 2012 designated New Castle County and Sussex County as nonattainment of the 2008 ground-level ozone NAAQS, which under Section 182(b)(2) of the CAA requires Delaware to submit to EPA by July 2014 a SIP revision that demonstrates that Delaware has implemented the necessary Reasonably Available Control Technology (RACT) requirements to stationary emission sources of precursors to ground-level ozone, i.e., volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>).

The Department's Division of Air Quality (DAQ) prepared the proposed SIP revision, which has been available to the public since April 17, 2014 and published in the May 1, 2014 issue of the *Delaware Register of Regulations*, as well as legal notices in the April 27, 2014 *Sunday News Journal* and the *Delaware State News*. These public notices also provided notice of a June 2, 2014 public hearing at the Department's Dover offices. The public was afforded an additional ten days for written public comments. The Department's presiding hearing officer prepared the attached Report, which recommends approval of the SIP revision as prepared by DAQ. The Report is adopted to the extent it is consistent with this Order.

### **Findings and Reasons**

The Department finds that the record supports approval of the SIP revision, which will amend the SIP to reflect changes in the RACT requirements. The changes updates the implementation of regulations to control the emissions of VOCs and NO<sub>x</sub>, and establishes NO<sub>x</sub> limits for two sources of NO<sub>x</sub> emissions at the Delaware City Refinery Company LP's (DCRC) petroleum refinery, namely, the fluidized catalytic cracking unit (FCCU) and the fluid coking unit (FCU). The SIP revision also determines that the RACT control measures satisfies the CAA requirements for the 50 ton per year (and above) major VOC sources and for the 100 ton per year (and above) for the major NO<sub>x</sub> sources. While 25-50 TPY VOC

sources and 25-100 TPY NO<sub>x</sub> sources are not specifically addressed in this SIP document, they remain subject to the 1-hour RACT requirements under Delaware Regulations and under the “anti-backsliding” provisions of the EPA 8-hour ozone implementation rule. Finally, the SIP revision demonstrates that Delaware has promulgated the necessary regulations that will meet current RACT levels and the 2008 ozone NAAQS.

The only public comments received on the SIP revision were from DCRC, at the hearing, which objected to the SIP’s determination of RACT-level limits for its FCU and FCCU equipment.

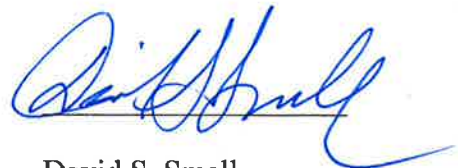
Four of DCRC’s comments were directed at claiming that the limits presented for FCU and FCCU operation were not RACT. DAQ, in its Technical Response Memorandum (TRM), did not agree with DCRC’s comments. DAQ’s proposed SIP revised relied on then available information from extensive testing of the FCU and FCCU using installed pollution abatement equipment for the FCU and FCCU. The proposed SIP revision for the FCU and FCCU was consistent with EPA’s definition of RACT because this equipment is installed and the operating conditions determined pursuant with the terms of a 2001 consent decree that continues to control aspects of the Department’s regulation of the refinery’s air emissions.. On May 21, 2014 EPA issued its determination on what the FCU and FCCU NO<sub>x</sub> limits would be, and DCRC is subject to these limits in the near future. Accordingly, DAQ at the hearing revised the SIP to reflect the EPA determination. t

The DAQ used limits based upon the existing controls installed on the FCU and FCCU, which were the subject of an extensive 18 month long optimization studies, which DAQ reviewed. These studies, along with DAQ’s expert opinion, provide ample justification for the FCU and FCCU having RACT limits established in Section 3.3 of the proposed SIP

revision. DAQ properly determined the two units' emission rates for purposes of the RACT's SIP revision. Without question, the two units' limits, as determined by EPA in its May 21, 2014 letters and accepted by DAQ's experts, meet the definition of RACT, and, hence, should be reflected in the SIP. At the hearing, DAQ adopted the EPA determined NOx limits for the FCCU and FCCU consistent with its use as the RACT in the SIP. This change was appropriate and necessary to make considering that EPA will review the SIP revision approved by this Order. The record remained open for public comment and none was received on the change, which was modest from the originally proposed SIP revision. The public had ample opportunity to comment following the hearing of this change, and DCRC commented, as discussed above. In sum, the EPA change should be reflected in the SIP revision and the Department properly reflected the change in its SIP revision.

The Department finds that the SIP revision should be adopted and submitted to EPA for approval. Approval of the SIP revision in final is supported by the record and consistent with the Department's delegated duties under the federal Clean Air Act. In conclusion, the following findings and conclusions are entered:

1. The Department finds the proposed SIP revision is supported by the record and should be adopted as a final SIP revision;
2. The Department finds that the SIP revision should be submitted to EPA for EPA's review in order that the SIP may be approved by EPA; and
3. The Department shall publish notice of this Order in the same manner as the notice of the proposed SIP revision.



David S. Small  
Secretary

## HEARING OFFICER'S REPORT

TO: The Honorable David S. Small  
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 STATE IMPLEMENTATION PLAN REVISION  
TO UPDATE REASONABLY AVAILABLE CONTROL TECHNOLOGY  
REQUIREMENTS**

DATE: July 9, 2014

This Hearing Officer's Report recommends adoption of a proposed revision to Delaware's State Implementation Plan (SIP), entitled "Delaware Reasonably Available Control Technology (RACT) State Implementation Plan (SIP) under the 2008 Ozone National Ambient Air Quality Standard (NAAQS). The Department prepares this SIP revision under delegated federal authority from the United States Environmental Protection Agency (EPA) under the federal Clean Air Act (CAA). The proposed revision would update Delaware's SIP for RACT requirements in response to EPA's changes to under the 2008 National Ambient Air Quality Standards (NAAQS) for the 8-Hour ground-level Ozone. EPA designated Delaware's New Castle County and Sussex County as nonattainment areas under the 2008 ozone NAAQS. Delaware is to submit a RACT SIP revision to EPA by July 2014.

The Department's proposed SIP revision demonstrates the regulatory actions already taken or that will be taken to enable Delaware's air quality to meet the 8 hour Ozone NAAQS. The revision demonstrated Delaware's regulatory efforts to reduce ozone levels to attain air quality that would comply with the 8 hour Ozone NAAQS. The proposed SIP revision indicated the existing regulations, which control emissions of ozone causing pollutants Nitrogen Oxide (NO<sub>x</sub>) and Volatile Organic Compounds (VOC) and establishes RACT requirements for sources that emit these pollutants. One change to the SIP is to identify specific RACT-level limits on the Fluidized Coker Unit (FCU) and the Fluidized Catalytic Cracking Unit (FCCU), which are two significant sources of NO<sub>x</sub> emissions at Delaware City Refining Company LP's (DCRC) petroleum refinery.

The proposed SIP revision was prepared by experts within the Department's Division of Air Quality and was made available to the public on April 17, 2014. The Department sent the proposed SIP revision to EPA, and had published in the May 1, 2014 issue of the Delaware Register of Regulations along with a public notice of the public hearing on June 2, 2014 and the public comment period. The Department also published public notices of the proposed SIP revision on April 27, 2014 in state-wide newspapers.

I presided over the June 2, 2014 public hearing at the Department's Dover offices. At the public hearing, DAQ was represented by the following persons from DAQ's Planning Branch: Gene Pettingill, Dave Fees and Ron Amirikian. Mr. Pettingill made a presentation and developed

the record by introducing as exhibits certain relevant documents. Several members of the public attended and a representative of DCRC submitted written comments. The record developed at the hearing contains the following documents:

DNREC Exhibit 1. Proposed SIP revision as published as a General Notice in the May 1, 2014 Delaware Register of Regulations

DNREC Exhibit 2. Affidavits of publication of legal notice published April 27, 2014 in the Delaware State News and the News Journal.

DNREC Exhibit 3 email to EPA dated April 21, 2014

DNREC Exhibit 4 Proposed changes to SIP for final publication.

DCRC Exhibit 1. Comments on proposed SIP revision.

In addition, the attached Technical Response Memorandum (TRM) from DAQ and the May 21, 2014 letters from EPA are included in the record. The TRM provides an in-depth response to the DCRC's comments and the EPA letters further support the final SIP's determination of RACT NO<sub>x</sub> limits for the FCU and the FCCU. I find that the record, as described above, supports adoption of the proposed revised SIP and that the changes made in DNREC Ex. 4 should be adopted. Accordingly, a draft Order is attached hereto to adopt the proposed revised SIP as a final revised SIP in order that it may be sent to EPA for its review.

DAQ recommended a change to the proposed SIP at the hearing and offered DNREC Ex 4 that is based upon EPA's May 21, 2014 letter that determines the NO<sub>x</sub> limits for the FCU and FCCU. I recommend that this change be accepted. Insofar as the proposed SIP is not subject to the rulemaking procedure within the Administrative Procedures Act, this change can be made without any other public notice or hearing. This SIP revision is not a regulation, but issued as a state-wide plan pursuant to Section 6010 of Title 29 of the Delaware Code. Moreover, the changes being made in DNREC Ex. 4 are based on EPA's decision that controls what the Department must accept under this federally delegated authority. I find that DCRC had sufficient notice of the proposed RACT-level limits on its FCU and FCCU at the hearing and even before considering DCRC also received the EPA letters. I find that the change from the originally proposed SIP revision is minor. DAQ proposed those limits as RACT-level controls, based on operational tests of the FCU and FCCU using installed pollution control equipment. EPA's determination is based upon its review of those tests, and DAQ accepts EPA's determination as consistent with EPA's definition of RACT. Therefore, the SIP should reflect the RACT for the FCU and FCCU in the final SIP revision set forth in DNREC Ex. 4.

**Delaware Reasonably Available Control Technology (RACT) State Implementation Plan (SIP) Under the 2008 Ozone National Ambient Air Quality Standard (NAAQS)**

**M E M O R A N D U M**

To: Robert Haynes

Through: Ali Mirzakhali

From: Gene Pettingill

**Subject: Technical Response Memorandum – June 2, 2014 Public Hearing on Delaware Reasonably Available Control Technology (RACT) State Implementation Plan (SIP) Under the 2008 Ozone National Ambient Air Quality Standard (NAAQS)**

Date: June 30, 2014

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This memorandum provides a response to comments received from Thomas S. Godlewski, Environmental Manager of the Delaware City Refining Company (DCRC) concerning a proposal to amend the Delaware SIP with respect to RACT standards for sources of volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>).<sup>1</sup> These comments were delivered to the Hearing Officer, Robert Haynes, during the hearing on June 2, 2014 and entered into the record as Delaware City Refining Company Exhibit 1.

Specifically, DCRC opposes the individual NO<sub>x</sub> emission limits proposed for the fluid coking unit (FCU) and the fluidized catalytic cracking unit (FCCU) at the DCRC because; (1) they are materially more stringent than RACT, (2) no justification was presented to characterize these limits as RACT, (3) DCRC's compliance with RACT is satisfied by compliance with the facility-wide emission limits of Regulation 1142, (4) the specific emission limits proposed are more appropriate to BACT or LAER due to the way they were derived, and (5) the actual values proposed by the Department are not the same values adopted by EPA pursuant to the consent decree.

**DAQ RESPONSE TO (1)** *They are materially more stringent than RACT.*

We do not agree. Historically, EPA has defined RACT to mean the lowest emission limitation a particular source is capable of meeting, in light of local circumstances, by the application of a control technology that is reasonably available considering technological feasibility and the cost of control in the area to which the SIP applies. RACT "is the minimum EPA can accept in non-

attainment state plans”<sup>2</sup>. Delaware is nonattainment for ground-level ozone. Consequently, emissions of the precursor pollutant NO<sub>x</sub> are highly regulated in Delaware. These DCRC controls have been operational and were studied to determine reasonable and appropriate emissions rates. If Delaware were to set a less stringent limit than has been demonstrated, the less stringent limit would obviously not be the lowest limit that is achievable considering technology and cost.

EPA has recently reported on their review of the Optimization Study submitted by the Premcor Refining Group, Inc. (Premcor) dated May 25, 2007 and its FCU WGS Annual Concentration and Mass NO<sub>x</sub> Limit Proposal dated July 28, 2008.<sup>3</sup> In the FCU Optimization Study, Premcor proposed both a long-term NO<sub>x</sub> limit of 118 parts per million, volumetric, dry at 0% O<sub>2</sub> (ppmvd @ 0% O<sub>2</sub>) (365-day rolling average) and a short-term NO<sub>x</sub> limit (7-day rolling average) of 152 ppmvd @ 0% O<sub>2</sub>. In the Annual Limit Proposal, Premcor proposed a revised long-term NO<sub>x</sub> limit (365-day rolling average) of 118 ppmvd @ 0% O<sub>2</sub>. EPA did not agree with the proposed long-term emission limit or the number of significant digits in the proposed short-term emission limit.

Based upon EPA’s analysis of the data obtained by Premcor during the demonstration, EPA determined the long-term limit should be 115.2 ppmvd NO<sub>x</sub> @ 0% O<sub>2</sub> on a 365-day rolling average and the short-term should be 152.0 ppmvd NO<sub>x</sub> at 0% O<sub>2</sub> on a 7-day rolling average basis.

In a similar fashion, EPA reported on their analysis of the “FCCU NO<sub>x</sub> Emission Demonstration Study” submitted by Premcor dated October 20, 2006.<sup>4</sup> In its Demonstration report, Premcor proposed a long-term NO<sub>x</sub> limit (365-day rolling average) of 98 ppmvd @ 0% O<sub>2</sub> and a short-term NO<sub>x</sub> limit (7-day rolling average) of 137 ppmvd @ 0% O<sub>2</sub>. EPA did not agree with the proposed long-term limit or the number of significant digits in the proposed short-term limit.

Based upon their analysis of the Premcor submitted data, EPA determined that for the FCCU, the long-term should be 160.7 ppmvd NO<sub>x</sub> @ 0% O<sub>2</sub> on a 365-day rolling average basis and the short-term limit should be 137.0 ppmvd NO<sub>x</sub> @ 0% O<sub>2</sub>.

EPA developed these operational limits based upon the data submitted by Premcor which was obtained from a series of actual runs demonstrating the performance of the FCU and the FCCU under real-life conditions. These limits were proposed by Premcor following 18-month long optimization studies followed by robust statistical analyses of operating data in each case. These analyses were based on one-sided (upper) tolerance limits that would assure, for the FCCU, 95 % confidence level that 99 % of the short-term (7-day rolling average) will be in compliance and 95 % confidence level that 95 % of the long-term (365-day rolling average); and for the FCU 95 % confidence level that 95 % of both the short-term (24-hour rolling average) and the long-term (365-day rolling average) would be in compliance.

DAQ’s assessment of both these optimization studies being reasonably achievable is consistent with the definition of RACT. Consequently, when DNREC received copies of the two EPA letters, DAQ revised the proposed SIP to show the new EPA derived NO<sub>x</sub> emission limits for the



FCU and the FCCU for submission to the Registrar for final SIP publication in a later issue of the Delaware Register of Regulations and so reported in the hearing.

Actual operating data also indicates that these units are readily complying with these standards.

**DAQ RESPONSE TO (2)** *No justification was presented to characterize these limits as RACT.*

We do not agree. As pointed out in (1) above, the justification is obvious since the limits were derived from the studies conducted by Premcor and demonstrated in practice.

**DAQ RESPONSE TO (3)** *DCRC's compliance with RACT is satisfied by compliance with the facility-wide emission limits of Regulation 1142.*

We do not agree. Compliance with the consent decree<sup>5</sup> is determined by application of its terms, compliance with Regulation 1142 is determined by the application of the regulation (the facility-wide limit in Regulation 1142 is a long-term limit), and compliance with RACT is determined by the emissions standards that are determined to be RACT (which is a short-term limit). Each of these has a separate and distinct purpose, and concurrently apply.

EPA guidance as far back as 1984 has established that the basic objective of SIP measures like RACT is the attainment and maintenance of the NAAQS, and to maintain the integrity of this basic objective control measures must be consistent with protecting short-term standards like ozone. The ozone NAAQS is based on an 8-hour average, and RACT compliance is to be demonstrated on no longer than a 24-hour basis unless such basis is not technically feasible.

Relative to the DCRC, RACT sets the maximum emission rate each source at the facility must meet on a short-term average, and the facility-wide cap in 1142 requires additional reductions, and provides flexibility for DCRC to make those additional reductions as it desires. Both are important to Delaware's ozone control strategy. The Department does not agree with this DCRC comment because long-term averages alone are not protective of the ozone NAAQS.

**DAQ RESPONSE TO (4)** *The specific emission limits proposed are more appropriate to BACT or LAER due to the way they were derived.*

We do not agree. The reader is referred to the response to (1) above. DCRC's comment does not comport with good engineering judgment. The FCU is equipped with a SNCR system whose performance has been optimized. The limits proposed by the former owner of the refinery have already been incorporated into state issued construction permits and EPA's subsequent approval merely requires the facility to operate the FCU and its SNCR system in a manner that minimizes NOx emissions which is wholly consistent with following good air pollution control practices. With respect to the FCCU, DCRC's comment is even less relevant because the FCCU is not equipped with any downstream NOx controls. Rather the facility is merely required to operate the FCCU and its CO boiler in the optimized manner. DCRC's proposition would have DNREC adopt "no controls" as RACT despite low-NOx burners being on-line. All DAQ is saying is to operate these burners properly.

Furthermore, and perhaps more pertinently, DCRC's comment alludes to these optimized limits as being representative of meeting the more stringent BACT or LAER levels of control because they were established pursuant to the terms and purpose of the federal consent decree. DAQ disagrees. While the federal consent decree prescribed various control measures as injunctive relief for alleged NSR violations, nowhere in this consent decree is any formal BACT or LAER determination made, nor does the permit reflect that either was BACT or LAER even at the time of the consent decree (8 years ago). Based on the totality of the circumstances, DAQ believes it is reasonable to adopt operation at these limits, considering technological and economic feasibility, to constitute RACT. In fact, DAQ had made an earlier BACT determination for the FCCU which would have required installation of controls meeting a 20 ppm NOx limit. The limitation proposed here as RACT is far in excess of what could be considered BACT or LAER.

**DAQ RESPONSE TO (5)** *The actual values proposed by the Department are not the same values adopted by EPA pursuant to the consent decree.*

We agree. At the time the DCRC comment letter was prepared, the only FCU and FCCU NOx emission limits published by DNREC were those in the proposed SIP published in the May 1, 2014 issue of the Delaware Register of Regulations. The two EPA letters, showing the limits they had derived from the Premcor submitted data, were dated May 21, 2014. At the hearing on June 2, 2014, DNREC acknowledged receipt of copies of the EPA letter sent to DCRC and included Exhibit 4 in the Public Record showing the new EPA proposed limits, as mentioned in the hearing statement, as a marked-up version of the proposed SIP for the Registrar to use in publishing the final SIP.

#### References:

- (1) Letter, Thomas S. Godlewski, Jr., DCRC Environmental Manager, "Proposed SIP Revision" to Mr. Gao, DNREC, dated June 2, 2014.
- (2) Letter, Roger Strelow, EPA Assistant Administrator for Air and Waste Management, "Guidance for Determining Acceptability of SIP Regulations in Non-attainment Areas", to Regional Administrators, Regions I – X, dated December 9, 1976.
- (3) Letter, Philip Brooks, Director, EPA Air Enforcement Division, "United States of America, et al., v. Motiva Enterprises LLC, No. H-01-0978 (S.D. Tex.) – Final NOx Limits for the FCU at the Delaware City Refinery", to John Deemer, HSE Manager, Delaware City Refining Company, dated May 21, 2014.
- (4) Letter, Philip Brooks, Director, EPA Air Enforcement Division, "United States of America, et al., v. Motiva Enterprises LLC, No. H-01-0978 (S.D. Tex.) – Final NOx Limits for the FCCU at the Delaware City Refinery", to John Deemer, HSE Manager, Delaware City Refining Company, dated May 21, 2014.
- (5) Consent Decree; United States of America, et al. vs Motiva Enterprises LLC, et al, March 21, 2001.