DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

DIVISION OF AIR QUALITY

Statutory Authority: 7 Delaware Code, Chapter 60 (7 **Del.C.** Ch. 60)

GENERAL NOTICE

REGISTER NOTICE

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: August 11, 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.** §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 (NOx).

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 NOx, and establishes NOx limits for two sources of NOx 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 NOx sources. While 25-50 TPY VOC sources and 25-100 TPY NO_X 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 NOx 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.

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 FCU 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

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

Submittal To U.S. Environmental Protection Agency
Submitted By Delaware Department of Natural Resources and Environmental Control

[~~May~~ August] 2014

1. Introduction

This document contains Delaware's State Implementation Plan (SIP) revision for meeting the Reasonably Available Control Technology (RACT) requirements of the Clean Air Act (CAA) under the 8-hour ozone National Ambient Air Quality Standard (NAAQS) set forth by US Environmental Protection Agency (EPA) in 2008. The document is hereafter referred to as "Delaware's 2008 8-hour ozone RACT SIP revision," or simply as "the 2008 RACT SIP."

1.1 Background and Requirements

Ground-level ozone, one of the principal components of "smog," is a serious air pollutant that harms human health and the environment. High levels of ozone can damage the respiratory system and cause breathing problems, throat irritation, coughing, chest pains, and greater susceptibility to respiratory infection. High levels of ozone also cause serious damage to forests and agricultural crops, resulting in economic losses to logging and farming operations.

In March 2008, the EPA revised the 1997 8-hour ozone NAAQS of 0.08 parts per million (ppm) to 0.075 ppm (73 FR 16436). The 2008 ozone standard of 0.075 ppm is expected to provide better protections of public health and environment. In a final rule of May 2012, the EPA designated 46 areas in the country as nonattainment for the 2008 ozone standard. New Castle County of Delaware was designated as nonattainment as a part of the Philadelphia-Wilmington-Atlantic City Marginal Non-Attainment Area (NAA) (77 FR 30088). Since this marginal NAA is centered by the City of Philadelphia, it is often referred to as "the Philadelphia NAA." In the same final rule, Sussex County of Delaware was designated as a stand-alone nonattainment area, called "Seaford Marginal NAA," and Kent County was in attainment (77 FR 30088). The EPA made the designations of these three counties based on their 2009-2010-2011 design values. Figure 1 presents a geographic demonstration of Delaware's three counties.

Ozone is generally not directly emitted to the atmosphere. It is formed in the atmosphere by photochemical reactions among volatile organic compounds (VOC), oxides of nitrogen (NO_X), and carbon monoxide (CO) in the presence of sunlight. Consequently, in order to reduce ozone concentrations in the ambient air, the CAA requires all ozone non-attainment areas, and areas in the Ozone Transport Region (OTR) established pursuant to Section 184 of the CAA, to implement relevant control measures on VOC and NO_X emission sources to achieve emission reductions.[1] Among effective control measures, the Reasonably Available Control Technology (RACT) controls are a major group for reducing VOC and NO_X emissions from stationary sources.

The EPA has defined the RACT as the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53762). Section 182 of the CAA sets forth two separate RACT requirements for ozone non-attainment areas. The first requirement, contained in section 182(a)(2)(A) of the CAA, and referred to as RACT fix-up, requires the correction of RACT rules for which EPA identified deficiencies before the Act was amended in 1990. Delaware has no deficiencies to correct under this section of the CAA. The second requirement, set forth in section 182(b)(2) of the CAA, applies to moderate or worse ozone non-attainment areas (NAAs) as well as to all areas within the OTR, and requires these areas to implement RACT controls on all major VOC and NO_X emission sources and on all sources and source categories covered by Control Technique Guidelines (CTGs) and Alternate Control Techniques (ACTs) issued by EPA.

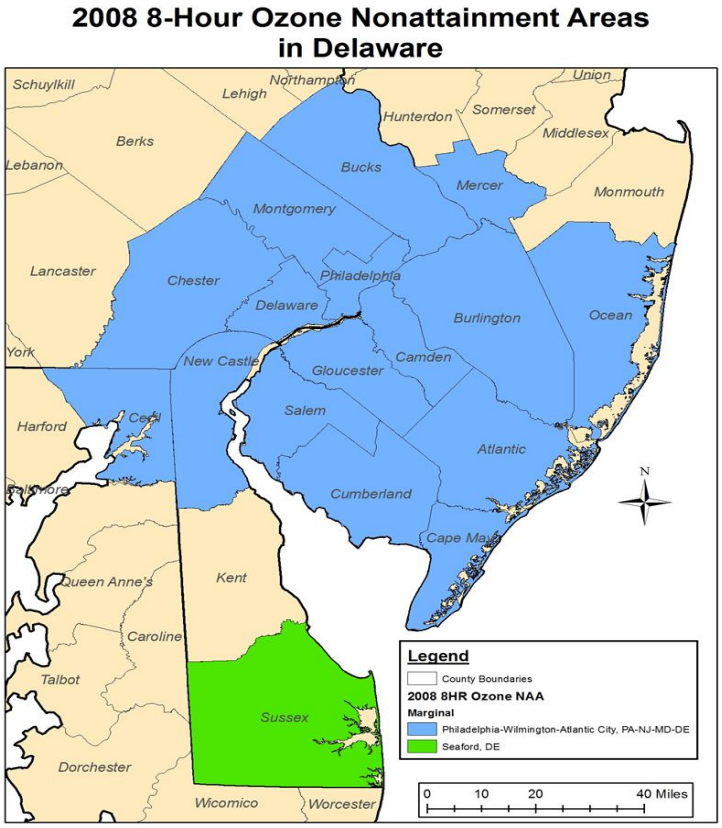

Figure 1. Delaware's NAA under the 2008 Ozone Standard: New Castle County in the Philadelphia NAA and the Seaford NAA.

Under section 183 of the CAA, EPA is required to develop and issue by certain timeframes relevant guidance documents for RACT controls that help states meet the requirements of Section 182(b)(2). This requirement upon EPA includes developing (1) CTGs for controls of VOC emissions from stationary sources, and (2) ACTs for controls of VOC and NO_X emissions from stationary sources. The controls in both CTG and ACT documents provide a basis for RACT determination.

Historically, the EPA has issued three groups of CTG documents, establishing a "presumptive norm" for RACT controls for various categories of VOC sources: Group I, issued before January 1978 including 15 CTGs; Group II, issued in 1978 including 9 CTGs; and Group III, issued in the early 1980s including 5 CTGs. Sources

1. Since CO's role in forming ozone is relatively insignificant, the CAA does not specify requirements on CO emission reductions regarding attainment of ozone standard.

not covered by the issued CTGs are referred to as non-CTG sources. The EPA has also issued numerous ACTs for various categories of VOCs and NO_X sources. In addition, the EPA updated some CTGs in the 2006-2008 periods. All published CTG and ACT documents, along with other documentation, are listed in Section 5 of this document.

Section 182(b)(2) of the CAA requires states with ozone non-attainment areas classified as moderate or worse to implement RACT controls for all pre-enactment (i.e., pre-1990) CTG source categories, for all sources subject to post-enactment (i.e., post-1990) CTGs, and for all non-CTG major sources in their non-attainment areas. In addition, Section 184(b)(1) of the CAA requires states within the OTR to implement RACT controls with respect to all CTG-ACT sources, whether those sources are in non-attainment or attainment areas. As a general guidance from EPA, a state should use current EPA CTG/ACT guidance and other information available in making RACT determination.[1] The EPA also points out that while the CTGs and ACTs provide a starting point for the RACT control analysis, RACT level controls can change over time as new technology becomes available or the cost of existing technology adjusts, and states are encouraged to use the latest information available in other forms when making RACT determinations, whether that information is in CTGs, ACTs, or in other guidance or forms that are available, or through information submitted during the public review process.[2]

Under the 1-hour ozone NAAQS of 0.12 ppm, Kent County and New Castle County of Delaware were designated as a part of the Philadelphia severe ozone NAA, and Sussex County was designated as a marginal ozone non-attainment area within the OTR. Therefore, all three counties were subject to the RACT requirements under the 1-hour ozone standard. Consequently in the 1990s, Delaware implemented numerous RACT controls throughout the state to meet the CAA's RACT requirements. These RACT controls were promulgated in Delaware Air Pollution Control Regulation No. 24 for VOC sources and Regulation No. 12 for NO_X sources[3].

In 1997, the EPA revised the 1-hour ozone NAAQS to an 8-hour standard of 0.08 ppm (62 FR 38856). Under the 1997 8-hour ozone NAAQS, the entire state of Delaware was designated a part of the Philadelphia moderate NAA, and therefore continued to be subject to the CAA RACT requirements. Delaware promulgated and revised its RACT regulations, and again demonstrated that it completely complied with the CAA RACT requirements for all three counties in a SIP revision submitted to the EPA in September 2006. That SIP revision, entitled "Delaware Reasonable Available Control Technology (RACT) State Implementation Plan (SIP) under the 8-Hour Ozone National Ambient Air Quality Standard (NAAQS)," was approved by the EPA in July 2008 (73 FR 42681). The EPA's approval was based on a thorough review of all Delaware's RACT-related regulations. Such approval indicated that Delaware fulfilled the CAA RACT requirements under the 1997 8-hour ozone NAAQS.

As aforementioned, the EPA revised the 1997 ozone standard to a new 0.075 ppm level in 2008 (73 FR 16483). Under the 2008 ozone standard, New Castle County and Sussex County are in marginal non-attainment, and Kent County is in attainment. Since Delaware is located within the OTR, under Section 184(b)(1) of the CAA, all three counties of Delaware are again subject to the RACT requirements set forth in the CAA Section 182(b)(2).

The EPA requires that Delaware meets the RACT requirements for all three counties through (1) certifying that previously-adopted RACT controls in its SIP revisions approved by EPA under the 1997 8-hour ozone NAAQS represent adequate RACT control levels for the new 2008 8-hour attainment purposes, or (2) adopting new or updated more stringent regulations that represent adequate RACT control levels under the new 2008 ozone standard. Certification shall be accompanied by appropriate supporting information such as consideration of information received during the public comment period and consideration of new data, that may supplement existing RACT guidance documents that were developed for the 1997 8-hour standard, such that the state SIPs accurately reflect RACTs for the new 2008 8-hour ozone standard based on the current availability of technically and economically feasible controls. Adoption of new RACT regulations shall occur when states have new stationary sources not covered by existing RACT regulations, or when new data or technical information indicates that a previously adopted RACT measure does not represent a newly-available RACT control level. Delaware has decided to use both certification and adoption in this SIP revision to demonstrate its fulfillment of the CAA RACT requirements under the 2008 ozone standard.

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1. EPA's current CTGs and ACTs are located at: http://www.epa.gov/air/ozonepollution/SIPToolkit/ctgs.html.
2. RACT Qs & As-Reasonably Available Control Technology (RACT): Questions and Answers. William T. Harnett, Director, Air Quality Policy Division, EPA, May 18, 2006.
3. Regulation 24 and Regulation 12 are now coded as 7 **DE Admin Code** 1124 and 7 **DE Admin Code** 1112, respectively.

It should be pointed out that under the 1-hour ozone standard, Delaware's New Castle County and Kent County were designated as severe NAAs and adopted 25 tons per year (TPY) as the threshold for major sources of both VOC and NOx according to Section 182(d) of the CAA. Under the 1997 8-hour ozone NAAQS, the entire state of Delaware (i.e., all three counties) was designated as moderate non-attainment area. Therefore, in its 2006 RACT SIP, the major source threshold was 50 tons per year (TPY) for non-CTG stationary VOC sources and 100 TPY for stationary NO_X sources. Under the 2008 8-hour ozone standard, New Castle County and Sussex County are designated as the marginal NAAs, and Kent County is in attainment. According to Section 184(b)(2), in this 2008 RACT SIP revision, the major source threshold stays 50 TPY for non-CTG stationary VOC sources and 100 TPY for stationary NO_X sources. However, the 25-50 TPY VOC sources and 25-100 TPY NOx sources remain subject to Delaware RACT rules in this document under the "anti-backsliding" provisions of the CAA and EPA's ozone implementation rule for the 2008 ozone standard (78 FR 34178)[1]. In addition, all of Delaware's RACT regulations apply state-wide.

In summary, through this RACT SIP revision Delaware demonstrates that its ozone-related SIP regulations meet the CAA's RACT requirements for the 50 TPY CTG and non-CTG major VOC sources and for all 100 TPY NO_X sources, and that all CTG covered source categories are addressed at the emission thresholds set in the CTG or in the "Blue Book" (Reference 63) for those CTG categories for which the CTG set no emission threshold. This demonstration is an analysis and certification that the control measures in Delaware SIP-approved regulations are based on currently available technically and economically feasible controls, and they represent RACT control levels adequate for implementing the 2008 8-hour ozone standard.

1.2 Responsibilities

The agency with direct responsibility for developing and submitting this SIP document is Delaware Department of Natural Resources and Environmental Control (DNREC), Division of Air Quality (DAQ), under the Division Director, Ali Mirzakhalili, P.E.. The working responsibility for Delaware's air quality SIP planning falls within DAQ's Planning Branch, with Branch Manager Ronald A. Amirikian. David Fees, P.E., managing engineer of the planning branch, is supervising this SIP revision development. Frank F. Gao, Ph. D. and P.E., of the planning branch, is the project leader and principal author of this document.

2. Determination of Compliance of VOC RACT Requirements

2.1 Certification of VOC RACT Requirements

Delaware's VOC RACT controls are contained in 7 **DE Admin Code** 1124, "Control of Volatile Organic Compound Emissions" (hereafter in this document referred to as Regulation 1124). Various sections in Regulation 1124, covering corresponding VOC sources, were originally developed and implemented into Delaware SIP under the 1-hour ozone standard or the 1997 8-hour ozone standard, and have been periodically updated based on advancements in technology. All major sources in Delaware and all CTG/ACT covered sources with applicability cut-off levels consistent with the "Blue Book" (Reference 63) are covered by adequate RACT controls in the corresponding Regulation 1124 sections.

Identification and certification/adoption of Regulation 1124 VOC RACT controls for meeting the 2008 8-hour ozone standard is provided in Table 1. Explanations for the columns of Table 1 are as follows:

Column 1: Identifies each section of Regulation 1124 that contains a Delaware VOC RACT rule. The effective date of each section is also provided in this column. In general, Regulation 1124 sections requires major VOC emitting sources to comply with the relevant deadlines specified in the CAA and EPA's implementation rules for the NAAQS.

Notes for Column 1:

(1) Column 1 does not include Sections 1 through 7 and Section 9 of Regulation 1124 because those sections are general administrative provisions on how to implement RACT controls, but not actual RACT controls.

(2) An asterisk mark (*) indicates a certification that the section is unchanged as approved by EPA in Delaware's 2006 RACT SIP under the 1997 ozone standard.

(3) A two-asterisk mark (**) indicates that the section is either newly adopted or revised to meet new requirements.

Column 2: Identifies the underlying basis for each RACT control rule and its implementation.

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1. Implementation of the 2008 National Ambient Air Quality Standard for Ozone: State Implementation Plan Requirements; Proposed Rule, 78 FR 34178, June 6, 2013. Upon the submission date of this 2008 RACT SIP, the EPA has not finalized the rule.

Column 3: Identifies the date the RACT rule was approved into the Delaware SIP, along with the Federal Register citation.

Column 4: Explains briefly the RACT control applicability and requirements.

Column 5: Determines, via certification or adoption, whether the rule represents the current RACT requirement under the 2008 8-hour ozone NAAQS.

Notes for Column 5:

(1) When certifying that a current SIP-approved rule represents the RACT level under the 8-hour ozone standard, DAQ affirms that it is not aware of any significant change in the RACT control technology after the previous RACT SIP determination that would affect this RACT SIP compliance determination. In other words, the current SIP-approved rule still sets up the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

(2) When adopting a new rule or revising an earlier version of a SIP-approved rule, DAQ affirms that the newly adopted version of the rule represents the new or more stringent RACT control levels specified in the EPA's most updated CTG/ACT documents, or in an agreement among regional affiliations of state agencies (such as an OTC model rule), or in new technology information from other sources. Those control levels represent the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

(3) Any discussion on cost effectiveness is relative only to this RACT SIP, and is not relevant as to whether or not control of a particular source or source category is cost effective relative to Delaware's entire SIP.

It should be pointed out that Delaware's minor source permitting program under 7 **DE Admin. Code** 1102, "Permits" (hereafter in this RACT SIP referred to as Regulation 1102), requires a detailed administrative and technical review of Delaware sources that emit air contaminants at levels far below the major source threshold and CTG cutoffs. For example, permits are required for the emission of 10 pounds per day or more of "aggregate" air contaminants, and registrations for emissions between 0.2 and 10 lb/day of air contaminants. This permitting program gives additional confidence that all major and CTG covered sources are controlled by RACT or better controls.

Table 1. Delaware VOC RACT Control List and Determination of Compliance under the 2008 Ozone NAAQS

Column 1	Column 2	Column 3	Column 4	Column 5
Regulation 1124 Section	**Basis for RACT Control**	**As SIP Revision Approved by EPA**	**RACT Rule Applicability and Requirements**	**Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?**

Section 8.0 Handling, Storage, and Disposal of Volatile Organic Compounds (VOCs)** 03/11/2011	CTG for Industrial Cleaning Solvents. EPA 453/R-06-001, September 2006.	Final Rule Federal Register Date: 04/13/2012 77 FR 22224	This section applies to any facility subject to any of Sections 10.0 through 50.0 of Regulation 1124, with a few exceptions as specified in 8.3.1 of this section, when the facility deals with activities involving handling, storage and disposal of VOCs and VOC-containing solvents. The section establishes for the regulated facilities (1) work practice standards, (2) control requirements, (3) testing methods and procedures, and (4) recordkeeping requirements, to reinforce effective control of VOC emissions from using VOCs or VOC-containing solvents in the regulated facilities.	Yes. Section 8.0 was not included in Delaware's RACT SIP under the 1997 ozone standard. It was updated in 2011 to fully implement relevant RACT requirements regarding handling, storage and disposal of VOCs and VOC-containing solvents as specified in the 2006 CTG. The requirements set up the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. Thus, it represents the current RACT control levels under the 2008 ozone NAAQS.
Section 10.0 Aerospace Coatings* 08/11/2002	CTG for Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations. EPA-453/R-97-004, December 1997.	Final Rule Federal Register Date: 03/24/2004 69 FR 13737	This section applies to any aerospace manufacturing and rework facility In brief, this section establishes vapor pressure limits, VOC content limits, emission limits and/or work practice standards for: (a) hand-wipe, spray gun, or flush cleaning operations, (b) primer, topcoat, self-priming topcoat, and specialty coating operations, (c) chemical milling maskant application, (d) depainting of aerospace vehicles, and (e) handling and storing of VOC.	Yes. This section was updated in 2002 to fully implement the RACT-level controls specified in the 1997 CTG. It was approved by the EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.

Section 11.0 Mobile Equipment Repair and Refinishing** 10/11/2010	OTC Alternate Model Rule “Motor Vehicle Mobile Equipment Repair and Refinishing (MVMERR)”, adopted in September 2009 and based on (1) CTG for Miscellaneous Metal and Plastic Parts Coatings (MMPPC),” EPA-453/R-08-003, September 2008. (2) National Emission Standards for Hazardous Air Pollutants (NESHAP): Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources; Final Rule January 9, 2008 (73 FR 1738). Alternative Control Techniques (ACT) for Reduction of Volatile Organic Compound Emissions from Automobile Refinishing, EPA-450/3-88-009, October 1988.	Revision with effective date of 10/11/2010 submitted to EPA in March 2014.	This section applies to any person who applies coatings to mobile equipment for beautification or protection in the State of Delaware. It establishes: (a) Requirements for using improved transfer efficiency coating and application equipment; (b) requirements for enclosed spray gun cleaning techniques; and (c) minimum training standards in the proper use of equipment and materials.	Yes. The previous version of this section was revised in 2001based on an OTC model rule to implement controls to mitigate Delaware’s attainment shortfall under the 1-hour ozone standard. The control levels were more stringent than the then-ACT requirements. It was approved by EPA as adequate under the 1997 ozone standard. In 2010, this section was updated to adopt more stringent limits set forth in EPA’s 2008 NESHAP rule and CTG. It also adopted some VOC limits from the California Air Resources Board (CARB) Suggested Control Measure (SCM) for Automotive Coatings, published October 2005, which are more stringent. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT control level under the 2008 ozone standard.

Section 12.0 Surface Coating of Plastic Parts** 10/11/2011	CTG for Miscellaneous Metal and Plastic Parts Coatings (MMPPC). EPA-453/R-08-003, September 2008 ACT for Surface Coating of Automotive/ Transportation and Business Machine Plastic Parts EPA-453/R-94-017, February 1994.	Final Rule Federal Register Date: 09/25/2012 77 FR 58953	This section applies to any plastic part or product coating unit. It establishes VOC content limits of various coatings, sets up requirements for control devices, testing methods and compliance certification.	Yes. This section was revised in 2001 to fully implement the 1994 ACT control requirements. It was approved by EPA as adequate under the 1997 ozone standard. In 2010, it was updated to expand the applicability scope and to adopt more stringent requirements set forth in EPA's 2008 CTG. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT control level under the 2008 ozone standard.
Section 13.0 Automobile and Light-Duty Truck Coating Operations** 03/11/2011	CTG for Automobile and Light-Duty Truck Assembly Coatings. EPA 453/R-08-006, September 2008. Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat Operations. EPA 453/R-08-002, September 2008. CTG for Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks. EPA-450/2-77-008, May 1977. (Group I)	Final Rule Federal Register Date: 04/13/2012 77 FR 22224	This section applies to coating operations at automobile or light-duty truck assembly plants. It establishes VOC content limits in adhesives, sealing materials, primer, coating materials used in automobile and light-duty truck coating operations, and requirements for control device, test methods, and recordkeeping for such operations.	Yes. This section was developed in 1993 to fully implement the 1977 CTG requirements in Delaware. It was approved by EPA as adequate under the 1997 ozone standard. In 2011, it was updated to implement the new VOC limits and operational requirements specified in the 2008 CTG. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It reflects the current RACT control levels under the 2008 8-hour ozone NAAQS.

Section 14.0 Can Coating* Section 15.0 Coil Coating* Section 17.0 Fabric Coating* Section 18.0 Vinyl Coating* 01/11/1993 for all above sections.	CTG for Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks. EPA-450/2-77-008, May 1977. (Group I)	Final Rule Federal Register Date: 05/03/1995 60 FR 21707	These sections apply to coating operations at any can, coil, paper, fabric, or vinyl coating unit. They establish various coating VOC content limits, depending on the particular coating and the substrate being coated, and operational requirements for relevant coating operations.	Yes. These sections were developed in 1993 for fully implementing the 1977 CTG specified controls the targeted sources or source categories in Delaware. They were approved by EPA as adequate under the 1997 8-hour ozone NAAQS. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for these sections. The requirements are the lowest emission limitations that the covered sources are capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. Thus, they represent the current RACT requirements under the 2008 ozone NAAQS.
Section 16.0 Paper, Film, and Foil Coating** 03/11/2011	CTG for Paper, Film, and Foil Coatings. EPA 453/R-07-003, September 2007. CTG for Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks. EPA-450/2-77-008, May 1977. (Group I)	Final Rule Federal Register Date: 04/13/2012 77 FR 22224	This section applies to paper, film, and foil surface coating operations. It establishes VOC limits in coating materials used in paper, film, and foil surface coating operations, and requirements for control device, test methods, and recordkeeping for such operations.	Yes. This section was developed in 1993 to fully implement the 1977 CTG specified VOC limits for paper coating materials in Delaware. It was approved by EPA as adequate under the 1997 ozone standard. In 2011, it was updated (1) to add film and foil coating operations, and (2) to implement the new VOC limits specified in the 2007 CTG. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represent the current RACT control levels under the 2008 8-hour ozone NAAQS.

Section 19.0 Coating of Metal Furniture** 10/11/2011	CTG for Metal Furniture Coatings. EPA 453/R-07-005, September 2007. CTG for Control of Volatile Organic Emissions from Existing Stationary Sources, Volume III: Surface Coating of Metal Furniture. EPA-450/2-77-032, December 1977. (Group I)	Final Rule Federal Register Date: 09/25/2012 77 FR 58953	This section applies to the coating operation of metal furniture. It establishes VOC content limits in coating materials and other requirements such as control device, testing methods and recordkeeping, etc., for metal furniture coating operations.	Yes. This section was developed in 1993 to fully implement the 1977 CTG specified requirements for metal furniture coating operation in Delaware. It was approved by EPA as adequate under the 1997 ozone standard. In 2011, it was updated to implement the new requirements specified in the 2007 CTG. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT control requirements under the 2008 8-hour ozone NAAQS.
Section 20.0 Coating of Large Appliances** 10/11/2011	CTG for Large Appliance Coatings. EPA 453-07-004, September 2007. CTG for Control of Volatile Organic Emissions from Existing Stationary Sources, Volume V: Surface Coating of Large Appliances. EPA-450/2-77-034, December 1977. (Group I)	Final Rule Federal Register Date: 09/25/2012 77 FR 58953	This section applies to the coating operation of large appliances. It establishes VOC content limits in coating materials and other requirements such as control device, testing methods and recordkeeping, etc., for large appliance coating operations.	Yes. This section was developed in 1993 to fully implement the 1977 CTG specified requirements for large appliance coating operation in Delaware. It was approved by EPA as adequate under the 1997 ozone standard. In 2011, it was updated to implement the new requirements specified in the 2007 CTG. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT control levels under the 2008 8-hour ozone NAAQS.

Section 21.0 Coating of Magnet Wire* 11/29/1994	CTG for Control of Volatile Organic Emissions from Existing Stationary Sources, Volume IV: Surface Coating of Insulation of Magnet Wire, EPA-450/2-77-033, December 1977. (Group I)	Final Rule Federal Register Date: 01/26/1996 61 FR 2419	This section applies to the coating operation of magnet wire. It requires use of compliant coatings with a VOC content of less than 1.7 lb/gal, and sets up requirements on control device, test methods, and recordkeeping for coating operation of magnet wire.	Yes. This section was developed in 1994 to fully implement the 1977 CTG specified requirements in Delaware. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.
Section 22.0 Coating of Miscellaneous Metal Parts** 10/11/2011	CTG for Miscellaneous Metal and Plastic Parts Coatings (MMPPC). EPA-453/R-08-003, September 2008 CTG for Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VI: Surface Coating of Miscellaneous Metal Parts and Products. EPA-450/2-78-015, June 1978. (Group II)	Final Rule Federal Register Date: 09/25/2012 77 FR 58953	This section applies to any miscellaneous metal parts coating unit. It establishes VOC content limits in coating materials and other requirements such as control device, testing methods, compliance certification and recordkeeping, etc., for miscellaneous metal part coating operations.	Yes. This section was developed in 1993 to fully implement the 1978 CTG specified requirements for miscellaneous metal part coating operations in Delaware. It was approved by EPA as adequate under the 1997 ozone standard. In 2011, it was updated to implement the new requirements specified in the 2008 CTG. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT control levels under the 2008 8-hour ozone NAAQS.

Section 23.0 Coating of Flat Wood Paneling** 03/11/11	CTG for Flat Wood Paneling Coatings. EPA 453/R-06-004, September 2006. CTG for Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VII: Factory Surface Coating of Flat Wood Paneling. EPA-450/2-78-032, June 1978. (Group II)	Final Rule Federal Register Date: 04/13/2012 77 FR 22224	The section applies to coating operations of flat wood paneling. It establishes VOC content limits in coatings, inks or adhesives used in coating operations for flat wood paneling, and sets up requirements of control device, test methods, and recordkeeping for such operations.	Yes. This section was developed in 1993 to fully implements the 1978 CTG specified requirements for coating operation of flat wood paneling in Delaware, and approved by EPA as adequate under the 1997 ozone standard. In 2011, it was updated to implement the new requirements specified in the 2006 CTG. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT control levels under the 2008 8-hour ozone NAAQS.
Section 24.0 Bulk Gasoline Plants* 01/11/1993	CTG for Control of Volatile Organic Emissions from Bulk Gasoline Plants. EPA-450/2-77-035, December 1977. (Group I)	Final Rule Federal Register Date: 05/03/1995 60 FR 21707	This section applies to all unloading, loading, and storage operations at bulk gasoline plants and to any gasoline tank truck delivering or receiving gasoline at a bulk gasoline plant. It established requirements for the use of vapor balance, and set up various equipment and work practice standards for regulated operations.	Yes. This section was developed in 1993 to fully implement the 1977 CTG specified requirements in Delaware. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.

Section 25.0 Bulk Gasoline Terminals* 11/29/1994	CTG for Control of Volatile Organic Emissions from Bulk Gasoline Plants, EPA-450/2-77-035, December, 1977. (Group I)	Final Rule Federal Register Date: 01/26/1996 61 FR 2419	This section applies to the total of all the loading racks at any bulk gasoline terminal that deliver liquid product into gasoline tank trucks. It sets up requirements for control using a vapor collection and control system designed to collect and destroy the organic compound liquids or vapors displaced from gasoline tank trucks during product loading, and various other equipment and operational requirements.	Yes. This section was developed in 1994 to fully implement the 1977 CTG specified requirements in Delaware. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.
Section 26.0 Gasoline Dispensing Facility Stage I Vapor Recovery* 01/11/2002	CTG for Design Criteria for Stage I Vapor Control Systems - Gasoline Service Stations, November 1975. (Group I)	Final Rule Federal Register Date: 11/14/2003 68 FR 64540	It applies to stationary gasoline storage tanks at gasoline dispensing facilities (GDFs). It sets up requirements that include (1) loading gasoline with submerged fill method, and (2) installing vapor recovery system that returns the displaced vapors to the delivery vessels and then to the bulk plant or terminal.	Yes. This section was updated in 2002 to provide for better control of emissions from GDFs than the 1975 CTG specified level. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.

Section 27.0 Gasoline Tank Trucks* 01/11/1993	CTG for Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals. EPA-450/2-77-026, December 1977. (Group I) CTG for Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems. EPA-450/2-78-051, December 1978. (Group II)	Final Rule Federal Register Date: 05/03/1995 60 FR 21707	This section applies to gasoline tank trucks equipped for gasoline vapor collection. It requires that the covered gasoline tank trucks must be vapor-tight. It also sets up requirements of test methods and recordkeeping for the regulated tank trucks.	Yes. This section was developed in 1993 to fully implement the 1977/1978 CTG specified control in Delaware. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.
Section 28.0 Petroleum Refinery Sources* 01/11/1993	CTG for Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds. EPA-450/2-77-025, October 1977. (Group I)	Final Rule Federal Register Date: 05/03/1995 60 FR 21707	This section applies to vacuum-producing systems, wastewater separators and process unit turnaround at petroleum refineries. Its requirements include (1) no uncompressed VOC emission from vacuum-producing systems, (2) covers, lids or seals for wastewater separators, and (3) depressurization of process unit or vessel to reduce its internal pressure to 136 kPa or less and then venting to vapor recovery system, flare or firebox.	Yes. This section was developed in 1993 to fully implement the 1977 CTG specified requirements in Delaware. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.

Section 29.0 Leaks from Petroleum Refinery Equipment* 11/29/1994	CTG for Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment. EPA-450/2-78-036, June 1978. (Group II)	Final Rule Federal Register Date: 01/26/1996 61 FR 2419	This section applies to equipment in VOC service in any process unit at petroleum refineries. The rule establishes standards for proper valve operations under various scenarios to prevent VOC leak emissions.	Yes. This section was developed in 1994 to fully implement the 1978 CTG specified requirements in Delaware. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.
Section 30.0 Petroleum Liquid Storage in External Floating Roof Tanks* 11/29/1994	CTG for Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks. EPA-450-2/78-047, December 1978. (Group II).	Final Rule Federal Register Date: 01/26/1996 61 FR 2419	This section applies to petroleum liquid storage tanks with external floating roofs and with capacity of 150,000 L or greater. It establishes sealing standards for a covered storage tank, including its openings, its connection structure between roof and tank wall, all seal closure devices, bleeder vents, rim vents, and emergency roof drains.	Yes. This section was developed in 1994 for fully implementing the 1978 CTG specified controls. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.

Section 31.0 Petroleum Liquid Storage in Fixed Roof Tanks* 11/29/1994	CTG for Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed Roof Tanks. EPA-450/2-77-036, December 1977. (Group I)	Final Rule Federal Register Date: 01/26/1996 61 FR 2419	This section applies to petroleum liquid storage tanks with fixed roofs and with capacity of 150,000 L or greater. It establishes sealing standards for a covered storage tank, including its openings, its connection structure between roof edge and tank wall, bleeder vents, and rim vents.	Yes. This section was developed in 1994 for fully implementing the 1977 CTG specified controls. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. Thus, it represents the current RACT requirements under the 2008 ozone NAAQS.
Section 32.0 Leaks from Natural Gas/ Gasoline Processing Equipment* 11/29/1994	CTG for Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants. EPA-450/2-83-007, December 1983. (Group III)	Final Federal Register Date: 01/26/1996 61 FR 2419	This section applies to equipment in VOC service in any process unit at onshore natural gas/gasoline processing facilities. It establishes standards for proper valve operations under various scenarios to prevent VOC leak emissions from the covered equipment.	Yes. This section was developed in 1994 to fully implement the 1983 CTG specified requirements. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. Thus, it represents the current RACT requirements under the 2008 ozone NAAQS.

Section 33.0 Solvent Cleaning and Drying* 11/11/2001	CTG for Industrial Cleaning Solvents: Final" EPA 453/R-06-001 September 2006 CTG for Control of Volatile Organic Emissions from Solvent Metal Cleaning. EPA-450/2-77-022, November 1977. (Group I) ACT for Halogenated Solvent Cleaners. EPA-450/3-89-030, August 1989.	Final Rule Federal Register Date: 11/22/2002 67 FR 70315	This section applies to any solvent cleaning machine that contains more than 1 liter of solvent in which VOC is more than 5% by weight. This rule establishes standards for (1) batch cold cleaning machines, (2) batch vapor cleaning machines, (3) in-line cleaning machines, (4) and cleaning machines without a solvent-air interface. It also specifies an alternative standard for (2) and (3) above.	Yes. This section was updated in 2001 based on an OTC model to implement more stringent standards than the 1977 CTG and 1989ACT control levels. It was approved by EPA as adequate under the 1997 ozone standard. Although EPA issued an updated CTG for industrial cleaning solvents in 2006, DAQ has determined that the 2001 version of this section contains more stringent requirements than those in the 2006 CTG, and still sets up the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. Therefore, it represents the current RACT requirements under the 2008 ozone NAAQS. In addition, this section is currently under evaluation for incorporating more stringent requirements specified in the 2012 OTC's Model Rule for Solvent Degreasing.

Section 34.0 Cutback and Emulsified Asphalt* 01/11/1993	CTG for Control of Volatile Organic Compounds from Use of Cutback Asphalt. EPA-450/2-77-037, December 1977. (Group I)	Final Federal Register Date: 05/03/1995 60 FR 21707	This section applies to manufacture, mixing, storage, use, and application of cutback and emulsified asphalts in Delaware. It prohibits all above activities for cutback asphalt during the ozone season without approval. It also prohibits all above activities during the ozone season for emulsified asphalt that contain any VOC.	Yes. This section was developed in 1993 to fully implement the 1977 CTG specified requirements. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.
Section 35.0 Manufacture of Synthesized Pharmaceutical Products* 11/29/1994	CTG for Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products, EPA-450/2-78-029, December 1978. (Group II)	Final Federal Register Date: 01/26/1996 61 FR 2419	This section applies to 10 VOC sources at synthesized pharmaceutical manufacturing facilities, including reactors, distillation operations, crystallizers, centrifuges, vacuum dryers, air dryers, production equipment exhaust systems, rotary vacuum filters and other filters, in-process tanks, and leaks. It establishes standards for controlling and reducing VOC emissions from all covered sources.	Yes. This section was developed in 1994 to fully implement the 1978 CTG specified requirements. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.

Section 36.0 Control of VOC Emissions- Stage II Vapor Recovery** 01/11/2002 (04/2015)	Non-CTG RACT, CAA Section 182(b)(3).	Final Rule Federal Register Date: 11/14/2003 68 FR 64540	This section applies to any gasoline dispensing facility (GDF) with a monthly throughput greater than 10,000 gallons. It requires that all covered GDFs install approved Stage II vapor recovery system. It was updated in 2002 to (1) increase inspection frequency, and (2) provide for compliance tester certification.	Yes. This section was updated in 2002 to fully implement the CAA required VOC emission control on GDFs in Delaware. It was approved by EPA as adequate under the 1997 ozone standard. Since 1998, the federally-enforced control (Onboard Refueling Vapor Recovery, i.e., ORVR) has been phased in that affects VOC emissions form this source. However, DAQ has determined that the Stage II requirements in Section 36.0 achieve significant emission reductions and remain the lowest emission limitations that the covered GDFs are capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. Requirements in Section 36.0 represent the current RACT requirements under the 2008 ozone NAAQS. This section is currently under evaluation, together with Sections 26.0 and 27.0, to ensure this source category remains well controlled as the fleet portion with ORVR equipped vehicles increases.

Section 37.0 Graphic Arts Systems** 03/11/2011	CTG for Flexible Package Printing. EPA 453/R-06-003, September 2006. CTG for Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VIII: Graphic Arts-Rotogravure and Flexography, EPA-450/2-78-033, December 1978. (Group II)	Final Rule Federal Register Date: 04/13/2012 77 FR 22224	This section allies to any packaging rotogravure, publication rotogravure, or flexographic printing process at a facility with potential uncontrolled VOC emission greater than 7.7 tons per year. It establishes the limits of VOC contents in coatings and inks used in the covered facilities, specifies standards for control devices for various printing processes, and set up requirements for testing and recordkeeping.	Yes. This section was developed in 1994 to fully implement the 1978 CTG specified requirements for printing operations in graphic arts facilities. It was approved by EPA as adequate under the 1997 ozone standard. In 2011, it was revised to implement the updated requirements specified in the 2006 CTG. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT control levels under the 2008 8-hour ozone NAAQS.
Section 38.0 Petroleum Solvent Dry Cleaners* 01/11/1993	CTG for Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners. EPA-450/3-82-009, September 1982. (Group III)	Final Federal Register Date: 05/03/1995 60 FR 21707	This section applies to petroleum dry cleaning facilities that consume 123,000 L or more petroleum solvent per year. It establishes emission limits or reduction requirements for fugitive emissions, leak repairs, dryers, and filtration systems at covered facilities.	Yes. This section was developed in 1993 to fully implement the 1982 CTG specified requirements. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.
Section 39.0 Reserved				

Section 40.0 Leaks from Synthetic Organic Chemical, Polymer, and Resin Manufacturing Equipment* 01/11/1993	CTG for Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations in SOCMI. EPA-450/4-91-031, November 1993. CTG for Control of Volatile Organic Compound Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment. EPA-450/3-83-006, March 1984 (Group III).	Final Rule Federal Register Date: 05/03/1995 60 FR 21707	This section applies to all equipment in VOC service in any process unit at a synthetic organic chemical, polymer, and resin production facility with an annual design production capacity equal to or greater than 1,000 mega grams of product. It establishes standards for proper valve operation, leak detection, repair, and reporting for synthetic organic chemical, polymer, and resin manufacturing equipment.	Yes. This section was developed in 1993 to fully implement the 1984/1993 CTG specified requirements. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.
Section 41.0 Manufacture of High-Density Polyethylene, Polypropylene and Polystyrene Resins* 01/11/1993	CTG for Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins; EPA-450/3-83-008, November 1983. (Group III)	Final Rule Federal Register Date: 05/03/1995 60 FR 21707	This section applies to specific process sections (material recovery section, and production finishing section) at facilities engaged in manufacturing high-density polyethylene, polypropylene, and polystyrene. It establishes requirements for VOC emission limits, reductions and combustions for the covered process sections.	Yes. This section was developed in 1993 to fully implement the 1983 CTG specified requirements. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. Thus, it represents the current RACT requirements under the 2008 ozone NAAQS.

Section 42.0 Air Oxidation Processes in the Synthetic Organic Chemical Manufacturing Industry* 01/11/1993	CTG for Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry. EPA-450/3-84-015, December 1984. (Group III)	Final Rule Federal Register Date: 05/03/1995 60 FR 21707	This section applies to 3 special air oxidation processes in synthetic organic chemical manufacturing industry. The rule establishes requirements for VOC emission reduction and emission combustion for the covered processes.	Yes. This section was developed in 1993 to fully implement the 1984 CTG specified requirements. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.
Section 43.0 Bulk Gasoline Marine Tank Vessel Loading Facilities* 08/08/1994	Non-CTG RACT control, based on CAA Section 183(f).	Final Rule Federal Register Date: 07/28/1995 60 FR 38710	This section applies to all loading berths at a bulk marine tank loading facility that (1) delivers gasoline into marine tank vessels, and (2) has an annual throughput equal to or greater than 15,000 gallons. It requires installation of a vapor collection system that is designed to collect all VOC vapors displaced from marine tank vessels during loading, ballasting, or housekeeping.	Yes. This section was developed in 1994 to implement the CAA Section 183(f) requirements. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no new CTG or significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.

Section 44.0 Batch Processing Operations* 11/29/1994	ACT for Control of Volatile Organic Compound Emissions from Batch Processes. EPA-453/R-93-017, February 1994.	Final Rule Federal Register Date: 01/26/1996 61 FR 2419	This section applies to process vents associated with batch processing operations in manufacturing facilities with Standard Industrial Classification (SIC) Codes of 2821, 2833, 2861, 2869, 2869, and 2879. It requires the affected sources to reduce VOC emissions by 90 percent by weight.	Yes. This section was developed in 1994 to implement the 1994 ACT specified requirements. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.
Section 45.0 Control of VOC Emissions- Industrial Cleaning Solvents** 03/11/2011	CTG for Industrial Cleaning Solvents. EPA 453/R-06-001, September 2006 ACT for Industrial Cleaning Solvents. EPA-453/R-94-015, February 1994.	Final Rule Federal Register Date: 04/13/2012 77 FR 22224	This section applies to all sources that use organic solvents for the purpose of cleaning. It establishes standards for the affected facilities to evaluate and test alternative cleaning solutions for the purpose of reducing VOC emissions.	Yes. This section was developed in 1994 to implement the 1994 ACT specified requirements for using industrial cleaning solvents. It was approved by EPA as adequate under the 1997 ozone standard. In 2011, it was revised for necessary corrections for meeting the 2006 CTG requirements reflected in the updated Section 8.0 (See Columns 4 and 5 of Section 8.0). Together, Section 45.0 and Section 8.0 require the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. They represent the current RACT control levels under the 2008 8-hour ozone NAAQS.

Section 46.0 Crude Oil Lightering Operations** 05/11/2007	Non-CTG RACT requirement, based on CAA Section 182(b)(2)(C).	Final Rule Federal Register Date: 09/13/2007 72 FR 52285	This section applies to the owner or operator of a lightering service that carries out crude oil lightering operations in the waters of the State. The owner of the crude oil being lightered is also affected by certain provisions in this section. It establishes: (a) requirements for using submerged filling pipes, vapor-tight vessel, and vapor balancing between the marine vessels during the transfer of crude oil during lightering operations; (b) progressive schedule limits the annual volume of crude oil that can be lightered without vapor balancing; and (c) limitations on conducting uncontrolled lightering operations on Ozone Action Days.	Yes. This section was not in Delaware's RACT SIP under the 1997 ozone standard. It was developed in 2007 to implement effective VOC emission controls over lightering processes to meet the requirements of CAA Section 182(b)(2)(C). It represents the current non-CTG RACT control levels and the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. Therefore, it is adequate under the 2008 ozone NAAQS.
Section 47.0 Offset Lithographic Printing and Letterpress Printing** 04/11/2011	CTG for Offset Lithographic Printing and Letterpress Printing. EPA-453/R-06-002, September 2006. ACT for Offset Lithographic Printing-Supplemental Information Based on Public Comment on CTG Draft EPA-453/D-95-001. EPA-453/R-94-054, June 1994. CTG for Control of Volatile Organic Compound Emissions from Offset Lithographic Printing (CTG Draft). EPA-453/D-95-001, September 1993.	Final Rule Federal Register Date: 11/25/2011 77 FR 72626	This section applies to any offset lithographic printing facility and letterpress printing facility, including any heatset and non-heatset web, non-heatset sheet-fed, and newspaper facility. It establishes VOC or alcohol content limits in fountain solutions, VOC limits in cleaning solutions, VOC control requirements for add-on control devices, and requirements for testing and recordkeeping, for the regulated facilities.	Yes. This section was developed in 1994 to fully implement the 1993 CTG (Draft) and 1994 ACT specified requirements for lithographic printing facilities. It was approved by EPA as adequate under the 1997 ozone standard. In 2011, it was revised to implement the requirements specified in the 2006 CTG, by (1) adding letterpress printing facility, and (2) adopting more stringent control requirements. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT control levels under the 2008 8-hour ozone NAAQS.

Section 48.0 Reactor Processes and Distillation Operations in the Synthetic Organic Chemical Manufacturing Industry* 11/29/1994	CTG for Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations in SOCMI. EPA-450/4-91-031, November 1993.	Final Rule Federal Register Date: 01/26/1996 61 FR 2419	This section applies to any vent stream that originates from a process unit in which a reactor or distillation operation is located at a facility within the synthetic organic chemical manufacturing industry (SOCMI). It requires the affected sources to reduce VOC emissions by 98 weight-present or to 20 ppmv on a dry basis corrected to 3% oxygen, via combustion device, flare, or process modification.	Yes. This section was developed in 1994 to fully implement the 1993 CTG specified requirements. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.
Section 49.0 Control of VOC Emissions- Control of Volatile Organic Compound Emissions from Volatile Organic Liquid Storage Vessels* 11/29/1994	ACT for Volatile Organic Liquids Storage in Floating and Fixed Roof Tanks. EPA-453/R-94-001, February 1994.	Final Rule Federal Register Date: 01/26/1996 61 FR 2419	This section applies to each storage vessel with a capacity equal to or greater than 40,000 gallons that is used to store volatile organic liquids (VOLs). It establishes the venting and sealing standards for internal and external floating roofs, and specifies alternatives to installing internal or external floating roofs.	Yes. This section was developed in 1994 to fully implement the 1994 ACT specified requirements. It was approved by EPA as adequate under the 1997 ozone NAAQS. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.

Section 50.0 Control of VOC Emissions- Other Facilities that Emit Volatile Organic Compounds (VOCs)* 11/29/1994	Non-CTG RACT requirement, based on CAA Section 182(b)(2)(C).	Final Rule Federal Register Date: 03/12/1997 62 FR 11329	This section applies to any facility that is not covered by Section 10.0 through Section 49.0 of Regulation 1124. In brief, it requires an affected source to achieve an overall VOC emission reduction of at least 81 percent by weight. Facilities may also comply with Section 50.0 by submitting an alternative control plan that is subject to approval.	Yes. This section was developed in 1994 to require non-CTG major sources to implement RACT, thus implementing requirements of the CAA Section 182(b)(2)(C). It was approved by EPA as adequate under the 1997 ozone NAAQS. After EPA's approval, there has been no new CTG or significant change in RACT control technology for this section. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. Thus, it represents the current RACT requirements under the 2008 ozone NAAQS.

2.2 Implementation of Non-CTG Specified VOC Controls

As indicated in Table 1 above, Delaware has certified that Regulation 1124 contains adequate VOC RACT controls under the 2008 ozone standard. In addition to Table 1, Delaware has implemented numerous non-CTG-ACT specified VOC controls to achieve further VOC emission reductions for attainment and maintenance of the ozone NAAQS. In general, those non-specified controls are developed for meeting requirements of the CAA Section 182(b)(2)(C) and related federal regulations, or for fulfilling Delaware's commitments for model rules agreed upon by regional state affiliations such as the Ozone Transport Commission (OTC), in which Delaware is a member state. Although those controls are not included in the current CTG-ACT documents, they are based on recent technical information available in other forms. DAQ believes that those additional or more stringent controls will help Delaware attain the ozone NAAQS as expeditiously as practicable.[1] The non-CTG specified VOC rules are discussed below.

2.2.1 Regulation 1141 Section 1.0 "Architectural and Industrial Maintenance (AIM) Coatings"

(1) This rule became effective on 03/11/2002 to control VOC emission from AIM coating activities;

(2) This rule was developed to fulfill Delaware's commitment for the OTC 2002 Model Rule-Architectural and Industrial Maintenance (AIM) Coatings;

(3) It applies to any person who supplies, sells, offers for sale, blends, repackages for sale, or manufactures any architectural coating for use in Delaware;

(4) It establishes VOC content limits in various coating materials;

(5) It sets up requirements for container labeling, recordkeeping, reporting and testing;

(6) This rule is currently under evaluation for more stringent requirements.

2.2.2 Regulation 1141 Section 2.0 "Consumer Products"

(1) This rule became effective on 04/11/2009 to control VOC emissions from using consumer products;

(2) This rule was developed to fulfill commitments for the OTC 2006 Model Rule-Consumer Products;

1. In its proposed implementation rule for the 2008 ozone NAAQS (78 FR 34180, June 6, 2013), EPA indicates that states may require VOC and NOx reductions that are even ''beyond RACT'' levels if such reductions are needed in order to provide for timely attainment of the ozone NAAQS.

(3) It applies to any person who sells, supplies, offers for sale, or manufactures consumer products in Delaware;

(4) It establishes VOC content limits for all covered consumer products;

(5) It sets up requirements for container/package labeling, recordkeeping, reporting and testing, as well as for surplus reductions and trading;

(6) This rule is currently under evaluation for more stringent requirements.

2.2.3 Regulation 1141 Section 4.0 “Adhesives and Sealants”

(1) This rule became effective on 04/11/2009 to control VOC emissions when using adhesives and sealants;

(2) This rule was developed to fulfill commitments for the OTC 2006 Model Rule-Adhesives and Sealants (Note that this model rule was the basis for EPA’s 2008 updated CTG Miscellaneous Industrial Adhesives (EPA-453/R-08-005, September 2008));

(3) It applies to any person who sells, supplies, offers for sale, or manufactures for sale adhesives, adhesive primers, sealants and sealant primers in Delaware;

(4) It establishes VOC content limits in covered materials, and requirements for compliance and testing, as well as recordkeeping and reporting.

3. Determination of Compliance of NO_X RACT Requirements

3.1 Certification of NO_X RACT Requirements

Delaware’s NOx RACT controls are specified into source groups in 7 **DE Admin. Code** 1112, “Control of Nitrogen Oxides Emissions” (hereafter in this document referred to as Regulation 1112), which forms the basic NOx RACT framework. Within this framework, other rules are developed and implemented for relevant subgroups, including 7 **DE Admin. Code** 1144 “Control of Stationary Generator Emissions” (hereafter referred to as Regulation 1144), 7 **DE Admin. Code** 1146 “Electric Generating Units (EGUs) Multi-Pollutant Regulation” (hereafter referred to as Regulation 1146), and 7 **DE Admin. Code** 1148“Control of Stationary Combustion Turbine Electric Generating Unit (EGU) Emissions” (hereafter referred to as Regulation 1148).

Sections in Regulation 1112 were first developed and implemented into Delaware SIP revisions under the 1-hour ozone standard, and then included in Delaware’s RACT SIP under the 1997 8-hour ozone standard. All those sections were approved by EPA as adequate for meeting the RACT requirements under the 1997 ozone standard (73 FR 42681, July 2008). Regulation 1144 was adopted in January 2006 to tighten the requirements covering internal combustion engines. Regulation 1146 was adopted in December 2006 to tighten the requirements covering EGUs. Regulation 1148 was adopted in July 2007 to tighten the requirements covering combustion turbines.

Certification of Delaware’s NOx RACT controls for meeting the 2008 8-hour ozone standard is provided in Table 2, which is laid out by following the framework of source groups in Regulation 1112. Explanations for the columns of Table 2 are as follows:

Column 1: Identifies NO_X source groups being covered.

Regulation 1112, with an effective date of 11/24/1993, requires all major NO_X emission sources to comply with the relevant provisions by May 31, 1995. Regulations 1144, 1146 and 1148, covering relevant subgroups, have subsequent compliance dates (See Section 3.2 of this document).

Column 2: Identifies the underlying basis for the NOx RACT control levels and compliance determination.

The fundamental basis of implementing NO_X RACT controls is CAA Sections 182(b)(2) and 182(f) (Citation of those CAA sections is not repeated in Column 2).

Column 3: Identifies the date the rule was approved by EPA into the Delaware SIP, along with the Federal Register citation.

Regulation 1112 was first implemented in November 1993, and conditionally approved by EPA in June 1999. After Delaware submitted four case-by-case RACT determinations in July 2000, EPA granted the final approval of Regulation 1112 on June 14, 2001 (66 FR 32231). Regulation 1144 was approved by EPA on August 11, 2010 (75 FR 48566). Regulation 1146 was approved by EAP on March 16, 2010 (75 FR 12449). Regulation 1148 was approved by EPA on August 11, 2010 (75 FR 48566).

Column 4: Explains RACT control requirements.

Column 5: Certifies that the rule represents the RACT control level under the 2008 ozone NAAQS.

Relevant subgroups being covered in Regulation 1144, Regulation 1146, and Regulation 1148 are briefly discussed in Column 5. More detailed discussions of Regulations 1144, 1146 and 1148 are presented in Section 3.2 of this document.

Delaware's minor source permitting program under Regulation 1102 "Permits" requires a detailed administrative and technical review of Delaware NOx sources that emit far below the "major" threshold" (i.e., permits are required for the emission of 10 pounds per day or more of "aggregate" air contaminants, and registrations for emissions between 0.2 and 10 lb/day of air contaminants). This permitting program gives confidence that all major NOx sources are currently controlled by RACT-level controls or more stringent controls.

Table 2. Delaware NOx RACT Control List and Determination of Compliance under the 2008 Ozone NAAQS

Column 1	Column 2	Column 3	Column 4	Column 5
NOx Emission Source Group	**Basis for RACT Control**	**As SIP Revision Approved by EPA**	**RACT Rule Requirements**	**Requirements at least as stringent as RACT level for the 2008 Ozone NAAQS?**

1. Fuel burning equipment with an input capacity of 100 mmBTU/hr or greater	Stationary Source Committee Recommendation on NOx RACT for Utility Boilers, NESCAUM, 8/12/1992. Stationary Source Committee Recommendation on NOx RACT for Industrial Boilers, Internal Combustion Engines and Combustion Turbines, NESCAUM, 9/18/1992. Controlling Emissions of Nitrogen Oxides from Existing Utility Boilers Under Title I of the Clean Air Act: Options and Recommendations, STAPPA/ALAPCO, 4/27/1992. State Implementation Plans; Nitrogen Oxides Supplement to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, USEPA, 10/27/1995. Summary of NOx Control Technologies and their Availability and Extent of Application, USEPA, February 1992. Alternative Control Techniques Document: NOx Emissions from Process Heaters (Revised), USEPA, September 1993. Alternative Control Techniques Document: NOx Emissions from Industrial/Commercial/Institutional (ICI) Boilers, USEPA, March 1994. Alternative Control Techniques Document: NOx Emissions from Utility Boilers, USEPA, March 1994. State's Report on Electric Utility Nitrogen Oxides Reduction Technology Options for Application by the Ozone Transport Assessment Group, prepared for the OTAG Control Technology & Options Workgroup by Ken Colburn, 4/11/1996. Status Report on NOx Controls for Gas Turbines, Cement Kilns, Industrial Boilers, Internal Combustion Engines, NESCAUM, December 2000. Summary of State/Local NOx Regulations for Stationary Sources, USEPA, 2004.	Final Rule Federal Register Date: 06/14/2001 66 FR 32231	Gas, oil and coal fired units are subject to 0.20, 0.25, or 0.38 lb/mmBTU emission limits, respectively; Or their emissions must be controlled by low NOx burner technology or flue gas circulation with excess air. And in general, equipment larger than 100 mmBTU is required to install NO_X continuous emission monitoring system (CEMS).	Yes. This provision fully implements the required NO_X controls over the targeted sources. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for the covered source. In addition, Delaware has adopted more stringent NOx limits in: (1) Regulation 1142, for two sub-groups of this source, i.e., industrial boilers greater than 100 mmBTU/hour and industrial boilers and heat processers greater than 200 mmBTU/hour at refineries; (2) Regulation 1146, for coal-fired and oil-fired electric generating units (EGUs) with capacity equal to or greater than 25 MW. See Section 3.2 of this document for details. Together, Regulations 1112, 1142, and 1146 require the lowest emission limitations that the covered sources are capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. The Department determines these requirements satisfy the current RACT requirements under the 2008 ozone NAAQS.

2. Fuel burning equipment with an input capacity of 50 mmBTU/hr or greater and less than 100 mmBTU/hr	Stationary Source Committee Recommendation on NOx RACT for Industrial Boilers, Internal Combustion Engines and Combustion Turbines, NESCAUM, 9/18/1992. Summary of NOx Control Technologies and their Availability and Extent of Application, USEPA, February 1992. Alternative Control Techniques Document: NOx Emissions from Process Heaters (Revised), USEPA, September 1993. Alternative Control Techniques Document: NOx Emissions from Industrial-Commercial/ Institutional (ICI) Boilers, USEPA, March 1994. Status Report on NO_X Controls for Gas Turbines, Cement Kilns, Industrial Boilers, Internal Combustion Engines, NESCAUM, December 2000. Summary of State/Local NO_X Regulations for Stationary Sources, USEPA, 2004.	Final Rule Federal Register Date: 06/14/2001 66 FR 32231	Emission rates of the targeted sources are limited to those to be achieved by low excess air and low NO_X burners, or flue gas recirculation.	Yes. This provision fully implements the required NO_X controls over the targeted sources. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for the covered source. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.
3. Fuel burning equipment with an input capacity of less than 50 mmBTU/hr	Stationary Source Committee Recommendation on NO_X RACT for Industrial Boilers, Internal Combustion Engines and Combustion Turbines, NESCAUM, 9/18/1992. Summary of NO_X Control Technologies and their Availability and Extent of Application, USEPA, February 1992. Alternative Control Techniques Document: NOx Emissions from Process Heaters (Revised), USEPA, September 1993. Alternative Control Techniques Document: NOx Emissions from Industrial/Commercial/ Institutional (ICI) Boilers, USEPA, March 1994. Summary of State/Local NO_X Regulations for Stationary Sources, USEPA, 2004.	Final Rule Federal Register Date: 06/14/2001 66 FR 32231	The rule requires the targeted sources to conduct annual tune-ups.	Yes. This provision fully implements the required NO_X controls over the targeted sources. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for the covered source. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.

4. Alternative requirement for fuel burning equipment - Seasonal fuel switching (April 1 through October 31) to a low NO_X emitting fuel.	Memorandum, Fuel Switching to Meet the Reasonably Available Control Technology (RACT) Requirements for Nitrogen Oxides (NO_X), Michael H. Shapiro, Air and Radiation, US EPA, 7/30/1993. Summary of NO_X Control Technologies and their Availability and Extent of Application, USEPA, February 1992. Memorandum, Nitrogen Oxides (NO_X) Questions from Ohio EPA, Tom Helms, Chief Ozone/Carbon Monoxide Programs Branch, US EPA (no date, referring to 11/30/1993 questions). Summary of State/Local NO_X Regulations for Stationary Sources, USEPA, 2004. Alternative Control Techniques Document: NO_X Emissions from Industrial-Commercial/ Institutional (ICI) Boilers, USEPA, March 1994. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, USEPA.	Final Rule Federal Register Date: 06/14/2001 66 FR 32234	For the covered sources, fuel switching is limited to the use of natural gas, liquid petroleum gas (LPG) or distillate oil. A 90% availability of the new fuel is required.	Yes. This provision fully implements the required NO_X controls over the targeted sources. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for the covered source. The requirements are the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.

5. Gas turbines	Alternative Control Techniques Document: NO_X Emissions from Stationary Gas Turbines, USEPA, January 1993. Stationary Source Committee Recommendation on NO_X RACT for Industrial Boilers, Internal Combustion Engines and Combustion Turbines, NESCAUM, 9/18/1992. Status Report on NO_X Controls for Gas Turbines, Cement Kilns, Industrial Boilers, Internal Combustion Engines, NESCAUM, December 2000. Summary of NO_X Control Technologies and their Availability and Extent of Application, USEPA, February 1992. Summary of State/Local NO_X Regulations for Stationary Sources, USEPA, 2004.	Final Rule Federal Register Date: 06/14/2001 66 FR 32231	The rule requires the covered gas turbines to meet 42ppm and 88 ppm NO_X limits for gas and oil fired units, respectively	Yes. This provision fully implements the required NO_X controls over the targeted sources. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for the covered source group, except as explained below. In 2007, Delaware adopted Regulation 1148, setting forth additional requirements for a subgroup of combustion turbine electric generating units (EGUs), in particular to control NOx emissions from the covered EGUs in high-electric-demand-days (HEDDs). See Section 3.2 of this document for details. Together, Regulations 1112 and 1148 require the lowest emission limitations that the covered source groups and subgroup are capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. The Department determines these requirements satisfy the current RACT requirements under the 2008 ozone NAAQS.

6. Stationary internal combustion engines	Summary of NO_X Control Technologies and their Availability and Extent of Application, USEPA, February 1992. Stationary Source Committee Recommendation on NO_X RACT for Industrial Boilers, Internal Combustion Engines and Combustion Turbines, NESCAUM, 9/18/1992. Alternative Control Techniques Document: NO_X Emissions from Stationary Reciprocating Internal Combustion Engines, USEPA, 1993. NO_X Emissions from Stationary Internal Combustion Engines, USEPA, October 2003 Stationary Reciprocating Internal Combustion Engines – Updated Information on NO_X Emissions and Control Techniques – Revised Final Report, USEPA, 9/1/2000. Sourcebook: NO_X Control Technology Data, USEPA, July 1991. Status Report on NO_X Controls for Gas Turbines, Cement Kilns, Industrial Boilers, Internal Combustion Engines, NESCAUM, December 2000. Summary of State/Local NO_X Regulations for Stationary Sources, USEPA, 2004	Final Rule Federal Register Date: 06/14/2001 66 FR 32231	The rule establishes emission limits for the targeted engines to those achieved using pre-ignition chamber combustion or clean burn technology for gas fired units and those achieved using lean burn technology for diesel fired units.	Yes. This provision fully implements the required NO_X controls over the targeted sources. It was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for the covered source group, except as explained below. In 2007, Delaware adopted Regulation 1144, setting forth NOx emission requirements for a subgroup of stationary generators that were generally exempted from Regulation 1112. See Section 3.2 of this document for details. Together, Regulations 1112 and 1144 require the lowest emission limitations that the covered source groups and subgroup are capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. The Department determines these requirements satisfy the current RACT requirements under the 2008 ozone NAAQS.

7. Fuel burning equipment used exclusively for providing residential comfort heating and hot water	Summary of NO_X Control Technologies and their Availability and Extent of Application, USEPA, February 1992. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, USEPA.	Final Rule Federal Register Date: 06/14/2001 66 FR 32231	Regulation 1112 specifies no emissions limits or control requirements for the targeted source group.	Yes. For this source group, DAQ determined that no cost effective RACT controls existed under the 1-hour ozone standard and under the 1997 ozone standard. The determination was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for the covered source group. DAQ's determination for this source group remains valid and represents the current RACT requirements under the 2008 ozone NAAQS.
8. Incinerator or thermal/catalytic oxidizer constructed before November 15, 1992, and used primarily for the control of air pollution.	Summary of NO_X Control Technologies and their Availability and Extent of Application, USEPA, February 1992,	Final Rule Federal Register Date: 06/14/2001 66 FR 32231	Regulation 1112 specifies no emissions limits or control requirements for the targeted source group.	Yes. For this source group, DAQ determined that no cost effective RACT controls existed under the 1-hour ozone standard and under the 1997 ozone standard. The determination was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for the covered source. DAQ's determination for this source remains valid and represents the current RACT requirements under the 2008 ozone NAAQS.

9. Fuel burning equipment with a rated heat input capacity of less than 15 MMBTU/ hour.	Memorandum: De Minimis Values for NO_X RACT, from G.T. Helms, Ozone Policy and Strategies Group, USEAP, 1/1/1995. Alternative Control Techniques Document: NO_X Emissions from Industrial-Commercial/ Institutional (ICI) Boilers, USEPA, March 1994	Final Rule Federal Register Date: 06/14/2001 66 FR 32231	Regulation 1112 specifies no emissions limits or control requirements for the targeted source group.	Yes. For this source group, DAQ determined that no cost effective RACT controls existed under the 1-hour ozone standard and under the 1997 ozone standard. The determination was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for the covered source. DAQ's determination for this source remains valid and represents the current RACT requirements under the 2008 ozone NAAQS.

10. Stationary internal combustion engine with a rated capacity of or less than 450 hp of output power.	Memorandum: De Minimis Values for NO_X RACT, from G.T. Helms, Ozone Policy and Strategies Group, USEPA, 1/1/1995. NO_X Emissions from Stationary Internal Combustion Engines, USEPA, October 2003. Stationary Reciprocating Internal Combustion Engines – Updated Information on NOx Emissions and Control Techniques – Revised Final Report, USEPA, 9/1/2000. Alternative Control Techniques Document: NOx Emissions from Stationary Reciprocating Internal Combustion Engines, USEPA, 1993.	Final Rule Federal Register Date: 06/14/2001 66 FR 32231	Regulation 1112 specifies no emissions limits or control requirements for the targeted source group.	Yes. For this source group, DAQ determined that no cost effective RACT controls existed under the 1-hour ozone standard and under the 1997 ozone standard. The determination was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for the covered source group, except as explained below. In 2007, Delaware adopted Regulation 1144, setting forth NOx emission requirements for a subgroup of stationary generators that were generally exempted from Regulation 1112. See Section 3.2 of this document for details. Together, Regulations 1112 and 1144 require the lowest emission limitations that the covered source groups and subgroup are capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. The Department determines these requirements satisfy the current RACT requirements under the 2008 ozone NAAQS.

11. Any source operating during the month of November to the end of March and operating with a capacity factor of 5% or less from April 1 to October 31.	Memorandum, Nitrogen Oxides (NO_X) Questions from Ohio EPA, Tom Helms, Chief Ozone/Carbon Monoxide Programs Branch, US EPA (no date, referring to 11/30/1993 questions). Memorandum Subject: De Minimis Values for NOx RACT, from G.T. Helms, Ozone Policy and Strategies Group, 1/1/1995	Final Rule Federal Register Date: 06/14/2001 66 FR 32231	Regulation 1112 specifies no emissions limits or control requirements for the targeted source group, based on EPA's Helms Memo.[a] Delaware, however, determines that some units in this source group have high short term or daily NOx emissions that impact ozone air quality in the ozone season. Delaware has set forth RACT-level requirements outside Regulation 1112 (i.e., in Regulations 1144 and 1148). See Column 5, and Section 3.2 of this document.	Yes. For this source group, DAQ determined that no cost effective RACT controls existed under the 1-hour ozone standard and under the 1997 ozone standard. The determination was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for the covered source, except as explained below. In 2007, Delaware adopted: (1) Regulation 1144, setting forth NOx emission requirements for a subgroup of stationary generators that were generally exempted from Regulation 1112; (2) Regulation 1148, setting forth additional requirements for a subgroup of combustion turbine electric generating units (EGUs), in particular to control NOx emissions from the covered EGUs in high-electric-demand-days (HEDDs). See Section 3.2 of this document for details. Together, Regulations 1112, 1144 and 1148 require the lowest emission limitations that the covered source groups and subgroup are capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. The Department determines these requirements satisfy the current RACT requirements under the 2008 ozone NAAQS.

12. Any fuel burning equipment, gas turbine, or internal combustion engine with an annual capacity factor of less than 5 percent.	Memorandum Subject: De Minimis Values for NO_X RACT, from G.T. Helms, Ozone Policy and Strategies Group, USEPA, 1/1/1995. Alternative Control Techniques Document: NO_X Emissions from Industrial-Commercial-Institutional (ICI) Boilers, USEPA, March 1994. Alternative Control Techniques Document: NOx Emissions from Stationary Reciprocating Internal Combustion Engines, USEPA, 1993. Alternative Control Techniques Document: NO_X Emissions from Stationary Gas Turbines, USEPA, January 1993. Alternative Control Techniques Document: NO_X Emissions from Process Heaters (Revised), USEPA, September 1993.	Final Rule Federal Register Date: 06/14/2001 66 FR 32231	Regulation 1112 specifies no emissions limits or control requirements for the targeted source group, based on EPA's Helms Memo.[7] Delaware, however, determines that some units in this source group have high short term or daily NOx emissions that impact ozone air quality in the ozone season. Delaware has set forth RACT-level requirements outside Regulation 1112 (i.e., in Regulations 1144 and 1148). See Column 5, and Section 3.2 of this document.	Yes. For this source group, DAQ determined that no cost effective RACT controls existed under the 1-hour ozone standard and under the 1997 ozone standard. The determination was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for the covered source group, except as explained below. In 2007, Delaware adopted: (1) Regulation 1144, setting forth NOx emission requirements for a subgroup of stationary generators that were generally exempted from Regulation 1112; (2) Regulation 1148, setting forth additional requirements for a subgroup of combustion turbine electric generating units (EGUs), in particular to control NOx emissions from the covered EGUs in high-electric-demand-days (HEDDs). See Section 3.2 of this document for details. Together, Regulations 1112, 1144 and 1148 require the lowest emission limitations that the covered source groups and subgroup are capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. The Department determines these requirements satisfy the current RACT requirements under the 2008 ozone NAAQS.

13. Case-by-case RACT determination:[b] CitiSteel USA, Incorporated, Claymont, Delaware: Electric Arc Furnace (EAF) rated at 150 tons per charge.	Alternative Control Techniques Document: NO_X Emissions from Iron and Steel Mills, USEPA, September 1994.	Final Rule Federal Register Date: 06/14/2001 66 FR 32231	The DAQ made a determination in 2001, which was approved by EPA, that (1) typical fuel fired combustion equipment applied to NO_X emitting sources were not technically feasible for an EAF, and (2) A well-designed exhaust system constituted RACT control level in compliance with Regulation 1112. Therefore, no additional requirements on the CitiSteel's EAF operations were required under RACT requirements.	Yes. DAQ's determination in 2001 was approved by EPA as adequate under the 1997 ozone standard. After EPA's approval, there has been no updated CTG and no significant change in RACT control technology for the covered source, and EPA has not set up any new or updated requirement for the covered source. The DAQ's determination reflects the lowest emission limitations that the covered source is capable of meeting by the application of control technology that is reasonably available considering current technological and economic feasibility. It represents the current RACT requirements under the 2008 ozone NAAQS.

a. The DAQ believes that the exemptions for this source group based on the 1995 Helms Memo should not continue because short term emissions from the source group impact adversely the ozone air quality in summer time. Delaware has adopted RACT controls in Regulation 1144 and Regulation 1148 to address the short term NOx emissions. The DAQ suggests that EPA revoke the 1995 memo to avoid continuous exemption for the related sources.

b. Three other case-by-case NOx RACT determinations were made by Delaware: (1) a sulfuric acid (H_2SO_4) and inter-stage absorption system (ISA) process, (2) a metallic nitrite process, and (3) a Polyhydrate Alcohol Catalyst Regenerative (PACR) process. Processes (1) and (2) were both at the General Chemical Corporation facility, Claymont, New Castle, Delaware, and process (3) was at SPI Polyols, Incorporated, Atlas Point Site, New Castle, Delaware. The General Chemical facility at Claymont was permanently shutdown. The PACR process at SPI was permanently shutdown. Therefore, these three NO_X RACT determinations are no longer required in Delaware's ozone SIP.

3.2 Implementation of Non-CTG Specified NOx Controls

As indicated in Table 2 above, Delaware has certified that the framework of Regulation 1112, including Regulations 1112, 1142, 1144, 1146 and 1148 contains adequate NO_X RACT controls under the 2008 ozone standard. As aforementioned, Regulation 1112 was developed following CTG-ACT guidelines under the 1-hour ozone standard and maintained valid under the 1997 8-hour ozone standard. Delaware has also developed Regulations 1142, 1144, 1146, 1148 and other controls to implement additional RACT-level rules and requirements to aid in maintenance of the 1-hour standard and attainment of the 8-hour NAAQS. In general, those non-CTG specified rules are developed for meeting requirements of the CAA Section 182(b)(2) and related federal regulations, or for fulfilling Delaware's commitments for model rules agreed upon by regional state affiliations such as the Ozone Transport Commission (OTC), in which Delaware is a member state.

As aforementioned, EPA has defined RACT as the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53762). This definition indicates that the RACT requirements must include compliance with the lowest emission levels that were achieved in the past, are achieved at present, or will be achieved in the future under facility's operational limitations (such as operational permits) and equipment standards that were previously applicable, are presently applicable, or will become applicable in the future, respectively. The DAQ believes that the development of its non-CTG specified

NOx rules reflects exactly the EPA's RACT definition, and DAQ has determined that those rules are necessary for Delaware to attain the 2008 ozone NAAQS.

The non-CTG NOx rules are discussed in details below.

3.2.1 Regulation 1142 Section 1.0 "Control of NO_X Emissions from Industrial Boilers"

(1) This rule became effective on 12/12/2001 to control NOx emissions from large industrial boilers;[1]

(2) It imposes controls on certain industrial boilers with heat input greater than 100 mmBTU/hour, by setting up a NOx emission rate limit of 0.10 lb/mmBTU for the ozone season, and 0.25 lb/mmBTU for the non-ozone season months.

(3) It also establishes the requirements of monitoring, recordkeeping and reporting for the covered boilers.

3.2.2 Regulation 1142 Section 2.0 "Control of NO_X Emissions from Industrial Boilers and Heat Processors at Petroleum Refineries"

(1) This rule became effective on 04/11/2011 to control NOx emission from large industrial boilers and heat processor at petroleum refineries;

(2) It was originally developed to fulfill requirements to attain the 1997 ozone standard and was revised following a consent agreement of May 2010 between the Department and the covered refinery;

(3) It imposes stringent NOx emission rate limits, and corresponding compliance schedule, for 8 industrial boilers and heat processors with heat input greater than 200 mmBTU/hour at Delaware City refinery, operated by Delaware City Refinery Company (DCRC) (the only petroleum refinery in Delaware);

(4) The emission rate limits include: 0.015 lb/mmBTU on a 24-hour rolling average basis for three boilers, 20 ppmvd@0% O_2 on a 365-day rolling average basis for a CO boiler, and 0.04 lb/mmBTU on a 24-hour rolling average basis process heaters;

(5) It establishes an alternative facility-wide NOx emission cap for the covered facility:

i. 2,525 tons in 2013;

ii. 2,225 tons in 2014;

iii. 1,650 tons in 2015;

(6) It also establishes the requirements of compliance, recordkeeping and reporting for the covered refineries.

3.2.3 Regulation 1144 "Control of Stationary Generator Emissions"

(1) This regulation became effective on 01/11/2006 to control NOx emissions, as well as other pollutant emissions, from stationary generators;

(2) It was developed from Delaware governor's initiative for clean energy and clean air, and later became the template of the OTC Model Rule for Stationary Generator Control Measures (2009);

(3) It addresses short term NOx emissions from the covered sources and reduces their daily impacts on ozone air quality during the ozone season.

(4) It sets up stringent NOx emission rates for stationary distributed generators, with standby power ratings greater than 10kW, when used at times other than emergency times;

(5) The emission rate limits include:

i. For existing distributed generators: 4.0 lb/MWh;

ii. For new distributed generators:

a. Installed on or after 01/11/2006, 2.2lb/MWh;

b. Installed on or after 01/01/2008, 1.0 lb/MWh;

c. Installed on or after 01/01/2012, 0.6 lb/MWh;

(6) For new distributed generators using waste/landfill/digester gases and installed on or after 01/01/2008: 2.2 lb/MWh;

(7) It establishes requirements for recordkeeping and reporting, emission certification, compliance and enforcement, and emission credit calculations for the covered generators.

(8) The stationary generators covered by Regulation 1144 are in general exempted from Regulation 1112 because of their small capacities. Delaware, however, determines that these units had high daily NOx emissions and therefore should be controlled to aid in attainment and maintenance of the ozone NAAQS during the ozone season.

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1. Three boilers at Sunoco refining facility (Claymont, Delaware) used to be subject to Regulation 1142 Section 1.0. The boilers were shutdown in 2002. At present, no source in Delaware is subject to this rule.

3.2.4 Regulation 1146 “Electric Generating Units (EGU) Multi-Pollutant Regulation”

(1) This regulation became effective on 12/11/2006 to limit NOx emission rates and to establish unit-specific annual NOx mass emissions caps, as well as SO2 and mercury emission rates and mass emissions caps, from coal and residual oil fired EGUs with a nameplate rating of 25 MW or greater;

(2) It was developed to fulfill Delaware’s obligations under the EPA’s Clean Air Interstate Rule (CAIR), EPA’s Clean Air Mercury Rule (CAMR), and Clean Air Act (CAA) Section 110 Interstate Transport FIP;

(3) It set up stringent NOx emission rate limit of 0.15 lb/mmBTU for coal-fired and residual oil-fired EGUs with nameplate capacity ratings of greater than 25 MW during the period of May 1, 2009 through December 31, 2009, and a NOx emissions rate limit of 0.125 lb/MMBTU for the period beginning January 1, 2010 and beyond;

(4) It establishes standards for recordkeeping and reporting, compliance, and penalties for the covered EGUs.

3.2.5 Regulation 1148 “Control of Stationary Combustion Turbine Electric Generating Unit (EGU) Emissions”

(1) This regulation became effective on 07/11/2007 to control NOx emissions from stationary combustion turbine EGUs with base-load nameplate capacities of 1 MW or greater;

(2) It was developed to fulfill requirements for controlling NOx emissions in high-electric-demand-days (HEDDs) during the ozone season, as required in the OTC Model Rule for HEDD Turbines (2009);

(3) It addresses short term NOx emissions from the covered sources and reduces their daily impacts on ozone air quality during the ozone season.

(4) It sets up RACT-level NOx emission limits, 42 ppmv (parts per million by volume) for gaseous fuel and 88 ppmv for liquid fuel, for the covered EGUs;

(5) It also implements NOx emission requirements for covered combustion turbine EGUs in HEDDs during the ozone season;

(6) It establishes standards for monitoring and reporting, recordkeeping for the covered EGUs.

(7) The stationary combustion turbines covered by Regulation 1148 are in general exempted from Regulation 1112 because of their small capacities. Delaware, however, determines that these units had high daily NOx emissions and therefore should be controlled to aid in attainment and maintenance of the ozone NAAQS in the ozone season.

3.3 Optimized Operation Limits as RACT Controls for Refinery Units

The DAQ has recently reviewed Delaware emission inventory and has determined that the requirements of Regulation 1112, Section 2.0 of 1142, 1144, 1146, and 1148 provide adequate NOx RACT emissions controls under the 2008 ozone standard for all NOx emission units except for two units located at the Delaware City Refinery. These two units are the fluid-coking unit (FCU) and the fluid-catalytic-cracking unit (FCCU).

The Delaware City refinery currently complies with Section 2.0 of Regulation 1142 by compliance with a facility-wide NOx emission cap. **[~~While~~ In addition, NO_x short-term and long-term emission limits from]** the FCU and the FCCU are covered under **[~~the facility-wide NOx cap, these two units themselves are not covered by any RACT emission limitation~~ an EPA consent decree finalized in letters from EPA to the refinery dated May 21, 2014]**. Delaware hereby establishes **[the consent decree limits as]** RACT limits for these two units **[~~via the following analysis~~ as follows]**:

(1) The FCU and FCCU each generate NOx and carbon monoxide (CO), the latter being combusted in a downstream CO Boiler;

(2) **[~~Both t~~T]**he FCU and FCCU **[~~operations have been optimized to minimize NOx emissions. These optimized levels of operation have resulted in the following concentration-based~~]** NOx limits **[are established as follows]**:

i. FCU: 152**[.0]** ppmvd **[(parts per million by volume dry)]** @ 0% O_2 on a **[~~24-hour~~ 7-day rolling]** average basis and **[~~118~~ 115.2]**ppmvd **[~~(parts per million by volume dry)~~]** @ 0% O_2 on a 365-day **[rolling]** average basis;

ii. FCCU: **[~~118~~ 137.0]** ppmvd @ 0% O_2 on a 7-day **[rolling]** average basis and **[~~98~~ 100.7]** ppmvd @ 0% O_2 on a 365-day **[rolling]** average basis;

(3) **[~~The optimized limits were demonstrated with the sample analyses using EPA’s ProUCL software that at 95% confidence level (1) 95% of the 24-hour rolling average of FCU, (2) 99% of the 7-day rolling average of FCCU, and (3) 95% of the 365-day rolling average of both FCU and FCCU, would be in compliance with the limits~~ For days in which the units are not operating, no NO_x value shall**

be used in the average, and those periods shall be skipped in determining the 7-day and 365-day averages];

(4) The DAQ finds the optimized limits described above to be the lowest emission limitation that the units are capable of meeting by the application of control technology that is reasonably available for the two units considering technological and economic feasibility.

(5) The DAQ incorporates hereby the following into this RACT SIP revision for the FCU and FCCU to meet the RACT requirements under the 2008 ozone standard:

i. The optimized limits as described in (4) above;

ii. The compliance requirements as specified in Section 2.4.1 of Regulation 1142.

iii. The recordkeeping and reporting requirements as specified in Section 2.5 of Regulation 1142, with a revised submittal date of January 11, 2015 for Section 2.5.1 thereof.

4. Negative Declarations

Some RACT controls have not been adopted in Delaware because there are no targeted emission sources in Delaware. The DAQ makes the negative declarations for the following RACT controls:

1) Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires, EPA-450/2-78-030, December 1978. (Group II).

2) Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations, EPA-453/R-96-007, April 1996.

3) Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating) - August 1996 (61 FR 44050), August 27, 1996.

4) Control Techniques Guidelines for Fiberglass Boat Manufacturing Materials. EPA-453/R-08-004, September 2008.

In addition, in its implementation rule for the 1997 ozone standard (70 FR 71612, November 29, 2005), EPA identified that cement kilns and stationary internal combustion engines were two source categories for which additional NO_X control information was available since the RACT determinations under the 1-hour ozone standard were made. However, Delaware declares that (1) it does not have cement kilns within its boundary and (2) the stationary internal combustion engines in Delaware are regulated by the federal RICE NESHAP & NSPS rules (Note that the subgroup of stationary generators is now covered by Regulation 1144).

Furthermore, Delaware declares that it does not have any new major stationary VOC and NO_X emission sources that fall outside the scope of the implemented RACT VOC rules (i.e., sections in Regulation 1124), RACT NOx rules (i.e., source groups of Regulation 1112), and other VOC rules and NOx rules discussed in 2.2 and 3.2 of this document, respectively.

5. Documentation

A. List of EPA's Control Techniques Guidelines (CTG) documents, Alternative Control Techniques (ACT) documents, and Additional Reference Documents, cited in this RACT SIP revision.

1. Control Technology Guidance (CTG) document: Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations, EPA-453/R-97-004, December 1997.
2. Alternative Control Techniques (ACT) document: Reduction of Volatile Organic Compound Emissions from Automobile Refinishing, EPA-450/3-88-009, October 1988.
3. ACT: Automobile Refinishing, EPA-453/R-94-031, April 1994.
4. ACT: Surface Coating of Automotive/Transportation and Business Machine Plastic Parts, EPA-453/R-94-017, February 1994.
5. CTG: Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks, EPA-450/2-77-008, May 1977 (Group I).
6. CTG: Control of Volatile Organic Emissions from Existing Stationary Sources, Volume III: Surface Coating of Metal Furniture, EPA-450/2-77-032, December 1977.
7. CTG: Control of Volatile Organic Emissions from Existing Stationary Sources, Volume V: Surface Coating of Large Appliances, EPA-450/2-77-034, December 1977 (Group I).
8. CTG: Control of Volatile Organic Emissions from Existing Stationary Sources, Volume IV: Surface Coating of Insulation of Magnet Wire, EPA-450/2-77-033, December 1977 (Group I).

9. CTG: Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VI: Surface Coating of Miscellaneous Metal Parts and Products, EPA-450/2-78-015, June 1978 (Group II).
10. CTG: Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VII: Factory Surface Coating of Flat Wood Paneling, EPA-450/2-78-032, June 1978 (Group II).
11. CTG: Control of Volatile Organic Emissions from Bulk Gasoline Plants, EPA-450/2-77-035, December, 1977 (Group I).
12. CTG: Control of Volatile Organic Emissions from Bulk Gasoline Plants, EPA-450/2-77-035, December, 1977 (Group I).
13. CTG: Design Criteria for Stage I Vapor Control Systems - Gasoline Service Stations, November 1975 (Group I).
14. CTG: Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals, EPA-450/2-77-026, December 1977 (Group I).
15. CTG: Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems, EPA-450/2-78-051, December 1978 (Group II).
16. CTG: Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds, EPA-450/2-77-025, October 1977 (Group I).
17. CTG: Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment, EPA-450/2-78-036, June 1978 (Group II).
18. CTG: Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks, EPA-450-2/78-047, December 1978 (Group II).
19. CTG: Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed Roof Tanks, EPA-450/2-77-036, December 1977 (Group I).
20. CTG: Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants, EPA-450/2-83-007, December 1983 (Group III).
21. CTG: Control of Volatile Organic Emissions from Solvent Metal Cleaning, EPA-450/2-77-022 November 1977 (Group I).
22. ACT: Halogenated Solvent Cleaners, EPA-450/3-89-030, August 1989.
23. CTG: Control of Volatile Organic Compounds from Use of Cutback Asphalt, EPA-450/2-77-037, December 1977 (Group I).
24. CTG: Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products, EPA-450/2-78-029, December 1978 (Group II).
25. CAA Section 182(b)(3).
26. CTG: Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VIII: Graphic Arts-Rotogravure and Flexography, EPA-450/2-78-033, December 1978 (Group II).
27. CTG: Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners, EPA-450/3-82-009, September 1982 (Group III).
28. CTG: Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations in SOCMI, November 15, 1993, EPA-450/4-91-031.
29. CTG: Control of Volatile Organic Compound Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment, EPA-450/3-83-006, March 1984 (Group III).
30. CTG: Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins, EPA-450/3-83-008, November 1983 (Group III).
31. CTG: Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry, EPA-450/3-84-015, December 1984 (Group III).
32. CAA Section 183(f).
33. ACT: Control of Volatile Organic Compound Emissions from Batch Processes, EPA-453/R-93-017, February 1994.
34. ACT Document: Industrial Cleaning Solvents, EPA-453/R-94-015, February 1994.
35. CTG: Control of Volatile Organic Compound Emissions from Offset Lithographic Printing (CTG Draft), EPA-453/D-95-001, September 1993.
36. ACT: Offset Lithographic Printing, EPA-453/R-94-054, June 1994.
37. CTG: Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations in SOCMI, November 15, 1993, EPA-450/4-91-031.
38. ACT: Volatile Organic Liquids Storage in Floating and Fixed Roof Tanks, EPA-453/R-94-001, February 1994.

39. CAA Section 182(b)(2)(C).
40. Stationary Source Committee Recommendation on NOx RACT for Utility Boilers, North-East States for Coordinated Air Use Management (NESCAUM), 8/12/1992.
41. Stationary Source Committee Recommendation on NOx RACT for Industrial Boilers, Internal Combustion Engines and Combustion Turbines, North-East States for Coordinated Air Use Management (NESCAUM), 9/18/1992.
42. Controlling Emissions of Nitrogen Oxides from Existing Utility Boilers Under Title I of the Clean Air Act: Options and Recommendations, State and Territorial Air Pollution Program Administrators and Association of Local Air Pollutions Officials (STAPPA/ALAPCO), 4/27/1992.
43. State Implementation Plans; Nitrogen Oxides Supplement to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, USEPA, 10/27/1995.
44. Summary of NOx Control Technologies and their Availability and Extent of Application, USEPA, February 1992.
45. Alternative Control Techniques Document: NOx Emissions from Process Heaters (Revised), USEPA, September 1993.
46. Alternative Control Techniques Document: NOx Emissions from Industrial/Commercial/Institutional (ICI) Boilers, USEPA, March 1994
47. Alternative Control Techniques Document: NOx Emissions from Utility Boilers, USEPA, March 1994.
48. State's Report on Electric Utility Nitrogen Oxides Reduction Technology Options for Application by the Ozone Transport Assessment Group (OTAG), prepared for the OTAG Control Technology & Options Workgroup by Ken Colburn, 4/11/1996.
49. Status Report on NOx Controls for Gas Turbines, Cement Kilns, Industrial Boilers, Internal Combustion Engines, NESCAUM, December 2000.
50. Summary of State/Local NOx Regulations for Stationary Sources, USEPA, 2004.
51. Summary of NOx Control Technologies and their Availability and Extent of Application, USEPA, February 1992.
52. Summary of NOx Control Technologies and their Availability and Extent of Application, USEPA February 1992
53. Memorandum subject, Fuel Switching to Meet the Reasonably Available Control Technology (RACT) Requirements for Nitrogen Oxides (NOx), Michael H. Shapiro, Air and Radiation, 7/30/1993
54. Memorandum subject, Nitrogen Oxides (NOx) Questions from Ohio EPA, Tom Helms, Chief Ozone/ Carbon Monoxide Programs Branch, (no date cited, references 11/30/1993 questions)
55. State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, USEPA.
56. Alternative Control Techniques Document: NOx Emissions from Stationary Gas Turbines, USEPA, January 1993
57. Alternative Control Techniques Document: NOx Emissions from Stationary Reciprocating Internal Combustion Engines, USEPA 1993.
58. NOx Emissions from Stationary Internal Combustion Engines, USEPA, October 2003.
59. Stationary Reciprocating Internal Combustion Engines – Updated Information on NOx Emissions and Control Techniques – Revised Final Report, USEPA, 9/1/2000.
60. Sourcebook: NOx Control Technology Data, USEPA, July 1991.
61. Memorandum Subject: De Minimis Values for NOx RACT, from G.T. Helms, Ozone Policy and Strategies Group, dated 1/1/1995.
62. Alternative Control Techniques Document: NOx Emissions from Iron and Steel Mills, USEPA, September 1994.
63. The "Blue Book," i.e., "ISSUES RELATED TO VOC REGULATION CUTPOINTS, DEFICIENCIES AND DEVIATIONS, Clarification to Appendix D of November 24, 1987 FEDERAL REGISTER," May 25, 1988
64. Control Techniques Guidelines for Flat Wood Paneling Coatings. EPA 453/R-06-004, September 2006.
65. Control Techniques Guidelines for Industrial Cleaning Solvents. EPA 453/R-06-001, September 2006.
66. Control Techniques Guidelines for Flexible Package Printing. EPA 453/R-06-003, September 2006.
67. Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing. EPA-453/R-06-002, September 2006.
68. Control Techniques Guidelines for Paper Film and Foil Coatings. EPA 453/R-07-003, September 2007.
69. Control Techniques Guidelines for Metal Furniture Coatings. EPA 453/R-07-005, September 2007.

70. Control Techniques Guidelines for Large Appliance Surface Coating. EPA 453-07-004, September 2007.
71. Control Techniques Guidelines for Auto and Light-duty Truck Assembly Coatings. EPA 453/R-08-006, September 2008.
72. Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat Operations. EPA 453/R-08-002, September 2008.
73. Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings. EPA-453/R-08-003, September 2008.
74. Control Techniques Guidelines for Fiberglass Boat Manufacturing Materials. EPA-453/R-08-004, September 2008.
75. Control Techniques Guidelines for Miscellaneous Industrial Adhesives. EPA-453/R-08-005, September 2008.
76. Model Rule for Architectural, Industrial and Maintenance Coatings (AIM), Ozone Transport Commission (OTC), 2002.
77. Model Rule for Consumer Products, Ozone Transport Commission (OTC), 2006.
78. Model Rule for Adhesives and Sealants, Ozone Transport Commission (OTC), 2006.
79. Model Rule for Large Above-Ground VOC Storage Tanks, Ozone Transport Commission (OTC), 2010.
80. Model Rule for Solvent Degreasing, Ozone Transport Commission (OTC), 2012.

[81. Letter from U.S. EPA (Philip Brooks, Director of Air Enforcement Division) to the Delaware City Refining Company (John Deemer, HSE Manager) dated May 21, 2014, establishing NO_x limits for the fluid coking unit (FCU) under the consent decree.

82. Letter from U.S. EPA (Philip Brooks, Director of Air Enforcement Division) to the Delaware City Refining Company (John Deemer, HSE Manager) dated May 21, 2014, establishing NO_x limits for the fluidized catalytic cracking unit (FCCU) under the consent decree.]

B. Delaware Reasonably Available Control Technology (RACT) State Implementation Plan (SIP) under the 8-Hour Ozone National Ambient Air Quality Standard (NAAQS), September 2006. Approved by EPA in July 2008 (73 FR 42681).

C. Delaware VOC RACT Regulation
Regulation 1124 Control of Volatile Organic Compound Emissions
http://regulations.delaware.gov/AdminCode/title7/1000/1100/Split1124/index.shtml#TopOfPage
(Note: Hard copy of this regulation is available upon request.)

D. Delaware NOx RACT Regulation
Regulation 1112 Control of Nitrogen Oxides Emissions
http://regulations.delaware.gov/AdminCode/title7/1000/1100/1112.shtml#TopOfPage
(Note: Hard copy of this regulation is available upon request.)

E. Other Delaware Regulations Included in This RACT SIP Document
Regulations are available at:
http://regulations.delaware.gov/AdminCode/title7/1000/1100/index.shtml#TopOfPage
(Note: Hard copies of the regulations are available upon request.)