DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF AIR AND WASTE MANAGEMENT
Statutory Authority: 7 Delaware Code, Chapter 60 (7 Del.C. Ch.60)

REGISTER NOTICE
GENERAL NOTICE

Delaware 2002 Milestone COMPLIANCE Demonstration for Kent and New Castle Counties

1. Title Of The Regulations:

DELAWARE 2002 MILESTONE COMPLIANCE DEMONSTRATION FOR KENT AND NEW CASTLE COUNTIES: Demonstrating Adequate Progress toward Attainment of the 1-Hour National Ambient Air Quality Standard for Ground-Level Ozone.

2. Brief Synopsis Of The Subject, Substance And Issues:

The Clean Air Act Amendments of 1990 (CAAA) require Delaware to submit to the US Environmental Protection Agency (EPA) a State Implementation Plan (SIP) revision for each of the milestone years (1996, 1999, 2002, and 2005) to demonstrate that the actual emissions of volatile organic compounds (VOC) and/or oxides of nitrogen (NOx) in Kent and New Castle Counties do not exceed the required emission targets specified in Delaware's Rate-of-Progress Plans. The document presented herein is for the milestone year of 2002, and thus termed as Delaware's 2002 Milestone Compliance Demonstration. The document analyzes VOC and NOx emission data in 2002 and concludes that Delaware's 2002 milestone for complying with the CAAA's VOC and NOx emission reduction requirements has been successfully met.

3. Possible Terms Of The Agency Action:

None.

4. Statutory Basis Or Legal Authority To Act:

7 **Del.C.** Ch. 60, Environmental Control.

5. Other Regulations That May Be Affected By The Proposal:

None.

6. Notice Of Public Comment:

A public hearing will be held on December 1, 2004, beginning at 6:00 pm, in AQM Conference Room, Priscilla Building, 156 South State Street, Dover, DE 19901.

7. Prepared By:

Frank F. Gao, Project Leader, (302) 323-4542, October 12, 2004.

Proposal

DELAWARE 2002 MILESTONE COMPLIANCE DEMONSTRATION FOR KENT AND NEW CASTLE COUNTIES

Demonstrating Adequate Progress toward Attainment of the 1-Hour National Ambient Air Quality Standard for Ground-Level Ozone

Submitted to US Environmental Protection Agency
By Delaware Department of Natural Resources and Environmental Control

November 2004

Acronym List

AQM	Air Quality Management Section of DNREC
CAAA	Clean Air Act Amendments of 1990
CMSA	Consolidated Metropolitan Statistical Area

CO	Carbon Monoxide
DAWM	Division of Air and Waste Management of DNREC
DNREC	Delaware Department of Natural Resources and Environmental Control
EID	Emission Inventory Development
EPA	United States Environmental Protection Agency
FMVCP	Federal Motor Vehicle Control Program
I/M	Inspection and Maintenance
LEV	Low Emission Vehicle
MCD	Milestone Compliance Demonstration
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standard
NLEV	National Low Emission Vehicle
NOx	Oxides of Nitrogen
OAQPS-	Office of Air Quality Planning and Standards of EPA
OTAG	Ozone Transport Assessment Group
OTC	Ozone Transport Commission
OTR	Ozone Transport Region
PCP	Planning and Community Protection Branch of DNREC
PEI	Periodic Emission Inventory
RACT	Reasonably Available Control Technology
RPP	Rate-of-Progress Plan
RVP	Reid Vapor Pressure
SCC	Source Classification Code
SIC	Standard Industrial Classification
SIP	State Implementation Plan
TPD	Tons per day
TPY	Tons per year
VOC	Volatile Organic Compound

Summary

Under the Clean Air Act Amendments of 1990 (CAAA), Kent and New Castle Counties in Delaware are classified as severe nonattainment areas with respect to the 1-hour ozone National Ambient Air Quality Standard (NAAQS). This document addresses Delaware's 2002 milestone year compliance demonstration regarding progress toward attainment of the 1-hour ozone NAAQS.

Under Sections 182(b)(1) and 182(d) of CAAA, Delaware is required (1) by 1996 to achieve a 15% reduction in emissions of volatile organic compounds (VOCs) from its 1990 level in the two nonattainment counties, (2) by 1999 to achieve an additional 9% reduction in emissions of either VOCs or oxides of nitrogen (NOx) from the 1990 levels, and (3) by 2002 to achieve a second additional 9% reduction in emissions of either VOCs or NOx from the 1990 levels. Under these requirements, the 2002 target levels of VOC and NOx emissions for the two nonattainment counties in Delaware have been determined to be 101.54 tons per day (TPD) and 143.12 TPD, respectively. To achieve these emissions targets, Delaware implemented numerous control measures over a large variety of VOC and NOx emission sources from 1990 to 2002. Delaware's 2002 emission inventory, which has been recently compiled, shows that the 2002 inventoried VOC and NOx emissions in Kent and New Castle Counties are 78.12 TPD and 144.49 TPD, respectively. These inventoried VOC and NOx emissions, when combined together and expressed as an equivalent VOC emission, are significantly lower than the required 2002 targets levels. Thus, Delaware demonstrates herein that its 2002 milestone for complying with the CAAA's VOC and NOx emission reduction requirements has been successfully met.

1.0 Introduction

1.1 Background

The Clean Air Act Amendments of 1990 (CAAA) set forth National Ambient Air Quality Standards (NAAQS) for the ground-level ozone. High levels of ground level ozone will harm the respiratory system and cause breathing problems, throat irritation, coughing, chest pains, and greater susceptibility to respiratory infection. Children, the elderly and individuals with respiratory diseases are especially vulnerable to the threat of ozone. Even healthy individuals can be harmed if they attempt strenuous activity on days with high ozone levels. High levels of ozone also cause serious damage to forests and agricultural crops, resulting in economic losses to logging and farming operations. Currently, there are two national standards for the ground-level ozone, i.e., the 1-hour standard (0.12 ppm) and the 8-hour standard (0.08 ppm). This document addresses issues relevant to the 1-hour standard only.

The CAAA classifies five nonattainment areas (NAA) that exceed the 1-hour ozone NAAQS based on the severity of the pollution problem. In the order of increasing severity, they are marginal, moderate, serious, severe, and extreme. According to Section 181 of CAAA, attainment dates for individual areas depend on their nonattainment designations. The Philadelphia Consolidated Metropolitan Statistical Area (CMSA) is classified as a severe nonattainment area (Figure 1), which has an attainment date of 2005. As shown in Figure 1, Kent and New Castle Counties in Delaware fall within the Philadelphia CMSA. Thus, these two counties are subject to all requirements set forth for the severe ozone nonattainment class. All discussions and data presented in this document apply only to Kent and New Castle Counties.

Generally, the ground level ozone is not directly emitted to the atmosphere, but is formed in the lower atmosphere by photochemical reactions mainly between volatile organic compounds (VOC) and nitrogen oxides (NOx) in the presence of sunlight. Thus, VOC and NOx are defined as ozone precursors. In order to reduce ozone concentration in the ambient air, the CAAA requires all ozone nonattainment areas to achieve specific reductions in anthropogenic VOC emissions and/or NOx emissions over several specified periods of years until the ozone standard is attained. This requirement for periodic emission reductions is termed as “rate of progress” toward the attainment of the 1-hour ozone standard (Reference 1).

Under Section 182(d) of CAAA, Delaware is required to develop and submit a State Implementation Plans (SIP) revision to the United States Environmental Protection Agency (EPA) for each of the milestone years of 1996, 1999, 2002 and 2005. In these plans, Delaware has to show that, by adopting and implementing adequate control measures, it can achieve adequate rate-of-progress reductions in VOC and/or NOx emissions for its severe ozone nonattainment area, i.e., Kent and New Castle Counties. Since these state implementation plans construct the path of Delaware’s rate of progress toward the attainment of the ozone standard, they are termed as Delaware’s Rate-of-Progress Plans (RPPs).

Under Section 182(a) of the CAAA, Delaware is required to develop comprehensive emission inventories of ozone precursors for 1993, 1996, 1999, 2002 and 2005 to monitor actual VOC and NOx emissions from its nonattainment areas along the path of rate of progress. These emission inventories are termed as Delaware’s periodic emission inventories (PEIs). Under Sections 182(a) and 182(g) of the CAAA, Delaware is required to use these periodic emission inventories (except the 1993 PEI) to demonstrate whether Delaware meets the required emission reductions as specified in its rate-of-progress plans in individual milestone years. This demonstrating process is termed as milestone compliance demonstration (Reference 1).

This document demonstrates Delaware 2002 milestone year compliance with adequate progress in emission reductions toward attainment of the 1-hour ozone NAAQS as required by the CAAA. The document is hereafter referred to as “Delaware 2002 Milestone Compliance Demonstration.”

Figure 1. Philadelphia Consolidated Metropolitan Statistical Area (CMSA) Nonattainment Area.[1]

1.2 Responsibilities

The agency with direct responsibility for preparing and submitting this document is Delaware Department of Natural Resources and Environmental Control (DNREC), Division of Air and Waste Management (DAWM), Air Quality Management Section (AQM), under the direction of Ali Mirzakhalili, Program Administrator. The working responsibility for Delaware's air quality management planning falls within the Planning and Community Protection (PCP) Branch of AQM Section, under the management of Raymond H. Malenfant, Program Manager and Ronald A. Amirikian, Planning Supervisor. Frank F. Gao, Environmental Engineer of Airshed Evaluation and Planning Program in the PCP Branch, is the project leader and principal author of this document. Questions or comments regarding this document should be addressed to F. Gao, (302)323-4542, AQM, 715 Grantham Lane, New Castle, DE 19720, or be e-mailed to Frank.Gao@state.de.us.

2.0 Delaware State Implementation Plans

2.1 Delaware 1990 Base Year Emission Inventory

Section 182(a)(1) of CAAA requires each state with ozone nonattainment areas to develop a comprehensive 1990 emission inventory for ozone precursors for its nonattainment areas. The emission inventory must be submitted as a state implementation plan (SIP) revision to EPA for approval. This 1990 base year emission inventory is used as the basis for a state to develop its rate-of-progress plans and control strategies toward attainment of the 1-hour ozone standard. Delaware's 1990 base year emission inventory was submitted to the EPA in May 1994, and approved by EPA in March 1996 (Reference 2).

The 1990 Base Year Inventory is categorized by five source sectors, i.e., point, stationary area, off-road mobile, on-road mobile and biogenic source sectors. Since volatile organic compounds (VOC), nitrogen oxides (NOx) and carbon monoxide (CO) are precursors for ground level ozone formation, their emissions from these source sectors in 1990 are inventoried and reported in the 1990 Base Year Inventory. Because the contribution of CO to ozone formation is insignificant, the CO component of the 1990 Base Year Inventory is not included in Delaware's rate-of-progress planning for attainment of ozone standard. A summary of VOC and NOx emissions by county in the 1990 Base Year Inventory is presented in Table 1. The unit of emissions reported in Table 1 is tons per day (TPD) in the peak ozone season. The peak ozone season in Delaware is defined as from June 1 through August 31.

Table 1. Summary of VOC and NOx Emissions (in TPD) in 1990 Base Year Inventory*

1990 Base Year	Kent		New Castle		Total NAA	
All Source Sectors	VOC	NOx	VOC	NOx	VOC	NOx

1. This map is adopted from *Major CO, NO_2 and VOC Sources in the 25-Mile Boundary Around Ozone Nonattainment Areas, Volume 1: Classified Ozone Nonattainment Area*, EPA/4-92-005a, U.S. Environment Protection Agency, Office of Air Quality Planning and Standards, Office of Air and Radiation, Research Triangle Park , NC, February, 1992.

Total Emissions	**65.23**	**25.84**	**131.30**	**137.00**	**196.53**	**162.85**

* Data obtained from Delaware 1990 Base Year Emission Inventory (Reference 2).

2.2 Delaware Rate-of-Progress Plans and Milestone Year Emission Targets

Under Sections 182(b)(1) and 182(d), Delaware is required to develop a rate-of-progress plan (as a SIP revision) for the period from 1990 to 1996. This plan must describe how Delaware could achieve an actual VOC emission reduction of at least 15% of its 1990 VOC emission level, and thus is termed as Delaware 1996 Rate-of-Progress Plan (RPP) or 15% RPP (Reference 3). The year of 1996 is defined as the first milestone year toward attainment of the 1-hour ozone standard.

In addition to the 15% VOC emission reduction, Section 182(d) of CAAA requires Delaware to submit three post-1996 rate-of-progress plans that will lead to VOC and/or NOx emission reductions of at least 3% per year between 1996 and 2005. These three post-1996 plans are: the 1999 RPP covering a 3-year period from 1997 to 1999, the 2002 RPP covering the period from 2000 to 2002, and the 2005 RPP covering the period from 2003 and 2005. Based on the 3% per year emission reduction requirements, these three RPPs set forth Delaware's VOC and NOx emission targets in their corresponding milestone years of 1999, 2002 and 2005. The required rate-of-progress reductions in VOC and/or NOx emissions in each rate-of-progress plan are estimated from the 1990 baseline level. For this purpose, the 1990 base year emissions in Table 1 must be adjusted to (1) include only anthropogenic and photochemically reactive emissions, and (2) exclude emission reductions from control measures promulgated prior to the 1990 CAA Amendments (Reference 1). After these adjustments, the required VOC and/or NOx emission reductions can be estimated, and then the VOC and/or NOx emission targets of each milestone year can be calculated. A summary of VOC and /or NOx emission targets for individual milestone years are presented in Table 2. Details of how to conduct base-year inventory adjustments and how to estimate emission reductions and emission targets can be found in References 1, 2, 3, 4, 5, 6 and 7.

Table 2. Delaware VOC and/or NOx Emission Targets for Individual Milestone Years

Emission Targets (TPD)	1996 Milestone Year	1999 Milestone Year	2002 Milestone Year	2005 Milestone Year
VOC	115.82	110.21	101.54	95.41
NOx	*	148.96	143.12	135.37

*NOx reduction was not required for the 1996 milestone year.

2.3 Control Measures and Expected VOC/NOx Emissions in 2002 RPP

To meet the 2002 VOC and NOx emission targets, Delaware proposed numerous control measures in its 2002 RPP. These control measures include federal mandatory rules and Delaware state regulations to be promulgated prior to the peak ozone season of 2002. These rules and regulations cover a large variety of VOC and NOx emission sources in all anthropogenic source sectors. A list of the control measures, along with their implementation dates, is given in Table 3. Detailed descriptions of individual rules and regulations can be found in Delaware 2002 RPP, as amended in December 2000 (Reference 5), and Delaware Regulations Governing Control of Air Pollution (Reference 8).

Table 3. Control Measures Proposed in Delaware's 2002 RPP

Control Measures and Regulations	Creditability	Emission Controlled	Effective Date
Point Source Controls			
RACT "Catch-Ups" in Kent County: Solvent Metal Cleaning	Creditable	VOC	31-May-95

Surface Coating of Metal Furniture	Creditable	VOC	31-May-95
Leaks from Synthetic Organic Chemical, Polymer, and Resin Manufact. Equip.	Creditable	VOC	31-May-95
New RACT Regulations: Bulk Gas. Marine Tank Vessel Loading Facil.	Creditable		31-Dec-95
SOCMI Reactor Proc. and Distillation Operat.	Creditable	VOC	01-Apr-96
Batch Processing Operations	Creditable	VOC	01-Apr-96
Offset Lithography	Creditable	VOC	01-Apr-96
Aerospace Coatings	Creditable	VOC	01-Apr-96
Industrial Cleaning Solvents	Creditable	VOC	29-Nov-94
Non-CTG RACT	Creditable	VOC	31-May-95
Delaware NOx RACT	Creditable	NOx	31-May-95
Regional NOx Control OTC MOU	Creditable	NOx	01-May-99
Federal Benzene Waste Rule	Creditable	VOC	Spring 1995
Sanitary Landfills	Creditable	VOC	09-Oct-93
Irreversible Process Changes	Creditable	VOC	01-Jan-96
Stationary Area Source Controls			
RACT "Catch-Ups" in Kent County: Solvent Metal Cleaning	Creditable	VOC	31-May-95
Cutback Asphalt	Creditable	VOC	31-May-95
New RACT Regulations: Stage I Vapor Recovery-Gas. Dispensing Facil.	Creditable	VOC	15-Nov-94
Emulsified Asphalt	Creditable	VOC	31-May-95
Motor Vehicle Refinishing	Creditable	VOC	01-Apr-96
Offset Lithography	Creditable	VOC	01-Apr-96
Aerospace Coatings	Creditable	VOC	01-Apr-96
Stage II Vapor Recovery	Creditable	VOC	15-Nov-94
Open Burning	Creditable	VOC, NOx	08-Feb-95
Off-Road Mobile Source Controls			
Reformulated Fuel	Creditable	VOC	01-Jan-95

New Emission Standards			
Spark Ignition Engines	Creditable	VOC, NOx	Court-Ordered
Compression Ignition Engines	Creditable	VOC, NOx	Court-Ordered
Marine Engines	Creditable	VOC	Court-Ordered
Locomotives	Creditable	NOx	31-Dec-01
On-Road Mobile Source Controls			
FMVCP and RVP	Noncreditable	VOC, NOx	Pre-1990
Tier I Vehicle Emissions Standards	Creditable	VOC, NOx	Model Yr 1994
Basic I/M for Kent County	Creditable	VOC, NOx	01-Jan-91
ATP and Pressure Test for Kent County	Creditable	VOC, NOx	01-Jan-95
ATP and Pressure Test for New Castle County	Creditable	VOC, NOx	01-Jan-95
Reformulated Fuel	Creditable	VOC	01-Jan-95
LEV Program	Creditable	VOC, NOx	01-Nov-99

In the 2002 RPP, Delaware projected 2002 VOC and NOx emissions in the peak ozone season assuming all control measures listed in Table 3 were implemented as expected. The projections are termed as "control strategy projections" and conducted following the methods and procedures specified in relevant EPA guidance documents (References 9, 10 and 11). In the projection calculations, factors such as growth, control efficiency, rule effectiveness, and rule penetration, are considered and incorporated whenever appropriate for point sources, stationary area sources and non-road mobile sources. Emission projections for on-road mobile sources were conducted using EPA's MOBILE5a software. Details of the control strategy projections are presented in the 2002 RPP, as amended in December 2000 (Reference 5). A summary of the 2002 VOC and NOx control strategy emission projections is given in Table 4.

Table 4. Delaware 2002 Control Strategy Projections for VOC and NOx Emissions (TPD)

2002 RPP	**Kent**		**New Castle**		**Total NAA**	
All Source Sector	**VOC**	**NOx**	**VOC**	**NOx**	**VOC**	**NOx**
Emission Projections	**20.53**	**24.01**	**81.01**	**118.07**	**101.54**	**142.08**

As shown in Table 4, the total VOC and NOx emissions projected for 2002 in Delaware's nonattainment area (i.e., Kent and New Castle Counties) are 101.54 TPD and 142.08 TPD, respectively. The VOC projection is equal to the emission target, while the NOx projection is lower than the target (143.12 TPD). Therefore, the 2002 RPP concludes that its proposed control measures are adequate and enough for Delaware to meet CAAA's rate-of-progress requirements on VOC and NOx emission reductions in the milestone year of 2002.

2.4 Delaware 1993, 1996, 1999 and 2002 Periodic Emission Inventories

Under Section 182(a) of the CAAA, Delaware is required to compile comprehensive periodic emission inventories of ozone precursors for 1993, 1996, 1999, 2002 and 2005. The emission data in these periodic inventories are either reported directly by individual sources (e.g., point sources such as industrial facilities), or calculated from the subject year activity data obtained from relevant sources or other agencies (e.g., area sources). These periodic emission inventories cover all sources included in the Delaware 1990 Base Year Emission Inventory. Delaware submitted to EPA its 1993 periodic emission inventory (PEI) in January 1998, its 1996 EPI in November 1999, its 1999 PEI in June 2002, and its 2002 PEI in June 2004. Emissions in these periodic emission inventories are reported in tons per year (TPY) and in tons per day (TPD) in the peak ozone season. Details of how Delaware compiled these

periodical emission inventories are described in References 12 through 15. For the purpose of demonstrating milestone year compliance, a summary of VOC and NOx emissions (in the unit of TPD) in the 1996 PEI, 1999 PEI and 2002 PEI is presented in Table 5.

Table 5. Summary of Delaware's 1996, 1999 and 2002 Periodic Emission Inventories (TPD)

All Source Sectors	1996 PEI		1999 PEI		2002 PEI	
	VOC	NOx	VOC	NOx	VOC	NOx
Total Emissions	101.87	121.55	88.69	117.68	78.12	144.49

2.4 Delaware 1996 and 1999 Milestone Compliance Demonstration

As mentioned earlier, under Sections 182(d) of CAAA, Delaware was required (1) to achieve in 1996 an actual VOC emission reduction of at least 15% from its 1990 VOC emission level, (2) to achieve in 1999 an additional 9% VOC and/or NOx emission reductions from the 1990 base year VOC or NOx emission levels. To demonstrate achieving these emission reduction goals, Delaware developed its 1996 milestone compliance demonstration (MCD) document in February 2000, and its 1999 MCD document in June 2003. A summary of the 1996 MCD is presented in Table 6, and a summary of the 1999 MCD is presented in Table 7.

Table 6. Delaware 1996 Milestone Compliance Demonstration Results*

Emission (*TPD*)	1996 Required Emission Target	1996 PEI Actual Emission	PEI vs. Target** Lower(-)/ Higher(+)
VOC	115.81	101.87	-12.0%

*Data obtained from Reference 16. ** % = (1996 PEI – 1996 Target)/1996 Target.

Table 7. Delaware 1999 Milestone Compliance Demonstration Results*

Emission (TPD)	1999 Required Emission Target	1999 PEI Actual Emission	PEI vs. Target** Lower(-)/ Higher(+)
VOC	110.21	88.69	-19.5%
NOx	148.96	117.68	-21.0%

*Data obtained from Reference 17. ** % = (1999 PEI – 1999 Target)/1999 Target.

As indicated in Table 6, the 1996 PEI VOC emission was 12.0% lower than the 1996 VOC emission target required by CAAA. As indicated in Table 7, the 1999 PEI VOC and NOx emissions were 19.5% and 21.0% lower than the required 1999 VOC and NOx emission targets, respectively. Therefore, for these two milestone years (i.e., 1996 and 1999), Delaware demonstrated that its VOC and/or NOx emissions were fully in compliance with the emission reduction requirements set forth by CAAA.

3.0 Delaware 2002 Milestone Compliance Demonstration

In the 2002 RPP, Delaware determined that the 2002 targets of VOC and NOx emissions for its nonattainment area (i.e., Kent and New Castle Counties) were 101.54 TPD and 143.12 TPD, respectively, in the peak ozone season (Table 2). In the recently compiled 2002 PEI, Delaware has shown that the actual total VOC and NOx emissions in 2002 are 78.12 TPD and 144.49 TPD, respectively, in the peak ozone season (Table 5). A comparison of the 2002 emission targets and the 2002 PEI emissions is presented in Table 8. As indicated in Table 8, the VOC emission in the 2002 PEI is 23.42 TPD lower than the target level, while the NOx emission in the 2002 PEI is 1.37 TPD higher than the 2002 target

Table 8. Comparison of 2002 Emission Targets and 2002 Inventoried Emissions.

Emission (TPD)	2002 Required Emission Target	2002 PEI Actual Emission	Difference (PEI - Target)
VOC	**101.54**	**78.12**	**-23.42**
NOx	**143.12**	**144.49**	**+1.37**

The 1990 baseline emission levels for VOC and NOx, as adjusted to 2002, are 133.15 TPD and 158.40 TPD, respectively (Reference 5). Thus, the VOC-to-NOx substitution ratio is 133.15:158.40 = 1:1.19. Using this ratio, the equivalent VOC emission for the over-target 1.37 TPD NOx emission can be calculated to be 1.37/1.19 = 1.15 TPD. Subtracting this number from the 23.42 TPD under-target VOC emission gives 23.42 – 1.15 = 22.27 TPD. In other words, the 2002 overall or net emission, expressed as an equivalent VOC emission, is 22.27 TPD lower than the 2002 emission target. Therefore, Delaware has demonstrated herein that its 2002 emissions are in compliance with the emission reduction requirements set forth by CAAA.

4.0 References

1. *Guidance on the Relationship between the 15 Percent Rate-of-Progress Plans and Other Provisions of the Clean Air Act*, EPA-452/R-93-007, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina, May 1993.

2. *The 1990 Base Year Ozone SIP Emissions Inventory for VOC, CO, and NOx*. Air Quality Management Section, Department of Natural Resources and Environmental Control, Dover, Delaware, revised as of May 3, 1994.

3. *The Delaware 15% Rate-of-Progress Plan*. Air Quality Management Section, Department of Natural Resources and Environmental Control, Dover, Delaware, February 1995.

4. *The Delaware 1999 Rate-of-Progress Plan for Kent and New Castle Counties*. Air Quality Management Section, Department of Natural Resources and Environmental Control, Dover, Delaware, December 1997, as amended in June 1999.

5. *The Delaware 2002 Rate-of-Progress Plan for Kent and New Castle Counties*. Air Quality Management Section, Department of Natural Resources and Environmental Control, Dover, Delaware, February 2000, as amended in December 2000.

6. *The Delaware 2005 Rate-of-Progress Plan for Kent and New Castle Counties*. Air Quality Management Section, Department of Natural Resources and Environmental Control, Dover, Delaware, December 2000.

7. *Guidance on the Post-1996 Rate-of-Progress Plan and the Attainment Demonstration*, Ozone/Carbon Monoxide Branch, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina, 27711, February 18, 1994.

8. *Regulations Governing the Control of Air Pollution*. Air Quality Management Section, Division of Air and Waste Management, Delaware Department of Natural Resources and Environmental Control, Dover, Delaware.

9. *Procedures for Preparing Emissions Projections*. EPA-450/4-91-019, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina, July 1991.

10. *Guidance for Growth Factors, Projections, and Control Strategies for the 15 Percent Rate-of-Progress Plans*. EPA-452/R-93-002, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina, March 1993.

11. *Guidance on Preparing Enforceable Regulations and Compliance Programs for the 15 Percent Rate-of-Progress Plans*. EPA-452/R-93-005, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina, March 1993.

12. *The 1993 Periodic Ozone State Implementation Plan Emission Inventory for VOC, NOx, and CO*. Air Quality Management Section, Department of Natural Resources and Environmental Control, Dover, Delaware, January 1998.

13. *The 1996 Periodic Ozone State Implementation Plan Emission Inventory for VOC, NOx, and CO*. Air Quality Management Section, Department of Natural Resources and Environmental Control, Dover, Delaware, November 1999.

14. *The 1999 Periodic Ozone State Implementation Plan Emission Inventory for VOC, NOx, and CO*. Air Quality Management Section, Department of Natural Resources and Environmental Control, Dover, Delaware, June 2002.

15. *The 2002 Periodic Ozone State Implementation Plan Emission Inventory for VOC, NOx, and CO*. Air Quality Management Section, Department of Natural Resources and Environmental Control, Dover, Delaware, June 2004.

16. *Delaware 1996 Milestone Demonstration for Kent and New Castle Counties*. Air Quality Management

Section, Department of Natural Resources and Environmental Control, Dover, Delaware, February 2000.

17. *Delaware 1999 Milestone Compliance Demonstration for Kent and New Castle Counties.* Air Quality Management Section, Department of Natural Resources and Environmental Control, Dover, Delaware, June 2003.