The State of New Jersey
Department of Environmental Protection

Proposed
Reasonably Available Control Technology (RACT) for the 8-Hour Ozone National Ambient Air Quality Standard (NAAQS) and other Associated State Implementation Plan (SIP) Revisions for the Fine Particulate Matter National Ambient Air Quality Standard (NAAQS), Regional Haze, and the Clean Air Act Requirements on Transport of Air Pollution

February 2, 2007

Preface

The State of New Jersey is proposing Reasonably Achievable Control Technology (RACT) revisions to its State Implementation Plan (SIP) to address the 8-hour Ozone National Ambient Air Quality Standard (NAAQS). The Clean Air Act requires nonattainment areas to implement Reasonably Available Control Measures (RACM), which include RACT, to attain the ozone NAAQS as expeditiously as practicable. Proposed SIP revisions include a commitment to propose more stringent RACT rules regulating certain source-specific categories with the greatest potential of reducing emissions of oxides of nitrogen and volatile organic compounds, both precursors to the formation of ozone. Some RACT rules are over a decade old and do not reflect advancements in technology that are currently available. The United States Department of Environmental Protection (USEPA) defines RACT as the lowest emissions limitation that a source can meet using control technology that is reasonably available. This SIP revision proposes a schedule for completing RACT rule revisions. This SIP revision also addresses certain related requirements for the affected source categories with respect to other aspects of the ozone, fine particulate, haze and regional transport SIPs.

Acknowledgements

The New Jersey Department of Environmental Protection (Department) acknowledges the efforts and assistance of the many agencies and individuals whose contributions were instrumental in the preparation of this proposed SIP Revision. In particular, the Department wishes to acknowledge the many individuals within the United States Environmental Protection Agency Region 2, the New Jersey Department of Transportation, the New Jersey Board of Public Utilities, the Ozone Transport Commission (OTC) and its participating member states, the Mid-Atlantic Regional Air Management Association (MARAMA), the Northeast States for Coordinated Air Use Management (NESCAUM), the Midwest Regional Planning Organization (MWRPO), the state of California and its various air districts, and the participating members of the workgroups that were formed as a result of the Department-sponsored workshop, *Reducing Air Pollution Together,* including industry, environmental and educational entities, local, county, state and federal government employees, and private citizens.

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Acronyms and Abbreviations

ACT	Alternative Control Techniques
AEL	Alternate Emission Limit
BACT	Best Available Control Technology
BART	Best Available Retrofit Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAIR	Clean Air Interstate Rule
CFR	Code of Federal Regulations
CM	Control Measures
CTG	Control Technique Guidelines
DLN	Dry low-NOx Combustion
EAF	Electric Arc Furnace
EGU	Electric Generating Unit
FCCU	Fluid Catalytic Cracking Unit
FGR	Flue Gas Recirculation
FIP	Federal Implementation Plan
FNL	Federal Direct Final Rule
FO	Fuel Oil
FR	Federal Register
FSEL	Facility Specific Emission Limit
HEDD	High Electrical Demand Day
HRSG	Heat Recovery Steam Generator
IAQR	Interstate Air Quality Rule
ICE	Internal Combustion Engine
LAER	Lowest Achievable Emission Rate
LNB	Low NOx Burner
MACT	Maximum Available Control Technology
MANE-VU	Mid-Atlantic/Northeast Visibility Union
MARAMA	Mid-Atlantic Regional Air Management Association
MMBtu	million British thermal unit
MSW	Municipal Solid Waste
MWRPO	Midwest Regional Planning Organization
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NEI	National Emissions Inventory
NESCAUM	Northeast States for Coordinated Air Use Management
NESHAP	National Emission Standards for Hazardous Air Pollutants
NG	Natural Gas
NH_3	Ammonia
NJ	State of New Jersey
NJDEP	New Jersey Department of Environmental Protection
NJEMS	New Jersey Environmental Management System
NJR	New Jersey Register

NO_x	Oxides of Nitrogen
NSPS	New Source Performance Standards
O3	Ozone
OFA	Overfire Air
OMET	Open Market Emissions Trading
OTC	Ozone Transport Commission
PCP	Preconstruction Permit
$PM_{2.5}$	Fine Particulate Matter (particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers)
PM_{10}	Particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PTE	Potential to Emit
RACT	Reasonably Available Control Technology
RBLC	RACT/BACT/LAER Clearinghouse
RICE	Reciprocating Internal Combustion Engine
RRF	Resource Recovery Facility
SCC	Source Classification Code
SIP	State Implementation Plan
SCR	Selective Catalytic Reduction
SNCR	Selective Non-catalytic Reduction
SO_2	Sulfur Dioxide
SO_x	Oxides of Sulfur
SOCMI	Synthetic Organic Chemical Manufacturing Industry
SOTA	State of the Art
TBD	To Be Determined
tpy	tons per year
ULNB	Ultra Low NOx Burner
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
WI	Water Injection

Executive Summary

This proposed revision to the New Jersey State Implementation Plan (SIP) for the Attainment of the 8-Hour Ozone National Ambient Air Quality Standard, Fine Particulate Matter National Ambient Air Quality Standard and the Regional Haze Rule provides for a committal by the New Jersey Department of Environmental Protection (Department) to propose rule changes addressing requirements to implement control measures[1] which reflect Reasonably Available Control Technology (RACT) for 8-hour ozone attainment.

The air contaminants most important in the formation of ozone are oxides of nitrogen (NO_x) and volatile organic compounds (VOC). Reductions of these pollutants will also result in reductions to fine particles and regional haze. Some of the RACT measures will also reduce emissions of sulfur dioxide (SO2). Therefore, this RACT analysis also addresses in part PM2.5 RACT requirements and the Regional Haze Rule Best Available Retrofit Technology (BART) requirement as well. A complete PM2.5 RACT analysis will be submitted with the PM2.5 attainment demonstration. In addition this SIP revision partially fulfills one of the Transport SIP requirements of Section 110(a)(2)(D)(i) of the Clean Air Act and the finding of failure to submit issued by the USEPA on April 25, 2005.[2]

Section 172(c)(1) of the Clean Air Act (42 U.S.C.§ 7502(c)(1)) requires nonattainment areas to implement RACT. This proposed SIP revision contains the Department's initial RACT analysis of the ozone precursors for this SIP revision. The Department will finalize its RACT determinations with the rulemaking identified in this SIP revision. The USEPA has defined RACT as the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.[3] RACT is required in all nonattainment areas and in the Ozone Transport Region (OTR) for new and existing major stationary sources. States should require sources to implement RACT no later than the first ozone season occurring 30 months after the required submittal date of the RACT SIP, which was due to the USEPA on September 15, 2006. States should provide for implementation of RACT as expeditiously as practicable, but no later than May 1, 2009,[4] to attain the 8-hour ozone standard.

RACT standards implemented to attain the previous 1-hour ozone standard were based on the federal RACT guidelines, known as Control Techniques Guidelines (CTGs) and Alternative Control Techniques (ACTs), which were developed over 10 years ago. The Department believes that advancements in technology over the past ten years have surpassed many of these presumptive norms, and more stringent requirements define RACT today. In many cases, NO_x and VOC control technologies have advanced beyond what was considered RACT in 1993 under the 1-hour ozone requirement. Therefore,

[1] 70 Fed. Reg. 71612; November 29, 2005
[2] 70 Fed. Reg. 21147-21151; April 25, 2005
[3] 44 Fed. Reg. 53762; September 17, 1979
[4] 70 Fed. Reg. 71658; November 29, 2005

many of the 1-hour ozone RACT limits are not sufficient RACT limits for 8-hour ozone attainment purposes. Additionally, given the development in technology, the Department believes that facilities with approved Alternate Emission Limits (AELs), or Facility-specific Emission Limits (FSELs), should be reevaluated to establish an appropriate RACT level of control based on new information on the advances in air pollution control that has become available.

This SIP revision outlines the process by which promising source categories were evaluated to address RACT. Generally, the proposed RACT SIP revision implementing the 8-hour ozone standard assures that RACT is met through a new RACT evaluation of the State's major source categories. In making these initial 8-hour ozone RACT assessments, the Department's engineers and scientists sought new information to identify advancements in control technology, using USEPA guidelines, searching the NJEMS (New Jersey Environmental Management System) permitting and emissions inventory database, comparing State rules with the USEPA guidance documents, and evaluating other states' regulations that may be more stringent. In some areas, where the Department determined more effective control technologies have not become available, previously required RACT controls continue to represent RACT for 8-hour implementation purposes.

While Section 172(c)(1) of the Clean Air Act (42 U.S.C.§ 7502(c)(1)) requires the Department to conduct RACT analysis for major stationary sources, the ozone control effort is not be limited to just major stationary sources which would only provide a portion of needed reductions to attain the ozone standard. With the promulgation of the more stringent ozone standard, the Department recognizes the need to identify new control measures for all types of sources to attain the standard. This effort began early in 2005, with a collaborative effort involving the Department, interested and affected parties. This effort involved all types of emission sources – stationary sources, area sources, and mobile sources, both on road and off road.

In addition, the Department is working with the other jurisdictions in the Ozone Transport Commission (OTC), the Mid-Atlantic Regional Air Management Association (MARAMA) and Northeast States for Coordinated Air Use Management (NESCAUM) to identify reasonable control measures which could be implemented on a regional geographic scope that will yield greater air quality benefits while providing industry with consistent requirements.

Table E1 lists New Jersey candidate source categories identified for their potential for substantial emissions reductions and the corresponding affected State regulations for which more stringent revisions will be proposed.

Table E1. Summary of New Jersey Candidate Source Categories and Future Rule Revisions

Candidate Source Categories	Targeted Pollutants				Affected Rules
	NO_x	VOC	SO2	$PM_{2.5}$	
Ozone Transport Commission (OTC)					
Asphalt Paving		X			N.J.A.C. 7:27-16.19
Asphalt Production	X				N.J.A.C. 7:27-19.9
Glass Furnaces	X			X	N.J.A.C. 7:27-19.2, 19.10
Industrial Adhesives & Sealants		X			New Rule
Industrial, Commercial & Institutional Boilers	X				N.J.A.C. 7:27-19.2, 19.7
EGU* Boilers	X		X	X	N.J.A.C. 7:27-4, 10 & 19.4
High Electrical Demand Day EGUs	X				N.J.A.C. 7:27-19.2, 19.5
Mid-Atlantic Regional Air Management Association (MARAMA)					
Petroleum Refineries	X	X	X	X	N.J.A.C. 7:27-6, 7, 16 & 19
State of New Jersey					
Petroleum Storage Tanks		X			N.J.A.C. 7:27-16.2, 16.3 & 16.4
Facility Specific Emission Limit & Alternate Emission Limit	X	X			N.J.A.C. 7:27-16.17 & 19.13
Control Techniques Guidelines		X			N.J.A.C. 7:27-16.6, 16.7

*Note: Electric Generating Unit, EGU

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I. Introduction

The federal Clean Air Act provides the United States Environmental Protection Agency (USEPA) with the authority to set primary (health-based) and secondary (welfare) standards for criteria air pollutants. The Clean Air Act addresses interstate movement of air pollution, emissions control measures, permits, enforcement, deadlines, and public participation to achieve and maintain air quality standards. The primary standard is designed to protect human health, and the secondary standard is designed to protect against environmental and/or property damage. These standards are known as the National Ambient Air Quality Standards (NAAQS). The criteria pollutants covered by the Clean Air Act (CAA) are ozone (O_3), sulfur dioxide (SO_2)**,** particulate matter (PM10), fine particulate matter (PM2.5), lead, oxides of nitrogen (NO_x), and carbon monoxide (CO).

When an area does not meet the air quality standard for one or more criteria pollutants, it is subject to the formal rule-making process established by the USEPA to designate the area it as nonattainment. The Clean Air Act further subclassifies ozone, carbon monoxide, and some particulate matter nonattainment areas based on the magnitude of an area's air quality problem. Nonattainment classifications are used to specify what air pollution reduction measures an area must adopt, and when the area must reach attainment. The technical details underlying these classifications are discussed in the Code of Federal Regulations, Part 81 (40 CFR 81).

This RACT analysis will primarily focus on control measures that reduce NO_x and VOC emissions, precursors to ozone formation. Reductions in fine particulate matter, haze, and regional transport of air pollution will also result from the RACT measures in this analysis.

A. Background on Ozone Health Effects

Ozone (O3) continues to be New Jersey's most pervasive air quality problem. Although the ozone found in the earth's upper atmosphere (stratosphere) forms a layer that protects living things from the sun's ultraviolet radiation, the ozone formed near the earth's surface (troposphere) is inhaled by or comes in contact with people, animals, crops and other vegetation, and can cause a variety of health and other adverse effects. Ozone is a highly reactive gas. In the lower atmosphere or troposphere, it is formed by complex chemical reactions involving oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of sunlight.

The reactivity of ozone causes health problems because it damages lung tissue, reduces lung function, and sensitizes the lungs to other irritants. Ozone has long been known to increase the incidence of asthma attacks in susceptible individuals. Ozone exposure also makes the lungs more vulnerable to lung diseases, such as pneumonia and bronchitis. Ozone not only affects people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to ozone for several hours at relatively low concentrations significantly reduces lung function and induces respiratory inflammation

in normal, healthy people during exercise. This decrease in lung function is generally accompanied by symptoms such as chest pain, coughing, sneezing, and pulmonary congestion. Recent research in Southern California strongly suggests that, in addition to exacerbating existing asthma, ozone also causes asthma in children.[5] Longer-term exposure to ozone can also lead to scarring of the lung tissue and permanent reductions in lung capacity.

[5] MARAMA's A Guide to Mid-Atlantic Regional Air Quality Report dated October 2005. It is in Appendix A, Health Effects of Air Pollutants page 89 of the document.

II. 8-Hour Ozone Nonattainment Designations

In 1997, the USEPA revised the National Ambient Air Quality Standards (NAAQS) for ozone, setting it at 0.08 parts per million (ppm) averaged over an 8-hour time frame. The USEPA set the 8-hour ozone standard based on scientific evidence demonstrating that ozone causes adverse health effects at lower ozone concentrations, over longer periods of time, than the then-existing 1-hour ozone standard. Therefore, the USEPA concluded that the existing 1-hour standard was not sufficiently protective of public health. The more stringent 8-hour standard will help protect everyone at risk from ozone exposure, especially children and adults who are active outdoors, and individuals with pre-existing respiratory disease, such as asthma.[6]

In April 2004, the USEPA designated the attainment status of areas across the country with respect to the 8-hour ozone standard. These actions took effect on June 15, 2004. Subsequently, the USEPA revoked the 1-hour ozone standard on June 15, 2005.[7]

The Clean Air Act contains two sets of provisions – subpart 1 and subpart 2 – that address planning, attainment and control requirements for ozone nonattainment areas.[8] New Jersey is subject to Subpart 2 requirements. Subpart 1, referred to as "basic" nonattainment, contains general, less prescriptive, requirements for nonattainment areas for any pollutant – including ozone – governed by a NAAQS. A US District Court decision recently vacated EPA's Subpart 1 requirements. Subpart 2 requirements were mostly upheld. Subpart 2 sets forth a classification scheme for ozone nonattainment areas and provides more specific requirements for ozone nonattainment areas.[9] Under subpart 2, areas were classified based on the ozone design value. Control requirements depend on the subpart 2 classification of the area. Areas with more serious ozone pollution are subject to more prescriptive requirements and are given longer to attain the standard. The requirements are designed to bring areas into attainment by their specified attainment dates. For subpart 2 moderate and above areas, and areas within an Ozone Transport Region (OTR), a RACT SIP revision is required. The entire State of New Jersey is in the Ozone Transport Region (OTR). The RACT requirement applies to VOC and NO_x, both ozone precursors.

Under EPA's 8-hour ozone implementation rule, published on April 30, 2004,[10] an area was classified under subpart 2 based on its 8-hour design value if it had a 1-hour design value at or above 0.121 ppm (the lowest 1-hour design value in Table 1 of subpart 2). For the 1-hour ozone NAAQS, design value is defined at 40 CFR 51.900(c). For the 8-hour ozone NAAQS, design value is defined at 40 CFR 51.900(d).

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[6] According to the USEPA, the current ozone NAAQS is not adequate. More information can be found at http://www.epa.gov/ttn/naaqs/standards/ozone/s_o3_cr_sp.html

[7] 40 CFR part 81, subpart C

[8] A description of subpart 1 and subpart 2 are found in Title I, part D

[9] For more information on the subpart 2 classification and requirements see State Implementation Plans; General Preamble for the Implementation of Title I of the CAA Amendments of 1990; Proposed Rule." April 16, 1992 (57 Fed. Reg. 13498 at 13501 and 13510).

[10] 69 Fed. Reg. Number 84, Page 23951-24000

In the Phase 2 ozone implementation rule, published on November 9, 2005, the USEPA addressed the control obligations that apply to areas under both subpart 1 and subpart 2. Subpart 2 areas were classified as marginal, moderate, serious, or severe, based on the area's 8-hour design value calculated using the most recent 3 years of data. There were no areas in New Jersey with design values in the extreme or severe classification for the 8-hour ozone standard.

Table 1 shows the 1-hour and 8-hour ozone designations and classifications for each county in New Jersey. Note that all the counties in New Jersey are associated with one of two multi-state nonattainment areas (NAA) for 8-hour ozone, Philadelphia-Wilmington-Trenton, PA-NJ-DE-MD (hereafter referred to as the Southern New Jersey – Philadelphia Nonattainment Area, SNJ-PHL NAA) or New York-Northern New Jersey-Long Island, NY-NJ-CT (hereafter referred to as Northern New Jersey – New York City Nonattainment Area, NNJ-NYC NAA).

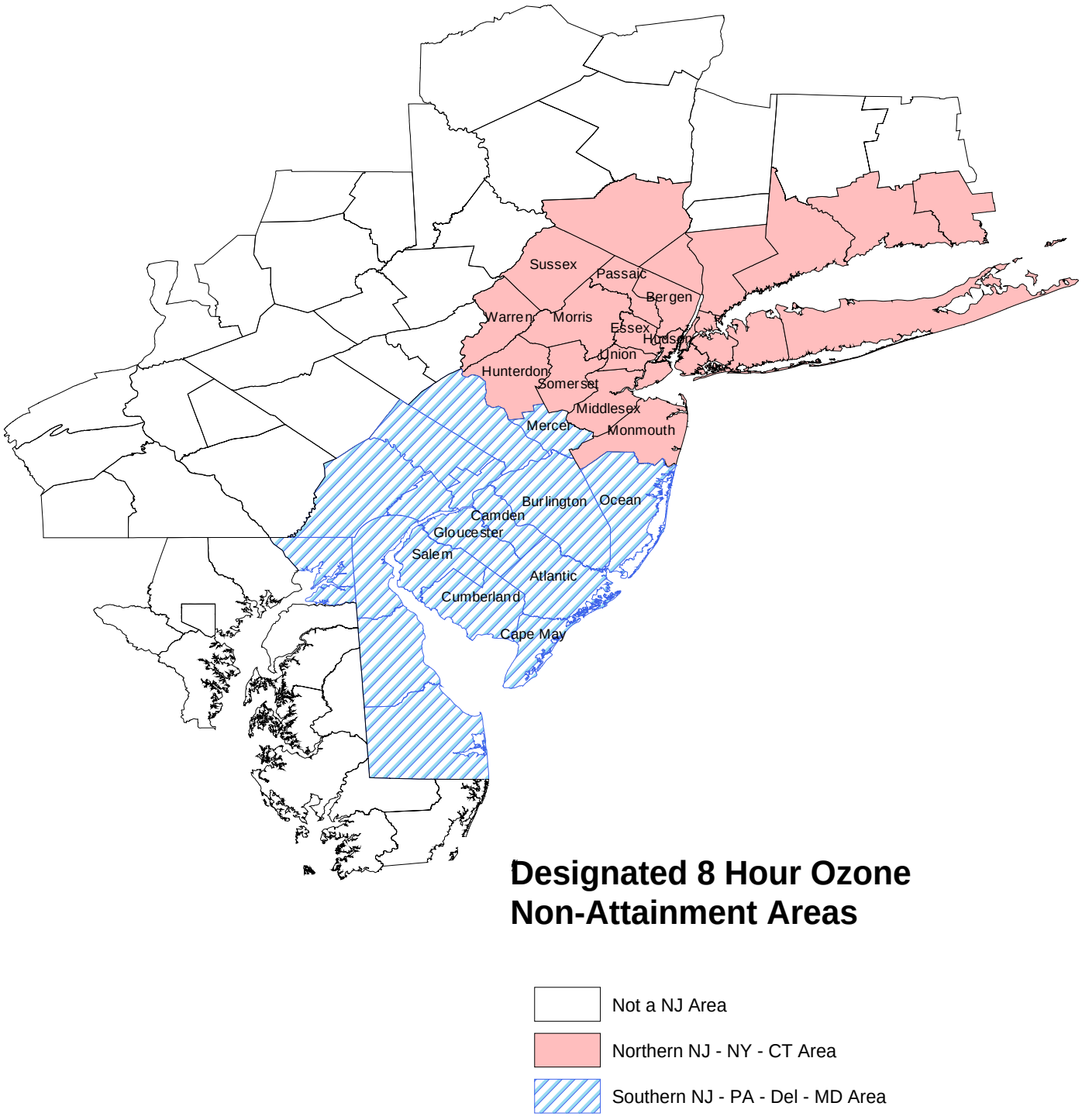
Table 1. Designated Ozone Nonattainment Areas

Area Name	New Jersey 1-Hour County Designations	New Jersey 1-Hour Classifications	New Jersey 8-Hour County Designations	New Jersey 8-Hour Classifications
Philadelphia-Wilmington-Trenton, PA-NJ-DE-MD	Burlington Camden Cumberland Gloucester Mercer Salem	Severe	Atlantic Burlington Camden Cape May Cumberland Gloucester Ocean Mercer Salem	Moderate
New York-N. New Jersey-Long Island, NY-NJ-CT	Bergen Essex Hudson Hunterdon Middlesex Morris Monmouth Ocean Passaic Somerset Sussex Union	Severe	Bergen Essex Hudson Hunterdon Middlesex Morris Monmouth Passaic Somerset Sussex Union Warren	Moderate
Allentown-Bethlehem-Easton, PA-NJ	Warren	Marginal	*	*
Atlantic City, NJ	Atlantic Cape May	Moderate	**	**

* included in the NNJ – NYC NAA

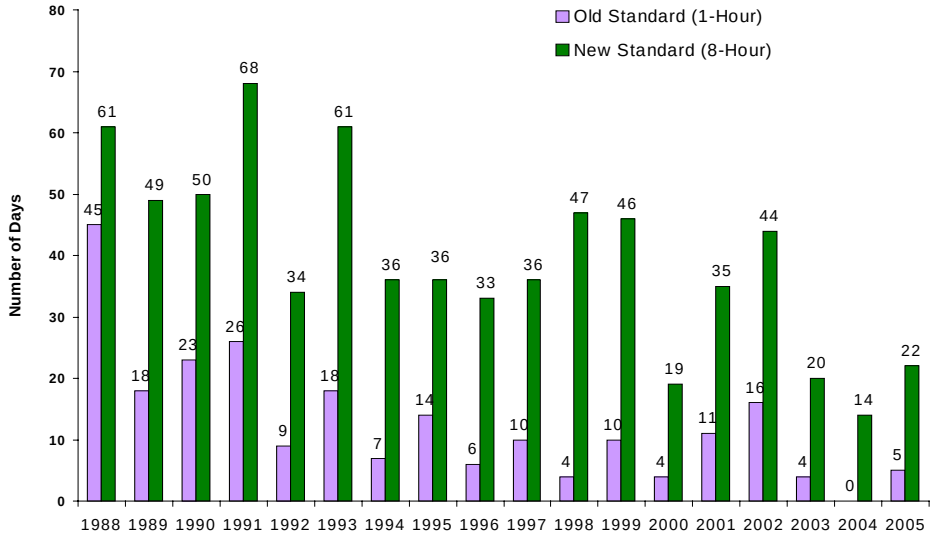
**included in the SNJ – PHL NAA

Figure 1. New Jersey 8-hour Ozone Nonattainment Areas



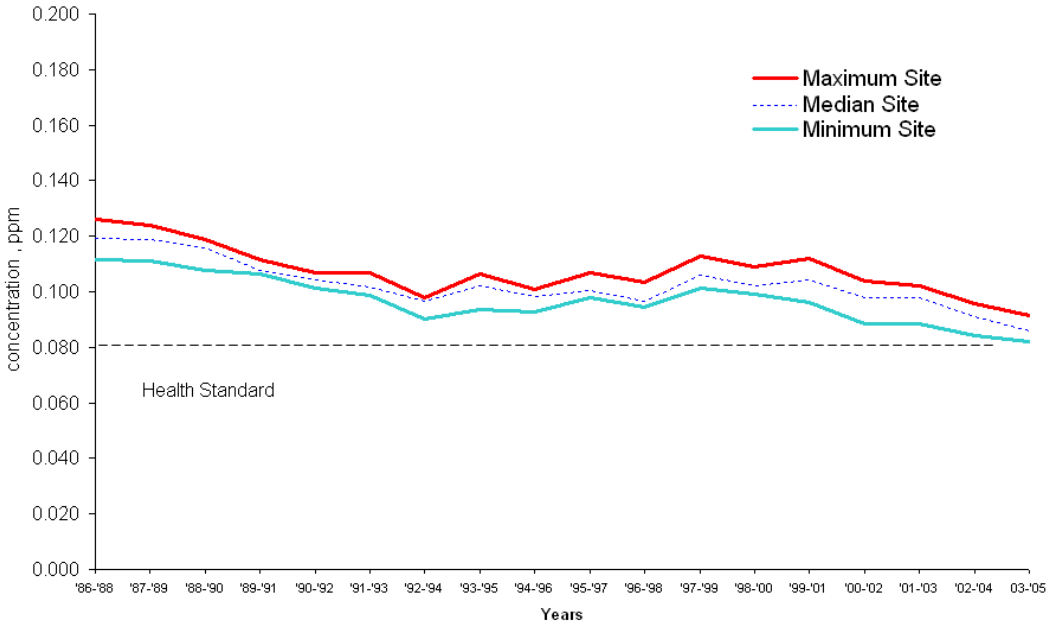
The entire State of New Jersey is designated as nonattainment for the 8-hour ozone NAAQS, and classified as moderate, based on air monitoring data.

Figure 2. Days on which the old (0.12 ppm) and new (0.08 ppm) ozone standards have been exceeded in New Jersey: 1988-2005



Design values, the fourth highest daily maximum average concentration recorded each year over three years, are calculated for all ozone sites in the monitoring network, and are used to determine nonattainment and to plan for attainment.

Figure 3. 8-hour Ozone Air Quality, 1986-2005 (based on 3-year average of 4th highest daily 8-hour maximum design values) in New Jersey



As can be seen from Figures 2 and 3, progress has been made towards attainment in the last 20 years, but a significant challenge remains.

III. RACT Requirements

On November 9, 2005, the USEPA issued a final rule outlining requirements for attaining and maintaining the 8-hour ozone health standard.[11] This rule, which was Phase 2 of the USEPA's implementation rules, specifically addresses those ozone implementation issues not included in the Phase 1 Ozone Rule, finalized on June 15, 2004.

Section 172(c)(1) of the Clean Air Act (42 U.S.C.§ 7502(c)(1)) requires states with nonattainment areas to submit State Implementation Plans (SIPs) implementing emission controls that are economically and technologically feasible. Emissions control technologies that meet these criteria for major stationary sources are known as Reasonably Available Control Technology or "RACT." Specifically, Phase 2 sets forth guidelines for making RACT determinations in 8-hour ozone nonattainment areas. RACT is required in both attainment and nonattainment areas in the Ozone Transport Region (OTR). On May 18, 2006, the USEPA Office of Air Quality Planning and Standards (OAQPS) released a Questions and Answers document to address RACT issues raised by the USEPA's Regional Offices and the States to provide additional guidance.[12] According to the USEPA's Phase 2 final rule, RACT rules were due September 16, 2006, and must be fully implemented by May 1, 2009.

In New Jersey, the New Jersey Administrative Code, Title 7, Chapter 27, Subchapters 16 and 19 (N.J.A.C. 7:27-16 & N.J.A.C. 7:27-19) establish RACT requirements concerning the control of air pollution by VOCs and NO_x, respectively. One purpose of these subchapters is to require significant stationary source operations located at a major facility to use RACT to reduce VOC and NO_x emissions. The same types and sizes of sources at minor facilities are also required to meet the RACT emission limits. Specific applicability thresholds and emission standards for various source categories are provided in these subchapters. Subchapter 16, Control and Prohibition of Air Pollution by Volatile Organic Compounds, and Subchapter 19, Control and Prohibition of Air Pollution of Oxides of Nitrogen, are commonly referred to as the State's VOC RACT and NO_x RACT rules. Both have been amended numerous times since their original adoption to add source categories or operations, and control requirements. Subchapter 16 was last revised on November 21, 2005. Subchapter 19 was last revised on September 8, 2005, and is currently being reviewed by the USEPA as a SIP Revision.

[11] 70 Fed. Reg. 71612; November 29, 2005

[12] Memo, "RACT Qs & As – Reasonably Available Control Technology (RACT): Questions and Answers," William T. Harnett, Director, Air Quality Policy Division to USEPA Regional. Air Directors, May 18, 2006.

IV. 8-hr Ozone RACT Analyses

The Department actively sought input in developing future revisions to the SIPs for 8-hour ozone, fine particulates and regional haze. This RACT SIP proposal will primarily address ozone precursors. A second RACT analysis focusing on the PM2.5 precursors (direct PM2.5 and SO2) will be part of the PM2.5 Attainment Demonstration due in April of 2008. Since NO_x is considered a precursor for PM2.5 as well as ozone, this analysis of ozone RACT is proposed for the PM2.5 RACT requirement as well. In addition, any control measures proposed here that have co-benefits for PM2.5 precursors will in part address the PM2.5 RACT requirement.

In our efforts to identify promising source categories with the potential for significant emission reductions of the precursors (NO_x, VOC, SO2, and fine particulates), the Department encouraged the exchange of information and experience through a public forum entitled, "*Reducing Air Pollution Together*," participated in the development of regional control measures, and conducted its own RACT assessments. The recommendations from these three venues were consolidated and presented to the Department's Air Quality Management team for their consideration. The Air Quality Management team then discussed and prioritized the recommendations resulting in a list of approximately 60 potential control measures for further evaluation. The Department's engineers and scientists were assigned the task of investigating and writing white papers for each potential control measure. Each control measure was evaluated based on information collected regarding emission benefits, implementation issues, cost-effectiveness, and existing controls. The white papers were then made available to the public for their review and comment. Based on that comment, other information obtained by the Department, or regional control strategy development efforts, several of the white papers have been revised, and those revisions are also available on the Department's website at www.nj.gov/dep/airworkgroups/docs/wp_summary_table_web.xls. More discussion regarding the white papers follows in the next three sections.

The source categories, affected emission units, and available control measures in this SIP revision represent the most promising emissions control opportunities identified by the internal, regional and public analyses for reducing ozone levels. Table 2 lists the source categories and examples of control measures with the highest potential for reasonable emissions reductions.

Table 2. Source Categories Identified by Regional/State/Workgroup Initiatives

Source Category	Example Controls	Regional	State	W/G*	Affected Rules
Asphalt Paving (cutback and emulsified)	Lower VOC content	X	X		Subchapter 16
Asphalt Production	Low NOx Burners, Flue Gas Recirculation (FGR) Tune ups; Best Management Practices	X			Subchapter 19
Glass Furnaces	Oxyfuel with next rebuild	X	X		Subchapter 19
Industrial Adhesives & Sealants	Reformulation, or Add-on Controls (carbon or thermal oxidizers)	X			New Rule
Industrial, Commercial & Institutional Boilers (point & area sources)	Annual tune ups; Ultra Low NO_x Burner; Low NO_x Burner* with Selective Non-catalytic Reduction (SNCR), or FGR; scrubber or low sulfur fuel	X	X	X	Subchapter 19
Electric Generating Units	Selective Catalytic Reduction (SCR); baghouse; scrubber	X	X		Subchapters 4, 10, & 19
High Electrical Demand Day Units	Water injection* (short term); Replacement with dry low NO_x combustors (long term)	X	X	X	Subchapter 19
Petroleum Refineries	Leak Detection and Repair*; Flare use avoidance* (monitoring and record keeping plan) SNCR or SCR on FCCUs/FCUs	X	X	X	Subchapters 6, 7, 16, & 19
Petroleum Aboveground Storage Tanks	Leg socks (external floating roof); vent degassing and cleaning vapors to control device	X	X	X	Subchapter 16

Note: * denotes workgroup (W/G) recommendation as a result of *Reducing Air Pollution Together* collaboration

A. Review of the 2002 Baseline Inventory

The 2002 annual emission inventory serves as the baseline for SIP development for those areas designated nonattainment for 8-hour ozone in 2004. The information reported through the Emission Statement Program makes up the Point Source sector of the 2002 Base Year Emission Inventory. The 2002 emissions inventory for the Ozone Transport Region was compiled by MARAMA and projected to 2009, including the effects of anticipated growth, as well as any planned controls that will result in emission reductions between 2002 and 2009 due to new regulations or enforcement settlements. The growth factors came from the United States Department of Energy's Annual Energy Outlook

(2005) projections. The controls factors were derived through a search of the NJEMS database, review of Title V operating permits, compilation of control measures contained in various Administrative Consent Orders (ACO) with 2002 to 2009 compliance deadlines, and analysis of current rule requirements ("on-the-books" control measures).

The Department submitted its 2002 Base Year Emission Inventory to the USEPA on May 18, 2006. The USEPA approved the 2002 Base Year Emission Inventory and published the adoption in the Federal Register on July 10, 2006[13].

B. *"Reducing Air Pollution Together"* Initiative

The Department commenced a collaborative effort to discuss the air quality challenges facing New Jersey by hosting a public workshop on Wednesday, June 29, 2005, at the Trenton War Memorial Building, Trenton, New Jersey. This workshop served to initiate a dialogue between the Department and interested and affected parties about reducing emissions in order to improve air quality in New Jersey. Over 200 persons representing various industry, environmental and civic groups attended.

As a result of the *Reducing Air Pollution Together* workshop, six air quality workgroups were formed and collaborated over several months to develop recommendations on how to reduce air emissions from their specific source categories. These workgroups were:

- Diesel Initiatives (DI)
- Gasoline Cars and Trucks (CT)
- Homes and Restaurants (HR)
- Non-Automobile Gasoline Engines (NA)
- Stationary Combustion Sources (SCS)
- Volatile Organic Compounds (VOC) from Industrial Processes and Consumer Products

The workgroups identified potential control measures to reduce NO_x, VOC, PM, and VOC emissions for possible inclusion in the upcoming SIP revisions. Through the cooperative efforts of the Department, federal agencies, industry, consultants, environmental groups, and other members of the regulated community, the workgroups evaluated available emission inventories, technical information and field data to develop a list of potential air emission control strategies. The criteria used by the workgroups to prioritize control measures included technical feasibility, economic feasibility, environmental benefits, and implementation feasibility.

The air quality workgroups compiled their recommendations into reports that were submitted to the Department for further consideration on October 31, 2005. The workgroups presented a summary of their recommendations to the Department's Air Quality Management Team on Monday, November 14, 2005. The event was another

[13] 71 Fed. Reg. 38770; July 10, 2006

opportunity for the Department staff and workgroup members to discuss the recommendations submitted.

The Department's workgroup leaders and facilitators met with the Department's Air Quality Management team to review over 200 recommendations and identify those control strategies with significant potential emissions reductions. Utilizing the same template as that used by the OTC, Department staff wrote sixty (60) white papers addressing the air quality workgroup recommendations that were determined to be the most promising from a regional or local perspective. These white papers are being used to help decide the strategies to include in the ozone, PM2.5 and haze SIP. The white papers relevant to this 8-hour ozone RACT SIP revision include:

SCS001	Electric Generating Peaking Units
SCS003	Industrial, Commercial and Institutional Boilers
SCS004A	Process Heaters & Boilers in a Petroleum Refinery
SCS004B	Flares in a Petroleum Refinery
SCS004C	Fluid Catalytic Cracking Unit (FCCU) & Fluidized Coking Unit (FCU) in a Petroleum Refinery
SCS006A	Coal Fired EGU Boilers
SCS006B	No. 6 Fuel Oil-Fired EGU Boilers
SCS007	Glass/Fiberglass Furnaces
SCS008	Asphalt Production Plants
SCS009	Municipal Waste Combustors (MWCs)
DI014	Control Measures for Stationary Diesel Engines
VOC003	Vapor Recovery Systems at Gasoline Service Stations
VOC004	Floating Roof Storage of Petroleum Products
VOC005	Expanding Refinery Controls to Other Similar Facilities
VOC006	Industrial Surface Coatings
VOC012	Cutback and Emulsified Asphalt Paving

A complete list of white papers, as well as links to these white papers, can be found at www.nj.gov/dep/airworkgroups/docs/wp_summary_table_web.xls.

The Department invited the public, representatives from local businesses, industry and environmental groups, and others to a follow-up workshop to discuss potential emission reduction strategies on Wednesday, May 17, 2006. The purpose of that workshop was for the Department to provide an update on efforts during the past year to address air quality challenges facing New Jersey and to share preliminary regulatory and nonregulatory plans to reduce air emissions. The public provided feedback on the workshop, and on the 60 white papers drafted by the Department and discussed at the workshop, through an online survey and/or directly contacting the Department by email or mail. Comments received on the white papers are posted at www.nj.gov/dep/airworkgroups/comments.html.

The Department intends to assemble new interested party teams as needed to provide input on the measures ultimately selected for rule development. The Department believes

it is important that representatives of the regulated community participate in this process because the potential control measures under consideration cover a broad range of emission sources. Expert input will improve the regulatory strategies and the more specific provisions of those strategies. This cooperative effort in reducing or controlling air pollutants is critical for the Department to improve air quality and public health and achieve federal health and visibility standards. The Department plans to continue to work with all interested parties to address the problems of air pollution most effectively.

C. Collaborative Regional Efforts

New Jersey worked with other jurisdictions in the Ozone Transport Region to explore reasonable control measures for potentially significant reductions to attain the 8-hour ozone and PM2.5 NAAQS and to achieve regional haze goals. The OTC staff and member jurisdictions formed workgroups to review mobile, point, and area source categories, identify candidate source categories; and consider potential control strategies to reduce NO_x, VOC and SO2 emissions. The workgroups were made up of staff from member states.

The workgroup that focused on major stationary point sources compiled a list of candidate control measures from sources published by the USEPA and various regional associations, OTC member state-specific control strategies already in place, and emission control initiatives from states outside the Ozone Transport Region, such as California. Then using 2002 emission inventories as the base year, the workgroups determined projected post-2009 emission reductions based on currently mandated controls including Federal rules, adoption of OTC model rules by member jurisdictions, enforcement settlements, and other state-specific control measures. Based on the review of the list of control measures and the emission inventories, the workgroups developed a preliminary list of candidate control measures thought to be most effective in reducing emission levels throughout the ozone transport region.

The preliminary list of major stationary source categories which the OTC decided to evaluate further for potential emission reductions from selected stationary sources included:

Asphalt Paving
Asphalt Production Plants
Automobile Refinishing
Cement/lime Kilns
Electrical Generating Units (EGUs)
High Electrical Demand Day (HEDD) Units
Glass Furnaces
Industrial Adhesives
Industrial, Commercial and Institutional Boilers (ICI Boilers)
Industrial Surface Coatings
Metal Production
Municipal Waste Combustors (MWCs)
Printing and Graphic Arts

Publicly-owned Treatment Works (POTWs)
Refineries
Stage I Gasoline Distribution

For most categories, white papers were developed by the OTC workgroups, summarizing key facts about the relevant control alternatives. The white papers provided information such as descriptions of source categories and candidate control measures, 2002 base year emissions, 2009 projected emissions after implementation, preliminary cost estimates, current federal and state regulations, recommended method of implementation, applicability and geographic impact. Some of the papers reflect inter-regional efforts such as those by the Mid-Atlantic Regional Air Management Association (MARAMA) for refineries, and the Northeast States for Coordinated Air Use Management (NESCAUM) for heating oil, and super-regional discussions with the Midwest Regional Planning Organization (MWRPO) regarding Industrial, Commercial and Institutional (ICI) boilers and Electricity Generating Units (EGUs).

The white papers are posted on the OTC website at www.otcair.org under Control Measures for public review. The OTC received written comments from stakeholders regarding the following source categories: automobile refinishing, electric generating units, EGU peaking units, and printing and graphic arts. Stakeholder representatives from the glass, asphalt and boiler industries have been meeting periodically with the OTC staff and participating on conference calls regarding the proposed control measures.

Using a scale of recommendation from 1 (Definitely recommended) to 5 (Not recommended), the member jurisdictions ranked the relative importance of the source categories and control strategies based on a qualitative assessment of the information presented in the white papers. After consideration of the estimated costs and magnitude of reductions potentially achievable for the selected emission sources, the OTC member jurisdictions identified reasonable control measures for a variety of stationary point and area source categories. The source categories recommended by OTC for member jurisdictions to consider for emission reductions in developing their RACT SIP revisions include:

Asphalt Paving (cutback and emulsified)
Asphalt Production Plants
Cement/lime Kilns (Note: no sources in New Jersey)
Electric Generating Units (EGUs)
Glass Furnaces
Industrial Adhesives and Sealants
Industrial, Commercial and Institutional Boilers (ICI Boilers)

New Jersey and other OTC member jurisdictions have resolved to pursue necessary and appropriate rulemakings to implement the emission reduction percentages, emission rates or technologies for asphalt paving, asphalt production plants, glass furnaces, and Industrial, Commercial and Institutional (ICI) boilers that are consistent with guidelines found in OTC Resolution 06-02 adopted on June 7, 2006, and amended on November 15,

2006. The guidelines are summarized in Table 3 below. The suggested compliance date for these guidelines is January 1, 2009, or as soon as practicable thereafter.[14]

Table 3. Summary of OTC Guidelines from Resolution 06-02 and Addendum as of January 2007

Source Category	Emission Rate	Percent Reduction (%) (from 2009 Base)
Asphalt Paving	(% VOC Limit)	
Cutback	4	20
Emulsified	4	20
Asphalt Production Plant	(lbs NO_x/ton)	
Major Sources		
Batch Mix Plant – Natural Gas	0.02	35
Batch Mix Plant – Distillate Oil/Waste Oil	0.09	35
Drum Mix Plant – Natural Gas	0.02	35
Drum Mix Plant – Distillate Oil/Waste Oil	0.04	35
Minor Sources		
Batch or Drum Mix Plant – Natural Gas	Low NO_x Burner Technology, or Best Management Practices	20
Batch or Drum Mix Plant – Distillate/Waste Oil	Low NO_x Burner Technology, or Best Management Practices	20
Glass Furnaces	(lbs NO_x /ton) block 24-hr avg	(lbs NO_x /ton) rolling 30-day avg
Container Glass	4.0	4.0
Fiberglass	4.0	4.0
Flat Glass	9.2	7.0
ICI Boilers	(lb NO_x/MMBtu)	%S by wt by 2012
5 – 25 MMBtu/hr	Annual Tune-up	#2 fuel oil – 0.05% #4 fuel oil – 0.25%
25 – 100 MMBtu/hr		
Natural Gas	0.05	#2 fuel oil – 0.05%
#2 Fuel Oil (25 – 100 MMBtu/hr)	0.08	#4 fuel oil – 0.25%
#4 or #6 Fuel Oil (25 – 100 MMBtu/hr)	0.20	#6 fuel oil – 0.50%
Coal	0.30	TBD*
100 – 250 MMBtu/hr		
Natural Gas	0.10	#2 fuel oil – 0.05%
#2, #4 or #6 Fuel Oil	0.20	#4 fuel oil – 0.25%
Natural gas & Fuel Oil	0.20	#6 fuel oil – 0.50%
Coal	0.08 – 0.22	TDB*
> 250 MMBtu/hr		
All boilers (Phase 1, 2009)	Same as EGUs of similar size	
All boilers (Phase 2, 2013)	Same as EGUs of similar size	

*To be Determined (TBD) – ongoing collaborative analysis

At this time the OTC is formulating a program to enhance the federal Clean Air Interstate Rule (CAIR) to address emissions from large electric generation units (EGUs). In addition to cap-and-trade emission programs, the OTC is evaluating a program that addresses emissions associated with high electrical demand days (HEDD).

[14] Ozone Transport Commission Resolution 06-02

Recommendations for a regional program addressing the base, intermediate, and peak load emissions from the electrical generation sector on both an annual and seasonal basis is expected to be voted on by the OTC commissioners in March, 2007.

Also, the OTC, with the assistance of a consultant, MACTEC Federal Programs, Inc., is drafting a model rule for industrial adhesives and sealants which will primarily affect area sources. At the request of member jurisdictions, the OTC may pursue additional model rules to help with states' rulemakings. Other control measures being evaluated by the OTC affect additional area sources which will be addressed in the State's forthcoming RACM analysis. Draft model rules are currently available at the OTC website listed above for Consumer Products, Portable Fuel Containers, and Diesel Chip Reflash.

Also, the MARAMA states have sought to identify and analyze emissions from all refinery processes to help states with refineries in developing their SIPs for ozone, fine particles, and regional haze. The MARAMA Refinery Technical Oversight Committee (TOC), assisted by MACTEC Federal Programs, Inc., evaluated emissions and existing requirements for each type of source found at fourteen (14) petroleum refineries in the area. Based on that preliminary review, the Technical Oversight Committee (TOC) selected catalytic and thermal cracking units, boilers and process heaters, flares, equipment leaks, wastewater treatment, storage tanks and sulfur recovery plants for further consideration.

MARAMA evaluated emissions, existing requirements, including recent Consent Decrees from 10 of the 14 refineries in the northeast, available control technology options, and typical installation costs for each category. MARAMA determined from this study that there is the potential for significant additional emission reductions from the following sources: 1) catalytic and thermal cracking units, 2) flares and 3) equipment leaks.

MARAMA members are presently reviewing the draft Technical Support Document, "Assessment of Control Technology Options for Petroleum Refineries in the Mid-Atlantic Region," and three Model Rules being developed for cracking units, flares and enhanced monitoring of equipment leaks at petroleum refineries. As part of this regional effort to attain the 8-hour ozone standard, the State of New Jersey expects to propose rules consistent with these model rules. These documents are available at www.marama.org.

D. State of New Jersey Internal RACT Analysis

Classified "severe" nonattainment under the revoked 1-hour ozone NAAQS, New Jersey was required to implement RACT for major stationary sources with a potential to emit 25 tpy VOC and/or NO_x. Even though the State is now classified as "moderate" nonattainment for the more stringent 8-hour standard, the major source thresholds continue to apply to prevent backsliding. Therefore, using the cutoff levels for the 1-hour ozone standard, the Department conducted an internal analysis of major stationary source categories. By searching the NJEMS database, the Department identified facilities with the potential to emit at least 25 tons per year of NO_x and VOC. Then the Department

reviewed the equipment and emissions inventories from the respective emissions statements and applicable permits. From these inventories, the Department developed lists of all pieces of equipment or emission units with actual emissions of 25, 15, 10, and 5 tons per year of NO_x and VOC. This process allowed the Department to identify sources with the largest emissions. Generally, pieces of equipment with greater than 25 ton per year emissions accounted for about 80 percent (%) of total emissions from major sources statewide.

Focusing the analysis on these sources, each emission unit or piece of equipment was further categorized according to the type of equipment or source operation and existing control devices if any. Based on a review of current state and federal requirements such as 1-hour ozone RACT, New Source Performance Standards (NSPS), and Maximum Available Control Technology (MACT), and an evaluation of whether existing controls at the time of installation were previously considered RACT, Best Available Control Technology (BACT), Lowest Achievable Emission Rate (LAER) or State of the Art (SOTA), the Department narrowed the list of sources to those with the greatest potential for reasonable reductions. In addition the Department evaluated other states' RACT regulations, such as those in effect in California, and information listed in USEPA's RACT/BACT/LAER Clearinghouse (RBLC) to identify advancements in control technology.

The following categories were identified through the Department's internal assessment as significant sources of NO_x and VOC emissions where promising advances in control technologies are available:

Asphalt Paving
Electric Generating Units
High Electrical Demand Day Units
Glass Furnaces
Industrial, Commercial and Institutional Boilers
Stationary Diesel Engines
Industrial Surface Coatings
Petroleum Aboveground Storage Tanks
Petroleum Refineries
Graphic Arts

Evaluations of the available control measures for each category, with the exception of graphic arts[15], are summarized in draft white papers written by engineers and scientists within the Department who have related knowledge and experience. Each paper describes the source category, viable control technologies, existing regulations, potential rule strategies, projected emissions reductions and supporting references. The white papers are located at www.nj.gov/dep/airworkgroups/docs/wp_summary_table_web.xls.

[15] 71 Fed. Reg. 58745, October 5, 2006. The USEPA issued a final CTG in lieu of national regulations for Lithographic and Letterpress Printing Materials. States have 1 year from the date the CTG was finalized to submit their SIP revisions. The Department is presently reviewing the new CTG.

E. Economic Feasibility

The USEPA 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*."[16] Where no facilities in a source category are currently controlled to a lower emission level, the determination of economic feasibility for RACT purposes is an estimation of whether or not the costs of potential controls is "reasonable" in comparison with similar type controls for comparable industries. Where several facilities in a source category are currently controlled to a lower emission level, that level is presumed to be RACT for the other facilities in that source category, depending on how effective those controls are. Even with existing controls on some units, technology transfer should be considered if more effective controls can be used.

In conducting its RACT analysis for 8-hour ozone, the Department reviewed existing USEPA guidance with respect to economic feasibility. In the preamble to the 8-hour ozone implementation rule,[17] the USEPA states that costs of $160 to $1,300 (in 1994 dollars) per ton of NO_x removed are considered reasonable for the purposes of RACT determinations. Furthermore, the USEPA states that in the 1998 NO_x SIP Call Rule, the USEPA reviewed all major NO_x source categories, and the NO_x SIP Call controls cost less than $2,000 per ton.[18] It appears the USEPA has used the low cost effective ratios of its EGU rules as the basis for this guidance. The USEPA describes its EGU rules as "extremely cost effective," recognizing that more costly measures are cost effective. Since EGU control typically has amongst the lowest cost effective ratios of all source categories because of economics of scale, using EGU cost ratios as a ceiling on economic feasibility for smaller emission units in other source categories tends to inappropriately eliminate most source categories from installing RACT. The Department finds the USEPA's definition of reasonable cost for ozone nonattainment areas to be too low, particularly given the difficulty of identifying further NO_x reductions in nonattainment areas, and believes that significantly higher costs are warranted and should be considered reasonable with respect to available technology. The Department intends to consider the following in determining what is economically feasible for RACT.

1. Past New Jersey Costs for Retrofitting NO_x Control

Past New Jersey NO_x costs for a source category have been as high as $26,700 per ton (2003 dollars, $29,623/ton in 2006 dollars) for diesel SCR retrofits of lean burn stationary reciprocating engines.[19] Other source categories have costs as high as $4,659 per ton (2003 dollars) for stationary combustion turbines and $9,150 per ton (2003 dollars) for rich burn engines. These costs are related to measures the Department considered reasonable when these rules were adopted.

[16] 44 Fed. Reg. 53762, September 17, 1979.
[17] 70 Fed. Reg. 71652, November 29, 2005.
[18] 70 Fed. Reg. 71654, November 29, 2005.
[19] New Jersey Register, September 20, 2004

2. Average Cost for a Source Category and Maximum Cost for a Specific Unit

RACT rule economic analysis generally focuses on average cost for a source category. Actual costs will be a range of costs below and above the average cost. The range of RACT costs can be a factor of 10 from average costs, when adding a particular control technology to existing sources. For example, if the USEPA's average RACT cost is $2,000 per ton in 1998 dollars, the actual RACT costs may be in the range of $200 to $20,000 per ton for specific units. Also, there may be considerable difference in RACT costs for different source categories, as noted in subsection 1 above.

In view of the variability of RACT costs between source categories and between units within a source category, setting a single cost threshold for determining economic feasibility, especially based on EGUs, is not appropriate. Rather, once a reasonable number of sources in a source category achieve a lower emission level, other sources should do the same, unless there are site specific circumstances that result in costs much higher than the average costs. Otherwise about half the sources in the source category would not be controlled if an Alternate Emission Limit (AEL) were based on costs exceeding an average cost. The intent of RACT rules are to require that a RACT limit be achieved by almost all units in the source category and allow an AEL only if site specific circumstances and the resulting costs are truly unusual.

3. Seriousness of the Region's Ozone Air Quality Exceedance

For nonattainment areas with higher ozone levels, higher costs for NO_x control are reasonable. There is no specific EPA guidance on this factor. To evaluate this factor we offer the following analysis. We start with the assumption that where the difference between the ozone design value and the NAAQS is greater than the difference for the average ozone design value for the USA, higher $/ton costs are reasonable. The following data is used to calculate a factor for reasonable increase in cost for this region's worse than average nonattainment areas.

Nonattainment Area Name	Design Value*, DV	NAAQS	(DV – NAAQS)
	(ppm)	(ppm)	(ppm)
SNJ – PHL NAA	0.101	0.08	0.021
NNJ – NYC NAA	0.106	0.08	0.026
Average USA NAA	0.092	0.08	0.012

*2001 - 2003 design values

The ratio of the ppm reductions needed in the SNJ – PHL NAA to the average ppm reduction needed in nonattainment areas (NAA) of the USA is 1.75 times. Similarly, the ratio for the NNJ – NYC NAA is 2.17 times. It is reasonable to conclude that RACT costs in these regions should be higher than the USA average RACT costs by at least these ratios. New Jersey's precedents for already requiring higher costs for retrofitting control on existing sources, and increasing difficulty of finding source categories where emission reductions are feasible, justify even higher ratios.

4. Need to Reduce Transported Air Pollution

RACT is also important in reducing transported air pollution within the Ozone Transport Commission (OTC) and beyond. In determining economic feasibility, we need to recognize the economic and health costs of ozone both within New Jersey and outside our borders, which is the price of continuing nonattainment. Reductions of VOC and NOx are necessary over broad regions because of their impacts on ozone hundreds of miles downwind. This is especially true in the Ozone Transport Region (OTR) set up by the Clean Air Act. New Jersey is a member state of the OTR. The recognized difficulty in achieving the ozone NAAQS in this region justifies higher costs for RACT throughout the region, especially in those areas upwind of ozone nonattainment areas. New Jersey is one of those states upwind of ozone nonattainment areas in other states. The high ozone levels in Connecticut justifies and requires meaningful RACT rules in New Jersey. Likewise the high ozone levels in New Jersey justifies and requires meaningful RACT measures in the states upwind of New Jersey.

5. Plans for Addressing Economic Feasibility in RACT Rules

While the Department believes the USEPA's cost estimates to be too low, the Department has not specified a higher cost threshold for RACT. Instead, the Department intends to specify RACT at the lowest emission limit that a reasonable number of similar industries had already successfully implemented for each source category. This is appropriate and reasonable, not only in terms of its technological feasibility, but in terms of determining economic feasibility as well. As the State moves ahead to implement these emission levels, an economic analysis will be prepared for each source category when specific emission limits are developed. In addition, a facility may conduct an individual emission unit economic impact analysis as part of an application for an alternative emission limit (AEL) if the facility believes unusual site specific circumstances would make their costs much higher than the costs for similar units and would also be economically infeasible.

The Department does not expect to specify a single $/ton cost/effectiveness ratio for all source categories, because other factors could justify different costs for different source categories. These include, but not limited to: quantity of emissions, quality of emissions (including toxicity), seasonal and daily pattern of emissions, impacts on other states, affordability for the average facility in a source category, and the extent of current use of a control measure by other sources in the same category. The Department expects to base RACT primarily on technological feasibility and degree of use for a particular source category. Costs will primarily be considered for technology transfer from one source category to another and on a unit specific basis where costs are shown in an Alternate Emission Limit (AEL) application[20] to be economically infeasible because of unusual site specific circumstances and extreme costs.

[20] N.J.A.C. 7:27-19.13

V. Review of Existing RACT

A. Control Technique Guidelines and Alternative Control Techniques

In the past the USEPA developed guidance to help states meet RACT requirements for major stationary VOC sources. These guidelines are called Control Technique Guidelines (CTGs) and were considered presumptive RACT for 1-hour ozone. The USEPA issued three sets of RACT CTGs for various categories of VOC sources. Those sources not covered by a CTG are referred to as non-CTG sources. Section 182(b)(2) of the Clean Air Act (42 U.S.C.§ 7511a(b)(2)) requires states with ozone nonattainment areas classified as moderate or higher, and Section 184(b)(1)(B) of the Clean Air Act requires areas within an Ozone Transport Region (OTR), to develop RACT for all pre-enactment CTG source categories, for all sources subject to post-enactment CTGs, and for all non-CTG major sources in those areas.

Section 183(c) of the Clean Air Act (42 U.S.C.§ 7511b(c)) provides that within 3 years after the date of the enactment of the Clean Air Act Amendments of 1990, the Administrator shall issue technical documents which identify alternative controls for all categories of stationary sources of NO_x and VOC which emit, or have the potential to emit, 25 tons per year or more of such air pollutants. Known as Alternative Control Techniques (ACTs), these documents outline available control technologies to reduce VOC and NO_x emissions from various source categories. The NO_x and VOC ACTs describe available control techniques and their cost effectiveness, but do not define presumptive RACT levels as the CTGs do.

The CTGs and ACTs for VOC were completed over a period from the late 1970s to mid-1990s and, with few exceptions, have not been updated. On October 5, 2006, the USEPA finalized four new CTGs covering five categories, including: flexible packaging printing materials, lithographic printing materials, letterpress printing materials, industrial cleaning solvents, and flat wood paneling coatings. The USEPA issued NO_x ACT documents between 1992 and 1995. In September 2000, updates to the NO_x ACT documents were completed for stationary internal combustion engines and cement kilns.

Section 183(c) of the Clean Air Act (42 U.S.C.§ 7511b(c)) requires the USEPA to revise and update these documents as the Administrator deems necessary. Issued over a decade ago, most of these documents are outdated and do not reflect technological advancements in many source categories. VOC and especially NO_x control technologies have advanced significantly in many cases, beyond what was considered RACT under the 1-hour ozone requirement. In these cases the CTGs and ACTs are no longer RACT for 8-hour ozone implementation purposes.

In determining if regulations were adopted to address RACT for all of the CTG and ACT documents, the Department reexamined the issued CTG and ACT documents, reviewed its applicable rules compiled in N.J.A.C. 7:27, and searched the NJEMS database. Table 4 lists all the CTG and ACT documents and identifies the regulations adopted by the State and approved by the USEPA. For many source categories, the existing New Jersey rules go beyond the recommendations contained in the CTG/ACT documents in terms of

more stringent emission rates and lower thresholds of applicability.[21] This is in part attributed to the State's adoption of pertinent OTC model rules developed to attain the 1-hour ozone standard. These rules are Architectural and Industrial Maintenance Coatings, Mobile Equipment Repair and Refinishing, Solvent Cleaning, Additional NO_x Controls, and Distributed Generation Standards. The Department adopted all of these suggested OTC model rules. These rules have all been approved by, or are pending with, the USEPA. On December 16, 2005, the State submitted a SIP revision, Additional NO_x Controls and Distributed Generation Standards, to the USEPA Region 2. The USEPA Region 2 determined that the State submittal was complete and will propose action regarding the SIP submittal in the near future.[22]

Table 4 also indicates if the Department has determined that previously adopted 1-hour ozone RACT controls still represent RACT for the more stringent 8-hour standard, or whether the State intends to require more up-to-date controls. A "Y" in the 8-hour RACT column indicates that the Department has determined that currently effective emission limits for that particular source category represent RACT. An "N" indicates those source categories where subsequent technology developments might be considered RACT at this time.[23] Some source categories are currently under evaluation by the OTC, MARAMA, NESCAUM, and National Association of Clean Air Agencies (NACAA, formerly STAPPA/ALAPCO) for promising emission reductions on a regional basis. These are indicated in Table 4 as to be determined (TBD).

In an effort to attain the 1-hour ozone standard, the Department adopted VOC RACT for major non-CTG sources located in the State. Those sources for which CTGs were not published, but for which the Department established RACT controls, include utility boilers, non-utility boilers, asphalt plants, flares, and VOC transfer operations.

[21] Beyond Volatile Organic Compound-Reasonably Available Control Technology-Control Technology Guidelines Requirements, EPA-453/R-95-010, April 1995.
[22] USEPA Region 2 letter dated January 25, 2006.
[23] See a discussion of the three phase process used to determine RACT described in Section IV.

Table 4. RACT Determinations Based on Existing USEPA Guidance

List of the USEPA's Control Technique Guidelines (CTG) and Alternative Control Techniques (ACT) for Control of VOC Emissions from Stationary Sources

Pre 1990 CTG Documents	Rules Adopted	EPA Approved	Control Techniques	Applicability	N.J.A.C. 7:27	8-hour O3 RACT
Group I						
1. Stage I Vapor Control Systems	Y	Y	Beyond	Same	16.3	TBD
2. Surface Coating of Cans	Y	Y	Same	Lower	16.7	TBD
3. Surface Coating Metal Coils	Y	Y	Same	Lower	16.7	TBD
4. Surface Coating Paper Products	Y	Y	Same	Lower	16.7	TBD
5. Surface Coating Fabrics	Y	Y	Same	Lower	16.7	TBD
6. Surface Coating Auto/Light trucks	Y	Y	Same	Same	16.7	NS
7. Misc. Refinery Sources	Y	Y	Same	Same	16.6	TBD
8. Solvent Metal Cleaning	Y	Y	Beyond	Lower	16.6	Y
9. Gasoline Loading Terminals	Y	Y	Same	Same	16.3	Y
10. Surface Coating Metal Furniture	Y	Y	Same	Lower	16.7	TBD
11. Surface Coating Magnet Wire	Y	Y	Same	Lower	16.7	TBD
12. Surface Coating Large Appliances	Y	Y	Same	Lower	16.7	TBD
13. Bulk Gasoline Plants	Y	Y	Same	Lower	16.3	Y
14. Fixed Roof Petroleum Tanks	Y	Y	Same	Lower	16.2	Y
15. Use of Cutback Asphalt	Y	Y	Same	Same	16.19	N
Group II						
16. Surface Coating Misc. Metal Parts	Y	Y	Same	Same	16.7	TBD
17. Surface Coating Flat Wood Panel	Y	Y	Beyond	Same	16.7	New CTG
18. Manufacture Vegetable Oils	NS	--	--	--	--	NS
19. Leaks from Refinery Equipment	Y	Y	Same	Same	16.18	N
20. Synthetic Pharmaceutical Product	Y	Y	Equivalent	Same	16.16	Y
21. Pneumatic Rubber Tires	NS	--	--	--	--	NS
22. Graphic Arts – Roto & Flex	Y	Y	Beyond	Lower	16.7	New CTG
23. External Floating Roof Tanks	Y	Y	Same	Same	16.2	N
24. Perchloroethylene Dry Cleaning	NA	--	--	--	--	--
25. Leaks from Gasoline Tank Trucks and Vapor Collection System	Y	Y	Beyond	Lower	16.3	Y
Group III						
26. Large Petroleum Dry Cleaners	Y	Y	Same	Same	16.20	Y
27. High-Density Polyethylene	Y	Y	Equivalent	Same	16.16	Y
28. Nat.Gas/Gasoline Process Leaks	Y	Y	Same	Same	16.18	Y
29. Syn Chemical Mfg Equip Fugitives	Y	Y	Same	Same	16.18	Y
30. Air Oxidation Processes in Synthetic Organic Chemical Mfg Industry (SOCMI)	Y	Y	Equivalent	Same	16.16	Y

Post 1990 CTG Documents	Rules Adopted	EPA Approved	Control Techniques	Applicability	N.J.A.C. 7:27	8-hour O3 RACT
1. Reactors and Distillation SOCMI	Y	Y	Equivalent	Same	16.16	Y
2. Offset Lithographic Printing	N	--	--	--	16.17	New CTG
3. Wood Furniture Manufacturing	Y	Y	Same	Same	16.7	TBD
4. Ship Building and Repair	N	--	--	--	16.7	TBD
5. Aerospace Coatings	NS	--	--	--	--	NS

Pre 1990 ACT Documents	Rules Adopted	EPA Approved	Control Techniques	Applicability	N.J.A.C. 7:27	8-hour O3 RACT
1. Traffic Markings (NR)	Y	Y	Beyond	Lower	23.3	Y
2. Auto Refinishing (NR)	Y	Y	Beyond	Lower	16.12	Y
3. Halogenated Solvent Cleaners	Y	Y	Beyond	Lower	16.6	Y

Post 1990 ACT Documents	Rules Adopted	EPA Approved	Control Techniques	Applicability	N.J.A.C 7:27	8-hour O3 RACT
1. Agricultural Pesticide Application	Y	--	--	--	*	NA
2. Batch Processes	Y	Y	Same	Lower	16.16	Y
3. Volatile Organic Liquids Storage	Y	Y	Same	Same	16.2	N
4. Industrial Cleaning Solvents	Y	Y	Beyond	Lower	16.6	New CTG
5. Surface Coating Plastic Parts	Y	Y	Same	Same	16.7	Y
6. Automobile Refinishing (NR)	Y	Y	Beyond	Lower	16.12	Y
7. Ship Building and Repair	NS	--	--	--	--	TBD
8. Industrial Wastewater	Y	Y	Same	Same	16.6	TBD
9. Offset Lithographic Printing	N	--	--	--	16.17	New CTG

List of USEPA's Alternative Control Techniques (ACT) for Control of NOx Emissions from Stationary Sources

Post 1990 ACT Documents	Rules Adopted	EPA Approved	Control Techniques	Applicability	N.J.A.C 7:27	8-hour O3 RACT
1. Iron and Steel Mills	NS	--	--	--	--	NS
2. ICI Boilers	Y	Y	Beyond	Lower	19.7	N

3. Glass Manufacturing	Y	Y	Same	Lower	19.10	N
4. Stationary RICE	Y	Y	Beyond	Lower	19.8	Y
5. Process Heaters	Y	Y	Beyond	Lower	19.7	N
6. Stationary Gas Turbines	Y	Y	Beyond	Lower	19.5	N
7. Utility Boilers	Y	Y	Beyond	Lower	19.4	N
8. Cement Manufacturing	NS	--	--	--	--	NS
9. Nitric and Adipic Mfg Plants	NS	--	--	--	--	NS

TBD indicates this control measure is currently being reevaluated
N indicates that rules were not adopted, or current RACT control technology does not meet 8-hour RACT
NS indicates no sources
NA indicates not applicable since CTG is no longer relevant or is superseded
NR indicates national rule was issued after the CTG/ACT
New CTG indicates that USEPA has issued a final CTG effective 10/05/06
Y indicates that rules were adopted by the State, approved by USEPA , or that previously adopted 1-hour RACT controls still represent RACT for 8-hour ozone standard
* N.J.A.C. 7:30, New Jersey Pesticide Control Rules

B. USEPA Responsibilities

As required under Section 183(e)(2)(A) of the Clean Air Act (42 U.S.C.§ 7511b(e)(2)(A)), the USEPA conducted a study of VOC emissions from the use of consumer and commercial products to assess their potential to contribute to levels of ozone that violate the health-based ozone NAAQS, and to establish criteria for regulating VOC emissions from these products. Section 183(e)(3)(A) of the Clean Air Act (42 U.S.C.§ 7511b(e)(3)(A)) further directed the USEPA to (1) list the categories of products that account for 80 percent or more of VOC emissions in areas that violate the USEPA's ambient standards for ozone; (2) divide the list into four priority categories, based on specified criteria; and (3) every two years after the list is promulgated, regulate one group of categories, until all four category groups are regulated. The USEPA initially published its list of categories, as well as a schedule for the regulation of each category, in 1995.[24] Accordingly, the USEPA was to promulgate regulations for the four priority groups by March 23, 1997, March 23, 1999, March 23, 2001, and March 23, 2003, respectively. The USEPA promulgated regulations or CTGs for each category in the first group (Group I) by July 1999, but had failed to promulgate regulations or CTGs for the remaining three groups in accordance with the schedule.

In the March 23, 1995 Federal Register, the USEPA stated that it could amend the list of products for regulation, and the groups of product categories, in order to achieve an effective regulatory program in accordance with the USEPA's discretion under 183(e) of the Clean Air Act (42 U.S.C.§ 7511b(e)).[25] The current list consists of 21 categories of products divided into 4 groupings. Fifteen categories, divided into three groups (Groups II-IV), remain unregulated.

[24] 60 Fed. Reg. 15264, March 23, 1995.
[25] The USEPA has revised the list several times. See 70 Fed. Reg. 69759 (Nov. 17, 2005); 64 Fed. Reg. 13422 (Mar. 18, 1999). In May 2006, the USEPA revised the list to add one product category, portable fuel containers, and to remove one product category, petroleum dry cleaning solvents. See 71 Fed. Reg. 28320 (May 16, 2006).

The Sierra Club filed seven different complaints against the USEPA, each seeking relief for the USEPA's alleged failure to discharge a different aspect of its regulatory duties under the Clean Air Act (one of which was its failure to regulate the 15 remaining categories listed in 42 U.S.C.§ 7511b(e)). As such, a revised schedule requiring the USEPA to regulate the remaining 15 categories (divided into three groups) was established. That schedule and the proposed, or anticipated, actions expected by the USEPA, are summarized in Table 5.

Table 5. Anticipated USEPA Actions on Remaining 15 Categories

Source Category	**Final USEPA Date (as required by Court Order)**	**USEPA Proposed/Anticipated Action**
Group II:		
Lithographic printing materials*	9/30/06	USEPA finalized a CTG on October 5, 2006
Letterpress printing materials*	9/30/06	USEPA finalized a CTG on October 5, 2006
Flexible packaging printing materials	9/30/06	USEPA finalized a CTG on October 5, 2006
Flat wood paneling coatings	9/30/06	USEPA finalized a CTG on October 5, 2006
Industrial cleaning solvents	9/30/06	USEPA finalized a CTG on October 5, 2006
Group III:		
Aerosol spray paints	9/30/07	National rule expected in June 2007
Paper, film, and foil coatings	9/30/07	USEPA anticipates proposing CTG
metal furniture coatings	9/30/07	USEPA anticipates proposing CTG
large appliance coatings	9/30/07	USEPA anticipates proposing CTG
Portable Fuel Containers (PFCs)	9/30/07	Regulated under the proposed National Mobile Source Air Toxic (MSAT) rule**
Group IV:		
Fiberglass boat manufacturing materials	9/30/08	USEPA anticipates proposing CTG
Auto and light duty truck (Original Equipment Manufacturer (OEM)) assembly coatings	9/30/08	USEPA anticipates proposing CTG
Miscellaneous metal products coating	9/30/08	USEPA anticipates proposing CTG
Miscellaneous industrial adhesives	9/30/08	USEPA anticipates proposing CTG
Plastics parts coatings	9/30/08	USEPA anticipates proposing CTG

*The USEPA consolidated lithographic printing materials and letterpress printing materials into one finalized CTG document on October 5, 2006.

** The MSAT rule was proposed on March 20, 2006 (71 Fed. Reg. 15803) and adoption is expected in February, 2007.

Section 183(e) of the Clean Air Act (42 U.S.C.§ 7511b(e)) provides the USEPA with authority to use any system or systems of regulation that the USEPA determines is the most appropriate for regulating a product category. Under these provisions, the USEPA has previously issued "national" regulations for architectural and industrial maintenance coatings, autobody refinishing coatings and consumer products, modeled after State standards set a decade previously. Section 183(e)(3)(C) of the Clean Air Act (42 U.S.C.§ 7511b(e)) further provides that the USEPA may issue a CTG in lieu of a national regulation for a product category where the USEPA determines that the CTG will be "substantially as effective as regulations" in reducing emissions of VOC in ozone nonattainment areas. The statute does not specify how the USEPA is to make this determination, but does provide a fundamental distinction between national regulations and CTGs. In accordance with the new schedule, on October 5, 2006, the USEPA finalized four CTGs addressing the five categories in Group II.

The USEPA's issuance of a CTG triggers a responsibility for states with nonattainment areas to revise their ozone SIP to address the affected stationary sources of VOCs. However, a CTG is considered guidance to the states and provides recommendations only. Therefore, a State can develop its own strategy for what constitutes RACT for any CTG category, and the USEPA will review that strategy in the context of the SIP process and determine whether it meets the RACT requirements of the Clean Air Act and its implementing regulations. Regardless of how a state chooses to address a CTG, Section 182(b)(2) of the Clean Air Act (42 U.S.C.§ 7511a(b)(2)) provides that a CTG issued after 1990 specify the date by which a State must submit a SIP revision in response to the CTG. In the adopted CTGs, effective October 5, 2006, the USEPA provided that States should submit their SIP revisions within one year of the date that the CTGs are finalized.[26]

The USEPA has not proposed any CTGs or ACTs for NO_x. In view of the advances in NO_x control over the last 10 years, the Department requests that USEPA publish CTGs or ACTs for NO_x source categories consistent with USEPA's obligation to help determine RACT.

New Jersey's Plan of Action with Respect to New Control Techniques Guidelines

The Department is reviewing the new CTGs and will work to propose regulations to implement them in New Jersey if appropriate and necessary, should the State determine they are more stringent than current State regulations for those categories. This process will continue for the Group III and IV categories, which are scheduled for finalization in the 2007 and 2008 timeframe, respectively. New Jersey is also committing to develop RACT rules for several NO_x source categories in the absence of USEPA guidance or commitments to develop RACT guidance for significant NO_x source categories.

[26] 71 Fed. Reg. 58748, October 5, 2006.

C. RACT Determinations for the 8-hour Ozone Standard

The Department has reviewed New Jersey's 1-hour RACT requirements and made the following determinations with respect to the 8-hour ozone RACT. Table 4 summarizes the CTG and major non-CTG source categories, corresponding State RACT regulations and preliminary RACT determinations. Source categories that we believe continue to meet the RACT requirements for the 8-hour standard are indicated with a "Y." For source categories marked "New CTG," the state will reexamine these source categories and implement the recommendations contained in the CTGs if applicable. For source categories marked "N," the State is proposing to adopt more stringent source-specific regulations. Further emission controls are still being evaluated by the OTC, MARAMA, and others, for some source categories. These remaining source categories are marked "TBD" and will be addressed in the State's proposed 8-hour Ozone Attainment Demonstration SIP.

D. Negative Declaration

By comparing the list of existing CTGs and ACTs with the Department's effective rules, and searching the NJEMS emission statements and permitting database for source categories by Standard Industrial Code (SIC), the Department has determined that the following source-specific categories either do not exist in this State, or fall below significant emission unit applicability thresholds:

1) Surface Coating of Automobiles and Light–Duty Trucks;
2) Manufacture of Vegetable Oils;
3) Manufacture of Pneumatic Rubber Tires;
4) Aerospace Coatings;
5) Iron and Steel Mills;
6) Cement Manufacturing;
7) Nitric and Adipic Manufacturing Plants;
8) Flat Wood Paneling Coatings, and

<u>Shipbuilding and Ship Repair Operations</u>

The Department has determined that Viking Yacht Company, and other ship building or repair facilities, currently regulated under N.J.A.C 7:27-16.7 and previously exempted from the shipbuilding and repair applicability threshold for recreational vessels less than 20 meters, may now be potentially affected. The Department will request that these facilities review the "Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating)," as well as the alternative control techniques for this emission source category, to confirm the applicability of this guidance. If the Department determines these facilities to be affected, then the State proposes to either adopt a RACT rule to implement the CTG for this category, or require these facilities to obtain a Facility Specific Emission Limit (FSEL).

Agricultural Pesticide Application

This is regulated under the Department's pesticide regulations, N.J.A.C. 7:30 by the Pesticide Control Program.

E. Review of Facility Specific Emission Limits and Alternate Emission Limits

The requirement to review and update 1-hour ozone RACT SIP limits also applies to all uniquely determined RACT limits for specific major stationary sources that are located in a nonattainment area. In New Jersey, facilities that have sources with potential to emit NO_x or VOC above RACT specified thresholds and for which no 8-hour ozone RACT source limit has been established, will be required to develop facility specific emission limits (FSELs) in accordance with regulations. Similarly, facilities that are not reasonably able to comply with 8-hour ozone RACT limits may request alternative emission limits (AELs). New Jersey has about 50 of these case-by-case RACT determinations for sources throughout the State. Control technologies have advanced sufficiently over the last several years to warrant the reevaluation of these case-by-case, or source-specific, determinations. Furthermore, the Department proposes to routinely reevaluate these AEL/FSEL determinations through the establishment of an approval authorization term for all case-by-case determinations, thus requiring periodic review. (The Department will continue to submit any approved case-by-case determination to USEPA for approval as a revision to New Jersey's SIP). The Department seeks comment on the appropriate life of an AEL and FSEL.

In cases where New Jersey has decided to update RACT for a given piece of equipment or source operation, all facilities with existing AELs must comply with the revised rules, or else seek renewal or modification of an AEL by demonstrating their inability to meet the modified standards. Likewise, in instances where New Jersey has committed to establish RACT for a given piece of equipment or source operation, all affected facilities with existing FSELs shall comply with the adopted rules, or else seek an AEL by demonstrating their inability to meet the new RACT standards.

The Department has reviewed the State's existing case-by-case determinations, or AELs and FSELs. These case-by-case determinations were submitted to the USEPA as revisions to New Jersey's SIP that had been previously adopted to meet the 1-hour ozone standard. Under the 1-hour ozone standard, a major facility was one with the potential to emit (PTE) 25 tons per year of NO_x and/or 25 tons per year of VOC; any source operation with a PTE of ten tons per year of NO_x located at a major NO_x facility, and any source operation with a PTE of at least 3.5 pounds per hour of VOC located at a major VOC facility. For moderate nonattainment areas, the thresholds for major source under the 8-hour ozone standard are one that emits, or has the potential to emit, 100 tons per year NO_x and 50 tons per year VOC. However, under the USEPA antibacksliding provisions, relaxation of existing RACT requirements is prohibited.[27] All major facilities

[27] 69 Fed. Reg. 23951, April 30, 2004, anti-backsliding principles

located in areas that were subject to mandatory control measures by virtue of the area's classification for the 1-hour NAAQS, must continue to implement all applicable requirements that were approved into the SIP to attain the 1-hour ozone standard. Also, the major facility thresholds to reevaluate RACT remain at the more stringent 1-hour ozone levels.

Based on the current data available from Title V operating permits, consent decrees, single-source NO_x RACT SIP files, Federal New Source Performance Standards (NSPS) and Maximum Available Control Technology (MACT) standards, State of the Art (SOTA) manuals, and the State's RACT rules, as well as those from other states, New Jersey has determined that for many sources with AELs or FSELs, there may be RACT level controls available today that were not feasible at the time of the case-by-case determination. Refer to Table 6 for a summary of the Department's analysis of its existing AEL and FSEL determinations.

The following facilities no longer require an AEL or a FSEL due to plant closings, equipment shutdown, equipment replacement, or affected equipment now operating in compliance with RACT limits:

Facility (Name)	Location (County)
Joint Meeting of Essex & Union Counties	Union
GM/Inland Fisher – CLOSED	Mercer
Hoffman LaRoche	Essex
Merck	Union
Durand Glass Manufacturing	Cumberland
Rollins Environmental Services – CLOSED	Gloucester
US Department of Navy – CLOSED	Mercer
Reliant Energy (formerly JCP&L)	Hunterdon
Elizabethtown Water Company	Somerset
GM Corp – CLOSED	Union
Atlantic Electric (Conectiv), Deepwater Station*	Salem
Recycled Paperboard	Passaic
Roche Vitamins, Belvidere Plant**	Warren
Atlantic Electric (Conectiv) Generating Stations***	Atlantic, Cape May, Cumberland, Ocean, Salem
Milford Power – CLOSED	Hunterdon
Hercules Inc. – CLOSED	Middlesex
Garden State Paper – CLOSED	Bergen

Notes: *except Boiler #8
**currently known as DMS Nutritional Products
***Deepwater Unit A is shut down; water injection installed on all other simple-cycle turbines

Table 6. NO_x and VOC Source-Specific RACT Determinations for the 8-hour Ozone NAAQS

Source	Status of 1-hr ozone SIP submittals	Type of Emissions Limits	Is facility major under 1-hr ozone standard?*	Type of RACT control to meet 1-hr ozone standard	What better control is available today that is technically feasible?**	Does NJ anticipate submitting new SIP*** under 8-hr ozone standard?
1. Atlantic States Cast Iron Pipe Co. Warren County (cupola and annealing oven)	SIP approved: Direct FNL 10/20/1998	FSEL	Yes	None	TBD	TBD
2. PQ Corporation Middlesex County (sodium silicate furnace)	SIP approved: Direct FNL 10/20/1998	FSEL	Yes	None	TBD	TBD
3. Novartis Pharmaceuticals (formerly Sandoz Pharmaceuticals) Morris County (small scale incinerator, trash fr boiler)	SIP approved: Direct FNL 01/17/1997	FSEL	Yes	None	SNCR	TBD
4. Algonquin Gas Transmission Co. Morris County (turbines)	SIP approved: Direct FNL 01/17/1997	AEL	Yes	None	TBD	TBD
5. Essex and Union County Resource Recovery Facilities (municipal solid waste incinerators) Essex County Resource Recovery Facility (municipal solid waste incinerators)	SIP approved Direct FNL 01/17/1997; SIP final approval 11/12/2003 Covered by Federal Plan	FSEL FSEL	Yes	SNCR	None	No
6. Repauno Products (formerly DuPont) Gloucester County (sodium nitrite plant)	SIP final, conditional approval 07/01/2004; Became disapproval 08/02/05	FSEL	Yes	None	TBD	Yes[28]

[28] 69 Fed. Reg. 39856-39858, July 1, 2004, New Jersey commitment to address two deficiencies.

Source	Status of 1-hr ozone SIP submittals	Type of Emissions Limits	Is facility major under 1-hr ozone standard?*	Type of RACT control to meet 1-hr ozone standard	What better control is available today that is technically feasible?**	Does NJ anticipate submitting new SIP*** under 8-hr ozone standard?
7. Int'l Flavors/Frag, Monmouth County (non-utility boiler)	SIP approved Direct FNL 01/17/1997	AEL	Yes	None	None	No
8. PSE&G Hudson County (utility boiler)	SIP approved Direct FNL 01/17/1997	AEL	Yes	LNB, SNCR	SCR by Consent Decree	Yes (incorporate Consent Decree limit in code)
9. Texas Eastern Union/Hunterdon Counties (internal combustion engines)	SIP approved Direct FNL 01/17/1997	AEL	Yes	None	TBD	TBD
10. Edgeboro Disposal Middlesex County (flares)	SIP approved Direct FNL 01/17/1997	FSEL	Yes	None	None	No
11. Griffin Pipe Co. Burlington County (cupola & furnace)	SIP approved Direct FNL 01/17/1997. New SIP 9/8/2003 incomplete. Most recent comments on new SIP September 15, 2004.	FSEL	Yes	No NOx control; VOC afterburner (for cupola)	TBD	Yes (1-hr ozone standard SIP submittal required)[29]
12. Hoeganaes Corp. Burlington County (furnace & kiln)	SIP approved Direct FNL 01/17/1997	FSEL	Yes	None	TBD	TBD

[29] 69 Fed. Reg. 23951, April 30, 2004, anti-backsliding principles

Source	Status of 1-hr ozone SIP submittals	Type of Emissions Limits	Is facility major under 1-hr ozone standard?*	Type of RACT control to meet 1-hr ozone standard	What better control is available today that is technically feasible?**	Does NJ anticipate submitting new SIP*** under 8-hr ozone standard?
13. Johnson Matthey Gloucester County (furnace)	SIP approved Direct FNL 01/17/1997	FSEL	Yes	NO_x scrubber; VOC scrubber	TBD	TBD
14. Camden County Resource Recovery Facility (municipal solid waste incinerators)	No SIP submitted; reviewed in draft (Covered by Federal Plan)	FSEL	Yes	None	SNCR	No[30]
15. Gloucester County Resource Recovery Facility (municipal solid waste incinerators)	No SIP submitted; reviewed in draft (Covered by Federal Plan)	FSEL	Yes	SNCR	None	No
16. Warren County Resource Recovery Facility (municipal solid waste incinerators)	SIP approved Direct FNL 10/20/1998 (Covered by Federal Plan)	FSEL	Yes	SNCR	None	No
17. Stony Brook Regional Sewerage Treatment Authority Mercer County (2 sewage sludge incinerators)	SIP approved Direct FNL 10/20/1998	FSEL	Yes	None	LNB, FGR, SCR, or SNCR	Yes
18. Dupont Salem County (hazardous waste incinerator)	SIP approved Direct FNL 01/17/1997	FSEL	Yes	SNCR on fluidized bed combustor	TBD	TBD
19. Dupont Salem County (furnace)	SIP approved Direct FNL 01/17/1997	FSEL	Yes	Facility switched to NG and installed SNCR	None	No

[30] Facility in compliance with the Federal Plan

Source	Status of 1-hr ozone SIP submittals	Type of Emissions Limits	Is facility major under 1-hr ozone standard?*	Type of RACT control to meet 1-hr ozone standard	What better control is available today that is technically feasible?**	Does NJ anticipate submitting new SIP*** under 8-hr ozone standard?
20. Parsippany-Troy Hills Sewage Treatment Plant Morris County (2 sewage sludge incinerators)	SIP approved Direct FNL 01/17/1997	FSEL	Yes	NG only (during ozone season)	LNB, FGR, SCR, or SNCR	Yes
21. 3M Somerset County (dryer and kiln)	SIP approved Direct FNL 01/17/1997	FSEL	Yes	LNB	None	No
22. Atlantic Electric (Conectiv) BL England Cape May County (cyclone boilers)	SIP final approval 07/11/96; Superceded by acid rain - CEMS shows no need for AEL; SIP returned to DEP 02/20/04; Revised SIP approved 03/21/05; corrections to SIP 04/14/05	AEL	Yes	SNCR/OFA	SCR	Consent agreement dated 1/24/2006 TBD
23. Nestle Monmouth County (boiler)	No SIP submitted; reviewed in draft Old boilers are replaced by new SOTA boilers; permitted in 1998 with LNB and FGR.	FSEL	Yes	LNB and FGR, NG with #2 FO for backup	None	No
24. Air Products & Chemicals Gloucester County (hazardous waste incinerator)	SIP approved Direct FNL 10/20/1998	FSEL	Yes	Steam injection/ modern excess air control	SNCR	TBD
25. Schering/Plough Union County (non-utility boiler, HRSG w/duct burner)	SIP approved Direct FNL 10/20/1998	AEL	Yes	LNB, no post control	LNB+FGR	Yes
26. US Generating Co, Carneys Point Salem County (backup boiler)	SIP approved Direct FNL 10/20/1998	AEL	Yes	LNB, FGR	TBD	TBD

Source	Status of 1-hr ozone SIP submittals	Type of Emissions Limits	Is facility major under 1-hr ozone standard?*	Type of RACT control to meet 1-hr ozone standard	What better control is available today that is technically feasible?**	Does NJ anticipate submitting new SIP*** under 8-hr ozone standard?
27. US Generating Co, Logan Gloucester County (backup boiler)	SIP approved Direct FNL 10/20/1998	AEL	Yes	LNB, FGR	TBD	TBD
28. US Pipe & Foundry Burlington County (cupola/furnace/oven)	SIP approved: Direct FNL 01/17/1997	FSEL	Yes	No NOx control 1 VOC afterburner	TBD	TBD
29. Somerset Raritan Valley Sewerage Authority Somerset County (2 sewage sludge incinerators)	No SIP submitted - reviewed in draft ; Department approved facility specific NOx; control plan is pending EPA approval of the SIP revision	FSEL	Yes	2 venturi scrubbers (17% NOx removal)	LNB, FGR, SCR, or SNCR	Yes (1-hr ozone standard SIP submittal required)[31]
30. UMDNJ, Newark Essex County (3 cogen units, turbine w/duct burner and 3 non-utility boilers)	SIP final approval 11/12/2003	AEL	Yes	None	LNB/SNCR	Yes
31. Atlantic Electric, Deepwater Station Salem County (utility boiler #8)	SIP approved: Direct FNL 10/20/1998	AEL	Yes	LNB/OFA	None	No
32. Township of Wayne, Mountain View Water Pollution Control Facility Passaic County (2 sewage sludge incinerators)	SIP approved Direct FNL 10/20/1998 Revised SIP final approval 11/12/2003	FSEL	Yes	Only NG combustion (during ozone season)	None	No

[31] 69 Fed. Reg. 23951, April 30, 2004, anti-backsliding principles

Source	Status of 1-hr ozone SIP submittals	Type of Emissions Limits	Is facility major under 1-hr ozone standard?*	Type of RACT control to meet 1-hr ozone standard	What better control is available today that is technically feasible?**	Does NJ anticipate submitting new SIP*** under 8-hr ozone standard?
33. Oxyvinyls LP (formerly Geon Co.) Salem County (2 direct-fired dryers)	SIP approved Direct FNL 01/30/1997	FSEL	Yes	Only NG combustion (during ozone season)	NG combustion/ LNB	Yes
34. Valero Refining Co (formerly Mobil Oil Corp.) Gloucester County (fluid catalytic cracking unit)	SIP submitted to USEPA (EPA Enforcement Initiative)	FSEL	Yes	None	Ultra LNB for NG heaters/SCR	Consent Decree TBD
35. Amerada Hess Corp Middlesex County (fluid catalytic cracking unit)	SIP submitted to USEPA (EPA Enforcement Initiative)	FSEL	Yes	None	TBD	Consent Decree (Pending) TBD
36. Conoco Phillips (formerly Bayway Refining) Union County (oxidizers/heaters/fluid catalytic cracking unit)	SIP submitted to USEPA (EPA Enforcement Initiative)	FSEL	Yes	1 heater w/ SCR; FCCU - None	Ultra LNB for NG heaters/SCR	Consent Decree TBD
37. Sunoco Eagle Point (formerly Coastal Eagle Point Oil) Gloucester County (fluid catalytic cracking unit and internal combustion engines)	SIP submitted to USEPA (EPA Enforcement Initiative)	FSEL	Yes	None	Ultra LNB for NG heaters/SCR	Consent Decree TBD
38. Gerdau Ameristeel Corp of Sayerville Middlesex County (electric arc furnace and furnace)	SIP final approval 11/12/2003	FSEL	Yes	No NOx control	TBD	TBD

Source	Status of 1-hr ozone SIP submittals	Type of Emissions Limits	Is facility major under 1-hr ozone standard?*	Type of RACT control to meet 1-hr ozone standard	What better control is available today that is technically feasible?**	Does NJ anticipate submitting new SIP*** under 8-hr ozone standard?
39. Gerdau Ameristeel Corp of Raritan Middlesex County (electric arc furnace and furnace)	SIP final approval 11/12/2003	FSEL	Yes	No NOx control	TBD	TBD
40. Homasote Company Mercer County (fiberboard dryer)	SIP final approval 11/12/2003	FSEL	Yes	None	TBD	TBD
41. LaFarge Gypsum (formerly Continental Gypsum) Port Newark Essex County (dryers)	NJDEP withdrew SIP in September 17, 2003 letter; new SIP submittal required. The revised NOx Control Plan is under review by the Bureau of Operating Permits. NOx Control Plan 1. Submitted to NJDEP on 09/30/97 2. Forwarded to EPA as part of NJ's SIP revision 04/26/99 3. Denied by EPA in August 2003 for deficiency 4. Resubmitted to NJDEP 02/20/04 5. Currently under review by BOP	FSEL	Yes	None	TBD	Yes (1-hr ozone standard SIP submittal required)[32]

[32] 69 Fed. Reg. 23951, April 30, 2004, anti-backsliding principles

Source	Status of 1-hr ozone SIP submittals	Type of Emissions Limits	Is facility major under 1-hr ozone standard?*	Type of RACT control to meet 1-hr ozone standard	What better control is available today that is technically feasible?**	Does NJ anticipate submitting new SIP*** under 8-hr ozone standard?
42. Schering Corp Union County (non-utility boiler, HRSG w/duct burner)	SIP final approval 03/15/06	AEL	Yes	LNB, no post control	LNB+FGR	TBD
43. Trigen-Trenton Energy Mercer County (internal combustion engines)	No SIP submitted; reviewed in draft 04/28/05. Trigen has proposed to discontinue oil combustion, except as required during startup, shutdown and clean burn; will submit an application for AEL to allow 200 hr/yr (for both engines)	AEL	Yes	Turbocharger aftercooler	None	Yes (1-hr ozone standard SIP submittal required)[33]
44. NGC Industries (formerly GP Gypsum) Camden County (paper dryer)	SIP final approval 08/31/98	FSEL	Yes	No VOC controls	TBD	TBD

* NOx > 25 TPY and/or VOC > 25 TPY and a source located at major NOx facility emits >10 TPY NOx

** Economic feasibility to be determined during RACT rulemaking

*** Either FSEL or revised RACT limit in rule (with possibility of an AEL); "AEL" means alternative emission limit; "FSEL" means facility-specific emission limit.

[33] 69 Fed. Reg. 23951, April 30, 2004, anti-backsliding principles

VI. Existing and Future Trading Program

The USEPA promulgated the NO_x SIP Call that required New Jersey, and certain other upwind states, to revise its SIP to reduce NO_x emissions that were contributing significantly to nonattainment or interfering with the maintenance of the ozone NAAQS in downwind states. The 1998 NO_x SIP Call Rule established statewide ozone season NO_x budgets based on data generated by the Ozone Transport Assessment Group (OTAG). New Jersey's current NO_x Budget Program satisfies the requirements of the NO_x SIP Call.

In May, 2005, the USEPA published the Clean Air Interstate Rule (CAIR)[34] which establishes SO2 and NO_x emission budgets for the District of Columbia and 25 states in the eastern United States to reduce interstate transport. CAIR requires reductions from additional States and annual NO_x emission reductions, in addition to ozone season NO_x reductions. The Phase 2 Ozone Implementation Rule stated that EGU sources complying with the rules implementing CAIR meet the ozone NO_x RACT obligation.[35] The Department does not agree with the USEPA's position that CAIR equals RACT.

A. NO_x Budget Program

In 1999, New Jersey modified the existing NO_x Budget Program in response to the USEPA's NO_x SIP Call. As modified, the NO_x Budget Program sets forth requirements for the monitoring, recordkeeping, and reporting of emissions and for certification of compliance with this program. This program established rules and procedures for the allocation of tradable units (allowances); the transfer, use, and retirement of the allowances; and the tracking of the allowances. As modified, the NO_x Budget Program conformed with and met the USEPA's NO_x Budget rules at 40 CFR 96 and met the USEPA's requirements at 40 CFR 51.121 for mitigating the interstate transport of both ozone and nitrogen oxides, a precursor to the formation of ground-level ozone.

New Jersey's current NO_x Budget Program consists of fossil fuel fired indirect heat exchangers with a maximum rated heat input capacity of at least 250 MMBtu/hr and fossil fuel-fired electric generating units with a rated output of at least 15 MW. Sources subject to the NO_x Budget Program are also required to meet RACT requirements.[36] Table 7 lists all the NO_x sources currently in the State's NO_x Budget Program.

[34] 70 Fed. Reg. 25162; May 12, 2005.
[35] 70 Fed. Reg. 71657, November 29, 2005.
[36] 63 Fed. Reg. 57356, October 27, 1998.

Table 7. NO_x Budget Sources

Account ID	Facility Name	Type of Combustion Unit	Rated Fuel Capacity *MMBtu per hour*
002378000001	CONECTIV - B L England	Boiler	1300
002378000002	CONECTIV - B L England	Boiler	1600
002378000003	CONECTIV - B L England	Boiler	1720
002379002001	CONECTIV - Carlls Corner Station	Combustion Turbine	322.8
002379003001	CONECTIV - Carlls Corner Station	Combustion Turbine	330
002380002001	CONECTIV - Cedar Station	Combustion Turbine	363
002380003001	CONECTIV - Cedar Station	Combustion Turbine	363
002380004001	CONECTIV - Cedar Station	Combustion Turbine	363
002382003001	CONECTIV - Middle Street	Combustion Turbine	324
002382004001	CONECTIV - Middle Street	Combustion Turbine	324
002382005001	CONECTIV - Middle Street	Combustion Turbine	324
002383010001	CONECTIV - Missouri	Combustion Turbine	312.9
002383011001	CONECTIV - Missouri	Combustion Turbine	312.9
002383012001	CONECTIV - Missouri	Combustion Turbine	312.9
002384000001	CONECTIV - Deepwater	Boiler	828
002384000004	CONECTIV - Deepwater	Boiler	426
002384000006	CONECTIV - Deepwater	Boiler	314
002384000008	CONECTIV - Deepwater	Boiler	820
002384009001	CONECTIV - Deepwater	Combustion Turbine	328.5
002385000004	Reliant Energy, NJ Holdings LLC - GE Werner	Boiler	607
002385009001	Reliant Energy, NJ Holdings LLC - GE Werner	Combustion Turbine	760.1
002385010001	Reliant Energy, NJ Holdings LLC - GE Werner	Combustion Turbine	760.1
002385011001	Reliant Energy, NJ Holdings LLC - GE Werner	Combustion Turbine	760.1
002385012001	Reliant Energy, NJ Holdings LLC - GE Werner	Combustion Turbine	760.1
002390000007	Reliant Energy, NJ Holdings LLC - Sayreville	Boiler	1248
002390000008	Reliant Energy, NJ Holdings LLC - Sayreville	Boiler	1259
002390012001	Reliant Energy, NJ Holdings LLC - Sayreville	Combustion Turbine	849.34
002390014001	Reliant Energy, NJ Holdings LLC - Sayreville	Combustion Turbine	849.34
002390015001	Reliant Energy, NJ Holdings LLC - Sayreville	Combustion Turbine	849.34
002390016001	Reliant Energy, NJ Holdings LLC - Sayreville	Combustion Turbine	849.34

Account ID	Facility Name	Type of Combustion Unit	Rated Fuel Capacity *MMBtu per hour*
002393000003	Reliant Energy, NJ Holdings LLC - Gilbert	Boiler	848.63
002393000004	Reliant Energy, NJ Holdings LLC - Gilbert	Boiler	717.75
002393000005	Reliant Energy, NJ Holdings LLC - Gilbert	Boiler	717.75
002393000006	Reliant Energy, NJ Holdings LLC - Gilbert	Boiler	717.75
002393000007	Reliant Energy, NJ Holdings LLC - Gilbert	Boiler	717.75
002393000009	Reliant Energy, NJ Holdings LLC - Gilbert	Combustion Turbine	1676.04
002393015001	Reliant Energy, NJ Holdings LLC - Gilbert	Combustion Turbine	398.66
002393016001	Reliant Energy, NJ Holdings LLC - Gilbert	Combustion Turbine	398.66
002393017001	Reliant Energy, NJ Holdings LLC - Gilbert	Combustion Turbine	398.66
002393018001	Reliant Energy, NJ Holdings LLC - Gilbert	Combustion Turbine	398.66
002397A0101	PSE&G - Bayonne Generating Station	Combustion Turbine	405
002397A0201	PSE&G - Bayonne Generating Station	Combustion Turbine	405
002398001101	PSE&G - Bergen	Combustion Turbine	1514.8
002398001201	PSE&G - Bergen	Combustion Turbine	1514.8
002398001301	PSE&G - Bergen	Combustion Turbine	1514.8
002398001401	PSE&G - Bergen	Combustion Turbine	1514.8
002398002101	PSE&G - Bergen	Combustion Turbine	2043
002398002201	PSE&G - Bergen	Combustion Turbine	2043
002398003001	PSE&G - Bergen	Combustion Turbine	327
002399000007	PSE&G - Burlington	Boiler	1950
002399000101	PSE&G - Burlington	Combustion Turbine	574.5
002399000102	PSE&G - Burlington	Combustion Turbine	574.5
002399000103	PSE&G - Burlington	Combustion Turbine	574.5
002399000104	PSE&G - Burlington	Combustion Turbine	574.5
002399000121	PSE&G - Burlington	Combustion Turbine	464
002399000122	PSE&G - Burlington	Combustion Turbine	464
002399000123	PSE&G - Burlington	Combustion Turbine	464
002399000124	PSE&G - Burlington	Combustion Turbine	464
002399004001	PSE&G - Burlington	Combustion Turbine	327
002399012001	PSE&G - Burlington	Combustion Turbine	802
002399014001	PSE&G - Burlington	Combustion Turbine	802
002399016001	PSE&G - Burlington	Combustion Turbine	802
002399018001	PSE&G - Burlington	Combustion Turbine	802
002399028001	PSE&G - Burlington	Combustion Turbine	802
002399030001	PSE&G - Burlington	Combustion Turbine	802
002399032001	PSE&G - Burlington	Combustion Turbine	802
002399034001	PSE&G - Burlington	Combustion Turbine	802
002400001001	PSE&G - Edison	Combustion Turbine	810
002400003001	PSE&G - Edison	Combustion Turbine	810
002400005001	PSE&G - Edison	Combustion Turbine	810
002400007001	PSE&G - Edison	Combustion Turbine	810
002400009001	PSE&G - Edison	Combustion Turbine	810
002400011001	PSE&G - Edison	Combustion Turbine	810

Account ID	Facility Name	Type of Combustion Unit	Rated Fuel Capacity *MMBtu per hour*
002400013001	PSE&G - Edison	Combustion Turbine	810
002400015001	PSE&G - Edison	Combustion Turbine	810
002400017001	PSE&G - Edison	Combustion Turbine	810
002400019001	PSE&G - Edison	Combustion Turbine	810
002400021001	PSE&G - Edison	Combustion Turbine	810
002400023001	PSE&G - Edison	Combustion Turbine	810
002401002001	PSE&G - Essex	Combustion Turbine	810
002401004001	PSE&G - Essex	Combustion Turbine	810
002401010001	PSE&G - Essex	Combustion Turbine	810
002401012001	PSE&G - Essex	Combustion Turbine	810
002401014001	PSE&G - Essex	Combustion Turbine	844
002401016001	PSE&G - Essex	Combustion Turbine	844
002401018001	PSE&G - Essex	Combustion Turbine	844
002401020001	PSE&G - Essex	Combustion Turbine	844
002401022001	PSE&G - Essex	Combustion Turbine	844
002401024001	PSE&G - Essex	Combustion Turbine	844
002401026001	PSE&G - Essex	Combustion Turbine	844
002401028001	PSE&G - Essex	Combustion Turbine	844
002401035001	PSE&G - Essex	Combustion Turbine	1221
002403000001	PSE&G - Hudson	Boiler	4558
002403000002	PSE&G - Hudson	Boiler	6600
002403008001	PSE&G - Hudson	Combustion Turbine	2304
002404000007	PSE&G - Kearny	Boiler	1865
002404000008	PSE&G - Kearny	Boiler	1865
002404000121	PSE&G - Kearny	Combustion Turbine	463
002404000122	PSE&G - Kearny	Combustion Turbine	463
002404000123	PSE&G - Kearny	Combustion Turbine	463
002404000124	PSE&G - Kearny	Combustion Turbine	463
002404005001	PSE&G - Kearny	Combustion Turbine	966
002404007001	PSE&G - Kearny	Combustion Turbine	966
002404009001	PSE&G - Kearny	Combustion Turbine	966
002404011001	PSE&G - Kearny	Combustion Turbine	966
002404015001	PSE&G - Kearny	Combustion Turbine	327
002404016001	PSE&G - Kearny	Combustion Turbine	2672
002404017001	PSE&G - Kearny	Combustion Turbine	2672
002406000002	PSE&G - Linden	Boiler	2586
002406000005	PSE&G - Linden	Combustion Turbine	1200
002406000006	PSE&G - Linden	Combustion Turbine	1200
002406000007	PSE&G - Linden	Combustion Turbine	1200
002406000008	PSE&G - Linden	Combustion Turbine	1200
002406000011	PSE&G - Linden	Boiler	1181
002406000012	PSE&G - Linden	Boiler	1181
002406000013	PSE&G - Linden	Boiler	1181

Account ID	Facility Name	Type of Combustion Unit	Rated Fuel Capacity *MMBtu per hour*
002406007001	PSE&G - Linden	Combustion Turbine	327
002406008001	PSE&G - Linden	Combustion Turbine	474
002406009001	PSE&G - Linden	Combustion Turbine	474
002408000001	PSE&G - Mercer	Boiler	3350
002408000002	PSE&G - Mercer	Boiler	3350
002408007001	PSE&G - Mercer	Combustion Turbine	2304
002409001001	PSE&G - National Park	Combustion Turbine	327
002410002001	PSE&G - Salem	Combustion Turbine	810
002411000001	PSE&G - Sewaren	Boiler	1550
002411000002	PSE&G - Sewaren	Boiler	1725
002411000003	PSE&G - Sewaren	Boiler	1600
002411000004	PSE&G - Sewaren	Boiler	1700
002411012001	PSE&G - Sewaren	Combustion Turbine	2304
002434005001	VINELAND MEU - Howard M Down	Boiler	270
002434006001	VINELAND MEU - Howard M Down	Boiler	357
005083004001	CONECTIV - Cumberland	Combustion Turbine	1032
006776002001	VINELAND MEU - Howard M Down	Combustion Turbine	450
007138002001	JCP&L - Forked River	Combustion Turbine	520.11
007138003001	JCP&L - Forked River	Combustion Turbine	520.11
007288000001	CONECTIV - Sherman Avenue	Combustion Turbine	1032
008008001001	CONECTIV - Mickelton	Combustion Turbine	1092
008227003001	Reliant Energy, NJ Holdings LLC - Glen Gardner	Combustion Turbine	354.17
008227004001	Reliant Energy, NJ Holdings LLC - Glen Gardner	Combustion Turbine	354.17
008227005001	Reliant Energy, NJ Holdings LLC - Glen Gardner	Combustion Turbine	354.17
008227006001	Reliant Energy, NJ Holdings LLC - Glen Gardner	Combustion Turbine	354.17
008227007001	Reliant Energy, NJ Holdings LLC - Glen Gardner	Combustion Turbine	354.17
008227008001	Reliant Energy, NJ Holdings LLC - Glen Gardner	Combustion Turbine	354.17
008227009001	Reliant Energy, NJ Holdings LLC - Glen Gardner	Combustion Turbine	354.17
008227010001	Reliant Energy, NJ Holdings LLC - Glen Gardner	Combustion Turbine	354.17
010043001001	Logan Generating Company, LP - Logan Station	Boiler	2116
010099001001	TXU - Pedricktown Cogen	Gas Turbine w DB	1048
010308001001	Florida Power and Light - North Jersey Energy	Combustion Turbine	1280

Account ID	Facility Name	Type of Combustion Unit	Rated Fuel Capacity *MMBtu per hour*
010308001002	Florida Power and Light - North Jersey Energy	Combustion Turbine	1280
010566001001	Chambers Cogeneration, LP - Carneys Point	Boiler	1389
010566002001	Chambers Cogeneration, LP - Carneys Point	Boiler	1389
010616004001	KAMINE/MILFORD - Milford Power	CT with Duct Burner	544
010751002001	Camden Plant Holdings, LLC - Camden	CT with Duct Burner	1358
010805002001	Primary Energy	Combustion Turbine	255
050006004001	Cogen Technologies Linden Venture - Linden Cogen	Combustion Turbine	2119.3
050006005001	Cogen Technologies Linden Venture - Linden Cogen	CT with Duct Burner	1416
050006006001	Cogen Technologies Linden Venture - Linden Cogen	CT with Duct Burner	1416
050006007001	Cogen Technologies Linden Venture - Linden Cogen	CT with Duct Burner	1416
050006008001	Cogen Technologies Linden Venture - Linden Cogen	CT with Duct Burner	1416
050006009001	Cogen Technologies Linden Venture - Linden Cogen	CT with Duct Burner	1416
050385001001	NEWARK BAY COGEN - Newark Bay Cogeneration	Combustion Turbine	640
050385002001	NEWARK BAY COGEN - Newark Bay Cogeneration	Combustion Turbine	640
050385003001	NEWARK BAY COGEN - Newark Bay Cogeneration	Boiler	208
050497001001	Bayonne Plant Holding, LLC - Bayonne	Combustion Turbine	525
050497002001	Bayonne Plant Holding, LLC - Bayonne	Combustion Turbine	525
050497004001	Bayonne Plant Holding, LLC - Bayonne	Combustion Turbine	525
050561000001	Sunoco Power Generation, LLC - Eagle Point Cogeneration	Combined	1576
050561000002	Sunoco Power Generation, LLC - Eagle Point Cogeneration	Combined	1576
050628748001	VALERO - Paulsboro	Industrial Boiler	484
050628749001	VALERO - Paulsboro	CT with Duct Burner	645
050628751001	VALERO - Paulsboro	Industrial Boiler	484
050628752001	VALERO - Paulsboro	Industrial Boiler	484
050797001001	Calpine Corporation - Newark	Combustion Turbine	554
050799001001	Calpine Corporation - Parlin	Combustion Turbine	555.8
050799003001	Calpine Corporation - Parlin	Combustion Turbine	555.8
050852002001	PRIME ENERGY - Elmwood	Gas Turbine	650
054416189001	DSM Nutritional Products	Diesel Engine	361
054416189003	DSM Nutritional Products	Combustion Turbine	690.5

Account ID	Facility Name	Type of Combustion Unit	Rated Fuel Capacity *MMBtu per hour*
054640001001	CNG LAKEWOOD - CNG Lakewood Cogen	Combustion Turbine	1190
054640002001	CNG LAKEWOOD - CNG Lakewood Cogen	Combustion Turbine	1190
054807001001	PHI - Vineland Cogeneration	Gas Turbine w DB	518
055113084001	Sunoco, Inc. - Coastal Eagle Point	Boiler	400
055113085001	Sunoco, Inc. - Coastal Eagle Point	Boiler	400
055113086001	Sunoco, Inc. - Coastal Eagle Point	Industrial Boiler	400
055113087001	Sunoco, Inc. - Coastal Eagle Point	Industrial Boiler	400
055113088001	Sunoco, Inc. - Coastal Eagle Point	Process Heater	400
055239000001	AES - Red Oak	Combustion Turbine	1967
055239000002	AES - Red Oak	Combustion Turbine	1967
055239000003	AES - Red Oak	Combustion Turbine	1967
05593800OP3	Con Ed Development - Ocean Peaking Power	Combustion Turbine	166.6666667
05593800OP4	Con Ed Development - Ocean Peaking Power	Combustion Turbine	166.6666667
05593800OP5	Con Ed Development - Ocean Peaking Power	Combustion Turbine	166.6666667
880016010001	Phillips - Bayway Refinery	Process Heater	500
880016010003	Phillips - Bayway Refinery	Process Heater	500

B. Clean Air Interstate Rule (CAIR)

On August 1, 2005, the USEPA proposed a Federal Implementation Plan (FIP) to require power plants in the eastern United States to participate in one or more of three separate cap and trade programs to ensure emissions reductions required under its Clean Air Interstate Rule (CAIR) are achieved. This Federal Implementation Plan was finalized on March 15, 2006.

The CAIR is the USEPA's attempt to address the interstate transport of ozone and fine particulate precursors by requiring emission reductions of SO_2 and oxides of NO_x. The CAIR expects to obtain these reductions from large electric generating units (EGUs > 25 MW) through three cap-and-trade programs – ozone season NO_x, annual NO_x, and annual SO_2. The CAIR requires states to have their SIP address this issue by September 11, 2006, for a state determined plan, or March 30, 2007, for a plan based on the USEPA's CAIR programs (abbreviated SIP).

New Jersey already has an ozone season NO_x trading program for the NO_x SIP Call. The Federal Implementation Plan, which is a backstop to the CAIR if states fail to submit a CAIR SIP on time, utilizes the CAIR as its basis, including the three cap-and-trade

programs. The Federal Implementation Plan provides states with two options to meet their CAIR obligations – an abbreviated SIP or a Federal Implementation Plan which allows the USEPA to administer all three cap and trade programs in their entirety. The abbreviated SIP approach allows the states the options to modify four elements of the cap-and-trade programs: allocate the NO_x allowances to the sources in a state differently than the USEPA, allocate the NO_x Compliance Supplemental Pool (CSP) allowances, inclusion of non-electrical generating facilities (non-EGUs) in the program, and including provisions for opt-in units. New Jersey has chosen to submit an abbreviated SIP, which was proposed on February 5, 2007.

The abbreviated SIP will include New Jersey's own allocation methodology for both the ozone season and annual NO_x cap-and-trade programs. The allocation methodology will be based on modifying the current NO_x Budget Program methodology to include allocation calculation based on electric output. New Jersey is not allocating the CSP allowances as allowed in the federal rules, but will instead retire the allowances for the benefit of air quality. Also, New Jersey will not include an opt-in provision nor include non-EGUs in the CAIR cap-and-trade programs which the CAIR allows states the option of including. New Jersey believes that including non-EGUs in CAIR would inflate the emissions caps and therefore be counter-productive to ozone reduction. To prevent backsliding from the NO_x SIP Call, the NO_x budget sources that are not in CAIR will be required to comply with New Jersey's NO_x RACT Rule, which will satisfy the NO_x SIP Call obligation. Table 8 lists those sources subject to CAIR in New Jersey. New Jersey intends to further control EGUs under RACT or the Ozone Attainment Demonstration SIP, in addition to CAIR.

Table 8. CAIR Sources

ACCOUNT ID	FACILITY NAME	TYPE OF COMBUSTION UNIT	RATED FUEL CAPACITY *MMBtu per hour*
002378000001	Conectiv - B.L. England	Boiler	1,300
002378000002	Conectiv - B.L. England	Boiler	1,600
002378000003	Conectiv - B.L. England	Boiler	1,720
002384000006	Conectiv - Deepwater	Boiler	314
002384000001	Conectiv - Deepwater	Boiler	828
002384000004	Conectiv - Deepwater	Boiler	426
002384000008	Conectiv - Deepwater	Boiler	820
002379002001	Conectiv - Carlls Corner Station	Combustion Turbine	323
002379003001	Conectiv - Carlls Corner Station	Combustion Turbine	330
002380002001	Conectiv - Carlls Corner Station	Combustion Turbine	363
002380003001	Conectiv - Carlls Corner Station	Combustion Turbine	363
002380004001	Conectiv - Carlls Corner Station	Combustion Turbine	363
005083004001	Conectiv - Cumberland	Combustion Turbine	1,032
008008001001	Conectiv - Mickleton	Combustion Turbine	1,092
002382003001	Conectiv - Middle Street	Combustion Turbine	324
002382004001	Conectiv - Middle Street	Combustion Turbine	324

ACCOUNT ID	FACILITY NAME	TYPE OF COMBUSTION UNIT	RATED FUEL CAPACITY *MMBtu per hour*
002382005001	Conectiv - Middle Street	Combustion Turbine	324
007288000001	Conectiv - Sherman Ave	Combustion Turbine	1,032
002383010001	Conectiv - Missouri	Combustion Turbine	313
002383011001	Conectiv - Missouri	Combustion Turbine	313
002383012001	Conectiv - Missouri	Combustion Turbine	313
010099001001	TXU - Pedricktown Cogen	Combined Cycle	1,048
054640001001	Consolidated Edison Development - Lakewood Cogeneration	Combined Cycle	1,190
054640002001	Consolidated Edison Development - Lakewood Cogeneration	Combined Cycle	1,190
05593800OPP3	Consolidated Edison Development - Ocean Peaking Power	Combustion Turbine	1,959
05593800OPP4	Consolidated Edison Development - Ocean Peaking Power	Combustion Turbine	1,959
05593800OPP5	Consolidated Edison Development - Ocean Peaking Power	Combustion Turbine	1,959
050561000001	Sunoco - Eagle Point Cogeneration	Combined Cycle	1,576
505610000002	Sunoco - Eagle Point Cogeneration	Combined Cycle	1,576
010751002001	Camden Cogeneration	Combined Cycle	1,369
050006004001	Cogen Technologies - Linden Cogeneration	Combined Cycle	2,119
050006005001	Cogen Technologies - Linden Cogeneration	Combined Cycle	1,416
050006006001	Cogen Technologies - Linden Cogeneration	Combined Cycle	1,416
050006007001	Cogen Technologies - Linden Cogeneration	Combined Cycle	1,416
050006008001	Cogen Technologies - Linden Cogeneration	Combined Cycle	1,416
050006009001	Cogen Technologies - Linden Cogeneration	Combined Cycle	1,416
050497001001	Bayonne Plant Holdings	Combined Cycle	525
050497002001	Bayonne Plant Holdings	Combined Cycle	525
050497004001	Bayonne Plant Holdings	Combined Cycle	525
007138002001	JCP&L - Forked River	Combustion Turbine	520
007138003001	JCP&L - Forked River	Combustion Turbine	520
010805002001	Primary Energy - E.F. Kenilworth	Combustion Turbine	255
002393000004	Reliant - Gilbert	Combined Cycle	718
002393000005	Reliant - Gilbert	Combined Cycle	718
002393000006	Reliant - Gilbert	Combined Cycle	718
002393000007	Reliant - Gilbert	Combined Cycle	718
002393000009	Reliant - Gilbert	Combustion Turbine	1,676
002393015001	Reliant - Gilbert	Combustion Turbine	399
002393016001	Reliant - Gilbert	Combustion Turbine	399
002393017001	Reliant - Gilbert	Combustion Turbine	399
002393018001	Reliant - Gilbert	Combustion Turbine	399
008227003001	Reliant - Glen Gardner	Combustion Turbine	354
008227004001	Reliant - Glen Gardner	Combustion Turbine	354
008227005001	Reliant - Glen Gardner	Combustion Turbine	354
008227006001	Reliant - Glen Gardner	Combustion Turbine	354

ACCOUNT ID	FACILITY NAME	TYPE OF COMBUSTION UNIT	RATED FUEL CAPACITY *MMBtu per hour*
008227007001	Reliant - Glen Gardner	Combustion Turbine	354
008227008001	Reliant - Glen Gardner	Combustion Turbine	354
008227009001	Reliant - Glen Gardner	Combustion Turbine	354
008227010001	Reliant - Glen Gardner	Combustion Turbine	354
002390012001	Reliant - Sayreville	Combustion Turbine	849
002390014001	Reliant - Sayreville	Combustion Turbine	849
002390015001	Reliant - Sayreville	Combustion Turbine	849
002390016001	Reliant - Sayreville	Combustion Turbine	849
002385009001	Reliant - GE Werner	Combustion Turbine	760
002385010001	Reliant - GE Werner	Combustion Turbine	760
002385011001	Reliant - GE Werner	Combustion Turbine	760
002385012001	Reliant - GE Werner	Combustion Turbine	760
054416189003	Roche Vitamins	Combustion Turbine	691
050628749001	Valero Refining	Combined Cycle	645
050385001001	Valero Refining	Combined Cycle	640
050385002001	Valero Refining	Combined Cycle	640
050385003001	Valero Refining	Boiler	208
010308001001	Florida Power and Light North Jersey Energy	Combined Cycle	1,280
010308001002	Florida Power and Light North Jersey Energy	Combined Cycle	1,280
050797001001	Calpine Newark Cogeneration	Combined Cycle	554
050799001001	Calpine Parlin	Combined Cycle	556
050499003001	Calpine Parlin	Combined Cycle	556
050852002001	Prime Energy	Combined Cycle	650
055238000001	AES - Red Oak	Combined Cycle	1,967
055239000002	AES - Red Oak	Combined Cycle	1,967
055239000003	AES - Red Oak	Combined Cycle	1,967
002397A01001	PSE&G - Bayonne Generation Station	Combustion Turbine	405
002397A02001	PSE&G - Bayonne Generation Station	Combustion Turbine	405
002398003001	PSE&G - Bergen	Combustion Turbine	327
002398001101	PSE&G - Bergen	Combined Cycle	1,515
002398001201	PSE&G - Bergen	Combined Cycle	1,515
002398001301	PSE&G - Bergen	Combined Cycle	1,515
002398001401	PSE&G - Bergen	Combined Cycle	1,515
002398002101	PSE&G - Bergen	Combined Cycle	2,450
002398002201	PSE&G - Bergen	Combined Cycle	2,450
002399000101	PSE&G - Burlington	Combined Cycle	575
002399000102	PSE&G - Burlington	Combined Cycle	575
002399000103	PSE&G - Burlington	Combined Cycle	575
002399000104	PSE&G - Burlington	Combined Cycle	575
002399004001	PSE&G - Burlington	Combustion Turbine	327
002399012001	PSE&G - Burlington	Combustion Turbine	802
002399014001	PSE&G - Burlington	Combustion Turbine	802
002399016001	PSE&G - Burlington	Combustion Turbine	802
002399018001	PSE&G - Burlington	Combustion Turbine	802

ACCOUNT ID	FACILITY NAME	TYPE OF COMBUSTION UNIT	RATED FUEL CAPACITY *MMBtu per hour*
002399028001	PSE&G - Burlington	Combustion Turbine	802
002399030001	PSE&G - Burlington	Combustion Turbine	802
002399032001	PSE&G - Burlington	Combustion Turbine	802
002399034001	PSE&G - Burlington	Combustion Turbine	802
002399000121	PSE&G - Burlington	Combustion Turbine	463
002399000122	PSE&G - Burlington	Combustion Turbine	463
002399000123	PSE&G - Burlington	Combustion Turbine	463
002399000124	PSE&G - Burlington	Combustion Turbine	463
002400001001	PSE&G - Edison	Combustion Turbine	810
002400003001	PSE&G - Edison	Combustion Turbine	810
002400005001	PSE&G - Edison	Combustion Turbine	810
002400007001	PSE&G - Edison	Combustion Turbine	810
002400009001	PSE&G - Edison	Combustion Turbine	810
002700011001	PSE&G - Edison	Combustion Turbine	810
002400013001	PSE&G - Edison	Combustion Turbine	810
024000015001	PSE&G - Edison	Combustion Turbine	810
024000017001	PSE&G - Edison	Combustion Turbine	810
024000019001	PSE&G - Edison	Combustion Turbine	810
024000021001	PSE&G - Edison	Combustion Turbine	810
024000023001	PSE&G - Edison	Combustion Turbine	810
002401002001	PSE&G - Essex	Combustion Turbine	810
002401004001	PSE&G - Essex	Combustion Turbine	810
002401010001	PSE&G - Essex	Combustion Turbine	810
002401012001	PSE&G - Essex	Combustion Turbine	810
002401014001	PSE&G - Essex	Combustion Turbine	844
002401016001	PSE&G - Essex	Combustion Turbine	844
002401018001	PSE&G - Essex	Combustion Turbine	844
002401020001	PSE&G - Essex	Combustion Turbine	844
002401022001	PSE&G - Essex	Combustion Turbine	844
002401024001	PSE&G - Essex	Combustion Turbine	844
002401026001	PSE&G - Essex	Combustion Turbine	844
002401028001	PSE&G - Essex	Combustion Turbine	844
002401035001	PSE&G - Essex	Combustion Turbine	1,221
002403008001	PSE&G - Hudson Generation Station	Combustion Turbine	2,304
002403000001	PSE&G - Hudson Generation Station	Boiler	4,558
002403000002	PSE&G - Hudson Generation Station	Boiler	6,600
002404000121	PSE&G - Kearny	Combustion Turbine	463
002404000122	PSE&G - Kearny	Combustion Turbine	463
002404000123	PSE&G - Kearny	Combustion Turbine	463
002404000124	PSE&G - Kearny	Combustion Turbine	463
002404015001	PSE&G - Kearny	Combustion Turbine	327
002404016001	PSE&G - Kearny	Combustion Turbine	2,672
002404017001	PSE&G - Kearny	Combustion Turbine	2,672
002406000005	PSE&G - Linden	Combustion Turbine	1,200

ACCOUNT ID	FACILITY NAME	TYPE OF COMBUSTION UNIT	RATED FUEL CAPACITY *MMBtu per hour*
002406000006	PSE&G - Linden	Combustion Turbine	1,200
002406000007	PSE&G - Linden	Combustion Turbine	1,200
002406000008	PSE&G - Linden	Combustion Turbine	1,200
002406007001	PSE&G - Linden	Combustion Turbine	327
002406000011	PSE&G - Linden	Boiler	1,181
002406000013	PSE&G - Linden	Boiler	1,181
002406001101	PSE&G - Linden	Combined Cycle	2,450
002406001201	PSE&G - Linden	Combined Cycle	2,450
002406002101	PSE&G - Linden	Combined Cycle	2,450
002406002201	PSE&G - Linden	Combined Cycle	2,450
002408007001	PSE&G - Mercer Generating Station	Combustion Turbine	2,304
002408000001	PSE&G - Mercer Generating Station	Boiler	3,350
002408000002	PSE&G - Mercer Generating Station	Boiler	3,350
002409001001	PSE&G - National Park	Combustion Turbine	327
002410002001	PSE&G - Salem	Combustion Turbine	810
002411012001	PSE&G - Sewaren	Combustion Turbine	2,304
002411000001	PSE&G - Sewaren	Boiler	1,550
002411000002	PSE&G - Sewaren	Boiler	1,725
002411000003	PSE&G - Sewaren	Boiler	1,600
002411000004	PSE&G - Sewaren	Boiler	1,700
010566001001	Chambers Cogeneration - Carneys Point	Boiler	1,389
010566001002	Chambers Cogeneration - Carneys Point	Boiler	1,389
010043001001	TXU - Pedricktown Cogen	Boiler	2,116
002434005001	Vineland - Howard M Down	Boiler	270
002434006001	Vineland - Howard M Down	Boiler	357
006776002001	Vineland - West Station	Combustion Turbine	450

VII. Best Available Retrofit Technology (BART) – Eligible Sources

A. Identification of Sources

The USEPA issued regulations[37] aimed at improving visibility conditions at Class I areas across the country. Under this rule, commonly referred to as the "Regional Haze Rule," States are required to submit a SIP revision, due to the USEPA by December 17, 2007, that identifies Best Available Retrofit Technology (BART)-eligible sources, and BART emission limitations for achieving visibility improvements. The Regional Haze Rule requires the States to determine the best system of continuous emission control technology available to reduce visibility-impairing emissions at facilities subject to BART.[38] Visibility–impairing pollutants that must be addressed by BART sources in New Jersey are oxides of nitrogen (NO_x), sulfur dioxide (SO2) and particulate matter. In July 2005, the USEPA released final BART guidelines[39] designed to help States determine whether a source, or facility, is BART-eligible and how to identify all the emission units at facilities that fit into one or more BART categories.

The Department, with the assistance of Northeast States for Coordinated Air Use Management (NESCAUM) and the Mid-Atlantic/Northeast Visibility Union (MANE-VU), identified the facilities in Table 9 as potentially subject to the requirements for BART controls under the federal Regional Haze Rule. A file review of all Title V Operating Permits was conducted and the list was prepared based on the identification process described above.

Table 9. Preliminary List of BART-eligible Stationary Sources

Bart-eligible Facility (Name)	*Plant ID*	*Location (County)*	*Emission Units Subject to BART*
PSEG – Hudson*	12202	Hudson	5
Amerada Hess	17996	Middlesex	23
ConocoPhillips	41805	Union	70
Sunoco Eagle Point	55781	Gloucester	79
General Chemical Corp**	07369	Essex	13

Notes: *subject to CAIR in New Jersey
**facility informed the Department of its intent to close in December 2006

The Department has requested by letter dated November 1, 2006, that each of these facilities review and confirm their BART eligible emissions units.

B. Overlap of Proposed RACT Control Measures and BART Requirements

The Department reviewed the emission units and equipment at the five facilities identified in Table 10 and compared them to the types of source categories proposed for RACT regulation. The emission units located at these sources include refinery

[37] 64 Fed. Reg. 35714; July 1, 1999, and 70 Fed. Reg. 39103; July 6, 2005.
[38] 64 Fed. Reg. 35767; July 1, 1999.
[39] 70 Fed. Reg. 39103; July 6, 2005.

operations, gas and oil fuel-fired boilers, and a coal-fired boiler. The Department has identified refineries, EGUs, ICI boilers, and petroleum aboveground storage tanks (AST) with external floating roofs among the sources identified for control under the proposed 8-hour RACT provisions of this SIP revision. Hence, there is considerable overlap between BART and RACT. Consequently, the Department intends to coordinate BART and RACT requirements.

The Department indicated in its letter to the potentially BART-eligible facilities that it intends to require these facilities to use the RACT type top-down evaluation process, as in the State's NO_x RACT rules for any BART-affected equipment. The same process would apply to any applicable equipment emitting significant amounts of particulate or SO2. The top-down RACT type evaluation process would apply to BART-affected equipment, whether or not there are currently specific RACT limits in the RACT rules. This will ensure that sources that are subject to RACT will also comply with BART.

C. Transport SIP

By proposing this RACT SIP and its BART component, the Department is also conforming to the USEPA guidance for fulfilling the requirements of Section 110(a)(2)(D)(i)(I) and (II) of the Clean Air Act (See 70 Fed. Reg. 21147-21151). On April 25, 2005, the USEPA issued a finding that all 50 states failed to submit SIPs to satisfy the requirements of Section 110(a)(2)(D)(i), commonly referred to as the Transport SIP. According to this finding, each state must submit a Transport SIP, and the USEPA must approve these Transport SIPs prior to May 25, 2007, or the USEPA will issue a Federal Implementation Plan to address the transport requirements under Section 110(a)(2)(D)(i). On August 11, 2006, the USEPA issued guidance regarding what states should submit in order to comply with Section 110(a)(2)(D)(i) of the Clean Air Act.

One of the requirements of the Transport SIP is that the SIP must contain adequate provisions prohibiting any source from emitting air pollutants in amounts which will interfere with measures required to meet the implementation plan for any other State related to Regional Haze and Visibility. With respect to Section 110(a)(2)(D)(i)(II), the USEPA guidance states that the visibility requirement can be addressed when the state submits its Regional Haze SIP, due to the USEPA in December of 2007. As part of this ozone RACT SIP proposal, the State is taking action with respect to regional haze because the State's proposed RACT analysis can fulfill the requirements of the Regional Haze Rule Best Available Retrofit Technology (BART) requirement. An analysis of the sources at BART-eligible facilities showed considerable overlap with those sources proposed in the 8-hour RACT SIP. Therefore, the Department is coordinating the BART and RACT requirements.

VIII. Commitments

Section 172(c)(6) of the Clean Air Act (42 U.S.C.§ 7502(c)(6)) requires nonattainment SIPs to "include enforceable emission limitations, and such other control measures, means or techniques… as well as schedules and timetables for compliance, as may be necessary and appropriate to provide for attainment." The following presents the State's commitments to achieve the additional NO_x and VOC reductions that will address RACT for 8-hour ozone nonattainment throughout New Jersey and neighboring states within the Ozone Transport Region.

A. Regional Actions

New Jersey has been working with other states including the OTC member states in implementing cost-effective technologies to reduce NO_x and VOC emissions necessary to reduce interstate pollution. As an OTC member state, New Jersey plans to revise its applicable rules consistent with the recent OTC guidelines or model rules developed for the following source categories:

Asphalt Paving
Asphalt Production
Glass Furnaces
Industrial Adhesives and Sealants
Industrial, Commercial and Institutional Boilers
Electric Generating Units (which have boilers)
High Electrical Demand Day EGUs

Further, in cooperation with MARAMA, the Department is actively engaged in the development of refinery model rules for participating states to use as a common basis for promulgating state-specific rules. New Jersey plans to amend its air regulations based on the MARAMA model rules to reduce emissions from:

Petroleum Refineries

The draft refinery model rules apply to fluid catalytic cracking units (FCCUs), flares and equipment leaks.

In addition to finalizing their model rules, the OTC, MARAMA and other regional partners are continuing their evaluations of other source sectors for feasible control measures. The Department may determine to include such measures, if warranted, in the State's 8-hour attainment submittal to attain the 8-Hour Ozone NAAQS.

B. Additional New Jersey Actions

The Department identified additional sources of emissions through its internal technical analyses and the collaborative efforts of the New Jersey air quality workgroups. In addition to the regional measures cited above, New Jersey commits to amend its air regulations to address emissions reductions from the following source sectors:

Petroleum Storage Tanks
Facility Specific Emission Limits and Alternate Emission Limits
BART-affected Emission Units

D. USEPA Actions

The USEPA should expeditiously issue new and revised CTGs and ACTs. The Department will make a new RACT determination for any new or revised CTG or ACT based on the evaluation of several factors, including comparability of recommended applicability thresholds and control recommendations to existing State RACT levels, and other technological and economic impacts.

E. Anticipated Changes to New Jersey Administrative Code, Title 7, Chapter 27

The Department hereby plans to amend various subchapters of New Jersey Administrative Code, Title 7, Chapter 27 (N.J.A.C. 7:27) to implement RACT. The changes primarily impact Subchapter 16, "Control of Air Pollution by Volatile Organic Compounds," and Subchapter 19, "Control and Prohibition of Air Pollution from Oxides of Nitrogen." As part of this proposed SIP revision, the State is committing to propose all ozone RACT rules prior to November 1, 2007, and adopt, subject to public comment, prior to May 1, 2008.

IX. Conclusions

The USEPA has established a health based ozone standard, 0.08 ppm over an 8-hour period. All counties in the State have been designated moderate nonattainment for the 8-hour ozone standard. This RACT SIP revision addresses control obligations as they apply to moderate nonattainment areas and areas within the Ozone Transport Region (OTR).

Since the entire State of New Jersey is designated nonattainment, and is located in an Ozone Transport Region, the State is required to submit a RACT SIP revision covering CTG sources and major non-CTG sources. Using current USEPA guidance in making RACT determinations, the Department has determined that previously required RACT controls represent RACT for 8-hour ozone SIP implementation purposes in some cases, primarily for major VOC sources for which air pollution control technology has not changed significantly over the last 10 years. The Department has determined that certain technologies have advanced in recent years and plans to revise the SIP to reflect modified RACT requirements for specific sources or source categories, primarily for NO_x control.[40] The Department also plans to conduct case-by-case RACT determinations for the State's approved FSELs and AELs.

This SIP Revision also proposes to amend the State's VOC and NO_x RACT rules to require that certain stationary sources that emit NO_x and VOC implement more stringent control measures as expeditiously as possible. Where feasible the deadline for implementation of controls will be May 1, 2009. If it is not reasonable to begin implementation by this date, a later date will be set as part of the State's plan to attain and maintain the ozone NAAQS. The State continues to be actively involved in regional efforts to identify potential emission reduction opportunities to reduce ozone by controlling its precursors, NO_x and VOC, and will make additional commitments to reduce these pollutants in the Ozone Attainment Demonstration SIP.

[40] 70 Fed. Reg. 71655; November 29, 2005.

X. Appendix

A. OTC Resolution 06-02
B. OTC Resolution 06-03
C. OTC MOU
D. OTC Statement Concerning EGUs
E. Addendum to OTC Resolution 06-02
F. USEPA RACT Q & A for 8-hour Ozone Implementation

A. Ozone Transport Commission Resolution 06-02

OZONE TRANSPORT COMMISSION

Connecticut
Delaware
District of Columbia
Maine
Maryland
Massachusetts
New Hampshire
New Jersey
New York
Pennsylvania
Rhode Island
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RESOLUTION 06-02 OF THE OZONE TRANSPORT COMMISSION CONCERNING COORDINATION AND IMPLEMENTATION OF REGIONAL OZONE CONTROL STRATEGIES FOR CERTAIN SOURCE CATEGORIES

Whereas, the Ozone Transport Commission (OTC) was established under Sections 176A and 184 of the federal Clean Air Act (CAA) to ensure the development and implementation of regional strategies to reduce ground-level ozone to healthful levels; and,

Whereas, ozone has been shown to cause respiratory illnesses, exacerbate or trigger asthma related episodes, increase respiratory-related emergency room and hospital admissions and compromise the immune system leading to increased incidents of other respiratory illnesses, including pneumonia and bronchitis, and to cause premature death; and,

Whereas, the OTC is charged with exploring the contributions of all sources of air pollution to the ozone problem, including the transport of ozone and its precursors nitrogen oxides (NO_X) and volatile organic compounds (VOCs) into as well as throughout the ozone transport region (OTR); and,

Whereas, the OTC, its staff and its member state staff have explored a full range of emission sources and, as directed by the Commission through its charge to the Control Strategies Committee and its Statement with regard to regional control measures (November, 2005), are recommending certain control measures for a variety of mobile, stationary and area sources; and,

Whereas, the respective state-sponsored workgroups and the Control Strategy Committee have, after soliciting stakeholder input, and consideration of the costs and magnitude of reductions potentially achievable, identified reasonable, technically feasible and cost-effective control measures for a variety of source categories; and,

Whereas, on February 23, 2006, the OTC directed "the Executive staff to work with staff of the OTC member states to advance air quality modeling efforts to ensure the control strategy modeling for 2009 reflects the appropriate level of reductions from' measures including the following:

Asphalt Paving
Asphalt Production Plants
Cement Kilns
Glass Furnaces
Industrial, Commercial and Institutional Boilers

THEREFORE, BE IT RESOLVED that the OTC member states will continue to work with interested stakeholders and pursue as necessary and appropriate state-specific rulemakings or other implementation methods to establish emission reduction percentages, emission rates or technologies as appropriate, that are consistent with the guidelines included in the table below:

Source Category	Emission Rate	% Reduction
Asphalt Paving	(% VOC limit)	(from 2009 base)
Cutback	4	20
Emulsified	4	20
Asphalt Plant	(lbs NOx/ton)	
Major Sources		
Batch Mix Plant – Natural Gas	0.02	35
Batch Mix Plant – Distillate Oil/Waste oil	0.09	35
Drum Mix Plant – Natural Gas	0.02	35
Drum Mix Plant – Distillate Oil/Waste oil	0.04	35
Minor Sources		
Batch or Drum Mix Plant – Natural Gas	Low NOx Burner Technology	
Batch or Drum Mix Plant – Distillate Oil/Waste oil	Low NOx Burner Technology	
Cement Kilns	(lb NOx/ton of clinker)	
Wet	3.88	60
Long Dry	3.44	60
Preheater	2.36	60
Precalciner	1.52	60
Regional Fuel		
Pursue a Regional Fuel Program Consistent with the Energy Act of 2005		
Glass Furnaces	(lb NOx/ton of glass)	
Container Glass	1.50	85
Flat Glass	2.40	85
Pressed/blown glass	3.30	85
ICI Boilers	(lb NOx/mmBtu)	
<25 mmBtu/hr		10
25-50 mmBtu/hr		
Natural Gas	0.05	50
#2 Fuel Oil (25-100 mmBtu/hr)	0.08	50
#4 or #6 Fuel Oil (25-100 mmBtu/hr)	0.20	50
Coal	*	*
50-100 mmBtu/hr		
Natural Gas	0.05	10
#2 Fuel Oil (25-100 mmBtu/hr)	0.08	10

#4 or #6 Fuel Oil (25-100 mmBtu/hr)	0.20	10
Coal	*	*
100-250 mmBtu/hr		
Natural Gas	0.10	75
#2, #4, or #6 Fuel Oil	0.20	40
Natural Gas & Fuel Oil	0.20	25
Coal	*	*
> 250		
All boilers (Phase 1)	Same as EGUs of Similar Size	
All boilers (Phase 2)	Same as EGUs of Similar Size	

*Values to be determined by Commission based on recommendations of committees and further discussion among collaborating states.

Be it further resolved that the OTC member states commit to pursue as necessary and appropriate consistent rulemakings for these source categories. Staff of the OTC and member state staffs' are directed to continue to seek stakeholder input and coordinate with our collaborative partners on any recommended revisions to these guidelines.

Be it further resolved that the compliance dates in said regulations should be targeted for January 1, 2009 or as soon as practicable thereafter; and,

Be it further resolved that should a member state find that rule amendments would be enhanced by OTC development of a model rule for a given category, that OTC staff be so notified, and that OTC staff make every effort to accommodate any such request.

Adopted by the Commission on June 7, 2006

Robert Golledge, Commissioner, MA DEP
Chair

B. Ozone Transport Commission Resolution 06-03

OZONE TRANSPORT COMMISSION

Connecticut

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District of Columbia

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Massachusetts

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New Jersey

New York

Pennsylvania

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RESOLUTION 06-03 OF THE OZONE TRANSPORT COMMISSION CONCERNING FEDERAL GUIDANCE AND RULEMAKING FOR NATIONALLY-RELEVANT OZONE CONTROL MEASURES

Whereas, the Ozone Transport Commission (OTC) was established under Sections 176A and 184 of the federal Clean Air Act (CAA) to ensure the development and implementation of regional strategies and to advise EPA on national programs and actions to reduce ground-level ozone to healthful levels; and,

Whereas, ozone has been shown to cause respiratory illnesses, exacerbate or trigger asthma related episodes, increase respiratory-related emergency room and hospital admissions and compromise the immune system leading to increased incidents of other respiratory illnesses, including pneumonia and bronchitis, and to cause premature death; and,

Whereas, in the course of the last decade, the OTC states have demonstrated leadership in NOx and VOC reductions, adopting and implementing measures to reduce emissions of these ozone precursors through its 1994 NOx MOU, and its 2000 Model Rule program, which have significantly reduced ozone formation in the region; and,

Whereas, the member states including the District of Columbia (States) of the OTC face a persistent problem in their efforts to attain the health-based National Ambient Air Quality Standard (NAAQS) for ozone; and,

Whereas, the OTC has identified and is pursuing additional regional controls in mobile, stationary and area source categories that are technically-feasible and cost-effective and will further improve air quality; and

Whereas, the OTC member states have engaged in super-regional discussions with other states beyond the OTR to implement similar reductions to achieve broader control consistency; and,

Whereas, as an example of the success of these coordinating efforts, twenty (20) collaborating states signed on to a letter dated March 14, 2006 to EPA specifically requesting action on the small engine regulations; and,

Whereas, although the member states must and will pursue state and regional control measures, in several instances, control measures are truly best implemented on a national level, and as national programs, would prove to be environmentally significant efforts at managing ozone formation; and,

Whereas, EPA is a partner to the Commission in its work, its Administrator is member of the Commission, and the Agency is in a position to effectuate some of these regional and super-regional controls on a national level.

THEREFORE, BE IT RESOLVED that the OTC member states request EPA pursue federal regulations and programs designed to ensure national implementation of control measures comparable to the cost-effective and technically feasible reduction levels OTC has adopted, including those identified in its resolution 06-02 adopted at this meeting of the Commission, and those the OTC intends to pursue to achieve desired levels of control for the source categories identified below, as well as other reduction efforts EPA is in the best position to advance.

Be it further resolved that, at a minimum, these areas include federal development and implementation of strong national programs reflecting current technology advancements regarding:

Architectural and Industrial Maintenance (AIM) Coatings
Consumer Products
ICI Boilers over 100 MMBTU
Portable Fuel Containers
Municipal Waste Combustors
Regionally Consistent and Environmentally Sound Fuels beyond the OTR
Small Engine Emission Regulation
Gasoline Vapor Recovery (including Stage I, Stage II and On-Board Vapor Recovery).

Be it further resolved that the OTC states recognize the EPA has previously developed or is in the process of developing rules for several of these source categories, but that in several instances, such as in Consumer Products and AIM, the rules on the books do not sufficiently reflect technological advancements in these areas to enable OTR states or other regions to rely upon them as part of their attainment plans, and in other instances, such as the small engine rulemaking, regulations are significantly overdue; and,

Be it further resolved that the compliance dates of EPA amended programs or rulemaking in these areas should be targeted for January 1, 2009 or as soon as practicable thereafter; and,

Be it further resolved that the OTC member states and OTC executive staff will assist EPA in any way feasible to help ensure environmentally

substantial federal programs are developed and implemented in a timely manner for each of these control areas.

Adopted by the Commission on June 7, 2006

Robert Golledge, Commissioner, MA DEP
Chair

C. Ozone Transport Commission Statement concerning Electrical Generating Units

OZONE TRANSPORT COMMISSION

Connecticut

Delaware

District of Columbia

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Maryland

Massachusetts

New Hampshire

New Jersey

New York

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Statement of the Ozone Transport Commission Concerning Multi-Pollutant Emission Control of Electrical Generating Units

The Ozone Transport Commission (OTC) was established under Sections 176A and 184 of the federal Clean Air Act (CAA) to ensure the development and implementation of regional strategies to reduce ground-level ozone to healthful levels. The health effects of ground-level ozone are well documented and in spite of significant reductions to date achieved through our NOx MOU of 1994, the EPA NOx SIP call effective in 2003, and expected reductions to be further achieved by federal and state programs over the next decade, a significant portion of the ozone problem continues to be, and is expected to remain, nitrogen oxides (NO_X) transported into and generated within our region by electrical generating units (EGUs).

A cost-effective and technically constructive method of reducing the emission of pollutants from EGUs is to address all EGU emissions at the same time (the multi-pollutant approach) and the Commission has pursued this policy through its Multi-pollutant Statement of Principles at its March 4, 2003 Meeting, Resolution 03-01 from the Fall Meeting in November, 2003, its Multi-pollutant Position of January 27, 2004, its Statement on Implementing Regional Emission Limits to Achieve Multi-Pollutant Reductions (04-01), and Resolution 05-01 regarding an integrated control of ozone adopted at the OTC Annual Meeting of June 8, 2005.

Over the past two years, Commission and state staff have met with stakeholders to evaluate methods of further reducing this sector's contribution to NOx emissions, considering and modeling various control scenarios and programs. This work continues.

The Commission has also reached out to other states, and participated actively in state-sponsored "super-regional" state collaborative discussions designed to broadly address this sector throughout the eastern United States.

At this meeting of the Commission (the OTC Annual Meeting, June 6-7, 2006), the Commission has heard of the progress to date on enhancements to strengthen the federal CAIR program addressing EGUs as well as other sectors, and of the additional information that high-demand day operation of EGUs is a particularly significant and troublesome contribution to NOx on days when the air quality can least afford the emission contribution from the sector.

Accordingly, the member states of the Commission direct staff and its workgroups to continue to formulate a program beyond CAIR to address the emissions from this sector. In conjunction with these ongoing efforts, staff should also evaluate and recommend options to address emissions associated with the high electrical demand days during the ozone season. In doing so, the OTC supports and remains committed to the concept of cap and trade programs as a primary means of achieving economical emission reductions from the electrical generation sector on both an annual and seasonal basis, but recognizes that an overlay program addressing the peak-demand days may also be required. Staff

should complete its evaluation and recommendations for a program beyond CAIR that includes strategies to address the base, intermediate and peak load emissions from this sector in the most comprehensive and cost-effective manner possible, so as to maximize public health, environmental and economic benefits while ensuring an adequate electrical capacity and reliability for the region. This program should be developed soliciting active involvement and participation of Public Utility Commissions, Regional Transmission Organization staff, EPA, the utility industry and other stakeholders.

Staff is directed to provide this program structure and a model rule no later than the Fall Meeting of the Commission in November of 2006.

Adopted by the Commission on June 7, 2006

Robert Golledge, Commissioner, MA DEP
Chair

D. Ozone Transport Commission Memorandum of Understanding

OZONE TRANSPORT COMMISSION

Connecticut

Delaware

District of Columbia

Maine

Maryland

Massachusetts

New Hampshire

New Jersey

New York

Pennsylvania

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MEMORANDUM OF UNDERSTANDING AMONG THE STATES OF THE OZONE TRANSPORT COMMISSION ON A REGIONAL STRATEGY CONCERNING THE INTEGRATED CONTROL OF OZONE PRECURSORS FROM VARIOUS SOURCES

WHEREAS, the Ozone Transport Commission (OTC) was established under Sections 176A and 184 of the federal Clean Air Act to ensure the development and implementation of regional strategies to reduce ground-level ozone to healthful levels; and,

WHEREAS, the member States including the District of Columbia (States) of the OTC face a persistent problem in their efforts to attain and maintain the health-based National Ambient Air Quality Standard (NAAQS) for ozone; and,

WHEREAS, the Clean Air Act recognizes ozone can cause respiratory illnesses, exacerbate or trigger asthma related episodes, increase respiratory-related emergency room and hospital admissions and compromise the immune system leading to increased incidents of other respiratory illnesses, including pneumonia and bronchitis and premature death; and,

WHEREAS, recent health studies indicate increased mortality from ground-level ozone, and indicate the need for increasingly tighter standards in the future to be fully protective of public health; and

WHEREAS, the OTC is charged with identifying and addressing the contributions of all relevant sources of air pollution to the ozone problem, including the transport of ozone and its precursors nitrogen oxides (NO_X) and volatile organic compounds (VOCs) into as well as throughout the ozone transport region (OTR); and,

WHEREAS, the OTC member States have already taken aggressive steps to reduce ozone air pollution within the OTR, and recognize that significant additional efforts are needed to further reduce emissions from a variety of sectors within and outside the region to attain and maintain healthful air quality; and,

WHEREAS, in 1994, the States of the OTC successfully entered into a Memorandum of Understanding (MOU) for coordinated implementation of stationary source controls of nitrogen oxides, which reduced NOx emissions from EGU's and large Industrial boilers by approximately 70% between 1999 and 2003; and,

WHEREAS, the aforementioned OTC NOx Budget Program, along with the EPA's NOx SIP call, helped to reduce peak 1-hour ozone levels, and

WHEREAS, the 1-hour ozone NAAQS standard has been replaced by the more health protective 8-hour ozone NAAQS; and,

WHEREAS, EPA, state and regional modeling and other studies confirm that additional NOx and VOC emission reductions are needed to reduce ozone formation and to help reduce ozone transport for the protection of public health; and,

WHEREAS, the OTC member states have engaged in super-regional discussions with other states beyond the OTR to implement similar reductions to achieve broader control consistency; and,

WHEREAS, the undersigned States seek to develop cost-effective solutions to reduce NOx and VOC emissions, which are best implemented through a suite of measures (including state-specific measures, regional and super-regional measures and the Federal measures required under the Clean Air Act) to control ozone precursors; and,

WHEREAS, Section 110(a)(2)(D) of the Clean Air Act requires that each state air quality implementation plan must prohibit emissions within such state from contributing significantly to nonattainment in, or interfering with maintenance by, any other state; and,

WHEREAS, by June 15, 2007, the States must submit to EPA State Implementation Plans (SIPs) that demonstrate how the ozone 8-hour standard of 0.08 parts per million will be attained by 2010; and

WHEREAS, the above measures, taken together, should enable EPA to approve SIPs that are adequately protective of the public health; and,

WHEREAS, approved SIP revisions would avoid EPA-imposed sanctions that could otherwise adversely affect economic growth throughout the OTR;

THEREFORE, the undersigned member States commit to continue to work with interested stakeholders and and pursue state-specific rulemakings as needed and appropriate regarding the following sectors to assist in reducing emissions of precursors to ground-level ozone:

- CONSUMER PRODUCTS
- PORTABLE FUEL CONTAINERS
- ADHESIVES AND SEALANTS
- DIESEL ENGINE CHIP REFLASH

FURTHERMORE, that the undersigned states will pursue any such rulemaking deemed needed in a manner consistent with the respective model rules developed by OTC for such purposes, and to have these rules become effective as soon as practicable, with a target date for compliance of January 1, 2009; and,

FURTHERMORE, that with respect to diesel engine chip reflash, and as a parallel activity to the development of a mandatory program, the OTC directs the staff of the OTC in cooperation with associated partner organizations to encourage state-engine manufacturer partnerships to implement voluntary programs to accelerate and ultimately complete low-NOx software replacement on all heavy-duty trucks covered by the Federal consent decree dated 11/3/98 in advance of the effective dates of the rules.

FURTHERMORE, with respect to diesel engine chip reflash, that the OTC States support the use of the model regulation developed by the Northeast States for Coordinated Air Use Management (NESCAUM), dated February 20, 2006, as an appropriate model for a mandatory chip reflash program; and

FURTHERMORE, that the OTC member States, recognizing that these programs are best implemented at a national level, urge EPA to pursue federal programs consistent with the standards expressed in these model rules; and

FURTHERMORE, that the OTC member States will continue to engage other states and seek to gain support from other states for a broader, inter-regional implementation strategy for control of ozone precursors from these and other appropriate sources; and,

FURTHERMORE, that the OTC member States recognize that additional measures may be required to demonstrate attainment, and to attain and maintain the ozone levels required to satisfy the NAAQS.

Executed by the undersigned States this 7th day of June, 2006:

Connecticut

Delaware

District of Columbia

Maine

Maryland

Massachusetts

New Hampshire

New Jersey

New York

Pennsylvania

Rhode Island

Vermont

Virginia

F. Ozone Transport Commission Addendum to Resolution 06-02

OZONE TRANSPORT COMMISSION

Connecticut

Delaware

District of Columbia

Maine

Maryland

Massachusetts

New Hampshire

New Jersey

New York

Pennsylvania

Rhode Island

Vermont

Virginia

Christopher Recchia
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ADDENDUM TO RESOLUTION 06-02 OF THE OZONE TRANSPORT COMMISSION CONCERNING COORDINATION AND IMPLEMENTATION OF REGIONAL OZONE CONTROL STRATEGIES FOR VARIOUS SOURCES

Whereas, the Ozone Transport Commission (OTC) was established under Sections 176A and 184 of the federal Clean Air Act (CAA) to ensure the development and implementation of regional strategies to reduce concentrations of ground-level ozone to healthful levels; and,

Whereas, ozone has been shown to cause respiratory illnesses, exacerbate or trigger asthma related episodes, increase respiratory-related emergency room and hospital admissions and compromise the immune system leading to increased incidents of other respiratory illnesses, including pneumonia and bronchitis, and to cause premature death; and,

Whereas, the OTC is charged with exploring the contributions of all sources of air pollution to the ozone problem, including the transport of ozone and its precursors nitrogen oxides (NO_X) and volatile organic compounds (VOCs) into as well as throughout the ozone transport region; and,

Whereas, the OTC, its staff and its member state staff have evaluated emissions from a full range of source categories and, as directed by the Commission through its charge to the Control Strategies Committee and its Statement with regard to regional control measures (November, 2005), are recommending certain control measures for a variety of mobile, stationary and area sources; and,

Whereas, the respective state-sponsored workgroups and the Control Strategy Committee have, after soliciting stakeholder input, and consideration of the costs and magnitude of reductions potentially achievable, identified reasonable, technically feasible and cost-effective control measures for a variety of source categories; and,

Whereas, on February 23, 2006, the OTC directed "the Executive staff to work with staff of the OTC member states to advance air quality modeling efforts to ensure the control strategy modeling for 2009 reflects the appropriate level of reductions from" a variety of sources, including Industrial, Commercial and Institutional (ICI) Boilers and Glass Furnaces; and

Whereas, on June **7**, 2006 the OTC adopted Resolution 06-02 addressing a variety of control strategies in various source categories, but did not complete work addressing ICI Boilers and Glass Furnaces, and additional work was also needed with regard to Asphalt Production; and

Whereas, in the intervening months, staff of the OTC and workgroup members engaged the owners and operators of ICI boilers, glass furnaces, and asphalt producers and their representatives in discussions and analysis in order to complete a recommendation for action by the Commission; and

Whereas, the Control Strategies Committee has now made recommendations for region-wide emission limitations for glass furnaces, asphalt production and ICI Boilers;

THEREFORE, BE IT RESOLVED that the OTC member states will pursue as necessary and appropriate state-specific rulemakings or other implementation methods to establish emission reduction percentages, limitations on emission rates or technologies consistent with the guidelines included in the table attached.

Be it further resolved that the OTC states commit to pursue consistent rulemakings as needed and appropriate for these source categories. It is understood that states may ultimately be more or less restrictive in implementing these guidelines; and,

Be it further resolved that the SO_2 Emission Reduction guidelines be presented to the MANE-VU Board of Directors in its role as the region's Regional Planning Organization for regional haze, for its consideration and adoption; and

Be it further resolved that the compliance dates in said regulations should be targeted for January 1, 2009 or as soon as practicable thereafter; and,

Be it further resolved that should a member state find that rule amendments would be enhanced by OTC development of a model rule for either of these categories, that OTC staff be so notified, and that OTC staff make every effort to accommodate any such request, and

Be it further resolved, that this Addendum supercedes those guidelines previously listed in Resolution 06-02 for the sources addressed herein.

Adopted by the Commission on *November 15, 2006*

David K. Paylor, Director, Virginia DEQ
Chair

Table of Source Categories and Emission Rate Guidelines for Asphalt Production, Glass Furnaces and ICI Boilers

Source Category	Emission Rate	
Asphalt Plant		
Major Sources	lbs NOx/ton	% Reduction
Batch Mix Plant – Natural Gas	0.02	35
Batch Mix Plant – Distillate Oil/Waste oil	0.09	35
Drum Mix Plant – Natural Gas	0.02	35
Drum Mix Plant – Distillate Oil/Waste oil	0.04	35
Minor Sources		
Batch or Drum Mix Plant – Natural Gas	Low NOx Burner Technology, or Best Management Practices.	
Batch or Drum Mix Plant – Distillate Oil/Waste oil	Low NOx Burner Technology, or Best Management Practices.	

Glass Furnaces	(lbs NOx/ton of glass pulled)[1]	
	Block 24 Hr Average	Rolling 30-Day Average
Container Glass	4.0	4.0
Fiberglass	4.0	4.0
Flat Glass	9.2	7.0

Industrial, Commercial and Institutional (ICI) Boilers

ICI Boiler Size (mmBtu/hr)	Control Strategy/ Compliance Option[2]	NOx Control Measure	SO_2 Control Measure
5-25		Annual Boiler Tune-Up	#2 fuel oil - 0.05% S by wt. by 2012 #4 fuel oil - 0.25% S by wt. by 2012
25-100		Initial NOx Stack Test for 25-100 mmBtu/hr Retest Every 5 Years for 50-100 mmBtu/hr Annual Boiler Tune-up	#2 fuel oil - 0.05% S by wt. by 2012 #4 fuel oil - 0.25% S by wt. by 2012 #6 fuel oil - 0.50% S by wt. by 2012
	Option #1	Natural Gas 0.05 lb NOx/mmBtu	
		#2 Fuel Oil 0.08 lb NOx/mmBtu	
		#4 or #6 Fuel Oil 0.20 lb NOx/mmBtu	
		Coal 0.30 lb NOx/mmBtu	
	Option #2	50% Reduction from uncontrolled	
	Option #3	Purchase current year NOx Allowances equal to reductions needed to achieve the required emission rates	
		Natural Gas 0.10 lb NOx/mmBtu	

[1] Compliance date is 2009. NOx Allowances may be surrendered in lieu of meeting the emission rate based on a percentage of the excess emissions from the facility, at the discretion of the State.
[2] Where options are presented, choice of option is at the discretion of the State and where they allow, the Source.

100-250	Option #1	#2, #4, or #6 Fuel Oil 0.20 lb NOx/mmBtu	#2 fuel oil - 0.05% S by wt. by 2012 #4 fuel oil - 0.25% S by wt. by 2012 #6 fuel oil - 0.50% S by wt. by 2012
		Natural Gas & Fuel Oil Combined 0.20 lb NOx/mmBtu	
		Coal Wall-fired 0.14 lb NOx/mm Btu Tangential 0.12 lb NOx/mm Btu Stoker 0.22 lb NOx/mm Btu FBC 0.06 lb NOx/mm Btu	
	Option #2	LNB/SNCR, LNB/FGR, SCR, or some combination of these controls in conjunction with Low Nox Burner Technology	
	Option #3	60% Reduction from uncontrolled	
	Option #4	Purchase current year NOx Allowances equal to reductions needed to achieve the required emission rates	
>250	Option #1	Purchase current year NOx allowances equal to reductions needed to achieve the required emission rates	Purchase current year SO_2 allowances equal to reductions needed to achieve the required emission rates
	Option #2	Phase I – 2009 Emission Rate Equal to EGUs of Similar Size	Phase I – 2009 Emission Rate Equal to EGUs of Similar Size
		Phase II – 2013 Emission Rate Equal to EGUs of Similar Size	Phase II – 2013 Emission Rate Equal to EGUs of Similar Size

G. USEPA Questions & Answers Document Related to RACT

May 18, 2006

Questions Related to RACT in 8-hour ozone implementation

A. What is RACT?

1. **Q**: Is the facility expected to perform the RACT analysis? Is this similar to a BACT analysis?

A: The State is responsible for the RACT determination but is likely to have considerable interaction with the affected facilities. States may rely on past EPA guidance, such as CTGs, for help and should also review other available information regarding the appropriate controls. BACT requires that new or modified sources adopt the best available controls and, as such, the analysis is a "top-down" analysis that first looks at the most stringent level of control available for a source. Industries applying for a construction permit list in their application what are the currently most stringent levels of control. The State verifies this by checking the application against other data sources including EPA's RACT/BACT Clearinghouse. RACT requires that sources adopt controls that are reasonably available and thus they may not be the most stringent controls that have been adopted for other similar sources.

2. **Q**: If a State in or near the Ozone Transport Region failed to adopt one of the model rules which the Ozone Transport Commission developed to help meet the ozone standard in that region, would this mean that a rule the State may have for that source is no longer considered to be RACT?

A: No, not necessarily. The model rules developed for the Ozone Transport Region were for the purpose of bringing areas in the OTR into attainment with the 1-hour NAAQS and thus may be more stringent than what would be considered RACT. In performing a RACT analysis, States should look at available controls, such as those that were the basis for the model rules developed by the OTR, to conclude whether they are reasonably available for a specific source or source category. However, the fact that another similar source has such controls in place does not mean that such a control is reasonably available for all other similar sources across the country.

3. **Q**: Some moderate 8-hour areas were severe 1-hour nonattainment areas. As such, the "major source" threshold for 1-hour RACT rules was 25 TPY potential emissions. For the purposes of certifying 1-hour RACT determinations, must the State address only down to the applicable 8-hour threshold [which is 100 TPY or in the Ozone Transport Region 50 TPY for VOC non-CTG major sources and the 100 TPY for all NOx sources] or down to the 1-hour threshold of 25 TPY?

A: For purposes of meeting the 8-hour RACT requirement, the State's RACT analysis only needs to include an evaluation of RACT for CTG sources and for non-CTG major sources based on the area's 8-hour classification.

We note however, that under the anti-backsliding requirements, the State may not remove RACT requirements for sources that were subject to RACT for the 1-hour standard (but that would not be subject to RACT based on the area's 8-hour classification). Similarly, if the State has never met the RACT requirement for one or more sources for the 1-hour standard, the anti-backsliding requirements require the State to meet that obligation. The anti-backsliding provisions may be found at 40 CFR 51.905 and apply to all former 1-hour non-attainment areas.

4. **Q**: Where a State determines that sources subject to Federal rules, such as NESHAPs, the municipal waste incinerator rules under CAA section 111(d), and NSR/PSD settlement agreements, meet RACT by compliance with those requirements, how should those requirements be addressed as part of the SIP?

A: To rely on federal rules to meet the RACT requirement, the State must incorporate these requirements into the SIP. For example, a State could incorporate by reference the Federal requirement or could submit a permit that includes this provision as a SIP revision.

5. **Q**: Can a State rely for RACT determinations on control obligations in Federally enforceable permits issues under a State approved nonattainment new source review program (or a PSD program)?

A: Yes, a State may rely on control obligations required by federally enforceable permits. The State would need to submit the relevant portions of these permits (i.e., the portions establishing the VOC and NOx obligations) as SIP revisions along with a demonstration that such controls are RACT.

6. **Q**: For NOx RACT for stationary source categories, other than wall and tangentially fired electric utility boilers, EPA guidelines in 1994 indicate States should consider in their RACT determinations technologies that achieve 30-50 percent reduction within a cost range of $160-1300 per ton of NOx removed. Do EPA VOC guidance documents, CTGs and ACTs, give percentage reductions and cost per ton removed guidelines for VOC?

A. The VOC CTGs and ACTs usually do not give percent reductions. The emission levels are typically expressed as weight of VOC emitted per some unit of production. For example, for coatings the units are often pounds of VOC emitted per gallon of coating. However in calculating the emission limits, EPA made an assumption of 90% capture of emissions and 90% control of these captured emission for an 81% overall control in many cases. Some of the CTGs, such as for degreasers and storage tanks, define RACT as certain types of equipment, rather than an emission limit.

EPA has never issued a general cost of control guideline for VOC, but costs of control in the CTGs generally ranged around $2000/ton in 1980s dollars. However, EPA never published this figure as a cut-point that had should not be exceeded.

7. **Q**: What is the primary difference between an ACT and a CTG?

A: The ACTs give percent reductions that can be achieved with various controls at various levels of stringency and the costs per ton to achieve those levels of control. The ACTs do not recommend a particular level as being RACT. The CTGs do specify a particular level of control as being presumptive RACT.

8. **Q**: Does EPA maintain a website containing all the RACT Control Techniques Guidelines and Alternative Control Techniques documents for both NOx and VOC?

A: The EPA web site http://www.epa.gov/ttn/atw/ctg_act.html contains a list of all published CTGs. This web site also contains a partial list of ACTs, although this ACT list is missing the ACTs for bakeries, organic waste process vents and polyester foam manufacture. The following website includes two updates to NOx ACTs (see items J.3-4): http://www.epa.gov/ttn/naaqs/ozone/ozonetech/#nox . A list of CTGs and ACTs is also attached to this list of Qs & As.

9. **Q:** Does a RACT analysis need to be done for source categories for which an Alternative Control Techniques (ACT) document has been published?

A: Yes. A RACT analysis needs to be done for all CTG sources and all major non-CTG sources. While the CTGs and ACTs provide a starting point for such an analysis, RACT can change over time as new technology becomes available or the cost of existing technology adjusts. States are encouraged to use the latest information available in making RACT determinations, whether that information is in CTGs, ACTs, other guidance that is available or through information submitted during the public review process.

10. **Q**: Would EPA's "Beyond VOC RACT CTG Requirements" guidance (EPA-53/R-010. April 1995) found at http://www.epa.gov/ttn/catc/dir1/byndract.pdf be of help in determining RACT? How about documents such as "Control Techniques for Volatile Organic Emissions from Stationary Sources," EPA-450/2-78-022, May 1978, or "Fugitive Emission Sources of Organic Compounds –Additional information on Emission, Emissions Reductions, and Costs," EPA-450/3-82-010, April 1982?

A: The "Beyond RACT" document could be a source to evaluate in performing a RACT analysis. We note that this document was originally written primarily for States that needed to get reductions beyond RACT in order to attain and maintain the ozone NAAQS. However, in the ten years since that document was issued these controls may have become more economically feasible and thus it is possible that controls considered beyond RACT in that document could be considered RACT for certain sources. The second two documents are somewhat analogous to ACT documents which describe various control techniques that can be applied to various industry sectors but do not identify a presumptive RACT-level of control. Some of the industry sectors addressed in these documents are also covered by a CTG, while others are not.

11. **Q**: For source categories for which an NSPS has been adopted, would a statement that there are no sources that preexisted the NSPS be an acceptable RACT analysis? In other words, does the fact that all existing sources meet the NSPS mean that they also meet RACT?

A: The NSPS and RACT requirements are separate obligations under the Act and both must be met. So the fact that a source meets a NSPS does not necessarily mean that it also meets RACT. A State should evaluate the control obligation required

through NSPS to determine whether the source is currently meeting the RACT obligation or whether additional control is necessary for RACT.

B. Certifications

12. **Q**: If a source is subject to a rule that is beyond 1-hour RACT, can a State give a certification that this source meets RACT?

A: Even though a source may have been subject to control that was beyond RACT for the 1-hour standard, the State needs to evaluate whether that requirement is, at a minimum, RACT based on the current information that is available.

13. **Q**: Would a certification need to include a commitment to upgrade rules in the future if/when we determine that RACT levels of control have become more stringent?

A: No. The RACT analysis needs to be performed at the time the RACT SIP is being developed and once the RACT SIP is approved there is no additional duty to reconsider this control obligation for a source.

14. **Q**: By what date does a facility need to have a federally enforceable permit to meet requirements for RACT?

A: A RACT SIP is due by September 15, 2006 for subpart 2 areas and with submission of an attainment demonstration request for subpart 1 areas seeking an attainment date more than 5 years after designation. RACT must be implemented no later than the beginning of the first ozone season or portion thereof that occurs 30 months after the required submission date. States should have enforceable measures in place by that date. If a source has or is required to have a Title V operating permit, the provisions of Title V program would govern when the RACT requirement must be incorporated into the SIP and a facility should consult with the permitting authority regarding that issue.

15. **Q**: Must RACT based emission limits, and associated monitoring, record keeping and reporting be included in a Federally enforceable permit (Title V operating permit)?

A: For purposes of meeting the requirements of Title I of the Act (i.e., the nonattainment area provisions), RACT needs to be adopted and approved into the SIP. This can be accomplished in a variety of ways. Typically, States have adopted regulations. However, the State could first specify the obligation in an enforceable permit and submit the permit (or portions of the permit) for inclusion into the SIP. In some cases, States have also submitted enforceable consent orders as SIP revisions. In general, the RACT requirement for a specific source or source category would include a requirement for a specific control measure or for a specific level of reduction and, as appropriate, monitoring, recordkeeping and reporting requirements.

16. **Q**: Does EPA intend to issue guidance on how States should reassess their rules in light of currently available technologies to determine if their rules incorporate RACT?

A: At this time, EPA is not working on further RACT guidance. States should consult with the appropriate EPA Regional office if they have questions regarding how the analysis for a specific source or source category should be performed.

17. **Q**: What should a State do if it concludes that for a specific source or source category no additional controls are necessary beyond what was required by the RACT analysis under the 1-hour standard?

A: Where a State concludes that the no control is required beyond what was required for purposes of the 1-hour NAAQS, the State should submit its analysis justifying such a conclusion as part of its RACT SIP.

18. **Q**: What is required in a RACT analysis in order for a State to give a certification that previously required RACT controls or newly applied controls represent RACT for 8-hour implementation purposes?

A: A State should evaluate RACT for a source or source category by examining existing EPA guidance as well as other available information such as that identified in the responses above. To conclude that the existing level of control is RACT for a source or source category, the State's analysis should demonstrate that more effective controls are not economically or technically feasible.

C. Relationship between RACT and the Clean Air Interstate Rule (CAIR) and the NOx SIP Call

19. **Q**: Can a State rely on its participation in the CAIR trading programs to demonstrate that certain source categories meet RACT?

A: EPA has received a petition for reconsideration asking it to reconsider and reopen for public comment its determination that certain sources in States participating in the EPA-administered CAIR NOx trading program meet ozone NOx RACT requirements. EPA intends to grant the petition for reconsideration on this issue. If necessary, EPA will provide further guidance on this subject after the reconsideration process is complete.

20. **Q**: Do all sources subject to a State's NOx SIP call trading program presumptively meet RACT even if the trading program covers non-EGU sources?

A: Yes, EPA believes that the NOx SIP Call constitutes RACT for those sources covered by the NOx SIP Call. However, whether our judgment that non-EGU sources subject to the NO_x SIP Call trading system meet RACT will continue to apply in the future depends upon how the State chooses to make the transition from the NO_x SIP Call trading system to the CAIR trading system. This issue is discussed in greater detail in the preamble to the November 29, 2005 8-hour implementation rule at 70 Fed. Reg. 71657.

21. **Q:** If electrical generating units (EGU) in a State are covered by the NOx SIP Call trading program, would any EGU be presumed to have met the requirements of NOx 8-hour ozone RACT even though the source just buys additional needed allocations to comply? Or does the State need to look to see if combustion modifications (e.g. adding low NOx burners or over fire air) are RACT?

A: As stated in the preamble to the November 29, 2005 8-hour implementation rule, the NOx SIP Call is estimated to achieve a beyond-RACT degree of control regionally, and sources were required to install any controls needed for compliance no later than May 2004. Under these circumstances, EPA believes that the NOx SIP call constitutes RACT for those sources covered by the NOx SIP Call, regardless of the manner of compliance of individual sources (e.g., control equipment installation or purchase of allowances from other sources).

22. **Q**: Does a source that came into existence after the State's NOx SIP call rule was adopted meet RACT if it is subject to the State's SIP call rule?

A: Yes, if that source is covered by the NOx SIP Call trading program. A large EGU will automatically become part of the NOx SIP Call trading program and thus will be considered to meet ozone NOx RACT requirements. If the source is a cement kiln or stationary internal combustion engine, a control level of at least a 30 percent or 82 percent reduction respectively from uncontrolled levels would be considered RACT.

23. **Q**: May a State rely on its compliance with the NOx SIP Call to show that cement kilns and stationary internal combustion engines are meeting the RACT requirements?

A: Yes, if the cement kilns and stationary internal combustion engines are subject to a SIP approved as meeting the NOx SIP Call obligation to install and operate controls that are expected to achieve at least a 30 percent and 82 percent reduction, respectively, from uncontrolled levels.

24. **Q**: The November 29, 2005 preamble to the 8-hour ozone implementation rule says, at page 71656, that: "….a State need not perform a NOx RACT analysis for non-EGU sources that after 2008 continue to be subject to a SIP that regulates those non-EGU sources equally or more stringently than the State's current rules meeting the NOx SIP call." Does this apply to the whole facility or just to the unit that is subject to the NOx SIP call?

A: The State need not perform such an analysis (and may instead rely on the analysis performed by EPA) only for the unit covered by the NOx SIP call.

D. Negative Declarations

25. **Q**: Are negative declarations required? That is, must a State certify that it has no sources in a particular CTG category if the State does not adopt a RACT rule for this category?

A: A negative declaration that there are no sources in a specific CTG category or no major non-CTG sources would need to be included as part of the RACT SIP submittal. As part of the RACT submission, the negative declaration and the information supporting the declaration would be subject to the SIP public hearing at the State level.

26. **Q**: If the State area believes that there are no major non-CTG sources located in the nonattainment area, would the area need to submit a negative declaration?

A: Yes, the negative declaration would need to assert that there are no major non-CTG sources in the area, and the accompanying analysis would need to support that conclusion.

E. Other Issues

27. **Q**: Can the State calculate the potential to emit (PTE) for an emission unit based on emissions after a control device if the operation and installation of the control device are federally enforceable, e.g., a NSPS or MACT standard requires the control device to be installed and operated?

A: Yes. Where a source has a federally enforceable limit on emissions or a federally enforceable restriction on the hours of operation, then the analysis of whether the source is subject to RACT would be based on emissions considering those restrictions.

28. **Q**: What must a State do for sources in a subpart 2 area not subject to 1-hour RACT SIP regulation?

A: The State must perform a RACT analysis for all CTG and major non-CTG sources in the nonattainment area. Where a source is currently not regulated, the State could start its analysis by considering EPA guidance documents (e.g., CTGs and ACTs). After considering these documents as well other available information, the State would need to submit a SIP revision providing for RACT for all CTG and major non-CTG sources in the area, and a negative declaration where no sources within a category are located in the area. Additionally, section §182(f) provides for an exemption from NOx RACT if certain criteria are met.

29. **Q**: What must a State do for sources which were subject solely to 1-hour RACT rules in their SIP (excluding sources covered by certain NOx SIP call/CAIR trading programs)?

A: For sources subject to 1-hour RACT, the State should review available EPA guidance and other available information to determine whether additional control is needed to meet 8-hour RACT. If no additional control is needed, the State may submit a certification with an accompanying analysis demonstrating that the current level of control is RACT. The State need not resubmit the existing SIP-approved 1-hour RACT rules. If additional control is needed, the State would need to make that obligation federally enforceable through a SIP revision.

30. **Q**: What must a State do for sources (excluding sources covered by certain NOx SIP call/CAIR trading programs) subject to 1-hour RACT rule in the SIP, but subsequently subject to a more stringent regulation ("beyond 1-hour RACT rule") in State rule which is already in the approved SIP where such rule was adopted as necessary for ROP/attainment?

A: See previous answer to question 29.

31. **Q**: Would the units covered by EPA's January 1, 1995 memorandum "De Minimis Values for NOx RACT" also fall into the category where the State used this guidance/policy to set cut-offs for small emissions units?

A: The purpose of the January 1, 1995 memorandum is to provide technical data that may be used to evaluate de minimis NOx for various categories of sources. EPA does not recommend specific de minimis values, but presents factors as a guide in the development and review of State de minimis rules. Similar to other RACT guidance issued for the 1-hour ozone standard, a State may continue to use this guidance--along with any other relevant infomation--for purposes of the 8-hour ozone RACT SIP.

32. **Q**: Subpart 1 areas must demonstrate they will attain the 8-hour standard within 5 years of designation, or submit RACT rules with their attainment date extension request. A State/Air District in a subpart 1 nonattainment area plans to submit an extension request and will need to adopt RACT rules for EGUs. In the meantime, a facility has shutdown an old EGU. They submitted a package to bank the shutdown emissions as emission reduction credits (ERCs). Do the calculated ERCs in the facility's submittal need to be reduced to account for the future RACT rule the State/Air District needs to adopt?

A: If the State plans to ask for an attainment date extension for a subpart 1 area beyond 5 years, RACT rules must be submitted. The ERCs must be discounted to the extent that emissions must be reduced to meet the new RACT rule. That is, the ERCs only continue to exist to the extent that the emissions reductions in the ERC represent lower emissions than those which would have been allowed under the new RACT rule if the rule had existed when the ERCs were generated.

Additional guidance on the issue of ERCs and RACT may be found in the 1994 memo, "Response to Request for Guidance on Use of Pre-1990 ERC's and Adjusting for RACT at Time of Use," dated August 26, 1994 from John S. Seitz, Director Office of Air Quality Planning and Standards to David Howekamp, Director Region IX Air and Toxics Division. This memo may be found at this web site: http://www.epa.gov/Region7/programs/artd/air/nsr/nsrmemos/pre-1990.pdf

33. **Q**: Is there any option for using Title V permits as the means of complying with the non-CTG major stationary source obligation – either submitting the permits for SIP approval or pulling the salient pieces from them and submitting these components, rather than going to the trouble of adopting a prohibitory rule for the source category?

A: Because Title V permits must be renewed every 5 years, the permits themselves should not be submitted as RACT rules because they are not permanent. However, if State law allows, the State may submit components of the permit as requirements that would remain enforceable until such time as the SIP is revised.

34. **Q**: May a State's RACT submission include commitments to adopt one or more RACT rules in the future?

A: A RACT submission that does not address RACT for all CTG and non-CTG sources would not be a complete official submission as required by the RACT provisions of the CAA. The State may address RACT through adoption of rules or submission of permits or consent orders; through one or more negative declarations; or through a request for a NOx RACT exemption. In addition, for non-CTG sources, some states have taken the approach of submitting a RACT rule that provides a process for the source-specific adoption of RACT through a future process. However, such a rule must also provide a backstop control obligation that would apply no later than the RACT compliance date if a source-specific rule had not been adopted, approved and implemented by that date.

35. **Q**: If a state includes its RACT SIP with its 8-hr ozone attainment demonstration as a submittal sometime after September 15, 2006, would that State's compliance date remain the same, or be adjusted to correspond with the actual submittal date?

A: The RACT compliance date would not change where a State chooses to delay submission of its RACT SIP beyond the required submission date.

36. **Q**: When are RACT SIPs due?

A: Subpart 2 moderate and above areas must submit RACT SIPs no later than September 15, 2006. Subpart 1 areas that seek an attainment date later than five years following designation are required to submit their RACT SIP at the time they request the attainment date extension, which can be no later than the time required for submission of the attainment demonstration – i.e., June 15, 2007. Subpart 1 areas that do not request an extension of the attainment date would meet RACT through submission of an attainment demonstration that demonstrates attainment as expeditiously as practicable. Thus, the area's attainment demonstration, which is due June 15, 2007, would also be the RACT submission for such area.

37. **Q**: For an area with a year-long ozone season, such as California, when does the implementation date for RACT begin?

A: Areas are required to implement RACT no later than the first ozone season or part thereof that occurs 30 months after the RACT SIP is due. Thus areas with a year-long ozone season would be required to implement RACT 30 months after the SIP submission is required – i.e., March 15, 2009.

38. **Q**: The maximum attainment date for a moderate 8-hour nonattainment area is June 15, 2010. All reductions needed for attainment are supposed to be achieved by the beginning of the ozone season prior to the attainment date. For areas with full

year ozone seasons (such as California), the final full ozone season prior to the required attainment date would be the ozone season beginning January 1, 2009. RACT requirements must be implemented by 30 months after SIP submittal, which would be March 15, 2009. When must the RACT requirements be implemented – by January 1, 2009 or by March 15, 2009?

A: Where a State is relying on RACT reductions as part of its attainment demonstration, then those reductions would need to be achieved by the beginning of the final full ozone season prior to the area's attainment date. For some areas, that may mean that RACT requirements will need to be implemented earlier than required under the RACT provisions of the Act and our regulations.

39. **Q**: What is the reference size cut-offs for major non-CTG source categories?

A: RACT applies to CTG sources and to major non-CTG stationary sources of VOC and/or NOx. The major-source threshold is based on the classification of the nonattainment area and are specified in Clean Air Act section 182(d) for VOC and 182(f)(1) for NOx. For example, for a severe 8-hour ozone non-attainment area, such as South Coast, ''major source'' means 25 tpy or more of VOCs or NOx.

40. **Q**: Does a VOC or NOx stationary source cut-off (e.g. 25 tpy for NOx or 25 tpy for VOC in any severe nonattainment area) represent an uncontrolled or controlled level?

A: In general, RACT applicability is based on the source's potential to emit – i.e., uncontrolled emissions. However, if the source has a federally enforceable restriction on the emission level or on the hours of operation, those restrictions would be considered in determining whether the source is a major source (see, e.g., Blue Book pages 2-3 at http://www.epa.gov/ttn/naaqs/ozone/ozonetech/voc_bluebook.pdf). The emissions restriction cannot be solely on the emissions, but must be on the operation of the source so that the potential to emit is below the applicability threshold.

41. **Q**: Does "major source" in the context of a RACT determination represent "equipment" or "facility."

A: EPA guidance provides that when assessing whether a source is "major" for purposes of non-CTG RACT, the State should consider the building, structure, facility or installation. See the Blue Book at: (http://www.epa.gov/ttn/naaqs/ozone/ozonetech/voc_bluebook.pdf). As provided in the guidance, the State should consider the emissions from all sources that were not required to install RACT (e.g., the source emissions are below those that would be subject to RACT under the applicable CTG) as well as any other sources at the facility. For purposes of determining whether a facility is subject to RACT pursuant to a CTG, the State should examine the aggregate of all emissions from sources in that particular CTG category at the facility.

42. **Q.** May States adopt generic RACT provisions in their 8-hour RACT SIP rules for VOC and/or NOx?

A. On November 7, 1996, EPA issued a policy memorandum providing additional guidance for approving regulations that contains these generic provisions (Sally Shaver, Director, Air Quality Strategies and Standards Division, memorandum to EPA Division Directors, "Approval Options for Generic RACT Rules Submitted to Meet the non-CTG VOC RACT Requirement and Certain NOx RACT Requirements"). A State may adopt generic RACT rules as part of its SIP. EPA encourages States to follow the provisions of the November 7, 1996 memorandum.

43. **Q**: Can you provide a complete list of CTGs and ACTs?

A: Here is as complete a listing as we have been able to compile. The CTG list is complete. We believe the ACT list is complete:

Pre 1990 CTGs

1. Design Criteria for Stage I Vapor Control Systems - Gasoline Service Stations, November 1975. [Note – this document is regarded as a CTG although it was never published with an EPA document number.]

2. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume I: Control Methods for Surface Coating Operations, EPA-450/2-76-028, November 1976 [Note – although often listed

with the CTGs for historical reasons, this document does not define RACT for any source. It is a compilation of control techniques.]

3. 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.

4. Control of Volatile Organic Emissions from Solvent Metal Cleaning, EPA-450/2-77-022, November 1977.

5. Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds, EPA-450/2-77-025, October 1977.

6. Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals, EPA-450/2-77-026, December 1977.

7. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume III: Surface Coating of Metal Furniture, EPA-450/2-77-032, December 1977

8. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume IV: Surface Coating for Insulation of Magnet Wire, EPA-450/2-77-033, December 1977

9. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume V: Surface Coating of Large Appliances, EPA-450/2-77-034, December 1977.

10. Control of Volatile Organic Emissions from Bulk Gasoline Plants, EPA-450/2-77- 035, December 1977

11. Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed Roof Tanks, EPA-450/2-77-036, December 1977.

12. Control of Volatile Organic Compounds from Use of Cutback Asphalt, EPA-450/2-77-037, December 1977

13. Control Techniques for Volatile Organic Emissions from Stationary Sources, EPA-450/2-78-022, May 1978. [Note – This document is often listed with CTGs, but it does not define RACT for any particular source.]

14. 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

15. 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.

16. Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment, EPA-450/2-78-036, June 1978.

17. Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products, 450/2-78-029, December 1978.

18. Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires, EPA-450/2-78-030, December 1978.

19. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VIII: Graphic Arts - Rotogravure and Flexography, EPA-450/2-78-033, December 1978.

20. Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks, EPA-450/2-78-047, December 1978.

21. Control of Volatile Organic Emissions from Perchloroethylene Dry Cleaning Systems, EPA-450/2-78-050, December 1978. [Note – Perchloroethylene has been exempted as a VOC, so this CTG is no longer relevant. However, there is a MACT standard for perchloroethylene dry cleaners.]

22. Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems, EPA-450/2-78-051, December 1978.

23. Fugitive Emission Sources of Organic Compounds – Additional Information on Emissions, Emission Reductions, and Costs, EPA-450/3-82-010, April 1982. [Note – This document does not define RACT for any particular source.]

24. Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners, EPA-450/3-82-009, September 1982

25. Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins, EPA-450/3-83-008, November 1983

26. Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants, EPA-450/2-83-007, December 1983.

27. Control of Volatile Organic Compound Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment, EPA-450/3-83-006, March 1984

28. Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry, EPA-450/3-84-015, December 1984.

Post 1990 CTGs

1. SOCMI Distillation and Reactor Processes CTG (EPA 450/4-91-031, August 1993).

2. Wood Furniture (CTG-MACT) - draft MACT out 5-94; Final CTG, EPA-453/R-96-007, April 1996; see also 61 FR 25223, and, 61 FR 50823, September 27, 1996.

3. Shipbuilding/repair ACT (EPA 453/R-94-032, April 1994) and CTG, see 61 FR 44050, August 27, 1996.

4. Aerospace (CTG & MACT) (see 59 FR 29216, June 6, 1994); CTG (Final), EPA-453/R-97-004, December 1997.

The VOC Available Control Technology (ACTs) Documents

1. Control Techniques for Organic Emissions from Plywood Veneer Dryers, EPA-450/3-83-012. May 1983. [This document is labeled as a control technique document (CTD) rather than an ACT. However, the information is similar to that in an ACT.]

2. Reduction of Volatile Organic Compound Emissions from Application of Traffic Markings – EPA-450/3-88-007, August 1988. [Note – the Architectural and Industrial Maintenance coatings (AIM) national rule issued in 1998 includes limits for traffic coatings and superseded the ACT.]

3. Ethylene Oxide Sterilization ACT (EPA 450/3-89-007) March 1989.

4. Alternative Control Technology Document – Halogenated Solvent Cleaners – EPA-450/3-89-030. August 1989.

5. Alternative Control Technology Document – Organic Waste Process Vents – EPA-450/3-91-007, December 1990.

6. Polystyrene Foam Manufacturing – EPA-450/3-90-020, 1990.

7. Bakery Ovens ACT (EPA 453/R-92-017, December 1992)

8. Control Techniques for Volatile Organic Compound Emissions from Stationary Sources, EPA-453/R-92-018, December 1992

9. Industrial Wastewater CTG (draft) (EPA-453/D-93-056, September 1992); ACT: April 94 ACT consists of cover memo with option tables + CTG (draft).

10. Control of VOC Emissions from the Application of Agricultural Pesticides, EPA-450/R-92-011, March 1993.

11. Alternative Control Techniques Document: Volatile Organic Liquid Storage In Floating and Fixed Roof Tanks, EPA 453/R-94-001, January 1994.

12. Control of Volatile Organic Compound Emissions from Batch Processes ACT (EPA 453/R-93-017 or EPA 453/R-93-020, February 1994)

13. Alternative Control Techniques Document – Industrial Cleaning Solvents, EPA-453/R-94-015, February 1994

14. Business Machine Plastic Parts coating/Automobile Plastic Parts coating ACT (EPA 453/R-94-017, February 1994)

15. Automobile Body refinishing ACT (EPA 453/R-94-031, April 1994) [Note – a national rule for autobody refinishing was issued in 1998 after the ACT.]

16. Ship building coatings ACT, EPA 453/R-94-032, April 1994. [This was superseded by the Ship building CTG which was issued in August 1996.]

17. Offset Lithography ACT (EPA 453/R-94-054, June 1994)

The NOx ACT documents:

1. NOx Emissions from Nitric and Adipic Acid Manufacturing Plants (EPA-453/3-91-026- December 1991.

2. NOx Emissions from Stationary Combustion Turbines (EPA-453/R-93-007) - January 1993.

3. NOx Emissions from Process Heaters (EPA-453/R-93-034) - revised September 1993.

4. NOx Emissions from Stationary Internal Combustion Engines (EPA-453/R-93-032), July 1993 – [Updated September 2000.]

5. NOx Emissions from Utility Boilers - (EPA 453/R-94-023) March 1994.

6. NOx Emissions from Cement Manufacturing - (EPA 453/R-94-004) March 1994 – [Updated September 2000.]

7. NOx Emissions from Industrial, Commercial & Institutional Boilers - (EPA 453/R-94-022) March 1994.

8. NOx Emissions from Glass Manufacturing - (EPA 453/R-94-037), June 1994.

9. NOx Emissions from Iron and Steel - (EPA 453/R-94-065) September 1994.