Department of Environmental Conservation
Division of Air Resources

NEW YORK
STATE IMPLEMENTATION PLAN
FOR
OZONE
(8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION
FOR
POUGHKEEPSIE, NY AREA

APPENDIX H

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ***ALEXANDER B. GRANNIS, COMMISSIONER***

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NOx SUBSTITUTION GUIDANCE

December, 1993

Office of Air Quality Planning and Standards
U.S. Environmental Protection Agency
Research Triangle Park, North Carolina 27711

Section 1: Background

Title I of the Clean Air Act Amendments (CAAA) mandates a 15% reduction of volatile organic compound (VOC) emissions from the 1990 base inventory by November, 1996 in all ozone nonattainment areas classified moderate and above. Areas classified serious and above must achieve the 3% per year VOC reductions past November, 1996 as part of the reasonable further progress (RFP) provisions (§ 182 [c][2][B]). However, Section 182 (c)(2)(C) allows the post-1996 RFP plan to accommodate a less than 3% per year VOC reduction if it can be demonstrated that substitution of NOx emission reductions (for VOC reductions) yields equivalent ozone reductions. Underlying this substitution provision is the recognition that NOx controls may effectively reduce ozone in many areas, and that the design of strategies is more efficient when the characteristic properties responsible for ozone formation and control are evaluated for each area.

The purpose of this document is to provide a procedure that can be applied to meet the post-1996 Section 182(c)(2)(B) RFP requirement as well as the Section 182 (c)(2)(C) equivalency demonstration requirements. The intent of this guidance is to facilitate implementation of the most effective ozone precursor control strategies, while meeting the intent of the CAA RFP provisions.

The guidance consists of two basic steps that are established in Sections 2 and 3 of this document. First, an equivalency demonstration requires that cumulative RFP emission reductions must be consistent with the NOx and VOC emission reductions determined in the ozone attainment modeling demonstration. Second, specified reductions in NOx and VOC emissions should be accomplished in the interim period between 1996 and the attainment date, consistent with the continuous RFP emission reduction requirement. Section 4 provides the legal rationale underlying this guidance and the guidance is summarized in Section 5.

Section 2: Test for Equivalency - Use of Strategies Aimed at the Mandated Attainment Year

[The condition for demonstrating equivalency is that State-proposed emission control strategies must be consistent with emission reductions required to demonstrate attainment of the ozone NAAQS for the designated year of attainment.]

The provision for NOx substitution recognizes that a VOC-only control pathway may not be the most effective approach for effecting attainment in all areas. Consequently, NOx reductions are placed on a near equal footing with VOC through substitution. This document establishes two conditions pursuant to both the substitution and RFP provisions in the Act. The first condition requires that control strategies incorporating NOx emission reduction measures must demonstrate that the ozone NAAQS will be attained within time periods mandated by the Act. This condition reflects the Title I provision for gridded photochemical model demonstrations (Section 182(c)).

The second condition, addressed below in Section 3, maintains the requirement for periodic emission reductions in order to realize progress toward attainment. Flexibility is introduced by allowing VOC and NOx reductions rather than VOC reductions alone. A third condition exists in which the periodic emission reductions must be consistent with the model attainment demonstration.

The basis for equivalency is the ability of a given control strategy (i.e., any particular mix of NOx and VOC emission reductions) to effect attainment of the ozone NAAQS by the designated attainment year. Section 182(c) of the CAA requires that State implementation plans (SIPs) for serious and above nonattainment areas include a demonstration of attainment of the ozone National Ambient Air Quality Ambient Standard (NAAQS) with gridded photochemical modeling. These SIP revisions are due by November 15, 1994 and provide the framework for demonstrating equivalent ozone reductions through the substitution of NOx emission reductions for VOCs. Model application procedures for demonstrating attainment are provided in EPA's Guideline for Regulatory Application of the Urban Airshed Model, (EPA-450/4-91-013).

This modeling requirement already exists as a Title I provision for areas classified serious and above. Due to the flexibility described below in Section 3.0 which permits virtually any set of NOx and VOC RFP reductions in years prior to the attainment date, a linkage to the attainment year control strategy is required. This linkage provides assurance that the

RFP reductions are consistent with the SIP attainment demonstration. States are required to justify substitution by illustrating "consistency" between the cumulative emission changes emerging from the RFP/substitution proposal and the emission reductions in the model attainment demonstration (or comparable modeling analysis). The EPA will approve substitution proposals on a case-by-case basis. Generally speaking, any reasonable substitution proposal will be approved. Linkage to the modeling demonstration provides a screen to remove unrealistic (and inefficient) substitution proposals.

Section 3: Reasonable Further Progress (RFP) Requirements

[The condition for meeting the RFP emissions reduction provision is that the sum of all creditable VOC and NOx emission reductions must equal 3% per year averaged every three years.]

The RFP provisions require periodic emissions reductions until attainment is reached. In the absence of the NOx substitution provision, an area classified serious or above would be required to reduce VOC emissions after 1996 an average of 3% per year every three year period until attainment. This guidance maintains the 3% per year emissions reduction requirement. However, no specified set of VOC or NOx controls is mandated. Reasons for not requiring specific "exchange" rates among VOC and NOx emissions include:

1. The strong likelihood that optimum "exchange" rates vary from year to year and across a geographic area as an area's emissions distribution and atmospheric chemistry change over time;

2. Uncertainty in modeling analyses, particularly when attempting to ascertain responses from small percentage perturbations in emissions; and

3. Resource limitations associated with modeling specific control measures during interim years before attainment dates.

Any combination of VOC and NOx emission reductions which totals 3% per year, and meet other SIP consistency requirements described in this document are allowed. These requirements ensure that the cumulative RFP reductions are consistent with the emission reduction measures identified in the model attainment demonstration. A percentage basis rather than a mass basis is used for calculating the RFP emission reductions. A percentage basis is applied to avoid "absurd" calculations. For example, substitution of NOx reductions for VOC on a ton for ton basis could yield calculated NOx reduction requirements which exceed the available NOx inventory in cases where the base VOC inventory greatly exceeds the NOx inventory. To illustrate, a 50% VOC reduction is analogous to a 100% NOx reduction assuming the VOC inventory is twice the NOx inventory and substitution is based on mass rather than percentage equivalency. The percentage basis also is consistent with the RFP "percent" reduction requirement, therefore buoying the legal justification underlying this guidance.

The calculation to determine yearly VOC and NOx emission reduction totals must be based on typical summer day inventories (same basis used for RFP and modeling inventories). Specific details regarding calculation procedures and emission inventory definitions are found in separate documents, including EPA's forthcoming Guidance on the Post-1996 Rate-of-Progress Plan and the Attainment Demonstration. The following equation generally describes the method to calculate the total 3% per year emission reductions:

$$R_V/VOCBASE + R_N/NOxBASE >= 0.03$$

where; R_V = typical summer day VOC reductions in mass units

R_N = typical summer day NOx reductions in mass units

VOCBASE = the mass of anthropogenic VOC emissions in the 1990 adjusted base inventory, and

NOxBASE = the mass of anthropogenic NOx emissions in the 1990 adjusted base inventory

[note, the cumulative mass reductions are not constrained to 3% per year so that RFP reductions greater than 3% per year are not discouraged.]

The values of R_V and R_N include only the creditable emission reductions from the nonattainment area of concern. For instance, VOC or NOx reductions from the pre-enactment Federal Motor Vehicle Control Program (FMVCP), which are not creditable toward the 3% per year requirement are not included. Potential "creditable" NOx emission reductions which are available for substitution purposes are described in EPA's forthcoming Guidance on the Post-1996 Rate-of-Progress Plan and the Attainment Demonstration.

The attainment strategy requirements must be met in addition to the RFP condition. Total emission reductions are determined by the attainment demonstration, implying that reductions averaging greater than 3% per year averaged from 1996 to the specified attainment year are required if shown to be necessary by the model demonstration. The 3% per year RFP requirement is thus a minimum requirement. Further, the NOx emission reductions credited toward RFP may be capped by the cumulative reductions dictated by the model demonstration. For example, an approved control strategy emerging from a model demonstration for a serious area might show reductions of 6% NOx and 80% VOC, relative to 1990 emissions, are needed by 1999. Assuming zero

creditable NOx emission reductions from 1990 through 1996, NOx reductions averaging 2% per year over the 3 years from 1996 to 1999 represent a cap on the NOx RFP reductions. The reason for linking the RFP reductions to the attainment strategy is to avoid RFP reductions which are not consistent with the model demonstration. Note that the sum of emissions totalling 3% per year are required to meet the basic RFP provisions -- they are not capped by the attainment demonstration. Thus, cases might exist where VOC reductions from the RFP provisions might exceed the cumulative VOC emission reductions in the attainment strategy. Such cases do not conflict with the attainment demonstration since additional VOC reductions will not increase peak ozone. On the other hand, the NOx cap is necessary because NOx reductions have the potential for increasing peak ozone.

Section 4: Discussion of Equivalency

[The following discussion provides the legal rationale underlying the interpretation of "equivalency" and the linkage between the RFP and NOx substitution provisions within the Act.]

"Equivalency" is not defined strictly in the context of, "What specified level of NOx reductions, compared to VOC, results in equivalent ozone reduction?" Instead, any combination of VOC and NOx reductions is "equivalent" so long as the reductions are consistent with those identified as necessary to attain the NAAQS in the modeling demonstration and provide for steady progress in leading to the emission reductions identified as necessary to attain the NAAQS by the specified attainment year.

In allowing a combination of NOx and VOC controls or the substitution of NOx emissions reductions for VOC emissions reductions, Section 182(c)(2)(C) of the statute states that the resulting reductions "in ozone concentrations" must be "at least equivalent" to that which would result from the 3% VOC reductions required as a demonstration of reasonable further progress (RFP) under Section 182(c)(2)(B). This provision could be interpreted to mean that the amount of NOx reductions appropriate for substitution purposes is an amount which, when compared to predicted VOC reductions, results in the same reductions in ozone concentrations that the VOC reductions would achieve in that area. However, such an interpretation could result in a demonstration showing that very small NOx reductions provide an adequate substitute for large VOC reductions. This is because under some conditions substantial VOC reductions produce only small - even insignificant - reductions in ozone concentrations, while minimal NOx reductions under the same conditions may produce the same degree of ozone reductions. EPA believes Congress would not have intended States to meet the Act's progress requirements with emissions reductions that would produce only minimal improvement in ozone concentrations.

The second sentence of Section 182(c)(2)(C) requires EPA to issue guidance "concerning the conditions under which NOx control may be substituted for [or combined with] VOC control." In particular, the Agency is authorized to address in the guidance the appropriate amounts of VOC control and NOx control needed, in combination, "in order to maximize the reduction in ozone air pollution." Further, the Act explicitly provides that the guidance may permit RFP demonstrations which allow a lower percentage of VOC emission reductions. The implicit assumption under that language is that such lesser levels of VOC reductions would be allowed only because of the correspondingly higher

percentage of NOx emission reductions to be authorized as a full or partial substitution for the otherwise required VOC reductions. In light of the entire set of language and Congress's evident intent under this subsection to maximize the opportunity for ozone reductions, EPA believes that Section 182(c)(2)(C) confers on the Agency the discretion to select, for purposes of determining equivalent reductions, a percentage of NOx emission reductions which is reasonably calculated to achieve both the ozone reduction and attainment progress goals intended by Congress. Nothing in the Act or in the legislative history directly addresses the case where NOx reductions that are substituted for VOC reductions, and which meet the plain grammatical meaning of "equivalency," nonetheless result in insignificant ozone reductions. To avoid such a result and give meaningful effect to what Congress likely intended regarding the substitution provision, EPA has decided to rely in its NOx-substitution guidance on the only point of reference provided by Congress concerning what may constitute an appropriate quantitative reduction target for RFP purposes, namely the 3 percent per year required under Section 182(c)(2)(B). Under that approach, EPA would approve substitutions of NOx for VOC that would ensure that the sum of the respective creditable percent reductions of each of these pollutants areawide, averaged over 3 years, would be no less than 3 percent from the baseline.

As additional evidence that Congress was concerned with getting more than minimal reductions in ozone concentrations through substitution, EPA notes that the RFP demonstration described in Section 182(c)(2)(B) focuses on reductions of a specified quantity of VOC emissions per year. (Similarly, the 15 percent RFP reductions required for Moderate ozone nonattainment areas focuses on reductions of that specific quantity of VOC emissions per year.) By contrast, the alternative RFP demonstration in Section 182(c)(2)(C) allows flexible VOC/NOx emission reduction strategies, but only so long as the overall quantitative reduction in ozone concentrations is equivalent to the amount which, for Serious ozone nonattainment areas, Congress initially determined must be met (i.e., the ozone concentrations achieved by VOC reductions of 3 percent per year) in order to ensure expeditious progress towards attainment. In this regard the House Committee Report states: "NOx reductions may not be substituted for VOC reductions in a manner that delays attainment of the ozone standard or that results in lesser annual reductions in ozone concentration than provided for in the attainment demonstration." H.R. Resp NO. 490, 101st Cong., 2d Sess. 239 (1990).

Section 5: Summary

The RFP requirements under Section 182(c)(2)(B) of the CAA are intended to insure that the SIP "provide for such specific annual reductions in emissions of VOC and NOx as necessary to attain the NAAQS for ozone by the applicable attainment date." This language is interpreted to mean that, to meet the RFP requirement, it is necessary to show that steady progress is being made toward implementing measures called for in an area's attainment strategy. Further, the Act also specifies minimal annual percentage reductions in creditable emissions which must be realized in an RFP program. Section 182(c)(2)(C) increases the flexibility in which the annual emission reductions can be derived by allowing NOx emission reductions substitution for VOC after 1996. The recommended procedure responds to these concerns by imposing two requirements.

1. Establish a strategy incorporating reductions in VOC and/or NOx sufficient to meet the NAAQS within timeframes specified by the Act. This is to be done using approved photochemical grid models in a manner consistent with published Agency guidance on the use of such models in attainment demonstrations. In the context of the NOx substitution guidance, the purpose of this first step is to establish an ultimate target toward which the RFP program is aimed.

2. For interim years, any mix of annual reductions in VOC and NOx is permissible so long as it reflects

   (a) a logical step toward implementing the attainment strategy identified in (1), and

   (b) results in a combined annual VOC and NOx reduction of 3% per year.

The requirement for continuous VOC emission reductions amounting to 3% per year has been modified to allow flexibility in the mix of VOC and NOx emission reductions, while maintaining a 3% per year reduction in the <u>sum</u> of NOx and VOC emissions. A principal assumption underlying this guidance is that optimum control strategy designs may differ among various nonattainment areas.

The NOx substitution provision permits greater flexibility for States in designing effective emissions control strategies. Furthermore, because the test for equivalency is identical to the NAAQS attainment test for serious and above areas, the demonstration imposes negligible additional resource burdens for

those areas already required to perform gridded photochemical modeling.

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APPENDIX I

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New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ***ALEXANDER B. GRANNIS, COMMISSIONER***

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Alexander B. Grannis
Commissioner

DEC 13 2007

Mr. Alan J. Steinberg
Regional Administrator
United States Environmental Protection Agency, Region 2
290 Broadway, 26" Floor
New York, New York 10007-1866

Dear Regional Administrator Steinberg:

Pursuant to Clean Air Act (CAA) sections 110(a)(1) and (2), states are required to address basic State Implementation Plan (SIP) requirements related to the attainment of new or revised National Ambient Air Quality Standards (NAAQS), including emission inventories, monitoring and modeling to assure attainment, maintenance and enforcement of the standards. SIPs meeting the requirements of CAA sections 110(a)(1) and (2) must be submitted within three years after promulgation of a new or revised standard.

As a result of a Consent Decree resulting from an EarthJustice lawsuit against EPA for failure to take action against States that had not made SIP submissions that met the requirements of CAA sections 110(a)(1) and (2), EPA was obligated to make official findings whether States have made SIP submissions required to meet CAA section 110(a)(2)(D)(I) relating to interstate transport by no later than March 15, 2005. Additionally, the Consent Decree obligates EPA to make a determination whether States have made submissions necessary to meet the remaining 110(a)(1) and (2) requirements for the 8-hour ozone NAAQS by December 15, 2007.

Section 110(a)(1) contains the general requirements for submitting a SIP to address new or revised primary NAAQS within three years of their promulgation. Section 110(a)(2) contains specific elements to be included in these plans. Pursuant to EPA guidance dated October 2, 2007, this submission addresses each of the required elements of CAA section 110(a)(2), and affirms that New York State's SIPs meet the requirements of CAA sections 110(a)(1) and (2).

Should you have any questions regarding this submission, please do not hesitate to contact me at (518) 402-8537. Should your staff have questions, please have them contact David J. Shaw, Director of the Department's Division of Air Resources at (518) 402-8452.

Sincerely,

J. Jared Snyder
Assistant Commissioner
Office of Air Resources, Climate Change and Energy

Enclosure

cc: Richard Ruvo, EPA Region 2

CAA Section 110 Requirements

On March 10, 2005, EPA entered into a Consent Decree with EarthJustice that obligates EPA to make official findings whether States have made required SIP submissions by dates certain. The Consent Decree obligates EPA to determine whether States have made SIP submissions required to meet CAA section 110(a)(2)(D)(I) relating to interstate transport by no later than March 15, 2005. The Consent Decree also obligates EPA to make a determination whether States have made submissions necessary to meet the remaining 110(a)(1) and (2) requirements by December 15, 2007 for the 8-hour ozone NAAQS.

Pursuant to EPA guidance issued on October 2, 2007, SIPs must include the following elements of CAA section 110(a)(2):

- Enforceable Emission Limitations and Other Control Measures (110(a)(2)(A))
- Ambient Air Quality Monitoring, Compilation, Analysis and Reporting (110(a)(2)(B)
- Enforcement and Stationary Source Permitting (110(a)(2)(C)
- Interstate Transport (110(a)(2)(D))
- Assurance of Adequate Resources (110(a)(2)(E))
- Stationary Source Monitoring System and Reporting (110(a)(2)(F))
- Emergency Powers and Contingency Plans (110(a)(2)(G))
- Authority for SIP Revisions for Revised NAAQS (110(a)(2)(H))
- Authority for SIP Revisions for New Nonattainment Areas (110(a)(2)(I))
- Consultation, Public Notification and Prevention of Significant Deterioration (PSD)/Visibility (110(a)(2)(J))
- Air Quality Monitoring and Reporting (110(a)(2)(K))
- Permitting Fees (110(a)(2)(L))
- Consultation/Participation with Affected Local Entities (110(a)(2)(M))

<u>Enforceable Emission Limitations and Other Control Measures (110(a)(2)(A))</u>

CAA section 110(a)(2)(A) requires SIPs to include enforceable emission limits and other control measures, means or techniques, schedules for compliance and other related matter.

Enforceable emission limitations and other control measures for ozone in New York are included in the New York Ozone SIP: 1-Hour Ozone Attainment Demonstration State Implementation Plan and 2007 Transportation Conformity Budgets, which was approved by EPA and effective on March 2, 2002. Proposed revisions to the ozone SIP to address the 8-hour NAAQS for the New York State portion of the New York - N. New Jersey - Long Island, NY-NJ-CT, and Poughkeepsie, NY, nonattainment areas were submitted to EPA on August 9, 2007. Proposed revisions to the New York ozone SIP to address the remaining ozone nonattainment areas classified under CAA subpart 2 in the State (Buffalo-Niagara Falls, NY; Rochester, NY; Albany-Schenectady-Troy, NY; Jamestown, NY; Jefferson County, NY; and Essex Co. (Whiteface Mtn.), NY) are being developed.

Ambient Air Quality Monitoring, Compilation, Analysis and Reporting (110(a)(2)(B))

CAA section 110(a)(2)(B) requires SIPs to include provisions to provide for the establishment and operation of ambient air quality monitors, collecting and analyzing ambient air quality data, and making these data available to EPA upon request. This information is included in the various SIPs that have been submitted to EPA.

The New York State Department of Environmental Conservation (Department) measures air pollutants at more than 80 sites across the state, using continuous and/or manual instrumentation. These sites are part of the federally-mandated National Air Monitoring Stations Network (NAMS) and the State and Local Air Monitoring Stations (SLAMS) Network. Real time direct reading measurements include gaseous criteria pollutants (ozone, sulfur dioxide, oxides of nitrogen, carbon monoxide), $PM_{2.5}$ (fine particulate with a diameter less than 2.5 microns), and meteorological data. Filter based $PM_{2.5}$, lead, and acid deposition samples are collected manually and shipped to the laboratory for analysis. The information obtained is compared to the NAAQS and is used to determine the attainment status of areas where these pollutants are monitored.

The near real-time data for gaseous pollutants and $PM_{2.5}$ are used for Air Quality Index (AQI) projection, and can be accessed by interested public on the DEC web site. The Department also provides real-time data to EPA for AIR*Now* live national ozone mapping. All ambient measurements undergo data validation and are subsequently submitted to EPA's Air Quality System (AQS) for public access.

The Department commits to continue to operate an air quality monitoring network that complies with EPA requirements and to submit this data to EPA's Air Quality System.

Enforcement and Stationary Source Permitting (110(a)(2)(C)

CAA section 110(a)(2)(C) requires States to include a program providing for enforcement of all SIP measures and the regulation of construction of new or modified stationary sources to meet PSD and nonattainment new source review (NNSR) requirements. New York's SIP currently includes NNSR requirements. In addition, there is a federal implementation plan in effect for PSD requirements, which EPA currently implements in New York State.

Environmental Conservation Law (ECL) section 19-0305 and Article 71 sections 71-2103 and 71-2105 authorizes the commissioner of the Department to enforce the codes, rules and regulations of the Department established in accordance with Article 19. The SIP is a compilation of rules and regulations that have been duly promulgated by the Department in accordance with its statutory authority and consistent with the State Administrative Procedures Act. Therefore, the Department has the authority to enforce all SIP measures.

New York is currently in the rule-making process for 6 NYCRR Part 231, "New Source Review of New and Modified Facilities," which will be submitted to EPA as expeditiously as practicable for approval and inclusion in the SIP. Part 231 will include 8-hour ozone and $PM_{2.5}$ PSD and NNSR permitting requirements for major stationary sources in the state. In the interim, New

York confirms that the current state NNSR permitting program remains in effect and continues to apply to the State's major stationary sources. EPA has been implementing the PSD program in New York State since 2004.

New York commits to the continued enforcement of all SIP measures and the regulation of construction of new or modified stationary sources to meet NNSR requirements. In addition, New York will ensure that federal PSD requirements which are included in EPA-issued PSD permits are incorporated into Title V operating permits.

Interstate Transport (110(a)(2)(D))

CAA section 110(a)(2)(D) requires SIPs to include provisions prohibiting any source or other type of emissions activity in one State from contributing significantly to nonattainment, or interfering with maintenance, of the NAAQS in another State, or from interfering with measures required to prevent significant deterioration of air quality or to protect visibility in another State.

On September 17, 2007, the Department submitted a SIP revision that satisfies New York's 110(a)(2)(D) obligations to submit a SIP revision that contains adequate provisions to prohibit air emissions from adversely affecting another state's air quality through interstate transport. EPA proposed approval (72 FR 55723) of this SIP revision on October 1, 2007.

In accordance with EPA guidance issued on August 15, 2006, states may continue to rely on their existing NNSR and PSD permitting programs to prevent significant deterioration of air quality within their own boundaries and in adjacent states. New York confirms that the current state NNSR permitting program remains in effect and continues to apply to the State's major stationary sources. EPA has been implementing the PSD program in New York State since 2004.

New York commits to the continued enforcement of all SIP measures and the regulation of construction of new or modified stationary sources to meet NNSR requirements. In addition, New York will ensure that federal PSD requirements which are included in EPA-issued PSD permits are incorporated into Title V operating permits.

With respect to visibility protection, and consistent with EPA's August 15, 2006 guidance, it is impossible at this time for New York to accurately determine whether there is interference with measures in another state's SIP designed to protect visibility because the affected Class I states have not submitted their regional haze SIPs to EPA, nor have they provided the Department with the pertinent information needed to identify the control measures necessary to reach the haze program's reasonable progress goals. New York will address the visibility protection requirements when the regional haze SIP is completed and submitted to EPA.

Assurance of Adequate Resources (110(a)(2)(E))

CAA section 110(a)(2)(E) requires States to provide (i) necessary assurances that the State will have adequate personnel, funding and authority under State law to carry out its SIP, (ii) requirements that the state comply with the requirements respecting state boards under CAA

section 7428, and (iii) necessary assurances that, where the State has relied on a local or regional government, agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision.

The Division of Air Resources (DAR), with a staff of 274, receives both operating and capital funding. Operating funds are allocated to the Division annually and are used for daily administrative expenses. These expenses include salaries, fringe benefits, indirect and non-personnel services such as travel, supply and equipment costs. Indirect costs are, in turn, allocated to other Departments or divisions that support DAR activities. DAR is allocated operating funds from five sources: General Fund, Utility Environmental Regulatory Account, Co-operative Agreements (i.e., EPA section 103 and 105 grants) and the Clean Air Fund, which is comprised of the Title V and Mobile Source accounts.

Capital funds are allocated to the Division at the discretion of the State legislature and are used for the financing or acquisition of capital facilities such as the construction of an air monitoring site. The Division is allocated Capital funds from three sources: General Fund, Mobile Source Account and Rehabilitation and Improvement.

Section 110(a)(2)(E)(ii) requires that the state comply with the requirements respecting state boards under CAA section 7428. New York's Public Officer's Law, POL, satisfies these requirements. Specifically, POL section 74(2) states "No officer or employee of a state agency, member of the legislature or legislative employee should have any interest, financial or otherwise, direct or indirect, or engage in any business or transaction or professional activity or incur any obligation of any nature, which is in substantial conflict with the proper discharge of his duties in the public interest." POL 74(3)(e) states "No officer or employee of a state agency, member of the legislature or legislative employee should engage in any transaction as representative or agent of the state with any business entity in which he has a direct or indirect financial interest that might reasonably tend to conflict with the proper discharge of his official duties."

Finally, the Department confirms that where the State has relied on a local or regional government, agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision.

Stationary Source Monitoring System and Reporting (110(a)(2)(F))

CAA section 110(a)(2)(F) requires States to establish a system to monitor emissions from stationary sources and to submit periodic emissions reports.

Authority for this provision is provided under article 19 of the ECL. In particular, ECL section 19-0311 [Operating Permit Program] states in section 3 that operating permits issued pursuant to this section shall include, among other things, "provisions for detailed monitoring, record-keeping and reporting, including requirements that records be kept for five years, and that monitoring records be submitted to the department at least every six months ..."

Emergency Powers and Contingency Plans (110(a)(2)(G))

CAA section 110(a)(2)(G) requires States to provide for authority to address activities causing imminent and substantial endangerment to public health, including contingency plans to implement the emergency episodes in their SIPs. Articles 3 and 19 of the ECL provide this authority to the Department and are included in the SIP.

Among other provisions, ECL section 3-0301 entitled "General functions, powers and duties of the department and the commissioner" authorizes the Department to prevent and control air pollution emergencies, as defined in subdivision 1 of ECL section 3. In exercising such prevention and control the department and the commissioner may limit the consumption of fuels and use of vehicles, curtail or require the cessation of industrial processes and limit or require the cessation of incineration and open burning, and take any other action he may deem necessary to prevent and/or control air pollution emergencies. The Department adopted 6 NYCRR Part 207, Control Measures for an Air Pollution Episode, and EPA approved this regulation as part of the New York SIP (46 FR 55690).

Authority for SIP Revisions for Revised NAAQS (110(a)(2)(H))

CAA section 110(a)(2)(H) requires States to have the authority to revise their SIPs in response to changes in the NAAQS, availability of improved methods for attaining the NAAQS, or in response to an EPA finding that the SIP is substantially inadequate.

Revisions to the SIP are authorized by Article 19 and sections 3-0301, 19-0103, 19-0301, 19-0303 and 19-0305 of the ECL. Article 19 of the ECL was adopted to protect New York's air resources from pollution and to effectuate the policy of the State to maintain a reasonable degree of purity of the air resources, consistent with the public health and welfare and the industrial development of the State. To this end, the Legislature gave the Department specific powers and duties, including the power to promulgate regulations for preventing, controlling, or prohibiting air pollution. The Department also has the specific authority to regulate motor vehicle exhaust and approve air contaminant control systems as well as regulate fuels. Section 71-2103 provides general enforcement authority for the air regulations. Section 71-2105 provides criminal enforcement authority.

This general statement of authority is included in the SIP.

Authority for SIP Revisions for New Nonattainment Areas (110(a)(2)(I))

CAA section 110(a)(2)(I) requires States to have the authority to revise their SIPs in response to changes in nonattainment areas.

Revisions to the SIP are authorized by Article 19 and sections 3-0301, 19-0103, 19-0301, 19-0303 and 19-0305 of the ECL. Article 19 of the ECL was adopted to protect New York's air resources from pollution and to effectuate the policy of the State to maintain a reasonable degree of purity of the air resources, consistent with the public health and welfare and the industrial

development of the State. To this end, the Legislature gave the Department specific powers and duties, including the power to promulgate regulations for preventing, controlling, or prohibiting air pollution. The Department also has the specific authority to regulate motor vehicle exhaust and approve air contaminant control systems as well as regulate fuels. Section 71-2103 provides general enforcement authority for the air regulations. Section 71-2105 provides criminal enforcement authority.

This general statement of authority is included in the SIP.

Consultation, Public Notification and PSD/Visibility (110(a)(2)(J))

CAA section 110(a)(2)(J) requires States to meet the applicable requirements of CAA section 121 relating to consultation, CAA section 127 relating to public information and Part C relating to PSD and visibility protection.

CAA section 121 requires States to provide a satisfactory process of consultation with general purpose local governments, designated organizations of elected officials of local governments and any Federal land manager having authority over Federal land to which the State plan applies. On December 22, 2005, the Department reestablished a SIP Coordinating Council consisting of senior policy representatives from 19 state agencies and authorities, and a SIP Task Force consisting of officials from thirty-seven local governments and designated organizations of elected officials. Periodic meetings of both groups have been held during the ozone SIP development period. Though there are no Federal lands within New York State to which the State plan applies, the Department has participated in the consultation process of the Regional Haze SIP (40 CFR 51.308) with the Federal Land Managers, States and Tribes of the Mid-Atlantic Northeast Visibility Union (MANE-VU), and other regional planning organizations where emissions from New York are reasonably anticipated to contribute to visibility impairment to Class I areas.

CAA section 127 requires State plans to contain measures which will be effective to notify the public during any calendar year, on a regular basis, of instances or areas in which any national primary ambient air quality standard is exceeded or was exceeded during any portion of the preceding calendar year to advise the public of the health hazards associated with such pollution, and to enhance public awareness of the measures which can be taken to prevent such standards from being exceeded and the ways in which the public can participate on regulatory and other efforts to improve air quality.

The Department's website, at http://www.dec.ny.gov/chemical/34985.html, contains an Air Quality Index (AQI) for reporting daily air quality to the public. It describes how clean or polluted the air is, and what associated health effects might be a concern. It was created as a way to correlate levels of different pollutants to one scale; the higher the AQI value, the greater the health concern. When levels of ozone and/or fine particles are expected to exceed an AQI value of 100, an Air Quality Health Advisory is issued alerting sensitive groups to take the necessary precautions. The Department, in cooperation with the New York State Department of Health, posts warnings on the above-referenced website if dangerous conditions are expected to occur.

These warnings are also aired through the media, and are available on the toll-free Ozone Hotline at 1-800-535-1345. The Air Quality Forecast displays the predicted AQI value for eight regions in New York State. It also displays the observed values for the previous day. Air quality measurements from New York's statewide continuous monitoring network are updated hourly where available. Parameters monitored include ozone, fine particulate, carbon monoxide, sulfur dioxide, nitrogen oxides, methane/nonmethane hydrocarbons, and meteorological data. Additional ozone information to enhance public awareness is located at http://www.dec.ny.gov/chemical/8400.html.

In accordance with EPA guidance issued on August 15, 2006, states may continue to rely on their existing NNSR and PSD permitting programs to prevent significant deterioration of air quality within their own boundaries and in adjacent states. New York confirms that the current state NNSR permitting program remains in effect and continues to apply for the State's major stationary sources. EPA has been implementing the PSD program in New York State since 2004.

New York commits to the continued enforcement of all SIP measures and the regulation of construction of new or modified stationary sources to meet NNSR requirements. In addition, New York will ensure that federal PSD requirements which are included in EPA-issued PSD permits are incorporated into Title V operating permits.

In addition, New York is currently in the rule-making process for 6 NYCRR Part 231, "New Source Review of New and Modified Facilities," which will be submitted to EPA as expeditiously as practicable for approval and inclusion in the SIP. Part 231 will include 8-hour ozone and $PM_{2.5}$ PSD and NNSR permitting requirements for major sources in the state.

With respect to visibility protection, and consistent with EPA's August 15, 2006, guidance, it is impossible at this time for New York to accurately determine whether there is interference with measures in another state's SIP designed to protect visibility because the affected Class I states have not submitted their regional haze SIPs to EPA, nor have they provided the Department with the pertinent information needed to identify the control measures necessary to reach the haze program's reasonable progress goals. New York will address the visibility protection requirements when the regional haze SIP is completed and submitted to EPA.

Air Quality Modeling / Data (110(a)(2)(K))

CAA section 110(a)(2)(K) requires States to provide for the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for which the Administrator has established a NAAQS. It also requires States to submit, upon request, data related to such air quality modeling to the Administrator.

The Department certifies that the air quality modeling and analysis used in SIPs complies with EPA's guidance* on the use of models in attainment demonstrations, and commits to continue to use air quality models in accordance with EPA's approved modeling guidance and to submit data to the Administrator if requested.

* US EPA 200. "Guidance on the use of models and other analyses for demonstrating attainment of air quality goals for ozone, $PM_{2.5}$ and regional haze." EPA-454/B-07-002.

Permitting Fees (110(a)(2)(L))

CAA section 110(a)(2)(L) requires States to require each major stationary source to pay permitting fees sufficient to cover the reasonable costs of reviewing, planning, approving, implementing and enforcing permits.

The ECL satisfies this requirement. ECL section 19-0311(c) requires the Department to promulgate regulations that, among other things, require applications to identify and describe facility emissions in sufficient detail to establish the basis for the fees and applicability of requirements of the Act. ECL section 72-0303 requires major stationary sources to pay operating permit program fees in an amount sufficient to cover the costs of the operating permit program.

In addition, paragraph 201-6.5(a)(7) of Subpart 201-6, the Department's approved Title V program, specifically states that "The owner and/or operator of a stationary source shall pay fees to the department consistent with the fee schedule authorized by Subpart 482-2 of this Title."

New York commits to continue to implement major stationary source permit fee regulations.

Consultation / Participation by Affected Local Entities (110(a)(2)(M))

CAA section 110(a)(2)(M) requires States to provide for consultation and participation by local political subdivisions affected by the plan.

The Department established an Inter-agency Consultation Group (ICG) pursuant to 6 NYCRR Part 240, "Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved under Title 23 U.S.C. or the Federal Transit Laws." Members of this group include the Federal Transit Administration, Federal Highway Administration, the New York State Department of Transportation, the United States Environmental Protection Agency, the New York State Department of Environmental Conservation, and several Metropolitan Planning Organizations statewide. The ICG is central to the entire transportation conformity process, and serves as the underpinning for conformity determinations and as the primary mechanism for ensuring early coordination and negotiation among all parties affected by transportation conformity, including the general public, the business community, and other interested parties.

Additional consultation and participation by local political subdivisions are provided through the SIP Task Force established on December 22, 2005, which consists of officials from thirty-seven local governments and designated organizations of elected officials.

The Department commits to continue to provide for consultation and participation by local political subdivisions.

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Department of Environmental Conservation
Division of Air Resources

NEW YORK
STATE IMPLEMENTATION PLAN
FOR
OZONE
(8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION
FOR
POUGHKEEPSIE, NY AREA

APPENDIX J

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ***ALEXANDER B. GRANNIS, COMMISSIONER***

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Appendix J
Sample Calculations

Section J-1 – Point Source OSD sample calculation

Base line ozone season day emission calculation – This sample is an actual combustion turbine with a low NOx burner and an SCR

Ozone Season Day Emissions (OSD_{init}) = (fuel thruput/osd) x (emission factor) x (1 – (removal efficiency/100))

The projected reductions are calculated as follows:

OSD $Emissions_{future}$ = OSD $Emissions_{init}$ x Growth Factor x (1 – (CF/100))

Where Growth Factor = SCC specific growth factor for the "new" year.
And CF = Control Factor = % additional control to be applied at this unit on or before the "new" year. For point sources, this is usually done on a case by case basis since some point sources already have the proposed control level installed. For example, the proposed control factor for process XYZ is 75 % removal – Facility A already has a control device that removes 75% (or more). At Facility A, the CF for this unit is 0. At Facility B, there is no control device. For Facility B, the CF is 75%.

Units	OSD emissions	– pounds per ozone season day (sometimes expressed in tons per ozone season day)
	Fuel thruput	– gallons of oil / ozone season day - could also be in cubic feet of natural gas or pounds of coal
	Emission factor	– pounds of emissions per unit of fuel – in this example, we are using pounds of emissions per gallon of oil burned
	Removal Efficiency	– this term is expressed as percent removal
	Growth Factor	– unitless this is a growth factor so units are pounds / pounds – hence unitless
	CE	– this term is expressed as percent additional removal from the base year

CF is calculated as follows

CF = CE x RP x RE

Where

CE is the control efficiency that is required for the emission category (e.g. cement kilns)
RP is the Rule Penetration – the degree a given rule penetrates the universe of emission processes coming under the purview of the rule (taking into account rule applicability, exemptions, etc.)
RE is the Rule Efficiency – the correction factor to adjust for "real-world" operating conditions (i.e. equipment breakdowns, operator variance, compliance rate, etc.)

Section J2 – Area Source Growth and Control calculations

Annual and Ozone Season Day emissions for the 2002 baseline inventory were calculated according to the procedures contained in *The New York State Area Source Methodologies Manual* – See Appendix D.

The projected reductions are calculated as follows:

$$\text{OSD Emissions}_{\text{future}} = \text{OSD Emissions}_{\text{init}} \times \text{Growth Factor} \times (1 - (CF/100))$$

Where Growth Factor = SCC specific growth factor for the "new" year.
And CF = Control Factor = % additional control to be applied at this unit on or before the "new" year.

Units	OSD emissions	– pounds per ozone season day (sometimes expressed in tons per ozone season day)
	Growth Factor	– unitless this is a growth factor so units are pounds / pounds – hence unitless
	CF	– this term is expressed as percent additional removal from the base year

CF is calculated as follows

$$CF = CE \times RP \times RE$$

Where

CE is the control efficiency that is required for the emission category (e.g. Consumer Products)
RP is the Rule Penetration – the degree a given rule penetrates the universe of emission processes coming under the purview of the rule (taking into account rule applicability, exemptions, etc.)
RE is the Rule Efficiency – the correction factor to adjust for "real-world" operating conditions (i.e. equipment breakdowns, operator variance, compliance rate, etc.)

For each Area Source category, the equations above can be used with the data contained in Tables J-1 and J-2 below.

Note: The rows in the tables that contain 8 digit SCC codes are point source emissions and as noted in Section J-1, the reductions from 2002 to 2012 might not be consistent with the control factor because some facilities in the non-attainment area might already have controls.

Table J-1
Proposed Rules

Area Source Category	SCC	RE	RP	2002 act	2009 GF	2009 CF	2009 emiss	2009 CE	2002 OSD	2008 OSD	2009 OSD
Adhesives and Sealants	2440020000	80	100	332.60	1.356215	64.4	160.58	80.5	0.91	0.51	0.44
	40200701	80	100	0.00	1.398149	64.4	0.00	80.5	0.00	0.00	0.00
	40200706	80	100	0.00	1.398149	64.4	0.00	80.5	0.00	0.00	0.00
	40200710	80	100	0.00	1.398149	64.4	0.00	80.5	0.00	0.00	0.00
Consumer Products (2)	2460000000	80	80	2911.71	1.048547	2	2567.13	3.125	8.00	7.19	7.05
Asphalt Paving	2461022000	80	80	505.01	1.188605	20	480.20	31.25	2.91	2.15	2.02
Portable Fuel Containers	2501011011	80	80	60.62	1.048221	5.8	30.65	9.0625	0.17	0.10	0.08
	2501011012	80	80	523.50	1.048221	5.8	264.66	9.0625	1.44	0.83	0.73
	2501011016	80	80	28.73	1.048221	5.8	14.52	9.0625	0.08	0.05	0.04
	2501012011	80	80	9.15	1.048618	5.8	4.63	9.0625	0.03	0.01	0.01
	2501012012	80	80	74.87	1.048618	5.8	37.87	9.0625	0.21	0.12	0.10
	2501012016	80	80	193.81	1.048618	5.8	98.02	9.0625	0.53	0.31	0.27
Portland Cement Plants	30501202	80	100	0.00	0.983655	70	0.00	87.5	0.00	0.00	0.00
	30501204	80	100	0.00	0.983655	70	0.00	87.5	0.00	0.00	0.00
	30501206	80	100	0.00	0.983655	70	0.00	87.5	0.00	0.00	0.00
	30500706	80	100	0.00	1.158273	20	0.00	25	0.00	0.00	0.00
	30500606	80	100	0.00	1.232589	20	0.00	25	0.00	0.00	0.00
Glass Manufacturing	30501416	80	100	0.00	1.123742	70	0.00	87.5	0.00	0.00	0.00
	30501401	80	100	0.00	1.123742	70	0.00	87.5	0.00	0.00	0.00
	30501403	80	100	0.00	1.123742	70	0.00	87.5	0.00	0.00	0.00
	30501402	80	100	0.00	1.123742	70	0.00	87.5	0.00	0.00	0.00
	39000689	80	100	1.12	1.054589	70	0.35	87.5	0.0029	0.0031	0.0031
	39001399	80	100	0.00	1.149248	20	0.00	25	0.00	0.00	0.00
Asphalt Production	30500251	80	100	0.00	1.235294	35	0.00	43.75	0.00	0.00	0.00
	30500205	80	100	0.00	1.235294	35	0.00	43.75	0.000	0.000	0.000

Table J-2
Adopted Rules

Area Source Category	SCC	RE	RP	2002 act	2009 GF	2009 CF	2009 emiss	2009 CE	2002 OSD	2008 OSD	2009 OSD
AIM Coatings	2401001000	80	80	1205.94	1.209415	31	1006.36	48.4375	4.31	3.70	3.59
	2401008000	80	80	7.54	0.995585	31	5.18	48.4375	0.03	0.02	0.02
Consumer Products (1)	2460000000	80	80	2911.71	1.048547	14.2	2619.53	22.1875	8.00	7.19	7.05
Mobile Equipment Repair	2401005000	80	80	538.52	1.1394	38	380.42	59.375	2.07	1.55	1.46
Portable Fuel Containers	2501011011	80	100	60.62	1.048221	48.8	32.53	61	0.17	0.10	0.08
	2501011012	80	100	523.50	1.048221	48.8	280.96	61	1.44	0.83	0.73
	2501011016	80	100	28.73	1.048221	48.8	15.42	61	0.08	0.05	0.04
	2501012011	80	100	9.15	1.048618	48.8	4.91	61	0.03	0.01	0.01
	2501012012	80	100	74.87	1.048618	48.8	40.20	61	0.21	0.12	0.10
	2501012016	80	100	193.81	1.048618	48.8	104.06	61	0.53	0.31	0.27
Solvent Metal Cleaning	2415020000	80	100	0.00	1.23849	66	0.00	82.5	0.00	0.00	0.00
	2415025000	80	100	6.72	2.039102	66	4.66	82.5	0.02	0.01	0.01
	2415035000	80	100	1.77	1.237118	66	0.74	82.5	0.01	0.00	0.00
	2415045000	80	100	13.12	1.504638	66	6.71	82.5	0.04	0.02	0.02
	2415055000	80	100	193.44	1.112949	66	73.20	82.5	0.53	0.25	0.20
	2415060000	80	100	74.56	1.169027	66	29.63	82.5	0.21	0.10	0.08