# Proposed
# Georgia's 15% Reasonable Further Progress State Implementation Plan Revision for the Atlanta 8-Hour Ozone Nonattainment Area

## March 26, 2009

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# EXECUTIVE SUMMARY

Section 182 of the federal Clean Air Act Amendments of 1990 (CAA) requires ozone nonattainment areas with air quality classified as "moderate" or worse to submit plans showing reasonable further progress towards attainment of the national ambient air quality standards (NAAQS).

On April 30, 2004, EPA designated 20 metropolitan Atlanta counties as a "marginal" nonattainment area under the 8-hour ozone standard. The 8-hour ozone nonattainment area encompasses the 13 counties of the former 1-hour ozone nonattainment area[1] plus seven additional "ring" counties: Barrow, Bartow, Carroll, Hall, Newton, Spalding, and Walton. With an attainment deadline of June 15, 2007, marginal 8-hour ozone areas were required to attain the NAAQS by the 2006 ozone season. Because monitoring data from the 2006 ozone season indicated that Atlanta had not attained the NAAQS, the area was reclassified to "moderate." In ozone nonattainment areas with air quality classified as "moderate" or worse, the reasonable further progress (RFP) requirement established in Section 182(b) of the CAA prescribes emission reductions from the baseline totaling 15% within six years of the base year (i.e., by the end of 2008 for the 8-hour ozone NAAQS).

This 15% Reasonable Further Progress Plan is not required or intended to demonstrate attainment of the ozone NAAQS; it is a description of how the 15% additional emission reductions required in the Atlanta area by 2008 were achieved. This 15% RFP Plan establishes 2008 motor vehicle emissions budgets of 171.83 and 272.67 tons per day, VOC and NOx, respectively, for the 20-county Atlanta 8-hour ozone nonattainment area. Note that the motor vehicle emissions budgets are essentially the 2008 mobile[2] source emission inventories for the Atlanta nonattainment area and do not include emissions from outside the nonattainment area. In order to complete the 15% RFP Plan in accordance with EPA guidance, 2002 VOC and NOx emissions inventories for the 20-county nonattainment area were produced. The 2002 inventories were adjusted by removing VOC and NOx already scheduled for control by previous federal regulations on motor vehicles and gasoline volatility. The required VOC and NOx reductions (15%) and the resulting target levels of future VOC and NOx emissions were calculated, and growth in emissions was projected. Projected emissions of VOC and NOx reflect control rules already adopted and implemented. In the nonattainment area as a whole, these controls were found to be more than sufficient to reduce overall emissions by the required amounts and also to offset all of the growth in emissions projected to occur between 2002 and 2008. Although projected emissions for 2008 are above the target levels calculated for 7-county VOC and 13-county NOx (see tables below), with VOC reductions from the 13-county area and NOx reductions from the 7-county area the 15% emissions reductions required in the Atlanta area by 2008 are easily achieved.

[1] Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale.

[2] The term "mobile" is used to describe emissions from on-road motor vehicles. The term "nonroad" is used to describe emissions from off-road equipment and vehicles.

## VOC Target Level and Projected Emissions for the 15% RFP Plan

| 2008 VOC Emissions (tons/day) | | | | |
|---|---|---|---|---|
| **7-County VOC Target Level** | **Projected 7-County VOC Inventory** | **Tons over 7-County Target** | **Available 13-County VOC Reductions** | **Excess Nonattainment Area VOC Reductions** |
| 96.9 | 109.7 | 12.9 | 74.7 | 61.8 |

## NOx Target Level and Projected Emissions for the 15% RFP Plan

| 2008 NOx Emissions (tons/day) | | | | |
|---|---|---|---|---|
| **13-County NOx Target Level** | **Projected 13-County NOx Inventory** | **Tons over 13-County Target** | **Available 7-County NOx Reductions** | **Excess Nonattainment Area NOx Reductions** |
| 441.2 | 445.5 | 4.3 | 128.1 | 123.8 |

## 1.0 INTRODUCTION

Section 182 of the federal Clean Air Act Amendments of 1990 (CAA) requires ozone nonattainment areas with air quality classified as "moderate" or worse to submit plans showing reasonable further progress towards attainment of the national ambient air quality standards (NAAQS). Because Atlanta was classified as a "serious" nonattainment area under the 1-hour ozone standard, the CAA required Georgia to develop a state implementation plan (SIP) to reduce emissions of volatile organic compounds (VOCs) in the 13-county Atlanta 1-hour ozone nonattainment area by 15% from 1990 to 1996. The last revision to Georgia's 15% Rate-of-Progress (ROP) SIP (the 15% Plan) was submitted by the Georgia Environmental Protection Division (EPD) on June 17, 1996, and was approved by the United States Environmental Protection Agency (EPA) effective May 26, 1999 (64 FR 20196, April 26, 1999).

The CAA also requires Post-1996 emission reductions of VOCs and/or nitrogen oxides (NOx) totaling 3% per year, averaged over each consecutive three-year period beginning in 1996 and continuing through the attainment date. Georgia chose to rely solely on NOx emission reductions in its Post-1996 ROP SIP (the 9% Plan). This plan was required to describe how Georgia would achieve reasonable further progress towards attaining the 1-hour ozone NAAQS between 1996 and 1999, the attainment deadline for serious nonattainment areas. The last revision to Georgia's 9% Plan was submitted June 17, 1996, and was approved by EPA effective April 19, 1999 (64 FR 13348, March 18, 1999).

On July 17, 2001, EPD submitted to EPA the Atlanta 1-hour ozone attainment SIP, which included a demonstration that Atlanta would attain the 1-hour ozone NAAQS by November 15, 2004. That attainment demonstration, including the extension of the attainment date, was approved by the EPA in a notice published in the Federal Register on May 7, 2002 (67 FR 30574), which cited EPA's policy to grant attainment date extensions for areas dependent upon upwind states' emission reductions mandated by the regional NOx SIP Call as a basis for approval. Subsequently, in challenges to other attainment date extensions, several federal appeals courts ruled that EPA lacked the authority to grant such attainment date extensions. On February 20, 2003, EPA filed a motion for voluntary vacatur of Atlanta's attainment date extension and approval of Atlanta's ozone attainment demonstration. On June 16, 2003, the United States Court of Appeals for the Eleventh Circuit issued an order granting EPA's motion, thereby vacating approval of the July 17, 2001, attainment demonstration.

In response to these court rulings, EPA issued a final rulemaking action in the September 26, 2003, Federal Register (68 FR 55469). It included a determination that the Atlanta area had failed to attain the 1-hour ozone standard by the statutory deadline of November 15, 1999, and that by operation of law, the Atlanta area was being re-classified as a "severe" ozone nonattainment area effective January 1, 2004. Under Section 181(a)(1) of the Clean Air Act, the attainment deadline for Atlanta as a new "severe" nonattainment area was "as expeditiously as practicable," but not later than November 15, 2005.

Georgia EPD subsequently conducted an Early Attainment Assessment to review the progress made in implementing the July 17, 2001, ozone attainment SIP. The Early Attainment Assessment indicated that the emission reductions achieved from the 1-hour ozone attainment

SIP control measures had been effective in reducing monitored levels of ozone and that the attainment demonstration previously approved by EPA for the Atlanta 1-hour ozone nonattainment area while classified as "serious" was still a valid technical demonstration of attainment under the "severe" classification. For this reason, EPD requested that EPA consider the July 17, 2001, attainment demonstration as a "severe" area attainment demonstration, thereby establishing November 15, 2004, as the "as expeditiously as practicable" attainment date for the Atlanta "severe" ozone nonattainment area.

EPA's September 26, 2003, action required submission of a severe area Post-1999 ROP SIP. A severe area Post-1999 ROP SIP must describe how at least a 3 percent per year reduction in emissions of ozone precursors (VOCs or NOx) will be achieved, from the time of failure to meet the "serious" area attainment date (November 15, 1999) until the "severe" area attainment date.

The Atlanta severe area Post-1999 ROP SIP contained a description of how the 3 percent per year reductions in ozone precursor emissions, required over the period from November 15, 1999, through November 15, 2004, were achieved. It also contained motor vehicle emission budgets (MVEBs) for the Atlanta 1-hour ozone nonattainment area. EPD submitted the Post-1999 ROP SIP and MVEBs on December 24, 2003, and they were approved by EPA effective August 18, 2004 (69 FR 42880, July 19, 2004).

On April 30, 2004, EPA designated 20 metropolitan Atlanta counties as a "marginal" nonattainment area under the 8-hour ozone standard. The eight-hour ozone nonattainment area encompasses the 13 counties of the former 1-hour ozone nonattainment area plus seven additional "ring" counties: Barrow, Bartow, Carroll, Hall, Newton, Spalding, and Walton. With an attainment deadline of June 15, 2007, marginal areas were required to attain the National Ambient Air Quality Standard (NAAQS) by the 2006 ozone season. Because monitoring data from the 2006 ozone season indicated that Atlanta had not attained the NAAQS, the area was reclassified[3] to "moderate," with an attainment date no later than June 15, 2010.

In ozone nonattainment areas with air quality classified as "moderate" or worse, the reasonable further progress (RFP)[4] requirement established in Section 182(b) of the Clean Air Act (CAA) prescribes emission reductions from the baseline totaling 15% within six years of the base year (i.e., by the end of 2008 for the 8-hour ozone NAAQS). Per 40 CFR Part 51.910(a)(1)(iii), moderate and higher classification areas of which a portion has an approved 1-hour ozone 15% VOC Plan can choose to treat the nonattainment area as two parts, each with a separate RFP target, and may substitute reductions in NOx for VOCs in the sub-area with the approved 15% Plan. The 15% reduction for the sub-area without an approved 1-hour ozone 15% VOC Plan must be entirely in VOCs. Because photochemical air quality modeling indicates that NOx reductions are more effective than VOC reductions in reducing ozone concentrations in the region,[5] Georgia will rely solely on NOx emission reductions for the 13-county part of the Atlanta ozone nonattainment area with an approved 15% VOC Plan.

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[3] 73 Federal Register 12013, March 6, 2008

[4] The terminology EPA uses for progress towards attainment has been codified at 40 CFR Part 51.900: "reasonable further progress" is used for the 8-hour ozone NAAQS, "rate of progress" is used for the former 1-hour NAAQS.

[5] See Appendix A, Sensitivity of ozone concentrations in Atlanta to NOx and VOC controls inside and outside the nonattainment area (www.gaepd.org/Files_PDF/plans/sip/app_a_nox_substitution_and_out_of_area_benefits.pdf)

## 2.0 PLAN REQUIREMENTS

This plan was prepared in accordance with the SIP requirements established in the Code of Federal Regulations (40 CFR Part 51), and with the EPA guidance cited in Section 3.2.1 below. The plan is consistent with existing guidelines for implementation plans and contains a detailed analysis of each of the following required elements of a reasonable-further-progress plan:

- Base Year Emissions Inventories
- Target Level Calculations
- Control Measures
- Projected Emissions
- Motor Vehicle Emissions Budgets
- Milestone Failure Contingencies
- Reporting Requirements

# 3.0 8-HOUR OZONE 15% REASONABLE FURTHER PROGRESS PLAN

## 3.1 Introduction

This Atlanta 8-Hour Ozone 15% Reasonable Further Progress Plan, hereinafter called the 15% RFP Plan, is not required nor intended to demonstrate attainment of the ozone NAAQS. The 15% RFP Plan is a description of how the 15% emissions reductions required by 2008 were achieved.

In order to develop the 15% RFP Plan, Georgia EPD worked with the Atlanta Regional Commission to update the 2002 VOC and NOx emissions inventories and adjusted the inventories by removing VOC and NOx already scheduled for control by previous federal regulations on motor vehicles and gasoline volatility. The required VOC and NOx reductions (15%) and the resulting target levels of future emissions were calculated, and growth in emissions was estimated. Projected 2008 emissions reflect various emissions control rules already adopted and implemented prior to the 2008 ozone season. Although projected emissions for 2008 are above the target levels calculated for 7-county VOC and 13-county NOx, with VOC reductions from the 13-county area and NOx reductions from the 7-county area the 15% emissions reductions required in the Atlanta area by 2008 are achieved.

Note that, while all appendices have been submitted in printed form, any supporting files and databases that would be impracticable to print are available electronically, both on the submitted CD-R and via permanent EPD web links. In addition, files are permanently archived on EPD computer networks. To request access to any of these files please contact the Georgia EPD Air Protection Branch at (404) 363-7000.

## 3.2 Calculation of Emission Target Levels

### 3.2.1 Procedure for Development of Target Levels

The 15% RFP Plan was prepared following the guidance in:

- *Appendix A to Preamble - Methods to Account for Non-Creditable Reductions When Calculating ROP Targets for the 2008 and Later ROP Milestone Years* ("the 8-hour ozone RFP guidance")[6];
- EPA's December, 1993, *NOx Substitution Guidance*[7]
- The August 15, 2006, 8-hour ozone RFP guidance memo from William T. Harnett, Director of EPA's Air Quality Policy Division; and
- EPA's *Policy Guidance on the Use of MOBILE6 for SIP Development and Transportation Conformity*[8] (the "MOBILE6 policy guidance").

[6] 70 FR 71696-71697, November 29, 2005; corrected October 4, 2006 (71 FR 58498)
[7] http://web.archive.org/web/20041011225913/http://www.epa.gov/ttn/oarpg/t1/memoranda/noxsubst.wpd
[8] http://www.epa.gov/otaq/models/mobile6/m6policy.pdf

The 8-hour ozone RFP guidance provides step-by-step procedures for calculating the 2008 target level emissions. This methodology was used to calculate 2008 target levels. The projected inventory for an RFP milestone year with all control measures in place and reflecting any growth in activity projected to occur by the milestone year must be equal to or less than the target level of emissions for that milestone year.

The Reasonable-Further-Progress Inventory is the base inventory from which the target levels of emissions for the milestone years must be calculated. These target levels reflect the required percent reductions, net of growth, from base year emissions that must be achieved to meet the requirements of the CAA. For this 15% RFP SIP, the target levels reflect the required 15 percent reductions for reasonable further progress.

### 3.2.2 2002 Reasonable-Further-Progress Base Year Inventories

The 2002 Reasonable-Further-Progress Base Year Inventories are comprised of the anthropogenic[9] point, area, nonroad, and mobile sources in the 20-county 8-hour ozone nonattainment area. Note that throughout this SIP revision, its appendices, and its exhibits, the term "mobile" is used to describe emissions from on-road motor vehicles, while the term "nonroad" is used to describe emissions from off-road equipment and vehicles. The 2002 RFP Base Year Inventories include emissions from the mobile and the nonroad sectors that have been updated using the latest models[10] and, for mobile sources, revised[11] 2002 vehicle activity estimates from a new 20-county travel demand model for the region. The development of the 2002 inventories for area, aircraft and locomotive, and point sources (excluding power plants) is documented in Appendix E, *Documentation of VISTAS Inventories and Georgia 2002 CERR Inventory*. For the 2002 power plant emissions inventory, actual emissions data from EPA's Continuous Emissions Monitoring System (CEMS) database were used, as further described in the second paragraph following, and in Section 5.4.1. The development of the 2002 mobile source emissions inventory is documented in Appendix C, *Mobile Source Emissions Modeling for Atlanta 15% RFP Plan.*

Per 40 CFR Part 51.910(a)(iii)(B), for moderate and higher classification areas of which only a portion has an EPA-approved 15% VOC reduction plan, the state can treat the nonattainment area as two parts, each with a separate RFP target. Georgia has chosen that approach. Because ozone concentrations in the Atlanta area are much more sensitive to reductions in NOx than in VOC emissions, NOx emission reductions are being relied upon for progress towards attainment in the 13-county area for which the statutory requirement for VOC reductions has already been met. For the 7-county part of the 20-county nonattainment area, VOC reductions are still required. Accordingly, two separate 2002 RFP Base Year Inventories were developed for this 15% RFP SIP, one each for the 13-county and 7-county parts of Atlanta's 20-county ozone nonattainment area.

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[9] (resulting from human activity)

[10] MOBILE6.2.03 and NONROAD2005, respectively

[11] According to the MOBILE6 policy guidance, “If SIPs are revised ..., base year...motor vehicle emission inventories will need to be recalculated with the latest available planning assumptions... Base year...inventories should use the best data available for those years."

The updated 2002 RFP NOx emissions inventory for the 13-county portion of the Atlanta 8-hour ozone nonattainment area is approximately 562.1 tons per day (See Table 1 below -- due to spreadsheet rounding, totals may differ slightly from the sum of the parts).

**Table 1 -- 13-County 2002 Reasonable-Further-Progress Base Year NOx Inventory**

| | 2002 NOx Emissions (tons/day) | | | | |
|---|---|---|---|---|---|
| | **Point** | **Area** | **Nonroad** | **Mobile** | **Total** |
| 13-county 2002 RFP Base Year Inventory | 84.1 | 24.5 | 111.3 | 342.1 | 562.1 |

Because the seven "ring" counties in the 20-county Atlanta ozone nonattainment area are not included in Georgia's approved 15% Plan for the 1-hour ozone standard, as part of a moderate ozone nonattainment area they are subject to the 15% VOC reduction requirement in Section 182(b)(1) of the CAA. To meet this requirement, VOC reductions from the 7-county and 13-county parts of the nonattainment area were relied upon for progress towards attainment.

**Table 2 -- 7-County 2002 Reasonable-Further-Progress Base Year VOC Inventory**

| | 2002 VOC Emissions (tons/day) | | | | |
|---|---|---|---|---|---|
| | **Point** | **Area** | **Nonroad** | **Mobile** | **Total** |
| 7-County 2002 RFP Base Year Inventory | 6.4 | 50.8 | 15.9 | 50.5 | 123.5 |

3.2.3 Adjusted Base Year Inventories

Adjusted Base Year Inventories must be calculated relative to the RFP milestone year. As detailed in the 8-hour ozone RFP guidance, the development of the Adjusted Base Year Inventories requires excluding from those inventories the emission reductions that would occur by the milestone years as a result of federal programs already mandated prior to the 1990 Clean Air Act Amendments.

The adjustments exclude:

- Emissions reductions that would occur by the milestone year as a result of the Federal Motor Vehicle Control Program (FMVCP) promulgated prior to the Clean Air Act Amendments; and

- Reductions that would result by the milestone year from the federal Reid Vapor Pressure (RVP) regulations promulgated in June 1990.

These adjustments are made because states are not allowed to take credit for emissions reductions that would have occurred due to fleet turnover from vehicles meeting pre-1990 standards to newer cars and trucks, or from previously existing federal fuel regulations. These non-creditable reductions are called the FMVCP/RVP reductions. See Appendix C, Exhibits 5 and 8, for details on the Adjusted Base Year Inventories. Tables 3 and 4 below show the FMVCP/RVP reductions.

**Table 3 -- 13-County FMVCP/RVP Reductions**

| 13-county area | Mobile Source NOx emissions (tons/day) | Mobile Source VOC emissions (tons/day) | FMVCP/RVP NOx reductions (tons/day) | FMVCP/RVP VOC reductions (tons/day) |
|---|---|---|---|---|
| 2002 w/o post-1990 CAA measures | 401.3 | 256.3 | --- | --- |
| 2002 adjusted to 2008 | 358.2 | 227.2 | 43.1 | 29.1 |

**Table 4 -- 7-County FMVCP/RVP VOC Reductions**

| 7-county area | Mobile Source VOC emissions (tons/day) | Mobile Source NOx emissions (tons/day) | FMVCP/RVP VOC reductions (tons/day) | FMVCP/RVP NOx reductions (tons/day |
|---|---|---|---|---|
| 2002 w/o post-1990 CAA measures | 64.0 | 72.8 | --- | --- |
| 2002 adjusted to 2008 | 54.5 | 65.8 | 9.6 | 6.9 |

The 2002 Adjusted Base Year Inventories were prepared using MOBILE6.2 emission factors; 2002 speeds[12] and vehicle miles traveled (VMT) data from ARC's travel demand model networks; and area-specific fleet age[13] distributions. The Adjusted Base Year inventory calculation procedure described in the 8-hour ozone RFP guidance was used. The 13-county 2002 Base Year NOx Inventory Adjusted to 2008 totals 519.0 tons per day, as shown in Table 5. The 7-county 2002 Base Year VOC Inventory Adjusted to 2008 totals 114.0 tons per day, as shown in Table 6.

**Table 5 -- 2002 Adjusted to 2008 Base Year 13-County NOx Inventory**

| 13-County NOx | NOx Emissions (tons/day) | | | | |
|---|---|---|---|---|---|
| | Point | Area | Nonroad | Mobile | Total |
| Adjusted Base Year Inventory | 84.1 | 24.5 | 111.3 | 299.1 | 519.0 |

[12] See Appendix C.
[13] See Section 6.2 and Appendix C.

**Table 6 -- 2002 Adjusted to 2008 Base Year 7-County VOC Inventory**

| 7-County VOC | VOC Emissions (tons/day) | | | | |
|---|---|---|---|---|---|
| | Point | Area | Nonroad | Mobile | Total |
| Adjusted Base Year Inventory | 6.4 | 50.8 | 15.9 | 40.9 | 114.0 |

3.2.4 Required Emissions Reductions

To calculate the required NOx emissions reduction in tons per day, the 13-county Adjusted Base Year Inventory adjusted to the RFP target year is multiplied by 15 percent. The required NOx reductions for 2008 are shown in Table 7.

**Table 7 -- Required 13-County NOx Reductions for 2008**

| | | |
|---|---|---|
| Adjusted Base Year Inventory | 519.0 | tons/day |
| Times Factor (15%) | × 0.15 | |
| Emissions Reduction Required | 77.9 | tons/day |

To calculate the required VOC emissions reduction in tons per day, the 7-county Adjusted Base Year Inventory adjusted to the RFP target year is multiplied by 15 percent. The required VOC reductions for 2008 are presented in Table 8.

**Table 8 -- Required 7-County VOC Reductions for 2008**

| | | |
|---|---|---|
| Adjusted Base Year Inventory | 114.0 | tons/day |
| Times Factor (15%) | × 0.15 | |
| Emissions Reduction Required | 17.1 | tons/day |

3.2.5 Target Levels of Emissions

To calculate the 2008 NOx target emissions level, the reductions necessary to meet the required 15 percent emissions reduction and the FMVCP/RVP non-creditable reductions were subtracted from the 13-county 2002 RFP NOx inventory. The results, in NOx tons per day, are shown in Table 9 below:

**Table 9 -- NOx Emissions Target Level for 2008, 13-County Area**

| | | |
|---|---|---|
| 2002 13-county NOx RFP inventory | 562.1 | tons/day |
| FMVCP/RVP reductions (2002 to 2008) | – 43.1 | tons/day |
| Adjusted Base Inventory | 519.0 | tons/day |
| Required Reduction (15% of Adjusted Base) | – 77.9 | tons/day |
| NOx Target Level for 2008 | 441.2 | tons/day |

To calculate the 2008 VOC target emissions level, the reductions necessary to meet the required 15 percent emissions reduction and the FMVCP/RVP non-creditable reductions were subtracted

from the 7-county 2002 RFP VOC inventory. The results, in VOC tons per day, are shown in Table 10 below:

**Table 10 -- VOC Emissions Target Level for 2008, 7-County Area**

| | | |
|---|---|---|
| 2002 7-county VOC RFP inventory | 123.5 | tons/day |
| FMVCP/RVP reductions (2002 to 2008) | – 9.6 | tons/day |
| Adjusted Base Inventory | 114.0 | tons/day |
| Required Reduction (15% of Adjusted Base) | – 17.1 | tons/day |
| VOC Target Level for 2008 | 96.9 | tons/day |

## 4.0 CONTROL MEASURES

This section describes the control measures being relied upon for this 15% RFP Plan. The projected emissions reflect federal and/or state emission controls on all emission source sectors. All non-federal control measures being relied upon for this 15% RFP Plan have been implemented and have been codified in Georgia's state regulations. See Rules for Air Quality Control Chapter 391-3-1 and Rules for Enhanced Inspection and Maintenance Chapter 391-3-20.

### 4.1 Point Source Control Measures

For demonstrating progress in the 13-county area for which the 15% VOC reduction requirement has already been met, NOx emission reductions are being relied upon for this 15% RFP Plan because photochemical air quality modeling indicates that, on a parts-per-billion per ton basis, NOx reductions are more effective than VOC reductions in reducing ozone concentrations in the region. Georgia EPD is including reductions of NOx emissions at coal-fired electrical power plants in the 20-county nonattainment area. As a control strategy to attain the 1-hour ozone standard in Atlanta, stricter controls have been placed on these power plants.[14, 15] Emissions from nonattainment area power plants are discussed in section 5.4.1, below. Note that although sensitivity analyses indicate that reducing NOx emissions from power plants as far away as Putnam and Monroe counties (Plants Branch and Scherer, respectively) results in significant reductions in ozone concentrations in central Atlanta (e.g., 1.8 parts per billion from NOx controls at Plant Scherer),[16] no emissions reductions outside the Atlanta nonattainment area are being relied upon for RFP credit.

State regulation[17] establishes May through September NOx emission limits on coal-fired electric generating units (EGUs) within the counties of Bartow, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Floyd, Forsyth, Fulton, Gwinnett, Heard, Henry, Monroe, Paulding, Putnam, and Rockdale. Compliance with this state regulation is achieved, in part, by the installation and operation of combustion modification and/or air pollution control equipment. Combustion modifications include the use of over-fire air and low-NOx burners. Air pollution control consisted in selective catalytic reduction (SCR). See Appendix D for details of the combustion modifications and/or SCR use placed on some of the large EGUs in the counties noted above.[18]

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[14] *Georgia's State Implementation Plan for the Atlanta Ozone Non-attainment Area*, Section 3.2.1.1.2, July 17, 2001, http://permanent.access.gpo.gov/websites/www.dnr.state.ga.us/dnr/environ/plans_files/plans/sip_narrative.pdf

[15] Appendix D, Controls on Large Electric Utility Steam Generating Units, http://www.gaepd.org/Files_PDF/plans/sip/app_d_egu_controls.pdf

[16] Appendix A, p. A-3 (http://www.gaepd.org/Files_PDF/plans/sip/app_a_nox_substitution_and_out_of_area_benefits.pdf)

[17] See Rules for Air Quality Control, Chapter 391-3-1-.02(2)(jjj), NOx Emissions from Electric Utility Steam Generating Units, http://www.gaepd.org/Files_PDF/rules/rules_exist/391-3-1.pdf

[18] Of these counties, all but Floyd, Heard, Monroe, and Putnam are in the Atlanta ozone nonattainment area.

## 4.2 Area Source Control Measures

The projected area source emissions reflect Georgia's ban[19] on open burning in the nonattainment area during the 2002 ozone season. This rule was instituted for the 15% and 9% Plans. Stage I gasoline vapor recovery is also reflected in the 13-county area source inventories.

## 4.3 Nonroad Mobile Source Control Measures

The projected 2008 nonroad emissions reflect all applicable federal controls on nonroad mobile sources, as well Georgia's controls[20] on gasoline.

## 4.4 Mobile Source Control Measures

The projected mobile source emissions inventories described in Section 5.4 below reflect all federal and state mobile source control rules. Controls that only apply in the 13-county part of the Atlanta 8-hour ozone nonattainment area include annual enhanced vehicle inspection and maintenance[21] (I/M) with onboard diagnostics system checks on 1996 and newer model year cars and light trucks; 2-mode ASM tests on 25-year-old through 1995 model year vehicles; a check for catalytic converter tampering on 25-year-old through 1995 model year vehicles; a gas cap pressure test on all subject vehicles; and technician training and certification; and Stage II gasoline refueling vapor recovery. Controls that apply in both the 13-county and the 7-county parts of the nonattainment area include low-sulfur and low (7.0 pounds per square inch) RVP gasoline;[22] the Federal Motor Vehicle Control Program, including Tier 1 and (beginning with 2004 models) Tier 2 tailpipe standards; and the National Low Emission Vehicle (NLEV) program.

See Section 5.4.4, Section 6, and Appendix C for further discussion of mobile source modeling.

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[19] See Rules for Air Quality Control, Chapter 391-3-1 -.02(5), Open Burning, http://www.gaepd.org/Files_PDF/rules/rules_exist/391-3-1.pdf

[20] See Rules for Air Quality Control, Chapter 391-3-1-.02(2)(bbb), Gasoline Marketing, http://www.gaepd.org/Files_PDF/rules/rules_exist/391-3-1.pdf

[21] See Rules for Enhanced Inspection and Maintenance, Chapter 391-3-20, http://www.gaepd.org/Files_PDF/rules/rules_exist/391-3-20.pdf

[22] See Appendix B, EPA Approval of Georgia Gasoline Control Program (http://www.gaepd.org/Files_PDF/plans/sip/app_b_epa_approval_of_georgia_gasoline_control_program.pdf)

# 5.0 PROJECTED EMISSIONS

## 5.1 Emissions Projection Overview

With the exceptions of mobile sources and the nonroad sources included in NONROAD2005, which were explicitly modeled[23] for the target year; and power plant emissions; 2008 emissions were projected by interpolating between 2002 and 2009 summer[24] daily emissions extracted from the "BaseG" county-level emissions inventories prepared by contractors for VISTAS,[25] the regional planning organization of which Georgia is a member . VISTAS has been funding the development of one base year (2002) and two future year (2009 and 2018) emissions inventories for the past several years. Preparation of the VISTAS inventories is described in Appendix E, *Documentation of VISTAS Inventories and Georgia 2002 CERR Inventory*.[26] The general approach adopted by VISTAS was to use recently updated growth and control data from sources that included EPA's Clean Air Interstate Rule analyses; EPA's Heavy Duty Diesel rulemaking emission projections; EPA's Economic Growth Analysis System (EGAS 5.0); an updated Regional Economic Models, Inc. (REMI), Policy Insight® model (version 5.5, used in the development of EGAS 5.0); and the latest Annual Energy Outlook published by the Department of Energy. See Appendix E for more details. The resulting emissions inventories represent the best currently available estimate of past and future year emissions in Georgia. EPD has conducted analysis that shows growth factors generated by EGAS, and aggregated by SCC and by county, follow a linear trend. The estimated change in emissions for interim years, linear in nature, obtained through interpolation of the quality-assured 2002 and 2009 VISTAS emission inventories is consistent with this finding. EPD considers it unlikely that use of a methodology other than interpolation would lead to significantly different or "better" 2008 inventories. EPD thus considers interpolation an appropriate technique to estimate emissions for 2008.

The VISTAS contractors processed the inventories using EPA's Sparse Matrix Operator Kernel Emissions (SMOKE)[27] modeling system. County-level daily emission files were generated for 2002 and 2009 from the earlier BaseF VISTAS inventories using the program SMKREPORT. EPD used these county-level daily emission files to calculate annual-average-day to summer-average-day conversion factors (ratio of the average summer emissions to average annual emissions). EPD then derived county-level summer-day emission estimates (defined as the average of all days in June, July and August) from the annual average daily BaseG emissions by multiplying those annual average daily emissions times the annual-to-summer day conversion factors derived from the VISTAS BaseF SMKREPORT outputs:

$$E_{BaseG}^{summmer} = E_{BaseG}^{annual}\left(\frac{E_{BaseF}^{summer}}{E_{BaseF}^{annual}}\right)$$

[23] The 2008 mobile and NONROAD2005 inventories reflect an assumed 100% market share of 10% ethanol-blend gasoline (E10), with a volatility waiver that, per Georgia's Gasoline Marketing Rule, allows RVP for E10 to rise as high as 8.0 pounds per square inch.
[24] June, July, and August
[25] Visibility Improvement State and Tribal Association of the Southeast
[26] http://www.gaepd.org/Files_PDF/plans/sip/app_e_vistas_inventory_documentation_b_and_f.pdf
[27] http://www.smoke-model.org/index.cfm

$E_{BaseG}^{summmer}$ = Daily summer BaseG emissions averaged over all days in June, July and August

$E_{BaseG}^{annual}$ = Daily annual BaseG emissions averaged over all 365 days

$E_{BaseF}^{summer}$ = Daily summer emissions averaged over all days in June, July and August extracted from the SMKREPORT output generated during VISTAS BaseF4 emissions processing

$E_{BaseF}^{annual}$ = Daily annual emissions averaged over all 365 days extracted from the SMKREPORT output generated during VISTAS BaseF4 emissions processing

The only change made between the BaseG inventories used for this SIP and the BaseG4 "best-and-final" inventories was to power plant emissions. As explained in Section 5.4.1 below, the only use made of VISTAS power plant emissions for this SIP was in calculating NOx-to-VOC conversion factors. These would not be expected to change if derived from BaseG4 inventories. The projected emissions for the 2008 target year are summarized in Excel workbooks available here:

http://www.gaepd.org/Files_XLS/plans/sip/20-county_RFP_targets_and_emissions_rev3.xls

## 5.2 Projected 7-County 2008 VOC Emissions Summary

Projected 7-county 2008 VOC emissions reflecting the control measures described in Section 4, Control Measures, are summarized in Table 11:

**Table 11 -- 2008 7-County Projected VOC Emissions**

| | VOC Emissions (tons/day) | | | | |
|---|---|---|---|---|---|
| | **Point** | **Area** | **Nonroad** | **Mobile** | **Total** |
| 2008 7-County Projected VOC Inventory | 6.7 | 49.1 | 12.9 | 41.1 | 109.8 |

Although the projected 7-county 2008 VOC emissions of 109.8 tons per day are above the 2008 7-county VOC Target Level Emissions of 96.9 tons of VOC per day by 12.9 tons per day, as shown in Table 12 below there are unclaimed 2008 VOC reductions totaling 74.6 tons per day available from the 13-county part of the nonattainment area for which there is an approved 1-hour ozone 15% VOC Plan. By applying 12.9 tons per day of those available 13-county VOC reductions towards 7-county RFP, the 7-county VOC target is met, with 61.7 available nonattainment area VOC tons per day reductions remaining.

**Table 12 -- 2008 13-County Available VOC Reductions**

| | VOC Emissions (tons/day) | | | | |
|---|---|---|---|---|---|
| | **Point** | **Area** | **Nonroad** | **Mobile** | **Total** |
| 2002 Adjusted to 2008 Base Year 13-County VOC Inventory | 15.9 | 297.8 | 137.7 | 145.1 | 596.4 |
| 2008 13-County Projected VOC Inventory | 14.5 | 269.2 | 107.4 | 130.7 | 521.8 |
| 2008 13-County Available VOC Reductions | 1.4 | 28.6 | 30.3 | 43.5 | 74.6 |

## 5.3 Projected 13-County 2008 NOx Emissions Summary

The projected 13-county 2008 NOx emissions reflecting the control measures described in Section 4, Control Measures, are summarized in Table 13:

**Table 13 -- 2008 Projected 13-County NOx Emissions**

| | NOx Emissions (tons/day) | | | | |
|---|---|---|---|---|---|
| | **Point** | **Area** | **Nonroad** | **Mobile** | **Total** |
| 2008 Projected 13-County NOx Inventory | 99.9 | 25.2 | 104.3 | 221.2 | 450.7 |

Although the projected 13-county 2008 NOx emissions of 450.7 tons per day are above the 2008 13-county NOx Target Level Emissions of 441.2 tons of NOx per day by 9.5 tons per day, as shown in Table 14 below there are unclaimed 2008 NOx reductions totaling 126.0 tons per day available from the 7-county part of the nonattainment area without an approved 1-hour ozone 15% VOC Plan, where RFP must be in VOC reductions. By applying 9.5 tons per day of those available 7-county NOx reductions towards 13-county RFP, the 13-county NOx target is met, with 116.5 available nonattainment area NOx tons per day reductions remaining.

**Table 14 -- 2008 7-County Available NOx Reductions**

| | VOC Emissions (tons/day) | | | | |
|---|---|---|---|---|---|
| | **Point** | **Area** | **Nonroad** | **Mobile** | **Total** |
| 2002 Adjusted to 2008 Base Year 7-County NOx Inventory | 163.1 | 7.8 | 18.1 | 59.0 | 247.9 |
| 2008 7-County Projected NOx Inventory | 46.7 | 8.0 | 15.7 | 51.5 | 121.9 |
| 2008 7-County Available NOx Reductions | 116.4 | -0.2 | 2.3 | 7.5 | 126.0 |

## 5.4 Emissions Projection Methodology by Source Category

### 5.4.1 Point Source Emissions Projections

There are two major types of point sources: electric generating unit (EGU) point sources and all other (non-EGU) point sources. For the 2002 Base Year Inventory, NOx emissions from EGU point sources were obtained from actual emissions data[28] reported by Georgia Power Company to EPA's CEMS database. Note that these actual EGU data for 2002 reflect the effects of controls in operation on several units at Georgia Power's Plants Bowen, McDonough, and Yates during the May through September, 2002. For nonattainment area EGU VOCs, facility-level, summer-day emissions were computed by multiplying the 2002 actual and 2008 projected summer-day EGU NOx emissions of individual facilities by site-specific NOx-to-VOC conversion factors. Facility-level daily emission files for 2002 and 2009 produced by SMKREPORT during the processing of the VISTAS BaseF4 emissions were used to calculate site specific NOx-to-VOC conversion factors (ratio of the average summer VOC emissions to average summer NOx emissions).[29] The 2002 NOx-to-VOC conversion factors were used with the 2002 actual EGU NOx emissions. Because no additional EGU controls will be added between 2008 and 2009, the 2009 NOx-to-VOC conversion factors were used with the 2008 projected EGU NOx emissions.

Non-EGU point source emissions estimates for 2002 and 2009 were extracted from the VISTAS inventories for the 20-county Atlanta 8-hour ozone nonattainment area. Non-EGU point source emissions inventories for 2008 were developed by interpolating between 2002 and 2009 non-EGU point source emissions inventories for the 20-county Atlanta 8-hour ozone nonattainment area. The 2008 inventories for the EGUs in the 20-county nonattainment area were actual NOx emissions from those plants[30] from the CEMS database.

### 5.4.2 Area Source Emissions Projections

Area source emissions inventories for 2008 were developed by interpolating between the 2002 and 2009 summer-day emissions extracted from the VISTAS BaseG area source emissions inventories for the 20-county Atlanta 8-hour ozone nonattainment area (see Section 5.1).

### 5.4.3 Nonroad Mobile Source Emissions Projections

Nonroad mobile source emissions for 2002 and 2008 were, with the exception of those from aircraft and locomotives, calculated by EPD using EPA's NONROAD2005 emissions model.[31] The NONROAD model reflects the effects of all federal controls, and of Georgia Gasoline and E10, on nonroad sources of emissions. Inventory methodology for 2002 and 2009 emissions

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[28] http://camddataandmaps.epa.gov/gdm/index.cfm?fuseaction=emissions.wizard

[29] See Column L of the "egu_by_facility" worksheet in the Excel workbook "20-county_RFP_targets_and_emissions_rev3.xls" available here: http://www.gaepd.org/Files_XLS/plans/sip/20-county_RFP_targets_and_emissions_rev3.xls

[30] see the "egu_nox_summer_02-08" worksheet in the Excel workbook "20-county_RFP_targets_and_emissions_rev3.xls" available here: http://www.gaepd.org/Files_XLS/plans/sip/20-county_RFP_targets_and_emissions_rev3.xls

[31] http://www.epa.gov/otaq/nonrdmdl.htm#model

from aircraft and locomotives is described in Appendix E, *Documentation of VISTAS Inventories and Georgia 2002 CERR Inventory*. Total nonroad inventories for 2008 were developed by adding the directly modeled 2008 emissions for sources included in the NONROAD2005 model to those interpolated between the 2002 and 2009 summer-day emissions for aircraft and locomotives extracted from the VISTAS BaseG inventories.

### 5.4.4 Mobile Source Emissions

The highway mobile source emissions for the 20-county 8-hour ozone nonattainment area were developed using the MOBILE6.2 emission factor model[32] and the ARC's link-based emissions estimation procedure. See Appendix C for details of the mobile source emissions modeling. The projected mobile source emissions inventories reflect all federal and state mobile source control rules, including federal tailpipe standards, low-sulfur and low-RVP gasoline, and, in the 13 counties of the former 1-hour ozone standard nonattainment area, enhanced I/M and Stage II refueling vapor recovery.

One adjustment had to be made to the calculated tons per day emissions inventories to arrive at the final motor vehicle emissions inventories. This adjustment accounts for the loss of credit from a state rule allowing exemption from vehicle inspection and maintenance for cars 10 years old or older driven fewer than 5,000 miles per year and owned by persons 65 years old or older. It was estimated that this senior I/M exemption increased VOC and NOx emissions by 0.05 and 0.03 tons per day, respectively, in 2002. This senior I/M exemption emissions debit for 2002 is conservatively high and was also added to the 2008 budget year inventories. See "Effect of Senior Exemption on 2002 Highway Mobile Source Emissions" in Appendix F for details of the senior exemption credit loss calculations.

[32] http://www.epa.gov/otaq/m6.htm#m60

## 6.0 MOTOR VEHICLE EMISSIONS BUDGETS

### 6.1 Background

Reasonable-Further-Progress plans are control strategy SIP revisions. As such, they establish motor vehicle emissions budgets (MVEBs). A motor vehicle emissions budget is described in EPA's transportation conformity rule[33] as "...the implementation plan's estimate of future [motor vehicle] emissions." Such budgets establish caps on motor vehicle emissions; projected emissions from transportation plans and programs must be equal to or less than these caps for a positive conformity determination to be made.

Section 93.118(e)(4)(iv) of the transportation conformity rule requires that the "motor vehicle emissions budget(s), when considered together with all other emissions sources, is consistent with applicable requirements for reasonable further progress, attainment, or maintenance...."

Section 93.118(e)(4)(v) of the transportation conformity rule requires that "the motor vehicle emission budget(s) is consistent with and clearly related to the emissions inventory and the control measures in the submitted control strategy implementation plan revision or maintenance plan...."

### 6.2 Establishment of 2008 Motor Vehicle Emissions Budgets for the Atlanta 8-hour Ozone Nonattainment Area

Note that the motor vehicle emissions budgets being established with this 15% RFP Plan are essentially the 2008 mobile source emission inventories for the Atlanta nonattainment area and do not include emissions from outside the nonattainment area. Table 15 below shows the 2008 nonattainment area emissions inventories for all sectors:

**Table 15 -- 2008 20-County Atlanta Nonattainment Area Projected Emissions**

| | Point | Area | Nonroad | Mobile | Total |
|---|---|---|---|---|---|
| VOC (tons/summer day) | 21.1 | 318.3 | 120.3 | 171.78 | 631.5 |
| NOx (tons/summer day) | 139.4 | 33.2 | 120.1 | 272.64 | 565.3 |

In preparation for this 15% RFP Plan, EPD worked closely with the ARC to develop the best possible estimates of mobile source emissions for the 20-county Atlanta nonattainment area. Mobile source inventories for 2008 were developed using the latest available planning assumptions,[34] the most recent recalibrated travel demand model, and EPA's latest motor vehicle emission factor model, MOBILE6.2.03. The 2008 mobile source emissions inventories developed for this 15% RFP Plan are the basis for new NOx and VOC budgets for 2008, ensuring that these new MVEBs are "consistent with applicable requirements for reasonable

[33] 40 CFR Part 93.124(a)

[34] e.g., separate registration distributions by age for the 13-county and 7-county parts of the 20-county nonattainment area; updated VMT and speeds from ARC's expanded and enhanced travel demand model

further progress" and "consistent with and clearly related to the emissions inventory and the control measures in the submitted control strategy implementation plan revision."

Although the 13-county emissions reductions being relied upon for this 15% RFP Plan are from NOx controls alone, a 2008 inventory of 13-county mobile source VOC emissions was also developed to provide a VOC budget for the entire 20-county nonattainment area that reflects all latest planning assumptions. Similarly, although 7-county reductions are, per CAA Section 182, entirely VOC, a 2008 mobile source inventory of 7-county NOx was also developed. EPD worked with ARC to develop VOC and NOx emissions inventories for mobile sources using the ARC's link-based emissions estimation procedure (see Appendix C). These mobile source inventories reflect the most recent planning assumptions and emission factor model available, and the use of updated travel demand and emissions calculation models. The methodology used to calculate the highway mobile source emissions on which the updated 2008 MVEBs are based is discussed below and, in greater detail, in Appendix C.

The MOBILE6.2 motor vehicle emission factor model was used to calculate 2008 VOC and NOx emission factors with all 2008 mobile source control rules in place. Two sets of emission factors were produced to properly reflect different fleet characteristics and mobile source emissions controls in the 13-county and 7-county parts of the 20-county nonattainment area.

The 13-county controls include: annual enhanced I/M with onboard diagnostics system checks on 1996 and newer model year vehicles; 2-mode ASM tests on 25-model-year-old through 1995 vehicles; a check for catalytic converter tampering on 25-model-year-old through 1995 vehicles; a gas cap pressure test on all subject vehicles; low-sulfur and low-RVP gasoline; Stage II gasoline refueling vapor recovery; the Federal Motor Vehicle Control Program (FMVCP), including Tier 1 and (beginning with 2006 models) Tier 2 tailpipe standards; the National Low Emission Vehicle (NLEV) program; and technician training and certification.

For the 7-county part of the nonattainment area, the emission factors reflect Georgia's low-sulfur/low-RVP gasoline and all federal controls (e.g., FMVCP, NLEV).

The emission factors resulting from the separate MOBILE6.2 runs for the 13-county and 7-county parts of the 20-county nonattainment area were used with ARC's link-based emissions estimation procedure to calculate 2008 tons per day emissions in the following manner:

- For each of four times of day (a.m. peak, midday, p.m. peak, and night), the HPMS-adjusted and summer-adjusted 2008 VMT from each link in ARC's travel demand model were multiplied by the 2008 MOBILE6.2 emission factor at the average speed closest to the congested-flow speed on that link.

- Emissions from all the links and all four time periods were summed together to get grams per day inventories, which were divided by 907,180 to convert from grams per day to tons per day.

These mobile source inventories reflect the most up-to-date mobile modeling assumptions, including 2008 VMT projected from a state-of-the-art travel demand model for the 20 counties

and July 2008 emission factors from EPA's latest mobile source emission factor model, MOBILE6.2.03. Details of the mobile source emissions modeling methodology, along with the MOBILE6.2 input files and other documentation, are in Appendix C (Mobile Source Emissions Modeling for 15% RFP Plan).

Table 16 sums the calculated emissions inventories for the 20-county Atlanta ozone nonattainment area and the 13-county senior I/M exemption emissions increases.

**Table 16 -- Total 20-County 2008 Motor Vehicle Emissions Budgets**

| | VOC (tons/day) | NOx (tons/day) |
|---|---|---|
| 2008 Mobile Emissions Subtotal (MOBILE6.2 results) | 171.78 | 272.64 |
| Senior I/M Exemption Increases | + 0.05 | + 0.03 |
| Total 2008 Motor Vehicle Emissions Budgets | 171.83 | 272.67 |

This 15% RFP Plan hereby establishes 2008 motor vehicle emissions budgets of 171.83 and 272.67 tons per day, VOC and NOx, respectively, for the 20-county Atlanta 8-hour ozone nonattainment area. Interagency consultation among the relevant agencies occurred during the development of these MVEBs and prior to the submittal of this 15% RFP Plan. Full implementation plan documentation was provided to EPA, and EPA's stated concerns have been addressed.

The MVEBs established by this 15% RFP Plan are based on new estimates of VMT and speeds from an updated, state-of-the-art travel demand model; on the latest version of EPA's motor vehicle emission factor model (MOBILE6.2.03); and on registration distributions by age developed using registration data[35] obtained from R.L. Polk & Company. These MVEBs are the most accurate estimates of motor vehicle emissions developed to date for the Atlanta 8-hour ozone nonattainment area.

[35] Registration data was from R. L. Polk & Co.'s National Vehicle Population Profile ® current as of October 2002 and from R. L. Polk & Co.'s TIPNet ® current as of March 2003. See Appendix C, Exhibit 2, http://www.gaepd.org/Files_PDF/plans/sip/exhibit_2_2002_registration_distributions.pdf, for more details on the registration distribution by age.

## 7.0 IMPLEMENTATION SCHEDULE

All control measures being relied on for this 15% RFP Plan were implemented no later than May 1, 2003, with the exception of the final phase of Georgia's low RVP/low-sulfur gasoline marketing rule, implemented September 16, 2003.

## 8.0 MILESTONE FAILURE CONTINGENCIES

As part of a 15% RFP Plan for a moderate ozone nonattainment area, Georgia is required to include a contingency plan identifying additional controls to be implemented in the event of a milestone failure. Contingency measures must be fully adopted rules or measures that will take effect without further action by the State or EPA if an area fails to make reasonable further progress by the applicable date.

EPA guidance[36] suggests that a contingency plan should include 3% of the Adjusted Baseline Inventory's emissions. The 2002 Adjusted-to-2008 Baseline NOx Inventory for the 13-county area is 519.0 tons per day (see Table 5); a 3% contingency would be 15.6 NOx tons per day:

$$519.0 \times 0.03 = 15.6$$

Section 5.3 of this 15% RFP Plan identifies excess 2008 NOx reductions of 116.6 tons per day. The 3% contingency, if needed, can be met with these excess NOx reductions.

The 2002 Adjusted-to-2008 Baseline VOC Inventory for the 7-county area is 114.0 tons per day (see Table 6); a 3% contingency would be 3.4 VOC tons per day:

$$114.0 \times 0.03 = 3.4$$

Section 5.3 of this 15% RFP Plan identifies excess 2008 VOC reductions of 61.7 tons per day. The 3% contingency, if needed, can be met with these excess VOC reductions.

[36]"...EPA will interpret the Act to require States...to include sufficient contingency measures...so that, upon implementation of such measures, additional emissions reductions of up to 3 percent of the emissions in the adjusted base year...would be achieved in the year following the year in which the failure has been identified." From section III.A.3.(c) of *General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990*, 57 FR 13498, April 16, 1992.

## 9.0 REPORTING REQUIREMENTS

All of the control measures being relied upon for the success of this 15% RFP SIP are already in place. Georgia Power's compliance with the state rule regulating NOx emissions from large EGU point sources is reflected in the emissions data they report to EPA's CEMS clearinghouse. This information can be retrieved here:
http://camddataandmaps.epa.gov/gdm/index.cfm?fuseaction=emissions.wizard

Compliance with Georgia's Gasoline Marketing Rule is assured through the Rule's reporting and sampling requirements, and through EPD enforcement action if violations occur. Compliance with Georgia's Stage I and Stage II gasoline vapor recovery rules, and its open burning rule, is assured through EPD enforcement action if violations occur. Compliance with Georgia's Enhanced Inspection and Maintenance program is enforced through registration denial.

## 10.0 CONCLUSIONS

In the nonattainment area as a whole, the emission controls being relied upon for this 15% RFP Plan were found to be more than sufficient to reduce overall NOx and VOC emissions by the required amounts and also to offset all of the growth in emissions projected to occur between 2002 and 2008. As shown in Tables 17 and 18, although projected emissions for 2008 are above the target levels calculated for 7-county VOC and 13-county NOx, with VOC reductions from the 13-county area and NOx reductions from the 7-county area the 15% emissions reductions required in the Atlanta area by 2008 are easily achieved.

**Table 17 -- VOC Target Level and Projected Emissions for the 15% RFP Plan**

| 2008 VOC Emissions (tons/day) | | | | |
|---|---|---|---|---|
| **7-County VOC Target Level** | **Projected 7-County VOC Inventory** | **Tons over 7-County Target** | **Available 13-County VOC Reductions** | **Excess Nonattainment Area VOC Reductions** |
| 96.9 | 109.8 | 12.9 | 74.6 | 61.7 |

**Table 18 -- NOx Target Level and Projected Emissions for the 15% RFP Plan**

| 2008 NOx Emissions (tons/day) | | | | |
|---|---|---|---|---|
| **13-County NOx Target Level** | **Projected 13-County NOx Inventory** | **Tons over 13-County Target** | **Available 7-County NOx Reductions** | **Excess Nonattainment Area NOx Reductions** |
| 441.2 | 450.7 | 9.5 | 126.1 | 116.6 |