

Implementation of the “Clean Smokestacks Act”

**A Report to the
Environmental Review Commission and the
Joint Legislative Commission on
Governmental Operations**

**Submitted by the North Carolina Department
of Environment and Natural Resources and
the North Carolina Utilities Commission**



Report No. XI

June 1, 2013

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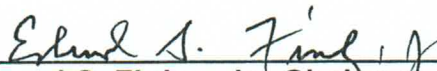
This report is submitted pursuant to the requirement of Section 14 of Session Law 2002-4, Senate Bill 1078 enacted June 20, 2002. The actions taken to date by Progress Energy Carolinas Inc. and Duke Energy Carolinas LLC appear to be in accordance with the provisions and requirements of the Clean Smokestacks Act.

Signed:



John E. Skvarla, III, Secretary
Department of Environment and Natural Resources

Signed:



Edward S. Finley, Jr., Chairman
North Carolina Utilities Commission

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Executive Summary

The Clean Smokestacks Act (or "Act") was enacted to improve air quality in North Carolina by imposing limits on the emission of certain pollutants from investor-owned electric generating facilities. The Act also provided for the recovery of costs incurred by the utilities to achieve those limits. The emissions limitations set in the Act applied to coal-fired electric generating units operated by Duke Energy Carolinas, LLC (Duke Energy) and Progress Energy Carolinas Inc. (Progress Energy).¹ The Act also imposed requirements on the Department of Environment and Natural Resources (DENR); the Division of Air Quality (DAQ) of DENR; the Environmental Management Commission; the Department of Justice, effectively; and the Utilities Commission (Commission). The Act, among other things, requires DENR and the Commission to report annually on the implementation of the Act to the Environmental Review Commission and the Joint Legislative Commission on Governmental Operations. The Act also requires Duke Energy and Progress Energy to submit annual reports to DENR and the Commission.

This report includes summaries of the annual reports submitted by Duke Energy and Progress Energy and describes actions and/or activities undertaken by state agencies in compliance with the Act. In summary, DENR and the Utilities Commission have concluded that the actions taken to date by Duke Energy and Progress Energy are in accordance with the provisions and requirements of the Clean Smokestacks Act. Further, the compliance plans and schedules proposed by Duke Energy and Progress Energy appear adequate to achieve the emissions limitations set out in G.S. 143-215.107D.

The General Assembly of North Carolina, Session 2001, passed Session Law 2002-4, also known as Senate Bill 1078. This legislation is titled "*An Act to Improve Air Quality in the State by Imposing Limits on the Emission of Certain Pollutants from Certain Facilities that Burn Coal to Generate Electricity and to Provide for Recovery by Electric Utilities of the Costs of Achieving Compliance with Those Limits*" ("the Clean Smokestacks Act," "the Act" or "the CSA"). The Clean Smokestacks Act, in Section 14,

¹ Effective April 29, 2013, Carolina Power & Light Company, d/b/a Progress Energy Carolinas, Inc., changed its legal name to Duke Energy Progress, Inc., d/b/a Duke Energy Progress, in connection with the Duke Energy/Progress Energy merger.

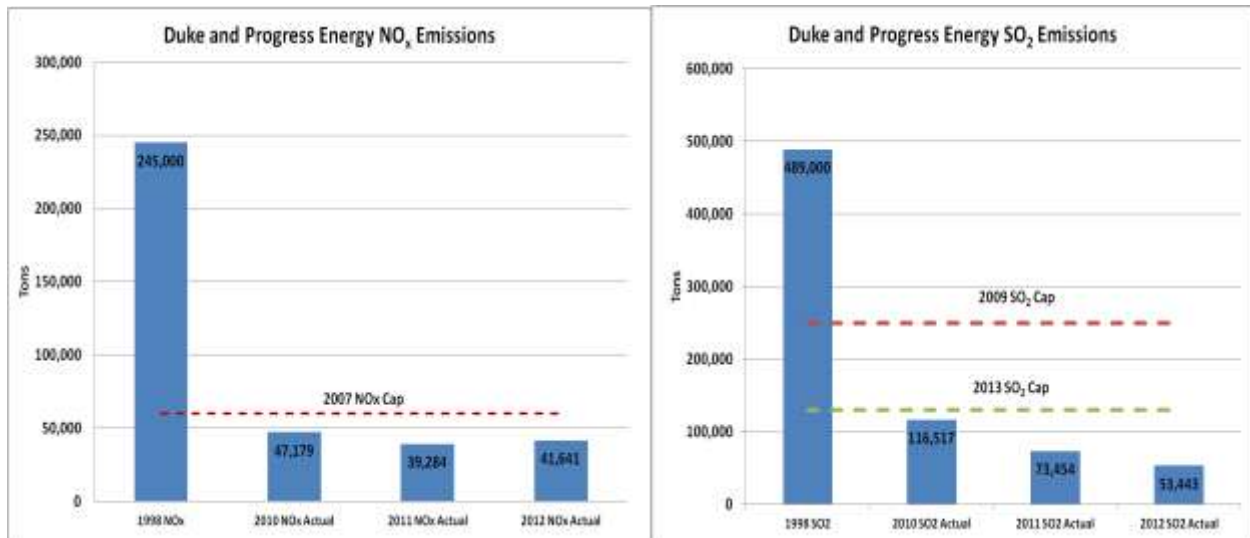
requires DENR and the Utilities Commission to report annually (by June 1 of each year) on the implementation of the Act to the Environmental Review Commission (ERC) and the Joint Legislative Commission on Governmental Operations (Governmental Operations).

The Act, in Section 9, requires Duke Energy, and Progress Energy, to submit annual reports to DENR and the Commission containing certain specified information. Duke Energy filed its report with DENR and the Commission by cover letter dated March 28, 2013. Progress Energy filed its report with DENR and the Commission by cover letter dated March 28, 2013. Each report was submitted in compliance with the requirements of G.S. 62-133.6(i). Duke Energy's and Progress Energy's reports are attached, and made part of this report, as Attachments A and B, respectively.

By letter dated May 10, 2013, the Secretary of DENR wrote to the Utilities Commission stating that, pursuant to G.S. 62-133.6(j), DENR has reviewed the information provided and has determined that the submittals comply with the Act. The Secretary further stated that the plans and schedules of the Companies appear adequate to achieve the emission limitations set out in G.S. 143-215.107D.

Significantly, 2007 marked the first step in meeting the emission reductions required by the Clean Smokestacks Act. Duke Energy was limited to 35,000 tons of oxides of nitrogen (NO_x) in any calendar year beginning Jan. 1, 2007, and Progress Energy was limited to 25,000 tons of NO_x (combined cap of 60,000 tons NO_x). DENR/DAQ has verified that both utilities have met their respective emission limits.

The end of 2009 marked the second milestone in emission reductions, when Duke Energy had to further reduce its calendar year NO_x emissions to 31,000 tons, and Progress Energy was required to emit less than 25,000 tons (combined cap of 56,000 tons NO_x). Also in 2009, both utilities were required to reduce calendar year sulfur dioxide (SO₂) emissions; Duke Energy to 150,000 tons and Progress Energy to 100,000 tons (combined cap of 250,000 tons SO₂). For calendar year 2012, both utilities reported that they have continued to meet their respective limits. This has been confirmed by DENR/DAQ. The figure below shows the decrease in NO_x and SO₂ emissions as a result of control measures implemented by Progress Energy and Duke Energy on a combined basis:



The reduction in SO₂ emissions required by CSA was paramount in attaining the fine particulate matter (PM_{2.5}) standard in the Hickory and Greensboro/High Point areas in North Carolina. In December 2009, DENR submitted to the U. S. Environmental Protection Agency (EPA) a redesignation demonstration and maintenance plan for these areas and then supplemented the maintenance plan in Dec. 2010. As part of the redesignation demonstration and maintenance plan, DENR relied on the CSA SO₂ reductions as permanent and enforceable measures that demonstrate continued maintenance of the PM_{2.5} standard. On Sept. 26, 2011, the EPA adopted the CSA emission caps into the State Implementation Plan (76 FR 59250). On Nov. 18, 2011, the EPA approved the redesignation demonstration and maintenance plan for the Hickory and Greensboro/High Point areas (76 FR 71452 and 71455). In this action, the EPA redesignated the area to attainment, effective Dec. 19, 2011. The approval of the North Carolina PM_{2.5} redesignation demonstration was made possible due to compliance with the CSA SO₂ emission caps.

The next milestone in emission reductions occurs in 2013, when Duke Energy and Progress Energy must reduce their annual SO₂ emissions to 80,000 tons and 50,000 tons, respectively (combined cap of 130,000 tons SO₂). Duke Energy's calendar year 2012 SO₂ emissions (12,640 tons SO₂) are well below the 2013 cap. Progress Energy's calendar year 2012 SO₂ emissions (40,803 tons SO₂) are also below the 2013 cap.

Collectively, the two utilities have reduced NO_x emissions by 83 percent and SO₂ emissions by 89 percent relative to 1998 emission levels.

This report is presented to meet the reporting requirement of the Act pertaining to DENR and the Commission, as discussed above, and is submitted jointly by DENR and the Commission. The report is structured to address the various actions that have occurred pursuant to the provisions of Sections 9, 10, 11, 12, and 13 of the Act. Reports of actions under these Sections describe the extent of implementation of the Act to this date.

I. Section 9(c) of the Act, Codified as Section 62-133.6(c) of the North Carolina General Statutes

G.S. 62-133.6(c) provides: *The investor-owned public utilities shall file their compliance plans, including initial cost estimates, with the Commission and the Department of Environment and Natural Resources not later than 10 days after the date on which this section becomes effective. The Commission shall consult with the Secretary of Environment and Natural Resources and shall consider the advice of the Secretary as to whether an investor-owned public utility's proposed compliance plan is adequate to achieve the emissions limitations set out in G.S. 143-215.107D.*

Status: The investor-owned utilities regulated under the Act, Progress Energy and Duke Energy, filed their initial compliance plans as required in June and July of 2002, respectively, in accordance with G.S. 62-133.6(c), Section 9(c) of Session Laws 2002-4, the Clean Smokestacks Act. DENR/DAQ reviewed this information and determined that the submittals complied with the Act and, as proposed, appeared adequate to achieve the emission limitations set out in G.S. 143-215.107D. The Commission agreed with and accepted DENR/DAQ's evaluations and findings.

II. Section 9(d) of the Act, Codified as Section 62-133.6(d) of the North Carolina General Statutes

G.S. 62-133.6(d) provides: *Subject to the provisions of subsection (f) of this section, the Commission shall hold a hearing to review the environmental compliance costs set out in subsection (b) of this section. The Commission may modify and revise those costs as necessary to ensure that they are just, reasonable, and prudent based on the most recent cost information available and determine the annual cost recovery amounts that each investor-owned public utility shall be required to record and recover during calendar years 2008 and 2009. In making its decisions pursuant to this subsection, the Commission shall consult with the Secretary of Environment and Natural Resources to receive advice as to whether the investor-owned public utility's actual and proposed modifications and permitting and construction schedule are adequate to achieve the emissions limitations set out in G.S. 143-215.107D. The Commission shall issue an order pursuant to this subsection no later than 31 December 2007.*

Commission proceedings conducted in compliance with this provision of the Act and related Commission rulings were comprehensively discussed in DENR and the Commission's 2009 Clean Smokestacks Act joint report to the ERC and the Joint Legislative Utility Review Committee, predecessor to Governmental Operations. For a complete detailed explanation of such matters, please refer to Part II of the 2009 report, beginning on Page 2.

III. Section 9(i) of the Act, Codified as Section 62-133.6(i) of the North Carolina General Statutes

G.S. 62-133.6(i) provides: *An investor-owned public utility that is subject to the emissions limitations set out in G.S. 143-215.107D shall submit to the Commission and to the Department of Environment and Natural Resources on or before 1 April of each year a verified statement that contains all of the following [specified information]:*

The following are the 11 subsections of G.S. 62-133.6(i) and the related responses from Progress Energy and Duke Energy for each subsection:

1. G.S. 62-133.6(i)(1) requires: *A detailed report on the investor-owned public utility's plans for meeting the emissions limitations set out in G.S. 143-215.107D.*

Progress Energy Response: Exhibit A of Attachment B to this report outlines Progress Energy's plan for technology selections by facility and unit, actual and projected operational dates, actual and expected emission rates, and the corresponding tons of emissions that demonstrate compliance with the provisions of G.S. 143-215.107D. The following changes to Duke Energy's plan for meeting emissions limits as compared to past compliance plans have been identified:

NO_x Compliance

Emission Rate Changes – “Expected [2014] emission rates for certain units have been adjusted in this 2013 update based on operating experience in 2012 with installed controls, targeted future performance, and planned retirements.”

SO₂ Compliance

Emission Rate Changes – “Expected [2014] emission rates for certain units have been adjusted in this 2013 update based on operating experience in 2012 with installed controls, targeted future performance, and planned retirements.”

Duke Energy Response: Exhibit A of Attachment A to this report outlines Duke Energy's plan for technology selections by facility and unit, actual and projected operational dates, actual and expected emission rates, and the corresponding tons of emissions that demonstrate compliance with the provisions of G.S. 143-215.107D. The following changes to Duke Energy's plan for meeting emissions limits as compared to past compliance plans have been identified:

NO_x Compliance

Emission Rate Changes – “Expected emission rates for certain units have been adjusted in this 2013 update based on operating experience in 2012 with installed controls, targeted future performance, and planned retirements.”

SO₂ Compliance

Emission Rate Changes – “Expected emission rates for certain units have been adjusted in this 2013 update based on operating experience in 2012 with installed controls, targeted future performance and planned retirements.”

2. G.S. 62-133.6(i)(2) requires: *The actual environmental compliance costs incurred by the investor-owned public utility in the previous calendar year, including a description of the construction undertaken and completed during that year.*

Summary of Progress Energy Report: “In the 2012 calendar year, Progress Energy did not incur any construction charges in support of compliance with the provisions of G.S. 143-215.107D.”

Summary of Duke Energy Report: The actual environmental compliance net costs incurred by Duke Energy in calendar year 2012 were \$309,000 (see Attachment A, Exhibit B). Such costs were incurred with respect to flue gas desulfurization (FGD) at the Company’s Allen and Cliffside Steam Stations.

3. G.S. 62-133.6(i)(3) requires: *The amount of the investor-owned public utility's environmental compliance cost amortized in the previous calendar year.*

Summary of Progress Energy Report: Progress Energy amortized no additional environmental compliance cost in 2012.

Summary of Duke Energy Report: Duke Energy amortized no additional environmental compliance cost in 2012.

4. G.S. 62-133.6(i)(4) requires: *An estimate of the investor-owned public utility's environmental compliance costs and the basis for any revisions of those estimates when compared to the estimates submitted during the previous year.*

Summary of Progress Energy Report: (Exhibit B of Attachment B) Progress Energy reported that there has been no significant change to the scope or timing associated with any of their projects, actual charges and forecasts for active projects have been updated as compared to the 2012 filing. The net overall cost is currently predicted to be \$1.05 billion. This is the final cost as no additional charges are expected.

Summary of Duke Energy Report: (Exhibit [B] of Attachment A) Duke Energy reported that there has been no significant change to the scope or timing associated with any of their projects, actual charges and forecasts for active projects have been updated as compared to the 2012 filing. The net overall cost is currently predicted to be \$1.84 billion. This is the final cost as no additional charges are expected.

5. G.S. 62-133.6(i)(5) requires: *A description of all permits required in order to comply with the provisions of G.S. 143-215.107D for which the investor-owned public utility has applied and the status of those permits or permit applications.*

Summary of Progress Energy Response: “Permitting necessary to comply with the provisions of G.S. 143-215.107D was completed in 2010.”

Summary of Duke Energy Response: “Permitting necessary to comply with the provisions of G.S. 143-215.107D was completed in 2010.”

6. G.S. 62-133.6(i)(6) requires: *A description of the construction related to compliance with the provisions of G.S. 143-215.107D that is anticipated during the following year.*

Summary of Progress Energy Response: Progress Energy “has finalized the construction activities necessary to comply with G.S. 143-215.107D.”

Summary of Duke Energy Response: Duke Energy “has finalized the construction activities necessary to comply with G.S. 143-215.107D. “

7. G.S. 62-133.6(i)(7) requires: *A description of the applications for permits required in order to comply with the provisions of G.S. 143-215.107D that are anticipated during the following year.*

Progress Energy Response: Progress Energy “has completed the permitting necessary to comply with the Provisions of G.S. 143-215.107D. No additional permit applications are expected.”

Duke Energy Response: Duke Energy “has completed the permitting necessary to comply with the Provisions of G.S. 143-215.107D. No additional permit applications are expected.”

8. G.S. 62-133.6(i)(8) requires: *The results of equipment testing related to compliance with G.S. 143-215.107D.*

Progress Energy Response: “No additional equipment testing related to compliance with G.S. 143-215.107D was performed in 2012.”

Duke Energy Response: “No additional equipment testing related to compliance with G.S. 143-215.107D was performed in 2012.”

9. G.S. 62-133.6(i)(9) requires: *The number of tons of oxides of nitrogen (NO_x) and sulfur dioxide (SO₂) emitted during the previous calendar year from the coal-fired generating units that are subject to the emissions limitations set out in G.S. 143-215.107D.*

Both utilities determine their actual emissions through measurements collected by continuous emissions monitors (CEMs). The raw CEM data are recorded and verified by the utilities, and then reported to the EPA’s Clean Air Markets Division. DENR/DAQ has

verified that emissions data reported by Progress Energy and Duke Energy are accurate.

Progress Energy Response: “In the 2012 calendar year, 22,524 tons of NO_x and 40,803 tons of SO₂ were emitted from the Progress Energy Carolinas coal-fired units located in North Carolina and subject to the emissions limitations set out in G.S. 143-215.107D.”

Duke Energy Response: “In the 2012 calendar year, 19,117 tons of NO_x and 12,640 tons of SO₂ were emitted from the Duke Energy Carolinas coal-fired units located in North Carolina and subject to the emissions limitations set out in G.S. 143-215.107D.”

10. G.S. 62-133.6(i)(10) requires: *The emissions allowances described in G.S. 143-215.107D(i) that are acquired by the investor-owned public utility that result from compliance with the emissions limitations set out in G.S. 143-215.107D.*

Progress Energy Response: “During 2012, Progress Energy Carolinas did not acquire any allowances as a result of compliance with the emission limitations set out in N.C. General Statute 143-215.107D.”

Duke Energy Response: “During 2012, Duke Energy Carolinas did not acquire any allowances as the result of compliance with the emission limitations set out in N.C. General Statute 143-215.107D.”

11. G.S. 62-133.6(i)(11) requires: *Any other information requested by the Commission or the Department of Environment and Natural Resources.*

Progress Energy Response: “No additional information has been requested to be included in this annual data submittal.”

Duke Energy Response: “No additional information has been requested to be included in this annual data submittal.”

IV. Section 10 of the Act provides: *It is the intent of the General Assembly that the State use all available resources and means, including negotiation, participation in interstate compacts and multistate and interagency agreements, petitions pursuant to 42 U.S.C. § 7426, and litigation to induce other states and entities, including the Tennessee Valley Authority, to achieve reductions in emissions of oxides of nitrogen (NO_x) and sulfur dioxide (SO₂) comparable to those required by G.S. 143-215.107D, as enacted by Section 1 of this act, on a comparable schedule. The State shall give particular attention to those states and other entities whose emissions negatively impact air quality in North Carolina or whose failure to achieve comparable reductions would place the economy of North Carolina at a competitive disadvantage.*

DENR/DAQ and Department of Justice (Attorney General) Activities to Implement this Section:

The State continues to pursue opportunities to carry forward the Legislature's objectives in Section 10 of the Act. The State reports the following recent activities and developments:

- 1) On Jan. 30, 2006, the State, through the Attorney General, sued the Tennessee Valley Authority (TVA) in federal district court in Asheville. The suit alleges that emissions of SO₂ and NO_x from TVA's fleet of coal-fired power plants are inadequately controlled and therefore create a public nuisance. The Attorney General asked the court to require TVA to install NO_x and SO₂ controls to abate the public nuisance.

On Jan. 13, 2009, the court found that four TVA coal-fired generating stations are creating a public nuisance in North Carolina. These facilities are the Bull Run, John Sevier, and Kingston plants in eastern Tennessee and the Widows Creek plant in northeastern Alabama. The judge ordered that each unit of each facility install modern pollution controls for SO₂ and NO_x and meet emission limits that are consistent with the continuous operation of such controls. The court ordered that TVA meet these limits on a staggered schedule ending in 2013.

On July 26, 2010, the United States Court of Appeals for the Fourth Circuit reversed the judgment, primarily on the ground that the action was pre-empted by the Clean Air Act. North Carolina petitioned the United States Supreme Court to review the case, but withdrew that petition pursuant to the ensuing settlement.

Meanwhile, on April 14, 2011, North Carolina, TVA, and several other parties agreed to a comprehensive settlement of a variety of air pollution allegations. The settlement was lodged with the federal district court in eastern Tennessee. The detailed settlement would, among other things, (1) subject SO₂ and NO_x emissions at all of TVA's coal-fired facilities to system-wide caps that decline on an annual basis to permanent levels of 110,000 tons of SO₂ in 2019 and 52,000 tons of NO_x in 2018; (2) require TVA to install modern pollution controls on or shutdown all of its coal-fired units (except certain units at the Shawnee plant in western Kentucky); and (3) require TVA to pay North Carolina \$11.2 million to fund mitigation projects in North Carolina. The settlement was filed on June 30, 2011 in the U.S. District Court for the Eastern District of Tennessee and is now binding. The settlement is being successfully implemented, including the provision of funds directly to North Carolina for approved projects.

- 2) On July 8, 2005, the Attorney General filed in the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) a petition for review of the EPA's Clean Air Interstate Rule (CAIR). CAIR was designed to reduce emissions of SO₂ and NO_x from power plants that cause particulate matter and ozone pollution

across the eastern United States. Among other things, the State alleged that CAIR fails to take into account significant air quality problems in North Carolina, fails to guarantee a remedy to North Carolina because the rule relies too heavily on the trading of pollution credits, and fails to require controls to be installed expeditiously.

On July 11, 2008, the D.C. Circuit granted North Carolina's petition in part. The court found that CAIR's trading program failed to comply with the Clean Air Act because it did not guarantee that emission reductions would be targeted to the downwind areas that need them, that EPA improperly refused to consider North Carolina's problems with maintaining national air quality standards, and that EPA set the CAIR pollution reduction deadlines without proper consideration of the tight deadlines faced by impacted States. The court also granted petitions from other parties on other issues.

In response to the court's judgment, on July 6, 2010, EPA proposed the Clean Air Transport Rule (CATR). The rule would cap SO₂ and NO_x emissions from States that impact attainment or maintenance of the national particulate matter and ozone standards in downwind states. Unlike CAIR, the CATR, as proposed, would largely abandon the interstate trading of pollution allowances. The deadlines for these emissions reductions would be coordinated with the needs of the downwind states and would ensure that the delay caused by the litigation would not negatively impact downwind states. On March 14, 2011, the Attorney General, along with the Attorney General of New York, sent a letter to the EPA Administrator requesting that EPA establish a schedule for completing the rule by the end of June 2011.

On July 6, 2011, the EPA promulgated the Cross-State Air Pollution Rule (CSAPR), rebranded from the proposed CATR. The promulgated rule does not stray far from the proposed CATR. Accordingly, CSAPR largely responds to the State's criticisms of CAIR.

Several petitions were filed in the D.C. Circuit for judicial review of CSAPR. Those petitions were consolidated and North Carolina, along with many other parties, intervened to assist EPA in the defense of CSAPR. On August 21, 2012 the Court held that CSAPR was unlawful because (i) EPA sought to impose a Federal Implementation Plan on states before providing adequate guidance for states to develop their own implementation plans and (ii) EPA improperly calculated states' contributions to other states' attainment problems. After the Court denied rehearing, EPA petitioned the United States Supreme Court to review the case. North Carolina and many other States supported EPA's petition. The Supreme Court is expected to decide in June 2013 whether it will hear the case. In the meantime, EPA has begun the process to develop a replacement rule to address interstate ozone and PM pollution.

- 3) On July 8, 2005, the Attorney General filed a petition with EPA requesting that EPA administratively reconsider certain aspects of CAIR. EPA denied this petition. This petition was reviewed by the D.C. Circuit and resolved along with the petition for review discussed in the preceding item.
- 4) On March 18, 2004, the State filed a petition under §126 of the Clean Air Act requesting that EPA impose NO_x and/or SO₂ controls on large coal-fired utility boilers in 13 upwind states that impact North Carolina's air quality. On March 15, 2006, EPA denied the State's petition. The Attorney General then petitioned EPA for administrative reconsideration, which was also denied. The Attorney General petitioned the D.C. Circuit for judicial review of both of these decisions.

Based on subsequent events, including the court's holding in the CAIR case, EPA conceded that it must reconsider its denial of North Carolina's §126 petition. The court agreed and, on March 5, 2009, remanded the matter back to EPA for further consideration. As part of the above-referenced settlement with TVA, North Carolina withdrew the petition as it relates to TVA. At the same time, North Carolina withdrew the petition regarding all sources in Maryland in part because Maryland enacted strict emissions limits on its coal-fired electric generating units (EGUs) that provided the relief that North Carolina was seeking.

- 5) In April 2008, EPA finalized a rule that exempts sources of NO_x in Georgia from any summertime NO_x cap under EPA's "NO_x SIP Call" rule. The NO_x SIP Call was designed to help downwind states reduce ambient levels of ozone. Sources in Georgia are also exempt from summertime NO_x controls for ozone pollution under CAIR. On June 20, 2008, the Attorney General petitioned the D.C. Circuit for review of EPA's decision to exempt Georgia sources from the NO_x SIP Call. On November 24, 2009, the court ruled that North Carolina did not have standing to sue EPA on this issue. The court concluded that, through the recent adoption and/or implementation of NO_x reduction rules by Georgia, sources in Georgia have reduced NO_x emissions to levels consistent with the NO_x SIP Call.

V. Section 11 of the Act provides: *The Environmental Management Commission shall study the desirability of requiring and the feasibility of obtaining reductions in emissions of oxides of Nitrogen (NO_x) and Sulfur Dioxide (SO₂) beyond those required by G.S. 143-215.107D, as enacted by Section 1 of this act. The Environmental Management Commission shall consider the availability of emission reduction technologies, increased cost to consumers of electric power, reliability of electric power supply, actions to reduce emissions of oxides of nitrogen (NO_x) and sulfur dioxide (SO₂) taken by states and other entities whose emissions negatively impact air quality in North Carolina or whose failure to achieve comparable reductions would place the economy of North Carolina at a competitive disadvantage, and the environment, and the natural resources, including visibility. In its conduct of this study, the Environmental Management Commission may consult with the Utilities Commission and the Public Staff. The Environmental Management Commission shall report its findings and*

recommendations to the General Assembly and the Environmental Review Commission annually beginning 1 September 2005.

Note: Session Law 2010-142 changed the beginning date of the requirements of this Section to Sept. 1, 2011.

Environmental Management Commission and DENR Response: A letter dated Sept. 1, 2011, was submitted to the Environmental Review Commission from Mr. Stephen T. Smith, chairman of the Environmental Management Commission. The letter (included as Attachment C in the June 1, 2012 CSA Report) stated that recent actions by the State, the federal government, the Eastern Tennessee federal District Court, and the U.S. Circuit Court are affecting power plant emissions and NO_x and SO₂ regulation. It recommended that the study of further State action to achieve additional reduction of these air pollutants be presented on Sept. 1, 2013. The study will:

- “allow the affected public utilities in North Carolina time to implement their control strategies to meet the compliance deadline under CSA,
- give the NCDAQ time to quantify air quality impacts from CSA compliance and evaluate necessary additional reductions needed to meet the new ambient air quality standards, and
- give industry and NCDAQ time to implement new federal rules and court actions.”

VI. Section 12 of the Act provides: *The General Assembly anticipates that measures implemented to achieve the reductions in emissions of oxides of nitrogen (NO_x) and sulfur dioxide (SO₂) required by G.S. 143-215.107D, as enacted by Section 1 of this act, will also result in significant reductions in the emissions of mercury from coal-fired generating units. The Division of Air Quality of the Department of Environment and Natural Resources shall study issues related to monitoring emissions of mercury and the development and implementation of standards and plans to implement programs to control emissions of mercury from coal-fired generating units. The Division shall evaluate available control technologies and shall estimate the benefits and costs of alternative strategies to reduce emissions of mercury. The Division shall annually report its interim findings and recommendations to the Environmental Management Commission and the Environmental Review Commission beginning 1 September 2003. The Division shall report its final findings and recommendations to the Environmental Management Commission and the Environmental Review Commission no later than 1 September 2005. The costs of implementing any air quality standards and plans to reduce the emission of mercury from coal-fired generating units below the standards in effect on the date this act becomes effective, except to the extent that the emission of mercury is reduced as a result of the reductions in the emissions of oxides of nitrogen (NO_x) and sulfur dioxide (SO₂) required to achieve the emissions limitations set out in G.S. 143-215.107D, as enacted by Section 1 of this act, shall not be recoverable pursuant to G.S. 62-133.6, as enacted by Section 9 of this act.*

DAQ Actions to Implement this Section: DENR/DAQ submitted reports in Sept. of 2003, 2004, and 2005, as required by this Section. The first report primarily focused on the "state of knowledge" of the co-benefit of mercury control that would result from the control of NO_x and SO₂ from coal-fired utility boilers. DAQ also made preliminary estimates of this co-benefit for North Carolina utility boilers based on the initial plans submitted by Progress Energy and Duke Energy. The second report primarily focused on "definition of options." DENR/DAQ has also submitted the third and final report titled Mercury Emissions and Mercury Controls for Coal-Fired Electrical Utility Boilers. In 2006, DENR/DAQ developed a state mercury rule that goes beyond the now-vacated federal Clean Air Mercury Rule (CAMR). The North Carolina mercury rules, contained in Section 15A NCAC 02D.2500, became effective Jan. 1, 2007. Under the rule, emissions of mercury from each coal-fired unit at Duke Energy and Progress Energy have to be controlled to the maximum degree that is technically and economically feasible or the unit must be shut down by a prescribed date.

In July 2008, DENR/DAQ submitted its fourth report on mercury emissions and controls for coal-fired electrical utility boilers. This report, required under 15A NCAC 2D.2509(b), discussed the technology, benefits and costs to further reduce mercury emissions from coal-fired electrical utility boilers (EGUs) in North Carolina. Also required under 15A NCAC 2D.2509(b), is the fifth mercury report, which was to be submitted to the Environmental Management Commission by July 1, 2012. The 2008 and 2012 reports provide updated information from the three earlier CSA reports on the same issues related to the control of mercury emissions from coal-fired EGUs and from other principal sources of mercury. Information was presented on the most recent mercury emissions, projected future emissions, existing and emerging control technology performance and costs, recent EPA rules with mercury emission limits, dispersion and deposition modeling, mercury in fish trends, and mercury-related health indicators of people consuming local fish. In addition, as required (by Jan.1, 2013) under 15A NCAC 2D.2511(b), Duke Energy and Progress Energy each submitted a mercury control plan to DENR/DAQ. Each plan described how each coal-fired generating unit will comply with the requirement to either install and operate mercury controls or shut down after Dec. 31, 2018.

The controls needed to comply with the Clean Smokestacks Act provide significant co-benefits in the form of mercury emission reductions. Therefore, mercury emission reductions in North Carolina will continue through the year 2013 and beyond. The Clean Smokestacks Act greatly reduces mercury emissions as a co-benefit of the NO_x and SO₂ controls from EGUs within the State. In 2002, the mercury emissions from the CSA facilities were 3,382 pounds (lbs). In 2010, those emissions dropped to 962 lbs, which is a 72 percent reduction in the mercury emissions.

On Feb. 16, 2012, the EPA finalized the national Mercury and Air Toxics Standards (MATS) for new and existing coal- and oil-fired EGUs. The rule replaces the court-vacated CAMR, and mercury reductions in North Carolina remain on schedule. The rule establishes power plant emission standards for mercury, acid gases, and non-mercury metallic toxic pollutants. According to the EPA, the standards will "prevent

90 percent of the mercury in coal burned in power plants from being emitted to the air; reduce 88 percent of acid gas emissions from power plants; and cut 41 percent of sulfur dioxide emissions from power plants beyond the reductions expected from the Cross State Air Pollution Rule.” Existing sources will have up to four years to comply with the MATS. Based on testing under 15A NCAC 2D.2511(d), Duke Energy and Progress Energy appear to be well-positioned to comply with the MATS mercury emission limits.

VII. Section 13 of the Act provides: *The Division of Air Quality of the Department of Environment and Natural Resources shall study issues related to the development and implementation of standards and plans to implement programs to control emissions of carbon dioxide (CO₂) from coal-fired generating units and other stationary sources of air pollution. The Division shall evaluate available control technologies and shall estimate the benefits and costs of alternative strategies to reduce emissions of carbon dioxide (CO₂). The Division shall annually report its interim findings and recommendations to the Environmental Management Commission and the Environmental Review Commission beginning 1 September 2003. The Division shall report its final findings and recommendations to the Environmental Management Commission and the Environmental Review Commission no later than 1 September 2005. The costs of implementing any air quality standards and plans to reduce the emission of carbon dioxide (CO₂) from coal-fired generating units below the standards in effect on the date this act becomes effective, except to the extent that the emission of carbon dioxide (CO₂) is reduced as a result of the reductions in the emissions of oxides of nitrogen (NO_x) and sulfur dioxide (SO₂) required to achieve the emissions limitations set out in G.S. 143-215.107D, as enacted by Section 1 of this act, shall not be recoverable pursuant to G.S. 62-133.6, as enacted by Section 9 of this act.*

DENR Actions to Implement this Section: DENR/DAQ submitted reports in September of 2003, 2004, and 2005, as required by this Section. The first report primarily focused on the "state of knowledge" and actions being taken or planned elsewhere regarding CO₂ control from coal-fired utility boilers. The second report primarily focused on "definition of options." DENR/DAQ submitted the third and final report titled, "Carbon Dioxide (CO₂) Emission Reduction Strategies for North Carolina," to the Environmental Management Commission and the Environmental Review Commission as required. Numerous recommendations were set forth in this report, including a recommendation for a North Carolina Climate Action Plan. The remaining text summarizes related actions at the state and federal level.

North Carolina Actions

The North Carolina Global Warming/Climate Change Bill (HB 1191/SB 1134) was enacted during the 2005 Session of the General Assembly. Along with the passage of the bill, the North Carolina 2005 Session of the General Assembly passed the Global Climate Change Act. This act established a Legislative Commission on Global Climate Change (LCGCC). DENR formed a related stakeholder group called the Climate Action Plan Advisory Group (CAPAG). CAPAG's purpose was to assess possible climate change mitigation options, carry out analysis related to emission trends, climate

scenarios and technology options, and make recommendations for state-level climate action planning, including CO₂ and other greenhouse gas (GHG) reductions. Impacts on economic opportunities and co-benefits of proposed potential mitigation options were evaluated through a formal consensus-based stakeholder process. Determination of economic benefits to North Carolina was also assessed. The inaugural meeting of the CAPAG was held on Feb. 16, 2006, and the CAPAG made recommendations regarding 56 mitigation options in the following five sectors: (1) Agriculture, Forestry and Waste; (2) Energy Supply; (3) Transportation and Land Use; (4) Residential, Commercial and Industrial; and (5) Cross Cutting (for issues that cut across different sectors, such as establishing a GHG registry). The work of developing these recommendations and evaluating potential GHG emissions reductions was divided among five technical work groups. The final CAPAG report can be found at <http://www.ncair.org/ncclimatechange/>.

One of the earlier recommendations of the CAPAG, a Renewable Energy and Energy Efficiency Portfolio Standard (REPS), was enacted by Session Law 2007-397 (SB3) and codified under G.S. 62-133.8. The Utilities Commission, in the context of an extensive rulemaking proceeding, has developed and issued comprehensive rules implementing the provisions of G.S. 62-133.8, including provisions related to REPS.

Federal Actions

On Oct. 30, 2009, EPA promulgated the “Mandatory Reporting of Greenhouse Gases,” a regulation that requires reporting of GHG emissions from certain large emissions sources. The rule would apply to major emitters, including electric power utilities such as Duke Energy and Progress Energy. As a result of this action, on Nov. 19, 2009, the N.C. Environmental Management Commission chose not to take action on amendments to the N.C. Annual Emissions Reporting Rule (as recommended by CAPAG) because GHG emissions data collected under the federal rule are considered to be sufficient in content and expected to be publically available.

On Dec. 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act (CAA). In the Endangerment Finding, the Administrator found “that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO₂)...--in the atmosphere threaten the public health and welfare of current and future generations.” In the Cause or Contribute Finding, the Administrator found “that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.”

On April 1, 2010, the EPA set national emission standards under Section 202(a) of the CAA to control GHGs from passenger cars and light-duty trucks, and medium-duty passenger vehicles, as part of a joint rulemaking with the National Highway Traffic Safety Administration (NHTSA). The standards would be phased in beginning with model year 2012 through 2016. On August 28, 2012, the EPA and NHTSA issued a joint final rulemaking to extend the national program to model year 2017 through 2025 passenger vehicles. By 2025, the rule calls for vehicle manufacturers to meet a CO₂

standard projected to be equivalent to 54.5 miles per gallon on an average fleet-wide basis. In August 2011, the two agencies issued the first GHG and fuel efficiency standards for model years 2014 to 2018 trucks and buses. These standards will jointly reduce fuel use and greenhouse gas emissions from medium- and heavy-duty vehicles, which range in size from the largest pickup trucks and vans to semi trucks.

The implementation of EPA's light-duty vehicle standard resulted in GHGs being subject to regulation under the CAA for the first time. As written in the CAA, air pollutants that are subject to regulation under the statute, are subject to prevention of significant deterioration (PSD) and operating-permit provisions for stationary sources (CAA Section 169(3)). To identify when stationary sources are subject to regulation, the EPA completed its reconsideration of the Dec. 18, 2008, memorandum entitled "EPA's Interpretation of Regulations that Determine Pollutants Covered by Federal PSD Permit Program." The final action, issued on March 29, 2010, confirms that "any new pollutant that EPA may regulate becomes covered under the PSD program on the date when the EPA rule regulating that new pollutant takes effect." It then clarifies that for GHGs that date will be Jan. 2, 2011, when the vehicle rule took effect.

To limit the number of stationary sources that would be subject to GHG regulations, the EPA promulgated a rule on May 13, 2010, that would apply a tailored approach to GHG regulations under the PSD and Title V programs of the CAA. The Tailoring Rule temporarily raises statutory thresholds and sets a PSD significance level for GHGs. By tailoring the applicability thresholds, only large emitting sources would be affected. EPA is phasing in the permitting requirements. In Step 1 (starting Jan. 2011), large industrial facilities that must already obtain CAA permits for non-GHGs must also include GHG requirements in these permits if they are newly constructed and have the potential to emit 75,000 tons per year (tpy) of carbon dioxide equivalent (CO_{2e}) or more or if they make changes at the facility that increase GHG emissions by that amount. In Step 2 (starting July 2011), in addition to facilities described above, all new facilities emitting GHGs in excess of 100,000 tpy of CO_{2e} and facilities making changes that would increase GHG emissions by at least 75,000 tpy CO_{2e}, and that also exceed 100/250 tpy of GHGs on a mass basis, will be required to obtain permits that address GHG emissions. On March 8, 2012, the EPA Proposed Step 3 PSD and Title V Tailoring Rule that retained the initial GHG permitting thresholds of 100,000/75,000 tpy CO_{2e}. Sources subject to the Clean Smokestacks Act are likely to be affected by the GHG Tailoring Rule. Future modifications at these sites, determined to meet significant emission levels, would require a review of best available control technologies. This will most likely consist of energy efficiency improvements at the affected sites.

On Dec. 23, 2010, the EPA entered into two proposed settlement agreements to issue rules that will address GHG emissions from fossil fuel-fired power plants and refineries. The CAA requires the EPA to set new source performance standards (NSPS) for industrial categories that cause, or significantly contribute to, air pollution. These standards set the level of pollution new facilities may emit and address air pollution from existing facilities. On March 27, 2012, EPA released a proposed GHG NSPS for new fossil fuel-fired EGUs. EPA is proposing that new fossil fuel-fired power plants meet an

output-based standard of 1,000 pounds of carbon dioxide per megawatt-hour (lb CO₂/MWh gross). The proposal covers fossil fuel-fired boilers, integrated gasification combined cycle (IGCC) units, and stationary combined cycle turbine units that generate electricity for sale and are larger than 25 megawatts (MW). The proposal would not cover existing units, including units that need permits for modifications, nor would it cover new power plant units that have permits and start construction within 12 months of the proposal. EPA is also proposing that plants may opt to meet a 30-year average of CO₂ emissions to meet the standard, under which the plants would meet a 1,800 lb CO₂/MWh gross emissions standard for the first 10 years and then ratchet down to a 600 lb CO₂/MWh gross emissions standard over the next 20 years. The EPA has not issued a final ruling based on this proposal. However, in April 2013, the attorneys general of ten states and the District of Columbia, along with the New York City Corporation Counsel, filed a notice with the EPA of their intent to sue the agency for its failure to finalize within the one-year deadline provided in the Clean Air Act the proposed CO₂ emissions standards for new fossil fuel-fired power plants. Separately, the Environmental Defense Fund, Sierra Club, and the Natural Resources Defense Council also filed a notice of their intent to sue.

On April 18, 2013, several industry groups filed petitions with the U.S. Supreme Court seeking review of a court decision upholding EPA's authority to regulate GHG emissions under the Clean Air Act (*Coalition for Responsible Regulation v. EPA*). In a similar action, thirteen states filed a petition on April 22, 2013, seeking the U.S. Supreme Court's review. In the decision at issue, the U.S. Court of Appeals for the District of Columbia Circuit upheld four EPA rules regulating GHG emissions: 1) Endangerment and Cause or Contribution Finding under Section 202(a) of the Clean Air Act ("Endangerment Finding", 74 Federal Register 66496, December 15, 2009); 2) Light-Duty Vehicle GHG Emission Standards and Corporate Average Fuel Economy Standards ("Light-Duty Vehicle Rule", 75 Federal Register 25324, May 7, 2010); 3) Reconsideration of Interpretation of Regulations that Determine Pollutants ("Johnson Memo Reconsideration", 75 Federal Register 17004, April 2, 2010); and 4) Prevention of Significant Deterioration and Title V GHG Tailoring Rule ("Tailoring Rule", 75 Federal Register 31514, June 3, 2010).

VIII. Supplementary Information

Public Staff – North Carolina Utilities Commission Audit Reports: As noted in earlier reports, the Public Staff – North Carolina Utilities Commission (Public Staff) has audited the books and records of the IOUs with regard to the costs incurred and amortized in compliance with the Act and has filed reports of its findings with the Commission. According to these reports, the Public Staff's audits have confirmed that the costs in question have been incurred in compliance with the Act and have been properly accounted for.

By letter dated May 20, 2008, the Public Staff requested that the Commission confirm that the Public Staff's audit and reporting responsibilities with respect to the costs incurred and amortized by Duke Energy in compliance with the Act have been fulfilled

with the filing of the Public Staff's 2008 report; inasmuch as Duke Energy's obligation under the Act, with respect to accelerated amortization, had been completed as of December 31, 2007.

By letter dated July 10, 2008, the Commission advised the Public Staff that, in consideration of the foregoing, it was of the opinion that the Public Staff should not need to continue to routinely monitor, audit, and make reports to the Commission regarding Duke Energy's recording of accelerated amortization, per se. But rather, the Commission expressed the opinion that such monitoring, auditing, and reporting should be undertaken on a case-by-case basis, as circumstances and/or events may require.

Progress Energy's obligation under the Act, with respect to accelerated amortization, was completed in June 2008. Consequently, neither IOU has recorded accelerated amortization since 2008.

The Public Staff filed its last Clean Smokestacks Act report concerning Progress Energy, and certain comments regarding Duke Energy, with the Commission on May 12, 2009. Such matters were addressed in DENR and the Commission's 2009 Clean Smokestacks Act joint report.

In its May 12, 2009, cover letter accompanying its 2008 Progress Energy Clean Smokestacks Act report, the Public Staff requested that the Commission ". . . confirm that its audit and reporting responsibilities with respect to costs incurred and amortized by [Progress Energy] in compliance with the Clean Smokestacks Act have been fulfilled with the filing of [the Public Staff's report for 2008]." While the Commission has not responded to that request directly, its expectations regarding any further audits and reports by the Public Staff relating exclusively to compliance with the Act are the same for Progress Energy as they are for Duke Energy.

Estimated 2013 Cost-of-Service Impact of IOUs' Continuing Compliance with the Act: The cost-of-service² or, synonymously, the revenue requirement impact of continuing compliance with the Act, for calendar year 2013, for each IOU is estimated to be as follows:

² The annual cost of service or, synonymously, annual revenue requirement of an investor-owned public utility, such as Progress Energy and/or Duke Energy, is typically defined as the sum total of reasonable operating expenses, depreciation expense, taxes, and a reasonable return on the net valuation of property.

Progress Energy:

- Total company \$90.6 million
- N.C. retail \$61.9 million
- Residential customer monthly bill impact with usage @ 1,000 kWh per month \$1.65
- Residential customer monthly bill with usage @ 1,000 kWh \$111.40

Duke Energy:

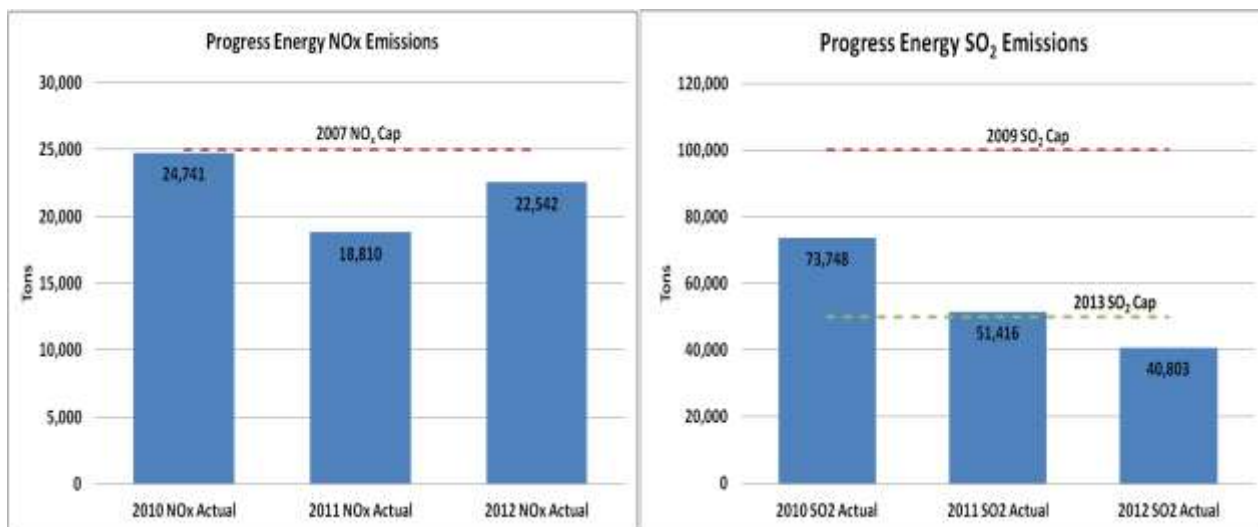
- Total company \$206.8 million
- N.C. retail \$148.7 million
- Residential customer monthly bill impact with usage @ 1,000 kWh per month \$2.68
- Residential customer monthly bill with usage @ 1,000 kWh \$103.00

IX. Conclusions

DENR/DAQ

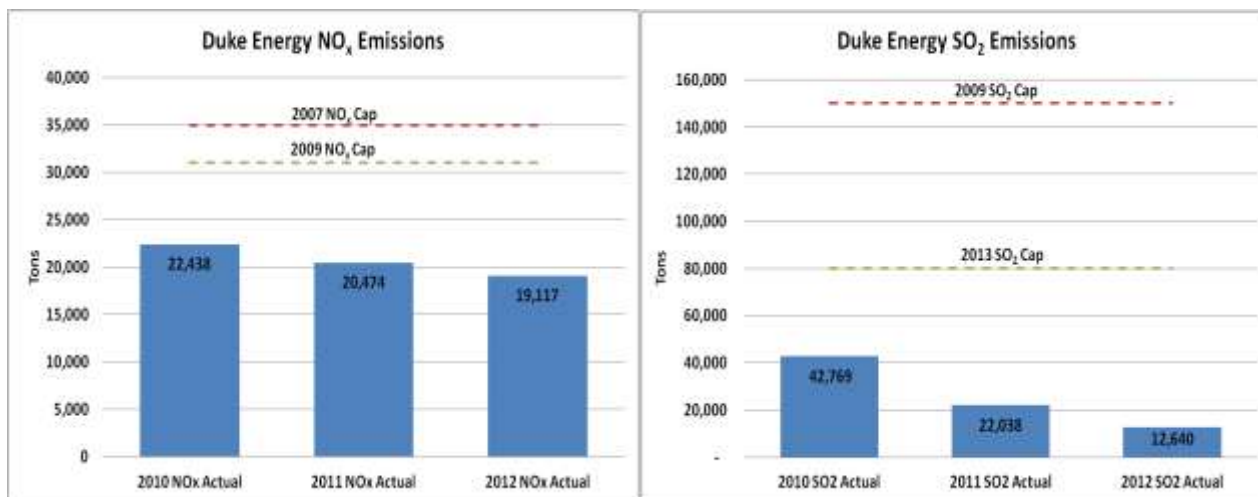
DENR/DAQ has carefully reviewed and considered the information provided by Progress Energy and Duke Energy in their compliance plan submittals for calendar year 2012. Both companies continue to meet the emissions limitations as specified in the Act.

Progress Energy has completed all of the emissions control projects and associated work to assure compliance with the Clean Smokestacks Act. No further construction is anticipated. The Company has installed a mix of combustion devices, which minimize the formation of NO_x (e.g., low-NO_x burners and over-fire air technologies), and post-combustion controls, which reduce NO_x produced during the combustion of fossil fuel to molecular nitrogen (e.g., selective catalytic reduction and selective non-catalytic reduction technologies). Progress Energy has continued to meet its 2007 annual emission limit of 25,000 tons NO_x. Calendar year 2012 NO_x emissions were 22,524 tons (see figure below):



Progress Energy's initial SO₂ control plan included putting scrubbers on eight units. The Company's 2004 SO₂ emissions were 195,655 tons with no scrubbers. Progress Energy has continued to meet its 2009 SO₂ limit of 100,000 tons. Calendar year 2012 SO₂ emissions were 40,803 tons. By 2013, Progress Energy plans to retire the Lee coal-fired plant and replace the plant with a combined-cycle natural gas-fired unit. Progress Energy already meets its 2013 SO₂ limit of 50,000 tons.

Duke Energy has completed all emissions control projects to assure compliance with the Clean Smokestacks Act. The Company has completed installing controls for NO_x reductions, which consists of a combination of selective catalytic reduction and selective non-catalytic reduction technologies, and low NO_x burners. Duke Energy has continued to meet its 2009 annual emissions limit of 31,000 tons for NO_x. Calendar year 2012 NO_x emissions were 19,117 tons (see figure below):



Duke Energy's SO₂ control plan included installation and operation of 12 scrubbers to meet emissions limits of 150,000 tons in 2009 and 80,000 tons in 2013. Duke Energy has completed installation of wet flue-gas desulfurization scrubbers on all 12 generating

units, and all scrubbers were in operation at the end of 2010. These units have so far reduced Duke Energy's SO₂ emissions from 298,781 tons (in 2005) to 12,640 tons (in 2012). Duke Energy's SO₂ controls are several years ahead of the planned schedule. The Company has already met its 2013 SO₂ target, and is expected to maintain such emissions levels through continuous operation of the required control systems.

COMMISSION

The Commission has also carefully reviewed and considered the information and data provided by the investor-owned public utilities in their Clean Smokestacks annual reports for calendar year 2012. Based upon those reports and in consideration of DENR's findings, the Commission is also of the opinion that Progress Energy and Duke Energy continue to be in compliance with the Act.

SUMMARY

In summary, DENR and the Commission conclude that the actions taken to date by Progress Energy and Duke Energy are in accordance with the provisions and requirements of the Clean Smokestacks Act. Further, the compliance plans and schedules proposed by Progress Energy and Duke Energy appear adequate to achieve the emissions limitations set out in G.S. 143-215.107D.

Attachments

Attachment A: Duke Energy Carolinas LLC, *Annual NC Clean Smokestacks Act Compliance Report*, Submitted by Cover Letters to DENR and the Commission Dated March 28, 2013.

Attachment B: Progress Energy Carolinas Inc. *Annual NC Clean Smokestacks Act Compliance Report*, Submitted by Cover Letters to DENR and the Commission Dated March 28, 2013.



MITCHELL C. GRIGGS
Vice President
Environmental Services

March 26, 2013

Duke Energy
526 South Church St.
Charlotte, NC 28202

704-382-8451
704-382-0249 fax
mitchell.griggs@duke-energy.com

Ms. Gail L. Mount, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, NC 27699-4325

Mr. John E. Skvarla, III, Secretary
North Carolina Department of Environment and Natural Resources
1601 Mail Service Center
Raleigh, NC 27699-1601

FILED
MAR 28 2013
Clerk's Office
N.C. Utilities Commission

Subject: Docket No. E-7, Sub 718
Duke Energy Carolinas, LLC
NO_x and SO₂ Compliance Plan Annual Update

Dear Chief Clerk Mount and Secretary Skvarla,

Duke Energy Carolinas, LLC, a subsidiary of Duke Energy Corporation is required by Senate Bill 1078 ("North Carolina Clean Air Legislation") to file information on or before April 1 of each year to update the North Carolina Utilities Commission ("Commission") regarding the progress to date, upcoming activities and expected plans to achieve the emissions limitations set out in G.S. 143-215.107D. Enclosed for filing are the original and thirty (30) copies of the Compliance Plan Annual Update for 2013 that fully describe the company's efforts to comply with the North Carolina Clean Air Legislation.

During 2012, the annual emissions from the North Carolina coal-fired units owned and operated by the company totaled less than the required amounts:

	NO_x Emissions Limit	SO₂ Emissions Limit
Duke Energy Carolinas	31,000 Tons	150,000 Tons

We have developed plans and processes to assure that we continue to meet the requirements of the Act while balancing operational flexibility, unit performance, and cost.

Exhibit A outlines current unit specific technology selections, operational year, expected emission rates and the corresponding tons of emissions that demonstrate compliance with the legislative requirements to the best of our knowledge at this time. The current estimate of the costs of these pollution control projects is included in Exhibit B.

Duke Energy Carolinas will continue to examine the technology selection, implementation schedule and associated costs. Annual updates will be provided to the Commission as required.

If you have questions regarding any aspect of our plan, please do not hesitate to contact my office at (704) 382-8451.

Sincerely,

A handwritten signature in black ink, appearing to read "M C Griggs", with a long horizontal flourish extending to the right.

Mitchell C. Griggs,
Vice President, Environmental Services
Duke Energy

Enclosures

- xc: Robert P. Gruber
Executive Director – Public Staff

- xc: Sheila Holman, Director
North Carolina Division of Air Quality

Duke Energy Carolinas, LLC
General Assembly of North Carolina Session 2001
Senate Bill 1078 – Improve Air Quality/Electric Utilities (NC Clean Air Legislation)

2013 Annual Data Submittal

- 1. A detailed report on the investor-owned public utility's plans for meeting the emissions limitations set out in G.S. 143-215.107D.**

Exhibit A outlines the technology selections by facility and unit, actual and projected operational dates, actual emission rates, and the corresponding tons of emissions that demonstrate compliance with the provisions of G.S. 143-215.107D. Changes to the expected plan for meeting these emissions limitations as compared to past compliance plans are:

NO_x Compliance

Expected emission rates for certain units have been adjusted in this 2013 update based on operating experience in 2012 with installed controls, targeted future performance and planned retirements; and

SO₂ Compliance

Expected emission rates for certain units have been adjusted in this 2013 update based on operating experience in 2012 with installed controls, targeted future performance and planned retirements.

- 2. The actual environmental compliance costs incurred by the investor-owned public utility in the previous calendar year, including a description of the construction undertaken and completed during that year.**

In the 2012 calendar year, Duke Energy Carolinas incurred construction charges of \$309,000 on activities in support of compliance with the provisions of G.S. 143-215.107D. Exact amounts associated with each project are provided in Exhibit B. A description of the associated activities is provided below:

Allen Steam Station FGD

- Completed installation of additional relays.

Cliffside Steam Station Unit 5 FGD

- Completed final tie-in and testing of new 230kV Breakers.
- Completed controls software upgrade.

- 3. The amount of the investor-owned public utility's environmental compliance costs amortized in the previous calendar year.**

As discussed in the December 20, 2007 order associated with rates and environmental compliance costs (Docket E-7 Sub 829), no additional amounts were amortized related to construction work activity in the 2012 calendar year in support of compliance with the provisions of G.S. 143-215.107D. **\$1,050,000,000** was amortized in total for the program through year-end 2007.

- 4. An estimate of the investor-owned public utility's environmental compliance costs and the basis for any revisions of those estimates when compared to the estimates submitted during the previous year.**

The estimated "environmental compliance costs" as defined in G.S. 143-215.107D are provided in Exhibit C. While there has been no significant change to the scope or timing associated with any of these projects, actual charges and forecasts for active projects have been updated as compared to the 2012 filing. The net overall cost is currently predicted to be \$1.84 billion. This is the final cost as no additional charges are expected.

- 5. A description of all permits required in order to comply with the provisions of G.S. 143-215.107D for which the investor-owned public utility has applied and the status of those permits or permit applications.**

Permitting necessary to comply with the provisions of G.S. 143-215.107D was completed in 2010.

- 6. A description of the construction related to compliance with the provisions of G.S. 143-215.107D that is anticipated during the following year.**

Duke Energy Carolinas has finalized the construction activities necessary to comply with the provisions of G.S. 143-215.107D.

- 7. A description of the applications for permits required in order to comply with the provisions of G.S. 143-215.107D that are anticipated during the following year.**

Duke Energy Carolinas has completed the permitting necessary to comply with the provisions of G.S. 143-215.107D. No additional permit applications are expected.

- 8. The results of equipment testing related to compliance with G.S. 143-215.107D.**

No additional equipment testing related to compliance with G.S. 143-215.107D was performed in 2012.

- 9. The number of tons of oxides of nitrogen (NO_x) and sulfur dioxide (SO₂) emitted during the previous calendar year from the coal-fired generating units that are subject to the emissions limitations set out in G.S. 143-215.107D.**

In the 2012 calendar year, 19,117 tons of NO_x and 12,640 tons of SO₂ were emitted from the Duke Energy Carolinas coal-fired units located in North Carolina and subject to the emissions limitations set out in G.S. 143-215.107D.

- 10. The emissions allowances described in G.S. 143-215.107D(i) that are acquired by the investor-owned public utility that result from compliance with the emissions limitations set out in G.S. 143-215.107D.**

During 2012, Duke Energy Carolinas did not acquire any allowances as the result of compliance with the emission limitations set out in G.S. 143-215.107D.

- 11. Any other information requested by the Commission or Department of Environment and Natural Resources.**

No additional information has been requested to be included in this annual data submittal.

NO _x						
Facility	Unit or Boiler	Technology	Initial Operational Year	2012		2014 Predicted
				Emission Rate lb/MMBtu	Tons	Tons
Allen	1	SNCR	2003	0.188	114	19
Allen	2	SNCR	2007	0.187	92	8
Allen	3	SNCR	2005	0.249	748	145
Allen	4	SNCR	2006	0.240	919	320
Allen	5	SNCR	2008	0.196	423	91
Belews Creek	1	SCR	2003	0.078	2,738	2,516
Belews Creek	2	SCR&Burners	2004	0.074	2,217	882
Buck	8	SNCR	2006	0.178	137	
Buck	9	SNCR	2006	0.185	76	
Cliffside	5	SCR	2002	0.060	361	416
Cliffside	6	SCR	2012	0.000	48	1,437
Marshall	1	SNCR	2006	0.233	1,291	1,648
Marshall	2	SNCR	2007	0.225	1,578	1,860
Marshall	3	SNCR/SCR	2005/2008	0.124	2,041	2,362
Marshall	4	SNCR	2007	0.321	6,118	6,979
Riverbend	7	SNCR	2007	0.215	36	
Riverbend	8	SNCR&Burners	2008	0.288	45	
Riverbend	9	SNCR&Burners	2006	0.198	59	
Riverbend	10	SNCR	2006	0.208	75	
NC Coal Fleet Expected/Actual Total:					19,117	18,681
Compliance Limit:					31,000	31,000

Predicted emissions for each unit are based on projected operation and 2012 NO_x rate

Burners = Low NO_x Burner

SCR = Selective Catalytic Reduction

SNCR = Selective Non-catalytic Reduction

SO ₂						
Facility	Unit or Boiler	Technology	Initial Operational Year	2012		2014 Predicted
				Emission Rate lb/MMBtu	Tons	Tons
Allen	1	Scrubber	2009	0.091	55	9
Allen	2	Scrubber	2009	0.101	50	4
Allen	3	Scrubber	2009	0.063	188	36
Allen	4	Scrubber	2009	0.062	240	83
Allen	5	Scrubber	2009	0.081	175	38
Belews Creek	1	Scrubber	2008	0.063	2,200	2,021
Belews Creek	2	Scrubber	2008	0.063	1,875	746
Buck	8			1.194	918	
Buck	9			1.194	493	
Cliffside	5	Scrubber	2010	0.018	284	123
Cliffside	6	Scrubber	2012	0.000	14	430
Marshall	1	Scrubber	2007	0.113	624	796
Marshall	2	Scrubber	2007	0.100	701	826
Marshall	3	Scrubber	2007	0.078	1,279	1,480
Marshall	4	Scrubber	2006	0.105	1,996	2,277
Riverbend	4			1.542	261	
Riverbend	5			1.583	250	
Riverbend	6			1.574	465	
Riverbend	7			1.577	573	
NC Coal Fleet Expected/Actual Total:					12,640	8,870
Compliance Limit:					150,000	80,000

Predicted emissions for each unit are based on projected operation and 2012 SO₂ rate

**Duke Energy Carolinas Compliance Costs for NC Clean Air Legislation
(Exhibit B)**

Facility	Unit(s)	Technology	Operational Date	Spent to Date										Remaining	Project Total (\$000)	
				2001-'03 (\$000)	2004 (\$000)	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)		
Allen	1-5	Scrubber	2009	\$1,100	(\$12)	\$5,348	\$62,753	\$209,063	\$153,698	\$51,765	(\$1,385)	\$182	\$110	\$0	\$482,622	SO ₂
Belews Creek	1-2	Scrubber	2008	\$1,121	\$5,999	\$106,434	\$250,648	\$128,058	\$34,629	\$1,338	(\$0)	\$0	\$0	\$0	\$528,227	
Cliffside	5	Scrubber	2010	\$978	\$287	\$112	\$3,175	\$57,778	\$77,525	\$96,111	\$79,671	\$3,403	\$198	\$0	\$319,240	
Marshall	1-4	Scrubber	2007	\$10,214	\$92,096	\$218,130	\$74,163	\$23,632	(\$1,250)	\$0	(\$228)	\$0	\$0	\$0	\$416,757	
Allen	1	SNCR	2003	\$3,224	\$365	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,589	NO _x
Allen	2	SNCR	2007	\$0	\$0	\$239	\$2,711	\$2,332	(\$208)	\$0	\$0	\$0	\$0	\$0	\$5,074	
Allen	3	SNCR	2005	\$216	\$2,584	\$4,092	\$32	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,924	
Allen	4	SNCR	2006	\$0	\$218	\$1,122	\$4,258	\$171	\$16	\$0	\$0	\$0	\$0	\$0	\$5,785	
Allen	5	SNCR	2008	\$99	\$165	\$122	\$23	\$2,161	\$2,425	\$0	\$0	\$0	\$0	\$0	\$4,994	
Buck	3	Burner	2007	\$0	\$0	\$0	\$615	\$3,565	\$0	\$0	\$0	\$0	\$0	\$0	\$4,179	
Buck	3	Classifier	2007	\$0	\$0	\$0	\$0	\$216	\$0	\$0	\$0	\$0	\$0	\$0	\$216	
Buck	4	Burner	2007	\$0	\$0	\$0	\$358	\$1,882	\$1	\$0	\$0	\$0	\$0	\$0	\$2,241	
Buck	4	Classifier	2007	\$0	\$0	\$0	\$0	\$93	\$0	\$0	\$0	\$0	\$0	\$0	\$93	
Buck	5	SNCR	2006	\$0	\$268	\$346	\$4,837	\$183	\$160	\$0	\$0	\$0	\$0	\$0	\$5,794	
Buck	6	SNCR	2006	\$0	\$266	\$335	\$3,814	(\$685)	(\$29)	(\$2)	\$0	\$0	\$0	\$0	\$3,699	
Dan River	1	Burner	2008	\$0	\$0	\$0	\$0	\$1,560	\$1,633	\$0	\$0	\$0	\$0	\$0	\$3,194	
Dan River	1	Classifier	2008	\$0	\$0	\$0	\$0	\$124	\$0	\$0	\$0	\$0	\$0	\$0	\$124	
Dan River	2	Burner	2006	\$0	\$0	\$775	\$1,694	\$239	\$0	\$0	\$0	\$0	\$0	\$0	\$2,708	
Dan River	2	Classifier	2005	\$0	\$0	\$131	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$131	
Dan River	3	Burner	2006	\$192	\$513	\$679	\$1,441	\$377	\$0	\$0	\$0	\$0	\$0	\$0	\$3,202	
Dan River	3	Classifier	2005	\$0	\$0	\$184	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$184	
Marshall	1	SNCR	2006	\$1	\$167	\$1,418	\$2,106	\$182	\$0	\$0	\$0	\$0	\$0	\$0	\$3,874	
Marshall	2	SNCR	2007	\$198	\$185	\$778	\$2,761	\$1,382	\$322	\$0	\$0	\$0	\$0	\$0	\$5,626	
Marshall	3	SNCR	2005	\$1,577	\$652	\$2,042	\$32	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,304	
Marshall	4	SNCR	2007	\$0	\$0	\$43	\$2,614	\$494	\$0	\$0	\$0	\$0	\$0	\$0	\$3,151	
Riverbend	4	SNCR	2007	\$0	\$46	\$474	\$1,082	\$1,982	(\$53)	\$0	\$0	\$0	\$0	\$0	\$3,531	
Riverbend	5	Burner	2005	\$650	\$2,313	\$180	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,143	
Riverbend	5	Classifier	2005	\$0	\$160	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$160	
Riverbend	5	SNCR	2008	\$0	\$2	\$322	\$1,475	\$2,587	\$6	\$0	\$0	\$0	\$0	\$0	\$4,390	
Riverbend	6	Burner	2005	\$572	\$510	\$2,096	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,179	
Riverbend	6	Classifier	2005	\$0	\$0	\$189	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$189	
Riverbend	6	SNCR	2006	\$0	\$2	\$340	\$3,454	\$504	\$4	\$0	\$0	\$0	\$0	\$0	\$4,304	
Riverbend	7	SNCR	2006	\$0	\$48	\$486	\$3,939	\$521	\$5	\$0	\$0	\$0	\$0	\$0	\$4,999	
Subtotals:				\$20,142	\$106,834	\$346,420	\$427,984	\$438,400	\$268,884	\$149,211	\$78,058	\$3,585	\$309	\$0		
NC Clean Air Legislation program forecast ¹ :																\$1,839,827

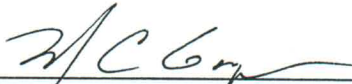
¹ The NC Clean Air Legislation program forecast excludes all financing-related accounting entries

NC Clean Air Legislation program forecast ¹:

VERIFICATION

I, Mitchell C. Griggs, state and attest that the attached information updating the North Carolina Utilities Commission on progress to date, upcoming activities and expected strategies to achieve the emissions limitations set out in N.C.G.S. 143-215.107.D is filed on behalf of Duke Energy Carolinas, LLC.

I have reviewed these annual updates, and in the exercise of due diligence have made reasonable inquiry into the accuracy of the information provided therein; and that, to the best of my knowledge, information, and belief, all of the information contained therein is accurate and true and no material information or fact has been knowingly omitted or misstated therein.

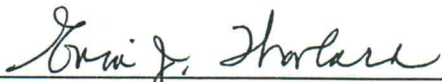


Mitchell C. Griggs,
Vice President, Environmental Services
Duke Energy

3/26/13

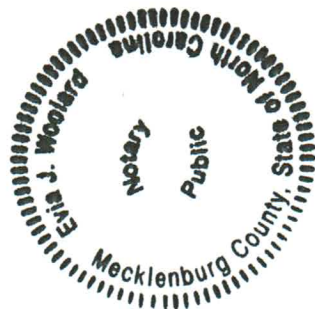
Date

Subscribed and sworn to before me,
This 26th day of March, 2013.



NOTARY PUBLIC

My commission expires: August 14, 2016





Kendrick C. Fentress
Associate General Counsel

Duke Energy Corporation
P. O. Box 1551
PEB 20
Raleigh, NC 27602

Tel 919.546-6733
Fax 919.546-2694

kendrick.fentress@duke-energy.com

March 28, 2013

FILED
MAR 28 2013
Clerk's Office
N.C. Utilities Commission

Ms. Gail L. Mount
Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4325

Re: Annual NC Clean Smokestacks Act Compliance Report
Docket No. E-2, Sub 815

Dear Ms. Mount:

Progress Energy Carolinas, Inc. submits the original and thirty-one (31) copies of the report for calendar year 2012 regarding the status of compliance with the provisions of the North Carolina Clean Smokestacks Act. Section 9(i) of the Act requires that an annual report of compliance progress be submitted to the Commission by April 1 of each year for the previous calendar year.

Sincerely,

Kendrick C. Fentress

KCF:dhs
Enclosure
STAREG3567



MITCHELL C. GRIGGS
Vice President
Environmental Services

March 26, 2013

Duke Energy
526 South Church St.
Charlotte, NC 28202

Ms. Gail L. Mount, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, NC 27699-4325

704-382-8451
704-382-0249 fax
mitchell.griggs@duke-energy.com

Mr. John E. Skvarla, III, Secretary
North Carolina Department of Environment and Natural Resources
1601 Mail Service Center
Raleigh, NC 27699-1601

Subject: Docket No. E-2, Sub 815
Carolina Power & Light Company dba Progress Energy Carolinas, Inc.
NO_x and SO₂ Compliance Plan Annual Update

Dear Chief Clerk Mount and Secretary Skvarla,

Carolina Power & Light Company dba Progress Energy Carolinas, Inc., an indirect subsidiary of Duke Energy Corporation is required by Senate Bill 1078 (“North Carolina Clean Air Legislation”) to file information on or before April 1 of each year to update the North Carolina Utilities Commission (“Commission”) regarding the progress to date, upcoming activities and expected plans to achieve the emissions limitations set out in G.S. 143-215.107D. Enclosed for filing are the original and thirty (30) copies of the Compliance Plan Annual Update for 2013 that fully describe the company’s efforts to comply with the North Carolina Clean Air Legislation.

During 2012, the annual emissions from the North Carolina coal-fired units owned and operated by the company totaled less than the required amounts:

	NO_x Emissions Limit	SO₂ Emissions Limit
Progress Energy Carolinas	25,000 Tons	100,000 Tons

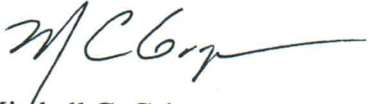
We have developed plans and processes to assure that we continue to meet the requirements of the Act while balancing operational flexibility, unit performance, and cost.

Exhibit A outlines current unit specific technology selections, operational year, expected emission rates and the corresponding tons of emissions that demonstrate compliance with the legislative requirements to the best of our knowledge at this time. The current estimate of the costs of these pollution control projects is included in Exhibit B.

Progress Energy Carolinas will continue to examine the technology selection, implementation schedule and associated costs. Annual updates will be provided to the Commission as required.

If you have questions regarding any aspect of our plan, please do not hesitate to contact my office at (704) 382-8451.

Sincerely,

A handwritten signature in black ink, appearing to read "M C Griggs", with a long horizontal flourish extending to the right.

Mitchell C. Griggs,
Vice President, Environmental Services
Duke Energy

Enclosures

xc: Robert P. Gruber
Executive Director – Public Staff

xc: Sheila Holman, Director
North Carolina Division of Air Quality

Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.
General Assembly of North Carolina Session 2001
Senate Bill 1078 – Improve Air Quality/Electric Utilities (NC Clean Air Legislation)

2013 Annual Data Submittal

- 1. A detailed report on the investor-owned public utility's plans for meeting the emissions limitations set out in G.S. 143-215.107D.**

Exhibit A outlines the technology selections by facility and unit, actual and projected operational dates, actual emission rates, and the corresponding tons of emissions that demonstrate compliance with the provisions of G.S. 143-215.107D. Changes to the expected plan for meeting these emissions limitations as compared to past compliance plans are:

NO_x Compliance

Expected emission rates for certain units have been adjusted in this 2013 update based on operating experience in 2012 with installed controls, targeted future performance and planned retirements; and

SO₂ Compliance

Expected emission rates for certain units have been adjusted in this 2013 update based on operating experience in 2012 with installed controls, targeted future performance and planned retirements.

- 2. The actual environmental compliance costs incurred by the investor-owned public utility in the previous calendar year, including a description of the construction undertaken and completed during that year.**

In the 2012 calendar year, Progress Energy Carolinas did not incur any construction charges in support of compliance with the provisions of G.S. 143-215.107D.

- 3. The amount of the investor-owned public utility's environmental compliance costs amortized in the previous calendar year.**

There were no additional amounts amortized related to construction work activity in the 2012 calendar year in support of compliance with the provisions of G.S. 143-215.107D.

- 4. An estimate of the investor-owned public utility's environmental compliance costs and the basis for any revisions of those estimates when compared to the estimates submitted during the previous year.**

The estimated "environmental compliance costs" as defined in G.S. 143-215.107D are provided in Exhibit B. While there has been no significant change to the scope or timing associated with any of these projects, actual charges and forecasts for active projects have been updated as compared to the 2012 filing. The net overall cost is currently predicted to be \$1.05 billion. This is the final cost as not additional charges are expected.

- 5. A description of all permits required in order to comply with the provisions of G.S. 143-215.107D for which the investor-owned public utility has applied and the status of those permits or permit applications.**

Permitting necessary to comply with the provisions of G.S. 143-215.107D was completed in 2010.

- 6. A description of the construction related to compliance with the provisions of G.S. 143-215.107D that is anticipated during the following year.**

Progress Energy Carolinas has finalized the construction activities necessary to comply with the provisions of G.S. 143-215.107D.

- 7. A description of the applications for permits required in order to comply with the provisions of G.S. 143-215.107D that are anticipated during the following year.**

Progress Energy Carolinas has completed the permitting necessary to comply with the provisions of G.S. 143-215.107D. No additional permit applications are expected.

- 8. The results of equipment testing related to compliance with G.S. 143-215.107D.**

No additional equipment testing related to compliance with G.S. 143-215.107D was performed in 2012.

- 9. The number of tons of oxides of nitrogen (NO_x) and sulfur dioxide (SO₂) emitted during the previous calendar year from the coal-fired generating units that are subject to the emissions limitations set out in G.S. 143-215.107D.**

In the 2012 calendar year, 22,524 tons of NO_x and 40,803 tons of SO₂ were emitted from the Progress Energy Carolinas coal-fired units located in North Carolina and subject to the emissions limitations set out in G.S. 143-215.107D.

- 10. The emissions allowances described in G.S. 143-215.107D(i) that are acquired by the investor-owned public utility that result from compliance with the emissions limitations set out in G.S. 143-215.107D.**

**Progress Energy Carolinas
Compliance for NC Clean Air Legislation as of 4/1/2013
(Exhibit A)**

NO_x					
Facility	Technology	Initial Operational Year ¹	2012		2014 Predicted
			Emission Rate lb/MMBtu	Tons	Tons
Asheville 1	LNB/AEFLGR/SCR	2007	0.102	446	394
Asheville 2	LNB/OFA/SCR		0.101	513	399
Cape Fear 5	ROFA/ROTAMIX		0.339	287	
Cape Fear 6	ROFA/ROTAMIX		0.269	416	
Lee 1	WIR		0.496	272	-
Lee 2	LNB	2006	0.317	15	4
Lee 3	LNB/ROTAMIX	2007	0.329	1,218	39
Mayo 1	LNB/OFA/SCR		0.163	2,968	1,979
Roxboro 1	LNB/OFA/SCR		0.164	1,569	433
Roxboro 2	TFS2000/SCR		0.180	3,530	2,758
Roxboro 3	LNB/OFA/SCR		0.225	4,038	2,117
Roxboro 4	LNB/OFA/SCR		0.174	3,931	2,028
Sutton 1	SAS		0.416	413	-
Sutton 2	LNB	2006	0.393	359	-
Sutton 3	LNB/ROFA/ROTAMIX		0.448	2,548	-
NC Coal Fleet Expected/Actual Total:				22,524	10,151
Compliance Limit:				25,000	25,000

Predicted emissions for each unit are based on projected operation and 2012 NO_x rate

AEFLGR – Amine-Enhanced Flue Lean Gas Return
LNB = Low NO_x Burner
SCR = Selective Catalytic Reduction
OFA = Overfire Air
ROFA = Rotating Opposed-fired Air
ROTAMIX = Injection of urea to further reduce NO_x
WIR = Underfire Air
TFS2000 = Combination Low-NO_x Burner/Overfire Air
SAS = Separated Air Staging

¹ This is the operation date for the control technology installed to comply with the North Carolina Clean Smokestacks Act only (shown in bold).

SO₂					
Facility	Technology	Initial Operational Year	2012		2014 Predicted
			Emission Rate lb/MMBtu	Tons	Tons
Asheville 1	Scrubber	2005	0.149	680	578
Asheville 2	Scrubber	2006	0.220	1,132	868
Cape Fear 5			1.406	1,169	
Cape Fear 6			1.425	2,129	
Lee 1			1.415	744	-
Lee 2			1.447	59	18
Lee 3			1.436	5,124	168
Mayo 1	Scrubber	2009	0.326	6,061	3,949
Roxboro 1	Scrubber	2008	0.206	1,980	542
Roxboro 2	Scrubber	2007	0.210	4,026	3,209
Roxboro 3	Scrubber	2008	0.175	3,347	1,651
Roxboro 4	Scrubber	2007	0.175	4,019	2,031
Sutton 1			1.364	1,332	
Sutton 2			1.386	1,244	
Sutton 3			1.399	7,755	
NC Coal Fleet Expected/Actual Total:				40,803	13,014
Compliance Limit:				100,000	50,000

Predicted emissions for each unit are based on projected operation and 2012 SO₂ rate

VERIFICATION

I, Mitchell C. Griggs, state and attest that the attached information updating the North Carolina Utilities Commission on progress to date, upcoming activities and expected strategies to achieve the emissions limitations set out in N.C.G.S. 143-215.107.D is filed on behalf of Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.

I have reviewed these annual updates, and in the exercise of due diligence have made reasonable inquiry into the accuracy of the information provided therein; and that, to the best of my knowledge, information, and belief, all of the information contained therein is accurate and true and no material information or fact has been knowingly omitted or misstated therein.



Mitchell C. Griggs,
Vice President, Environmental Services
Duke Energy

3/26/13

Date

Subscribed and sworn to before me,
This 26th day of March, 2013.



NOTARY PUBLIC

My commission expires: August 14, 2016

