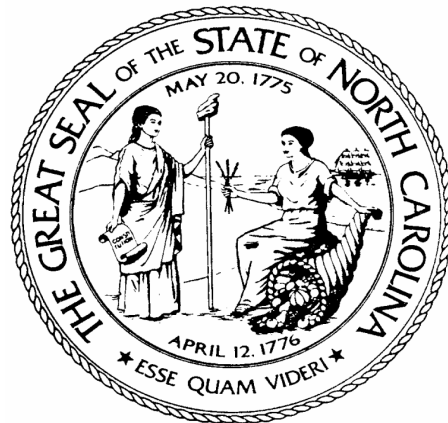


# **Implementation of the “Clean Smokestacks Act”**

**A Report to the  
Environmental Review Commission and the  
Joint Legislative Utility Review Committee**

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



**June 1, 2005**

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**A Report to the  
Environmental Review Commission and the  
Joint Legislative Utility Review Committee**

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

**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 Power, a Division of Duke  
Energy Corporation, appear to be in accordance with the provisions and  
requirements of the Clean Smokestacks Act.**

**Signed:**

\_\_\_\_\_  
**William G. Ross, Jr., Secretary  
Department of Environment and Natural Resources**

**Signed:**

\_\_\_\_\_  
**Jo Anne Sanford, Chair  
North Carolina Utilities Commission**

**June 1, 2005**

# **Implementation of the "Clean Smokestacks Act"**

## **A Report to the Environmental Review Commission and the Joint Legislative Utility Review Committee**

**June 1, 2005**

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" or "the Act"). The Clean Smokestacks Act, in Section 14, requires the Department of Environment and Natural Resources ("DENR") and the Utilities Commission ("Commission") to report annually, i.e., by June 1 of each year, on the implementation of the Act to the Environmental Review Commission and the Joint Legislative Utility Review Committee.

The Act, in Section 9, requires Duke Power, a Division of Duke Energy Corporation (Duke Energy), and Progress Energy Carolinas, Inc. (Progress Energy) to submit annual reports to DENR and the Commission containing certain specified information. Duke Energy and Progress Energy filed reports, with DENR and the Commission, by cover letter dated March 31, 2005, and April 1, 2005, respectively. Specifically, such reports were 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.

Additionally, the Secretary of DENR wrote the Commission on May 9, 2005, as follows:

"North Carolina's investor owned electric utilities, Duke Energy and Progress Energy, have filed their compliance plan annual updates for 2005 in accordance with N.C.G.S. 62-133.6(i), Section 9(i) of S.L. 2002-4, known as the 'Clean Smokestacks Act'. Pursuant to N.C.G.S. 62-133.6(j), the Department of Environment and Natural Resources has reviewed this information, and the submittals comply with the Act. The plans and schedules of the companies appear adequate to achieve the emission limitations set out in N.C.G.S. 143-215.107D."

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, 12, and 13 of this 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:** North Carolina's investor-owned electric utilities, 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 S.L. 2002-4, the Clean Smokestacks Act. DENR reviewed this information and determined that the submittals comply with the Act and, as proposed, appear adequate to achieve the emission limitations set out in G.S. 143-215.107D.

**II. 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 eleven 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:** "The initial plan for Progress Energy Carolinas, Inc. was submitted on July 29, 2002. Appendix A [of the attached Progress Energy submittal dated April 1, 2005, i.e., Attachment B] contains an updated version of this plan, effective April 1, 2005."

**Duke Energy Response:** "Exhibits A and B [of the attached Duke submittal dated March 31, 2005, i.e., Attachment A, outline the updated plan as of April 1, 2005,] . . . for technology selections by facility and unit, projected operational dates, expected

emission rates, and the corresponding tons of emissions that demonstrate compliance with the provisions of G.S. 143-215.107D."

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:** The actual environmental compliance costs incurred by Progress Energy in calendar year 2004 were \$78.3 million. Progress Energy performed a significant amount of work at the Asheville and Roxboro plants, and began preliminary engineering for the Lee and Mayo plants.

**Summary of Duke Energy Report:** The actual environmental compliance costs incurred by Duke Energy in calendar year 2004 were \$106.8 million. The Company reported that costs were incurred for such things as a variety of project studies and investigations, engineering, equipment specifications development, equipment layout, contracting related costs, logistics, and general grading and site preparation activities.

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 and Duke Energy Reports:** Progress Energy amortized \$174 million in 2004. Duke Energy amortized \$211.4 million in 2004. As indicated in the June 1, 2004 report to the Environmental Review Commission and the Joint Legislative Utility Review Committee ("the June 1, 2004 report"), Progress Energy, in response to a data request submitted by the Commission, had projected that it would amortize \$75 million of environmental compliance costs in 2004. Also, as indicated in the June 1, 2004 report, Duke Energy, in response to a Commission data request, had projected that it would amortize \$171 million of environmental compliance costs in 2004.

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:** Progress Energy reported that the estimated total capital costs escalated for inflation are currently projected to be \$895 million, a 10 percent increase from the original 2002 cost estimate. The cost increases are due to higher steel prices and changes to the original plan (detailed in the attached Progress Energy report).

**Summary of Duke Energy Report:** Duke Energy reported that its expected costs are about 17.8 percent higher than the estimates provided in 2003. More specifically, in its 2005 report, the Company estimated its compliance costs to be \$1.742 billion, as compared to the \$1.479 billion reflected in its 2003 report, an increase of \$263 million. The Company stated that the adjustments to the estimates are the

result of additional project scope definition and refinement of project schedules and higher costs for certain commodities (steel, primarily) and labor.

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.*

**Progress Energy Response:**

Asheville Plant

- Numerous soil erosion and sedimentation control plans have been approved
- Non-discharge permit for wastewater collection system extension approved
- Authorization to Construct (ATC) installation of constructed wetlands approved

Roxboro Plant

- Several soil erosion and sedimentation control plans have been approved
- ATC for coal pile runoff pond modifications approved

**Duke Energy Response:**

Belews Creek

- NPDES Permit modification submitted

Marshall

- Scrubbers
  - Landfill construction plan application submitted
  - Sedimentation and erosion control plan permits approved
  - ATC application for Solids Removal System approved
  - ATC application for Constructed Wetlands approved
- Selective Non-Catalytic Reduction (SNCR)
  - Air permit approved
  - NPDES permit renewal submitted

Allen

- Air permit approved

Riverbend

- Air permit approved

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.*

**Progress Energy Response:** See Appendix C of the attached letter from Progress Energy dated April 1, 2005 (Attachment B), for details of construction and installation of equipment. Significant construction activities at the Asheville Plant in 2005 include the completion of systems for the Unit 1 scrubber so that it can be placed

into service by year's end. At the Roxboro Plant, significant construction activities in 2005 include completion of a new coal unloading facility.

**Duke Energy Response:** See attached letter from Duke Energy dated March 31, 2005 (Attachment A), for details of construction anticipated for the next year for:

Allen Steam Station

- Scrubbers
- SNCR, Units 2, 3, and 4

Belews Creek Steam Station

- Scrubbers

Cliffside Steam Station

- Scrubbers

Marshall Steam Station

- Scrubbers
- SNCR, Units 1, 2, 3, and 4

Buck Steam Station

- SNCR, Units 5 and 6

Dan River Steam Station

- Burners, Units 2 and 3
- Classifiers, Units 2 and 3

Riverbend Steam Station

- SNCR, Units 4, 5, 6, and 7
- Burners, Units 5 and 6
- Classifiers, Unit 6

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:** For the Asheville Plant, an ATC for a pretreatment system has been submitted. For the Roxboro Plant, applications have been or will be submitted for several erosion and sedimentation control plans, a NPDES permit modification for wastewater treatment system, an ATC for the wastewater treatment system, and an Army Corps permit to fill wetlands for gypsum storage area.

**Duke Energy Response:**

Belews Creek Steam Station Scrubbers, Units 1-2

- Landfill Site Suitability Application – Plan to submit 3/31/05

- Landfill Construction Plan Application – Plan to submit 10/30/05
- Air Permit Application – Plan to submit May 2005
- Sedimentation and Erosion Control Plan – Plan to submit 2/8/05
- ATC application for Wastewater Treatment System – Plan to submit 9/1/05
- ATC application for Constructed Wetlands – Plan to submit 8/15/05

Allen Steam Station SNCR, Unit 4

- Air Permit Application – Plan to submit October 2005

Buck Steam Station SNCR, Unit 5

- Air Permit Application – Plan to submit December 2005

Buck Steam Station SNCR, Unit 6

- Air Permit Application – Plan to submit December 2005

Dan River Steam Station Separated Overfired Air (SOFA), Unit 2

- Air Permit Application – Plan to submit June 2005

Dan River Steam Station SOFA, Unit 3

- Air Permit Application – Plan to submit June 2005

Marshall Steam Station SNCR, Unit 2

- Air Permit Application – Plan to submit December 2005

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 equipment testing related to compliance with G.S. 143-215.107D occurred in 2004."

**Duke Energy Response:**

Allen Steam Station SNCR, Unit 1

- Equipment acceptance testing in November, 2003
  - Nominal 25% reduction in NO<sub>x</sub> with ammonia slip of less than 5 ppm at full load
- During the 2004 ozone season, achieved a 0.162# NO<sub>x</sub>/MMBTU outlet rate, 5% better than the 0.17#/MMBTU target established for the unit

Belews Creek Steam Station Selective Catalytic Reduction (SCR)

- Operational problems in first half of 2004 ozone season



- After many problems addressed, emissions averaged 0.07# NOx/MMBTU in August and September 2004

9. **G.S. 62-133.6(i)(9) requires:** *The number of tons of oxides of nitrogen (NOx) 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.*

**Progress Energy Response:** "The total calendar year 2004 emissions from the affected coal-fired Progress Energy Carolinas units are:

- NOx 49,959 [tons]
- SO<sub>2</sub> 195,655 [tons]"

**Duke Energy Response:** In the 2004 calendar year, the following were emitted from the North Carolina based Duke Energy coal-fired units:

- NOx - 64,634 tons
- SO<sub>2</sub> - 276,083 tons

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 2004, PEC did not acquire any allowances as a result of compliance with the emission limitations set out in G.S. 143-215.107D. "

**Duke Energy Response:** "No emissions allowances have been acquired by Duke Power Company resulting from compliance with the limitations set out in G.S. 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*

**Summary of Commission Request:** The Commission submitted informational requests to Progress Energy on April 20, 2005, and Duke Energy on April 20, 2005, and May 6, 2005. The information requested, among other things, concerned current projected amortization schedules over the remaining years of the seven-year accelerated cost-recovery period.

**Progress Energy Response:** Progress Energy responded that it currently expects to amortize the remaining balance of the \$813 million of environmental compliance costs set forth in the Act as follows: 2005 - \$107 million; 2006 - \$107 million; 2007 - \$107 million; 2008 - \$121.9 million; and 2009 \$121.9 million. However, Progress Energy noted that subsection (d) of G.S. 62-133.6 provides that the Commission shall hold a hearing to review its compliance costs and may modify or revise those costs as necessary to ensure they are just, reasonable, and prudent based

on the most recent cost information available and determine the annual cost recovery amount that Progress Energy will be required to record and recover during 2008 and 2009.

Progress Energy also commented that subsection (f) of G.S. 62-133.6 provides that in any general rate case initiated by it to adjust base rates effective on or after January 1, 2008, Progress Energy shall be allowed to recover its actual compliance costs less the cumulative amount of accelerated cost recovery previously recorded.

Regarding incremental costs that Progress Energy expects to incur above and beyond the previously stated \$813 million, Progress Energy, among other things, advised that such costs “. . . are the result of either unforeseen increases in the cost of compliance or expenditures made in order to reduce PEC’s [Progress Energy Carolinas] fuel costs. Thus, as contemplated by subsection (f) [i.e., G.S. 62-133.6(f)], PEC should be allowed to include these costs in its rate base and seek recovery of these costs in its next general rate case.”

**Duke Energy Response:** In regard to calendar years 2005 through 2007, Duke Energy responded that it currently plans to amortize \$281 million of environmental compliance costs annually.

Regarding the amounts of amortization to be recorded in calendar years 2008 and 2009 and potential variances in costs from the \$1.5 billion set forth in the Act, Duke Energy stated as follows: “While Section 62-133.6(b) states that ‘(Duke) shall amortize environmental compliance costs in the amount of . . . (\$1,500,000,000)’, Section 62-133.6(d) states that the Commission ‘may modify . . . those costs . . . based upon the most recent cost information available’ and will ‘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.’ Therefore, the amount to be amortized in 2008 and 2009 will be determined by the Commission as noted in our earlier response. The Commission’s actions will be based on updated estimate information provided to the Commission in the proceeding required by the statute. The estimate in that proceeding could be higher or lower than the original estimate of \$1.5 billion. While Duke Power cannot speculate as to the action the Commission will take, we believe the Commission could authorize the utility to amortize the unamortized portion of the updated estimated amount, whether higher or lower than \$1.5 billion, in 2008 and 2009. Another potential alternative is that Duke could initiate a general rate case in 2007-2008 timeframe and propose, pursuant to G.S. 62-122.6(f), a different treatment for the unamortized portion of the original estimate and any additional compliance costs”.

**III. 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 (NOx) 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 Activities to implement this Section:**

- A meeting was held between DENR/DAQ and the Tennessee Valley Authority (TVA) and the Tennessee air program officials in August 2002, to discuss actions planned by TVA that would be comparable to the Clean Smokestacks Act. TVA presented their plans to add five additional SO<sub>2</sub> scrubbers to power plants primarily in the eastern portion of the TVA system. These new scrubbers should benefit North Carolina most. TVA plans to complete installation of the new facilities by 2010 and the first plant, Paradise, will be installed by 2006. Regarding NO<sub>x</sub> control, TVA is on schedule to have the first 8 of its selective catalytic reduction (SCR) systems in place. TVA plans to have 25 boiler units controlled by 2005 at a cost of \$1.3 billion which will reduce ozone season NO<sub>x</sub> by 75 percent.

Through DENR's efforts, the Clean Smokestacks Act is achieving notoriety nationally and is being touted in other States as a model for State action. The Secretary of DENR and the Chief of Planning of DAQ made presentations about the Clean Smokestacks Act at two national state environmental organization meetings in the fall of 2002. The Chief of Planning of DAQ testified in 2002, at a U.S. Senate Environment and Public Works Committee Hearing on the features and benefits of North Carolina's Clean Smokestacks Act. The Deputy Director of DAQ participates on a national dialogue workgroup addressing ideal features of national multi-pollutant legislation for coal-fired utility boilers. The Clean Smokestacks Act is held up as an ideal example.

- The State also has been active in maintaining federal standards. In an April 2003 letter to EPA Administrator Whitman, Governor Easley urged the Administration to ensure that the federal Clear Skies bill not override State initiatives such as the Clean Smokestacks Act. The Governor also indicated the State's opposition to bill text that would extinguish the statutory rights of States regarding interstate pollution abatement. DAQ and the Attorney General commented in opposition to a proposed federal rule that would weaken the federal New Source Review program and potentially result in significant new upwind emissions.

**Intent to Sue TVA:** On November 10, 2004, Attorney General Cooper dispatched a letter to the TVA (and, among others, EPA and the States of Tennessee, Alabama, and Kentucky), informing these parties of the State's intent to sue the TVA for violations of the Clean Air Act's New Source Review program and other provisions at several of its coal-fired facilities. The Act required the State to provide such sixty-day notice prior to filing a "citizen suit" enforcement action under the Act for certain of the alleged violations. The Attorney General is currently preparing to file civil action(s)

against the TVA in order to mandate compliance with the relevant pollution control requirements.

**Section 126 Petition:** On March 18, 2004, the Attorney General filed with EPA a petition pursuant to Section 126 of the Clean Air Act. Section 126 allows a downwind State to petition EPA to mandate emissions reductions from sources in upwind States, if the emissions contribute significantly to nonattainment of federal ambient air standards in the downwind State or interfere with maintenance of the standards in the downwind State. The petition alleges that sources in thirteen upwind States emit SO<sub>2</sub> and NO<sub>x</sub> that unlawfully cause attainment problems in North Carolina under the eight-hour ozone and PM<sub>2.5</sub> standards. After the EPA failed to act on the State's Section 126 petition in the time period required by law, the Attorney General filed an action requesting that a federal court compel the EPA to render a decision. The State and EPA then reached an agreement establishing a schedule by which EPA must act on the petition. On May 9, 2005, a federal court entered a judgment requiring EPA to comply with that schedule. Under the schedule, EPA must propose a rule regarding the State's Section 126 petition by August 1, 2005, and issue a final rule by March 15, 2006.

**Georgia NO<sub>x</sub> SIP Call Requirements:** Under the NO<sub>x</sub> SIP call rule, power plants and other sources of NO<sub>x</sub> in certain States must limit emissions in order to assist downwind States with ozone attainment and maintenance issues. North Carolina is subject to the rule. EPA had previously concluded that sources in the northern part of Georgia (including the Atlanta area) should be subject to the NO<sub>x</sub> SIP call rule. However, EPA recently proposed to stay Georgia's NO<sub>x</sub> SIP call requirements while EPA reconsiders whether Georgia should be required to comply with the program. DENR has requested that EPA not stay Georgia's requirements. EPA has not made a final decision on the stay.

**IV. Section 12 of the Act provides:** *The General Assembly anticipates that measures implemented to achieve the reductions in emissions of oxides of nitrogen (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>) 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 (NOx) 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:** The DAQ submitted reports on September 1, 2003 and 2004, as required by this section. The first report primarily focused on the "state of knowledge" of the co-benefit of mercury control that will result from the control of NOx and SO<sub>2</sub> from coal-fired utility boilers. Also, preliminary estimates were made for this co-benefit for the 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". The Division has begun preparing the September 2005 report by scheduling meetings with stakeholders. The purpose of these meetings is to (1) discuss options for recommendations identified in the second reports, (2) identify any additional options that should be considered for the final reports, and (3) begin a dialogue on the prioritization of the options for the purpose of structuring the final recommendations.

**V. 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 (NOx) 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:** The DAQ submitted reports on September 1, 2003 and 2004, as required by this section. The first report primarily focused on the "state of knowledge" and actions being taken or planned elsewhere regarding CO<sub>2</sub> control from coal-fired utility boilers. The second report primarily focused on "definition of options". The Division has begun preparing the September 2005 report by scheduling meetings with stakeholders. The purpose of these meetings is to (1) discuss options for recommendations identified in the second reports, (2) identify any additional options that should be considered for the final reports, and (3) begin a

dialogue on the prioritization of the options for the purpose of structuring the final recommendations.

**VI. Supplementary Information:** As noted in earlier reports, the Public Staff - North Carolina Utilities Commission (Public Staff) will audit the books and records of Progress Energy and Duke Energy on an ongoing basis in regard to the costs incurred and amortized in compliance with the provisions of the Act. The Public Staff has undertaken such a review, focusing on the verification of costs related to complying with the Act, the amortization of those costs, and the operating results of emission reduction equipment installed by Progress Energy and Duke Energy. The Public Staff filed its most recent reports in the present regard with the Commission on May 17, 2005. Such reports, which are a continuation of the Public Staff's ongoing review, present the Public Staff's findings for the 12-month period ending December 31, 2004. Attached, and made part of this report, are the Public Staff's reports for Duke Energy and Progress Energy, Attachments C and D, respectively.

## **CONCLUSION**

Actions taken to date by Progress Energy and Duke Energy appear to be in accordance with the provisions and requirements of the Clean Smokestacks Act.

## ATTACHMENTS

- Attachment A:** Duke Power, a Division of Duke Energy Corporation, Clean Smokestacks Compliance Plan Annual Update for 2005, Submitted by Cover Letter Dated March 31, 2005
- Attachment B:** Progress Energy Carolinas, Inc. Annual North Carolina Clean Smokestacks Act Compliance Report, Submitted by Cover Letter Dated April 1, 2005
- Attachment C:** Report of the Public Staff on Costs Incurred and Amortized by Duke Energy Corporation in Compliance with Session Law 2002-4, Filed on May 17, 2005
- Attachment D:** Report of the Public Staff on Costs Incurred and Amortized by Progress Energy Carolinas, Inc. in Compliance With Session Law 2002-4, Filed on May 17, 2005



George T. Everett, Ph.D.  
Director, Environmental/Legislative Affairs

919-235-0955  
gterrett@duke-energy.com

March 31, 2005

Mrs. Geneva S. Thigpen, Chief Clerk  
North Carolina Utilities Commission  
4325 Mail Service Center  
Raleigh, NC 27699-4325

Subject: Docket No. E-7, Sub 718  
Duke Power Compliance Plan Annual Update NO<sub>x</sub> Control  
Record No. NC CAP 004

RECEIVED  
APR 01 2005  
Operations Division  
N.C. UTILITIES COMMISSION

Dear Mrs. Thigpen:

Duke Power is required by Senate Bill 1078 to file information on or before 1 April of each year to update the Commission on progress to date, upcoming activities and expected strategies to achieve the emissions limitations set out in G.S. 143-215.107D. Enclosed for filing are the original and thirty (30) copies of Duke Power's Compliance Plan Annual Update for 2005 that fully describe the company's efforts to comply with this clean air legislation.

The current plan to meet the emission requirements for NO<sub>x</sub> and SO<sub>2</sub> includes:

NO<sub>x</sub> Control – The installation of Selective Catalytic Reduction (SCR) on Cliffside Steam Station Unit 5 and Belews Creek Steam Station Units 1&2 have been completed. Increased costs associated with Selective Non Catalytic Reduction (SNCR) technology have caused Duke to re-examine its strategy to install this equipment all of its remaining 24 units. These increased costs, combined with the very narrow compliance margin and our need to develop new generation/retirement options, may lead Duke to consider SCR technology at some of the plants in lieu of some SNCR installations. Duke expects to make a final decision on this aspect of our NO<sub>x</sub> strategy this year.

SO<sub>2</sub> Control – The installation of wet scrubbers on our twelve largest generating units continues to be our plan. We are working with the Department of Environment and Natural Resources on a plan to accelerate the scrubber installation schedule at Plant Allen. Acceleration of the Allen scrubbers maintains our design and construction continuity and helps assure Duke Power can meet the recently finalized Clean Air Interstate Rule. Costs for our scrubber projects have gone up due to increases in material (steel and petroleum-based products) and scope changes. Explanations for these increases have been shared with the Public Staff.

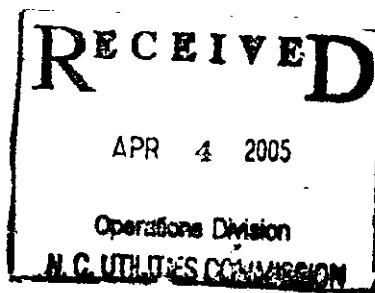
Exhibits A and B outline current unit specific technology selections, projected operational dates, expected emission rates, and the corresponding tons of emissions that demonstrate compliance with the legislative requirements to the best of Duke Power's knowledge at this time. The projected estimates of 'environmental compliance costs' for these pollution control projects are included in Exhibit C.

Duke Power will continue to examine the technology selection, implementation schedule and associated costs. Annual updates will be provided to the NC Utilities Commission as required. If you have questions regarding any aspect of our plan, please do not hesitate to contact my office at 919-235-0955.

Sincerely,

George T. Everett, Ph.D.  
Director, Environmental/Legislative Affairs  
Duke Power

Enclosures





cc: Robert P. Gruber  
Executive Director – Public Staff  
4326 Mail Service Center  
Raleigh, NC 27699-4326



**George T. Everett, Ph.D.**  
Director, Environmental/Legislative Affairs

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gteverett@duke-energy.com

VERIFICATION

I, George T. Everett, 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. 143-215.107D (Annual Update) is filed on behalf of Duke Power, a division of Duke Energy; that I have reviewed said Annual Update 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.

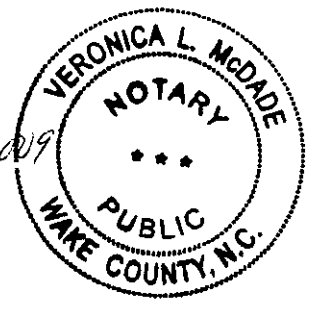
George T. Everett  
George T. Everett, Ph.D.  
Director, Environmental/Legislative Affairs

04/01/05  
Date

Subscribed and sworn before me this the 1<sup>st</sup> day of April, 2005.

Veronica L. McDeade  
Notary Public

My Commission Expires: November 28, 2009



**Duke Power Company**  
**General Assembly of North Carolina Session 2001**  
**Senate Bill 1078 – Improve Air Quality/Electric Utilities (NC Clean Air Legislation)**  
**2005 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.**

Exhibits A and B outline the plan as of this date for technology selections by facility and unit, projected operational dates, expected 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 highlighted in these exhibits and described below:

NO<sub>x</sub> Compliance

- Belews Creek NO<sub>x</sub> Rate Change – Belews Creek had operational problems during the first half of the 2004 ozone season. However, by August 2004 many of these issues were addressed on Unit 1 and a test was performed to determine how low the SCR could reliably operate during the months of August and September. When the SCR was in service during these months, the unit averaged 0.07# NO<sub>x</sub>/MMBTU. Based on these results and enhancements made to both Units 1&2, the 2005 NO<sub>x</sub> goal is 0.08# NO<sub>x</sub>/MMBTU.
- Buck Units 3&4, Dan River Units 1&2 Technology Change – During the past year, Duke evaluated capital costs for various technologies and determined that the Separated Overfired Air (SOFA) burner technology could be installed at approximately the same capital costs as SNCR with a much lower operating cost and a lower NO<sub>x</sub> emission rate. For these reasons, the plan was changed to include the SOFA projects and associated mill classifiers instead of SNCR for these units. SOFA or other comparable burner technology has been installed on all other units in North Carolina with the exception of Cliffside Units 1 – 4. Additionally, the Dan River Unit 2 SOFA project was accelerated in order to be operational in 2006.
- Cliffside Units 1–4 – Additional NO<sub>x</sub> controls for these units were eliminated from the compliance plan and expected emissions rates revised based on 2004 results during ozone season operation. Cliffside 1–4 are among Duke Power's least efficient units and other options for NO<sub>x</sub> emissions control are being evaluated.
- Marshall Units 1, 2 & 4 SNCR – Marshall Unit 4 SNCR installation was accelerated in order to be operational by the ozone season of 2007 in support of the Triad Early Action Compact for the 8-hour ozone standard. Additionally, the schedules for Marshall Units 1&2 were adjusted to better coincide with the timing of existing planned outages.

- Riverbend Units 4 & 6 SNCR – Riverbend Units 4 & 6 SNCR installations were adjusted to improve the sequencing of installation outages for all four units at Riverbend. With the change, Units 6 & 7 will now be installed in the same timeframe, followed by Units 4 & 5.

With these changes, there is still very little margin expected in meeting the 31,000 ton limit in 2009 (Phase II cap). This and previous plans for compliance assumed that installing SCR equipment at Marshall would be cost prohibitive due to its required configuration above the existing Electrostatic Precipitators (ESPs). However, recent decisions to install new ESPs on Marshall 3 & 4 in a different configuration than is currently used may allow SCR Equipment to be installed where the old ESPs reside at a lower cost. Considering this opportunity, Duke Power is further evaluating the SCR option for Marshall Units 3 and/or 4 to determine whether or not a new lower cost solution is available that would also offer some margin in meeting the required 31,000 ton emissions cap in 2009.

#### SO<sub>2</sub> Compliance

- Allen Scrubber Schedule Acceleration – The Allen Scrubbers were accelerated from installation in 2011 and 2012 to all being installed in 2009. The reasons for this change are as follows:
  - Acceleration better integrates into the existing Scrubber construction program, utilizing labor, contracts and other resources from the earlier Scrubber installations and Marshall, Belews Creek and Cliffside Unit 5.
  - The Clean Air Interstate Rule (CAIR) and the utility mercury rule were finalized in March 2005. Having all of the Scrubbers installed by early 2010 allows Duke Power to better support these new requirements.
  - By accelerating these installations prior to 2010, Duke Power hopes to eliminate the 2008 NC DAQ requirement for extensions to the existing stacks on Units 1 – 5, instead integrating these required improvements into the FGD design.
- Belews Creek Unit 2 Scrubber Schedule Acceleration – Belews Creek Unit 2 was accelerated from the fall of 2008 to the fall of 2007 to keep from having multiple Scrubber project startups from occurring during the same outage season.
- Cliffside Unit 5 Scrubber Schedule Acceleration – Cliffside Unit 5 was accelerated from the fall of 2009 to the fall of 2008 to keep from having multiple Scrubber project startups from occurring during the same outage season.

**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 2004 calendar year, Duke Power Company spent \$106,834,500 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 C, and a description of the associated activities is provided below:

**Allen Steam Station Scrubbers**

- No significant activity in 2004

**Belews Creek Steam Station Scrubbers**

- Completed majority of Phase II Study with EPC Contractor required to finalize project scope, funding and installation schedule
- Completed other miscellaneous engineering and environmental studies required to finalize project scope, funding and installation schedule

**Cliffside Steam Station Scrubbers**

- No significant activity in 2004

**Marshall Steam Station Scrubbers**

- Full Notice to Proceed (FNTP) awarded to EPC Contractor
- Performed general grading and site preparation activities
- Initiated construction of the foundations for certain Scrubber structures and components (new stack, duct support steel, absorber vessels and other miscellaneous structures)
- Installed new stack
- Began excavating for wetlands
- Began installing underground piping and ductbanks

**Allen Steam Station SNCR, Unit 1**

- Final costs associated with project to install SNCR equipment on unit were incurred in early 2004

**Allen Steam Station SNCR, Unit 3**

- Completed detailed design and received mechanical, electrical and installation drawings
- Procured and received material in preparation for 2005 installation

**Allen Steam Station SNCR, Unit 4**

- Completed preliminary engineering

**Allen Steam Station SNCR, Unit 5**

- Completed preliminary engineering

Buck Steam Station SNCR, Unit 5

- Completed modeling, boiler temperature mapping and some preliminary engineering activities

Buck Steam Station SNCR, Unit 6

- Completed modeling, boiler temperature mapping and some preliminary engineering activities

Dan River Steam Station Burners, Unit 3

- Awarded project material order to Foster-Wheeler

Marshall Steam Station SNCR, Unit 1

- Completed preliminary engineering

Marshall Steam Station SNCR, Unit 2

- Completed preliminary engineering

Marshall Steam Station SNCR, Unit 3

- Completed detailed design and received mechanical, electrical and installation drawings
- Procured material in preparation for 2005 installation

Riverbend Steam Station SNCR, Unit 4

- Completed modeling, boiler temperature mapping and some preliminary engineering activities

Riverbend Steam Station Burners, Unit 5

- Completed installation of SOFA technology on Unit 5 in December 2004

Riverbend Steam Station Classifiers, Unit 5

- Completed installation of advanced static classifier technology on Unit 5 mills in December 2004

Riverbend Steam Station SNCR, Unit 5

- No significant activity in 2004

Riverbend Steam Station Burners, Unit 6

- Completed detailed design for installation of SOFA technology on Unit 5 in spring 2005
- Procured material in preparation for 2005 installation

Riverbend Steam Station SNCR, Unit 6

- No significant activity in 2004

Riverbend Steam Station SNCR. Unit 7

- Completed modeling, boiler temperature mapping and some preliminary engineering activities

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

In the 2004 calendar year, **\$211,379,807** was amortized related to construction work activity in support of compliance with the provisions of G.S. 143-215.107D. **\$326,193,142** in total has now been amortized for the program through year-end 2004.

**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. Changes to the expected costs as compared to past compliance plans are highlighted in this exhibit and described below:

- Scrubber Projects – Allen, Belews Creek and Cliffside Scrubber projects have seen significant increases in expected costs recently. These increases are primarily related to the further identification of the required scope for the equipment installation, recent market price escalations related to certain commodities (steel, primarily), and escalation of labor costs required by the EPC Contractor to complete the projects.
- SNCR Projects – Allen, Buck, Dan River, Marshall and Riverbend SNCR projects have seen significant increases in expected costs recently as well. These increases are primarily related to the identification of required balance of plant equipment additions required to support the reliable operation of the equipment. These balance of plant issues include additional plant air capacity requirements, dilution water requirements and reagent storage requirements.

**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.**

Belews Creek Steam Station Scrubbers. Units 1-2

- NPDES Permit Modification – Submitted 6/30/04

Marshall Steam Station Scrubbers

- Landfill Construction Plan Application – Submitted 4/1/04
- Sedimentation and Erosion Control Plan Permits

- Install new consolidated sump system for stormwater run-off from new Scrubber areas
- Install new fire water loop

#### Cliffside Steam Station Scrubbers

- Further Scrubber engineering study expected to be awarded in 2<sup>nd</sup> quarter of 2005 to finalize Scrubber project scope, funding, and implementation schedule
- Release for detailed engineering and authorization for early site prep, and potentially some selected materials procurement; expected to be awarded under a Limited Notice To Proceed (LNTP) to the Scrubber Contractor in 1st quarter of 2006

#### Marshall Steam Station Scrubbers

- Construction activities are scheduled to continue throughout 2005 in support of the Marshall schedule and include the following:
- Continue site preparation and excavation
- Complete all remaining building/equipment foundations (wetlands equalization, switchgear, limestone/gypsum transfer system, limestone unloading system, absorber outlet duct, booster fans, reagent prep facility, dewatering facility, wastewater solids removal system and flue gas duct foundations)
- Install absorber pump building steel
- Begin erection of limestone feed / gypsum disposal conveyor system
- Install limestone unloading facility and equipment
- Begin erection of flue gas duct support steel
- Continue installation of mechanical systems and equipment (fire protection, potable water, compressed air, sanitary waste, service water, hydrocyclones, secondary dewatering, absorber vessels, ball mills, absorber outlet ducts and flue liners)
- Continue installation of electrical systems and equipment (underground duct bank and transformers)

#### Allen Steam Station SNCR, Unit 2

- Initiate preliminary engineering activities associated with project

#### Allen Steam Station SNCR, Unit 3

- Complete installation of SNCR equipment, including incremental compressed air requirements, in time to support 2005 ozone season

#### Allen Steam Station SNCR, Unit 4

- Complete detailed engineering for SNCR equipment installation

#### Buck Steam Station SNCR, Unit 5

- Complete detailed engineering for SNCR equipment installation



Buck Steam Station SNCR, Unit 6

- Complete detailed engineering for SNCR equipment installation and begin procurement activities in support of installation in early 2006

Dan River Steam Station Burners, Unit 2

- Complete installation of SOFA technology on Unit 2 in fall 2005

Dan River Steam Station Classifiers, Unit 2

- Completed installation of advanced static classifier technology on Unit 2 in fall 2005

Dan River Steam Station Burners, Unit 3

- Complete installation of SOFA technology on Unit 2 in fall 2005

Dan River Steam Station Classifiers, Unit 3

- Completed installation of advanced static classifier technology on Unit 2 in fall 2005

Marshall Steam Station SNCR, Unit 1

- Complete detailed engineering for SNCR equipment installation and begin procurement activities in support of installation in early 2006

Marshall Steam Station SNCR, Unit 2

- Complete detailed engineering for SNCR equipment installation

Marshall Steam Station SNCR, Unit 3

- Complete installation of SNCR equipment in time to support 2005 ozone season

Marshall Steam Station SNCR, Unit 4

- Initiate preliminary engineering activities associated with project

Riverbend Steam Station SNCR, Unit 4

- Complete detailed engineering for SNCR equipment installation

Riverbend Steam Station Burners, Unit 5

- Complete closeout activities for project, including final payment due upon acceptance

Riverbend Steam Station SNCR, Unit 5

- Initiate preliminary engineering activities associated with project

Riverbend Steam Station Burners, Unit 6

- Complete installation of SOFA technology on Unit 6 in spring 2005

Riverbend Steam Station Classifiers, Unit 6

- Completed installation of advanced static classifier technology on Unit 6 in spring 2005

Riverbend Steam Station SNCR, Unit 6

- Complete detailed engineering for SNCR equipment installation

Riverbend Steam Station SNCR, Unit 7

- Complete detailed engineering for SNCR equipment installation

**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.**

Belews Creek Steam Station Scrubbers, Units 1-2

- Landfill Site Suitability Application – Plan to submit 3/31/05
- Landfill Construction Plan Application – Plan to submit 10/30/05
- Air Permit Application – Plan to submit 5/20/05
- Sedimentation and Erosion Control Plan – Plan to submit 2/8/05
- Authorization to Construct (ATC) application for Wastewater Treatment System – Plan to submit 9/1/05
- Authorization to Construct (ATC) application for Constructed Wetlands – Plan to submit 8/15/05

Allen Steam Station SNCR, Unit 4

- Air Permit Application – Plan to submit October 2005

Buck Steam Station SNCR, Unit 5

- Air Permit Application – Plan to submit December 2005

Buck Steam Station SNCR, Unit 6

- Air Permit Application – Plan to submit December 2005

Dan River Steam Station SOFA, Unit 2

- Air Permit Application – Plan to submit June 2005

Dan River Steam Station SOFA, Unit 3

- Air Permit Application – Plan to submit June 2005

Marshall Steam Station SNCR, Unit 2

- Air Permit Application – Plan to submit December, 2005

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

Allen Steam Station SNCR, Unit 1

- SNCR Equipment installation was completed in May 2003 followed by equipment acceptance testing in late 2003. During this test run, it was determined that the SNCR system met all commercial performance guarantees with approximately a 25% reduction in NO<sub>x</sub> with ammonia slip of less than 5 ppm at full load
- During the 2004 ozone season, Allen Unit 1 achieved a 0.162# NO<sub>x</sub>/MMBTU outlet rate, 5% better than the 0.17#/MMBTU target established for the unit.

Belews Creek Steam Station SCR

- SCR Equipment installation was completed in 2003 in support of the EPA/SIP Call requirements for NO<sub>x</sub> reduction. While Belews Creek had operational problems in the first half of the 2004 ozone season, many of these issues were addressed on Belews Creek Unit 1 by August, 2004. Subsequently, tests performed during the months of August and September showed that when the SCR Equipment was in service during this time, emissions averaged 0.07# NO<sub>x</sub>/MMBTU

**9. The number of tons of oxides of nitrogen (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>) 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 2004 calendar year, 64,634 tons of NO<sub>x</sub> and 276,083 tons of SO<sub>2</sub> were emitted from the North Carolina based Duke Power Company 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.**

No emissions allowances have been acquired by Duke Power Company resulting from compliance with the emissions 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.

Expected Duke Power Company Compliance for NC Clean Air Plan as of 4/1/2005  
(Exhibit A)

		NO <sub>x</sub>					
Facility	Unit	Technology	Operational Date	2007 Compliance		2009 Compliance	
				Expected Rate #/MMBTUs	Tons	Expected Rate #/MMBTUs	Tons
Allen	1	SNCR	2003	0.17	779	0.17	631
Allen	2	SNCR	2007	0.19	790	0.17	805
Allen	3	SNCR	2005	0.17	1,367	0.17	1,143
Allen	4	SNCR	2006	0.17	1,421	0.17	1,431
Allen	5	SNCR	2008	0.23	1,923	0.17	1,401
Belews Creek	1	SCR	2003	0.08	2,305	0.08	2,774
Belews Creek	2	SCR&Burners	2004	0.08	2,929	0.08	2,925
Buck	3	Burners	2009	0.42	514	0.23	265
Buck	4	Burners	2008	0.42	287	0.23	157
Buck	5	SNCR	2007	0.17	479	0.17	638
Buck	6	SNCR	2006	0.17	622	0.17	652
Cliffside	1	Tuning Only	2004	0.35	237	0.35	230
Cliffside	2	Tuning Only	2004	0.35	227	0.35	192
Cliffside	3	Tuning Only	2004	0.40	472	0.40	491
Cliffside	4	Tuning Only	2004	0.40	488	0.40	494
Cliffside	5	SCR	2002	0.07	1,242	0.07	1,264
Dan River	1	Burners	2009	0.37	419	0.23	257
Dan River	2	Burners	2006	0.23	297	0.23	290
Dan River	3	SNCR&Burners	2007	0.20	601	0.17	549
Marshall	1	SNCR	2006	0.17	2,133	0.17	2,101
Marshall	2	SNCR	2007	0.20	2,031	0.17	2,086
Marshall	3	SNCR	2005	0.18	4,097	0.18	4,097
Marshall	4	SNCR	2007	0.20	4,444	0.18	4,033
Riverbend	4	SNCR	2008	0.24	536	0.17	377
Riverbend	5	SNCR&Burners	2008	0.24	471	0.17	364
Riverbend	6	SNCR&Burners	2007	0.20	688	0.17	614
Riverbend	7	SNCR	2007	0.17	614	0.17	652
<b>Expected Total:</b>					<b>32,415</b>		<b>30,911</b>
<b>Compliance Limit:</b>					<b>35,000</b>		<b>31,000</b>

Technology:  
 Burners -- Overfired Air or Separated Overfired Air with associated Mill Classifier installations  
 SCR -- Selective Catalytic Reduction  
 SNCR -- Selective Non-Catalytic Reduction

Expected Duke Power Company Compliance for NC Clean Air Plan as of 4/1/2005  
(Exhibit B)

SO <sub>2</sub>							
Facility	Unit	Technology	Operational Date	2009 Compliance		2013 Compliance	
				Expected Rate #/MMBTUs	Tons	Expected Rate #/MMBTUs	Tons
Allen	1	Scrubber	2009	1.24	4,708	0.15	749
Allen	2	Scrubber	2009	1.24	5,915	0.15	792
Allen	3	Scrubber	2009	1.24	8,427	0.15	1,341
Allen	4	Scrubber	2009	0.48	4,115	0.15	1,354
Allen	5	Scrubber	2009	0.48	3,956	0.15	1,317
Belews Creek	1	Scrubber	2008	0.15	5,291	0.15	5,365
Belews Creek	2	Scrubber	2007	0.15	5,582	0.15	5,718
Buck	3			1.40	1,745	1.40	1,773
Buck	4			1.40	1,010	1.40	1,023
Buck	5			1.40	5,381	1.40	5,669
Buck	6			1.40	5,522	1.40	6,023
Cliffside	1			1.55	1,049	1.55	1,094
Cliffside	2			1.55	882	1.55	1,045
Cliffside	3			1.55	1,995	1.55	1,962
Cliffside	4			1.55	2,014	1.55	2,155
Cliffside	5	Scrubber	2008	0.15	2,868	0.15	2,943
Dan River	1			1.40	1,673	1.40	1,498
Dan River	2			1.40	1,855	1.40	1,837
Dan River	3			1.40	4,575	1.40	4,763
Marshall	1	Scrubber	2007	0.15	1,894	0.15	1,971
Marshall	2	Scrubber	2007	0.15	1,879	0.15	1,950
Marshall	3	Scrubber	2007	0.15	3,481	0.15	3,509
Marshall	4	Scrubber	2006	0.15	3,425	0.15	3,431
Riverbend	4			1.55	3,501	1.55	3,791
Riverbend	5			1.55	3,356	1.55	2,814
Riverbend	6			1.55	5,699	1.55	6,266
Riverbend	7			1.55	5,998	1.55	6,415
<b>Expected Total:</b>					<b>97,797</b>		<b>78,570</b>
<b>Compliance Limit:</b>					<b>150,000</b>		<b>80,000</b>

Expected Duke Power Company Compliance Plan for NC Clean Air Plan as of 4/1/2005  
(Exhibit C)

Facility	Unit(s)	Technology	Operational Date	Spent to Date				Remaining		Project Total (\$000)
				2001 (\$000)	2002 (\$000)	2003 (\$000)	2004 (\$000)	2005-2010 (\$000)	2005-2010 (\$000)	
Allen	1-5	Scrubber	2009	\$0.9	(30.9)	\$1,099.8	(511.8)	\$393,768.3	\$394,856.3	
Belews Creek	1-2	Scrubber	2008			\$1,121.3	\$5,999.1	\$540,647.7	\$547,768.1	
Cliffside	5	Scrubber	2008			\$978.5	\$287.5	\$251,958.3	\$253,224.2	
Marshall	1-4	Scrubber	2007			\$10,213.7	\$92,096.3	\$321,794.0	\$424,104.0	
Allen	1	SNCR	2003	\$177.3	\$162.4	\$2,884.1	\$564.9	\$0.0	\$3,588.8	
Allen	2	SNCR	2007					\$7,597.3	\$7,597.3	
Allen	3	SNCR	2005			\$215.7	\$2,584.1	\$4,515.4	\$7,315.3	
Allen	4	SNCR	2006				\$217.9	\$5,340.5	\$5,558.4	
Allen	5	SNCR	2008			\$98.9	\$164.6	\$4,673.5	\$4,937.0	
Buck	3	Burner	2009					\$3,864.0	\$3,864.0	
Buck	3	Classifier	2009					\$401.9	\$401.9	
Buck	4	Burner	2008					\$2,140.0	\$2,140.0	
Buck	4	Classifier	2008					\$212.0	\$212.0	
Buck	5	SNCR	2007				\$268.2	\$6,805.4	\$7,073.6	
Buck	6	SNCR	2006				\$265.8	\$4,471.8	\$4,737.6	
Dan River	1	Burner	2009					\$2,151.0	\$2,151.0	
Dan River	1	Classifier	2009					\$212.1	\$212.1	
Dan River	2	Burner	2006					\$2,342.5	\$2,342.5	
Dan River	2	Classifier	2006					\$181.1	\$181.1	
Dan River	3	Burner	2006	\$7.5	\$162.3	\$22.2	\$512.8	\$2,041.0	\$2,745.8	
Dan River	3	Classifier	2006					\$215.7	\$215.7	
Dan River	3	SNCR	2007					\$7,100.0	\$7,100.0	
Marshall	1	SNCR	2006			\$0.8	\$167.2	\$4,610.0	\$4,778.0	
Marshall	2	SNCR	2007			\$197.6	\$185.4	\$8,531.3	\$8,914.3	
Marshall	3	SNCR	2005			\$1,577.4	\$652.1	\$3,699.0	\$5,928.4	
Marshall	4	SNCR	2007					\$4,223.1	\$4,223.1	
Riverbend	4	SNCR	2008				\$45.6	\$12,901.0	\$12,946.6	
Riverbend	5	Burner	2005	\$362.8	\$284.3	\$2.8	\$2,313.4	\$166.7	\$3,130.0	
Riverbend	5	Classifier	2005				\$159.6	\$0.0	\$159.6	
Riverbend	5	SNCR	2008				\$1.5	\$5,948.8	\$5,950.3	
Riverbend	6	Burner	2005	\$144.0	\$416.1	\$12.2	\$510.4	\$2,210.6	\$3,293.3	
Riverbend	6	Classifier	2005					\$215.8	\$215.8	
Riverbend	6	SNCR	2007				\$1.5	\$5,000.2	\$5,001.7	
Riverbend	7	SNCR	2007				\$48.5	\$5,163.1	\$5,211.6	
<b>Subtotals:</b>				\$692.4	\$1,024.2	\$18,425.0	\$106,834.5	\$1,615,103.1	\$1,615,103.1	
<b>NC-CAP Total:</b>				<b>\$1,742,079.2</b>						

SO<sub>2</sub>

NO<sub>x</sub>



April 1, 2005

Mrs. Geneva S. Thigpen  
Chief Clerk  
North Carolina Utilities Commission  
4325 Mail Service Center  
Raleigh, NC 27699-4325

*E-2, Sub 815*

Re: Annual NC Clean Smokestacks Act Compliance Report

Dear Mrs. Thigpen:

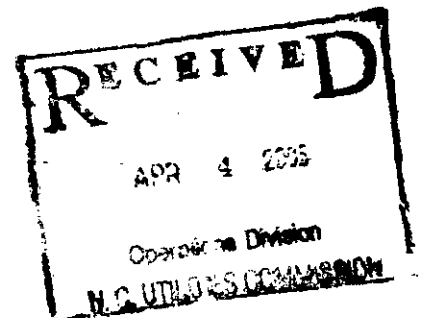
Progress Energy Carolinas, Inc. submits the attached report for calendar year 2004 regarding the status of compliance with the provisions of the North Carolina Clean Smokestacks Act. Section 9(i) of the Act requires that an annual report of compliance progress be submitted to the Commission by April 1 of each year for the previous calendar year.

Very truly yours,

*Len S. Anthony*  
Len S. Anthony  
Deputy General Counsel

LSA:mhm  
Attachment  
201419

Progress Energy Service Company, LLC  
P.O. Box 1551  
Raleigh, NC 27602





April 1, 2005

Mr. William G. Ross, Jr.  
Secretary  
North Carolina Department of Environment and Natural Resources  
1601 Mail Service Center  
Raleigh, NC 27699-1601

Dear Secretary Ross:

Progress Energy Carolinas, Inc. ("Progress Energy Carolinas" or "PEC") submits the attached report for calendar year 2004 regarding the status of compliance with the provisions of the North Carolina Clean Smokestacks Act. Section 9(i) of the Act requires an annual compliance progress report be submitted by April 1 of each year for the previous calendar year. PEC appreciates the efforts of your staff to work with us and looks forward to continuing our positive working relationship to facilitate fulfillment of the Company's obligations with this important law.

Please don't hesitate to contact me at (919) 546-3775 if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads 'Caroline Choi'.

Caroline Choi  
Interim Director, Environmental Services

c: North Carolina Public Utilities Commission  
Keith Overcash



Progress Energy Carolinas, Inc.  
Senate Bill 1078 – Clean Smokestacks Act  
Calendar Year 2004 Progress Report

On June 20, 2002, North Carolina Senate Bill 1078, also known as the “Clean Smokestacks Act,” was signed into law. This law requires significant reductions in the emissions of nitrogen oxides (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>) from utility-owned, coal-fired power plants located in North Carolina. Section 9(i) of the bill, which is now incorporated as Section 62-133.6(i) of the North Carolina General Statutes, requires that an annual progress report regarding compliance with the Clean Smokestacks Act be submitted on or before April 1 of each year. The report must contain the following elements, taken verbatim from the statute:

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.
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 that year.
3. The amount of the investor-owned public utility’s environmental compliance costs amortized in the previous calendar year.
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.
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.
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.
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.
8. The results of equipment testing related to compliance with G.S. 143-215.107D.
9. The number of tons of oxides of nitrogen (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>) 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.
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.
11. Any other information requested by the Commission or the Department of Environment and Natural Resources.

Information responsive to each of these report elements follows. The responses are given by item number in the order in which they are presented above.

**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.**

The initial plan for Progress Energy Carolinas, Inc. was submitted on July 29, 2002. Appendix A contains an updated version of this plan, effective April 1, 2005.

**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 that year.**

Appendix B contains the actual costs incurred through 2004 toward compliance with G.S. 143-215.107D and the projected costs for future years through 2013. The estimated total capital costs escalated for inflation are currently projected to be \$895 million, a 10 percent increase from the original 2002 cost estimate. These cost increases are due to higher steel prices, changes allowing greater fuel flexibility and scrubber SO<sub>2</sub> removal efficiency, larger limestone preparation facilities, larger absorber tower buildings, and changing the Asheville scrubber design from a dry scrubber to a wet scrubber. Spending additional capital to install a wet scrubber at Asheville and increasing the capability of the scrubbers to remove a greater amount of SO<sub>2</sub> from a wider range of fuels should provide PEC the opportunity to realize annual fuel savings after the scrubbers are installed.

The Company performed a significant amount of work at the Asheville Plant in 2004 to support placing the Unit 1 scrubber in service in 2005. This work included the installation of a new chimney and flue liners for each boiler, the limestone unloading pit, limestone grinding mills, various electrical transformers and switchgear, the support structure for the new sections of ductwork from units 1 and 2 to the absorber towers, and the new control room. Erection of the flue gas desulfurization (FGD) building and absorber towers for both units, rough setting the absorber recycle pumps, and field erection of various process tanks also were completed. Remaining work includes the installation of electrical power and control cables and circuits, piping, pumps, valves, oxidation air compressors, instruments and controls, agitators, absorber tower outlet hoods, spray headers, trays and other tower internals, limestone and gypsum handling equipment, induced draft fans, and various other process equipment and completion of ductwork from the stack to the precipitator. This equipment will be placed into service in 2005 for Unit 1 and 2006 for Unit 2. In addition to the scrubber projects at Asheville, preliminary engineering began for the Unit 1 SCR, which will be installed and operational in 2008.

At the Roxboro Plant, the Company completed a significant amount of engineering and began procurement of major equipment. Work began on the installation of a new electrical switchgear building that will provide power to some of the scrubber equipment. Various power distribution panels and load centers located in the electrical switchgear building will be placed into service in 2005. Remaining work, which will begin in 2005 and continue through 2009, includes engineering, procurement and installation of the mechanical, civil/structural, electrical and controls material and equipment for the installation of the new chimneys, absorber towers and internals, absorber feed, limestone preparation, and gypsum dewatering systems for the scrubbers for units 1, 2, 3 and 4.

At the Lee Plant, preliminary engineering associated with the installation of low-NOx burners in 2006 was started. There was no equipment installed during 2004.

At the Mayo Plant, the Company undertook preliminary engineering to develop the general arrangement for the wet scrubbers. There was no equipment installed during 2004.

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

Progress Energy Carolinas, Inc. amortized \$174 million in 2004.

**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.**

Appendix B contains the actual costs incurred through 2004 toward compliance with G.S. 143-215.107D and the projected costs for future years through 2013. The estimated total capital costs escalated for inflation are currently projected to be \$895M, an increase of 10% from the original 2002 cost estimate for the reasons detailed above.

**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.**

The following permits were approved in 2004:

**Asheville Plant**

Non-discharge permit – Permit # WQ0023612, approved 3-1-04, wastewater collection system extension

**Erosion and Sediment Control Plans**

- ID #: BUNCO-2004-003, approved 12-13-04, borrow area and duct bank
- ID #: BUNCO-2004-003, approved 11-29-04, addition of ¼ acre at old ash pond
- ID #: BUNCO-2004-003, approved 8-11-04, contractor parking lot
- ID #: BUNCO-2004-003, approved 7-21-04, removal of silt fencing to allow placement of power lines under ground and addition of 75 feet of silt fence
- ID #: BUNCO-2004-003, approved 6-15-04, removal of silt fence
- ID #: BUNCO-2004-003, approved 2-13-04, limestone storage and handling area; shutdown trailers, make-up water and transformer areas; SCR area; ductwork area; control room area; laydown area adjacent to ash pond.
- ID #: BUNCO-2004-003, approved 1-7-04, expansion of laydown area south of the gypsum pile

Authorization to Construct (ATC) installation of constructed wetlands approved 11-5-2004 – ATC No. 0000396A02

### **Roxboro Plant**

ATC – Coal pile runoff pond modifications – approved 10-20-04 – ATC No. 003425A01

#### **Erosion and Sediment Control Plans**

- Roxboro FGD Installation/RR, approved 10-11-04, to install new lead-in track
- Roxboro Steam Electric Plant, approved 8-18-04, North loop railroad and limestone and coal unloading pits, coal pile runoff pond sediment removal, FGD common facilities areas, FDG absorber and chimney area
- Roxboro FGD Installation Addition, approved 2-19-04, duct banks; potable, sanitary, and wastewater pipelines; conveyor tower support foundations excavations; additional laydown areas; railroad road bed construction.

#### **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.**

Appendix C presents the planned construction schedule for compliance with G.S. 143-215.107D. Please note that this projected schedule of construction activity through 2013 is subject to modification. The schedule will be updated as part of this report each year.

Significant construction activities at the Asheville Plant in 2005 include the completion of the mechanical, electrical and controls systems for the Unit 1 scrubber so that it can be placed into service by year's end. This includes installation, checkout and commissioning of the major equipment including the limestone preparation, absorber recycle, oxidation air, and dewatering systems. Construction activities for these systems also will continue for Unit 2 in order to support placing this scrubber in service in 2006. The constructed wetlands will also be completed for the treatment of scrubber blowdown waste streams.

At the Roxboro Plant, significant construction activities in 2005 include completion of a new coal unloading facility. The existing coal unloading facility will be demolished to provide the necessary space for the construction of the scrubber equipment once the new coal unloading facility is placed in service. Foundations for the Units 1 and 2 chimney, the Units 3 and 4 chimney, the absorber towers for Units 2, 3 and 4, and the limestone preparation and gypsum dewatering buildings will be installed. A new chimney will be constructed for Units 1 and 2 and the flue liners will be fabricated. Erection of the absorber tower for Unit 2 will begin. Various mechanical and electrical equipment will also begin to arrive on site.

#### **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.**

The following permit applications and permit approvals are anticipated for 2005:

### **Asheville Plant**

ATC submitted 12-17-04 for pretreatment system (treatment prior to discharging into

constructed wetlands)

### **Roxboro Plant**

Erosion and Sedimentation Control Plan – Rev H – Gypsum Storage Area – Submitted 1-21-05

Erosion and Sedimentation Control Plan – Gypsum Settling Pond Area

Erosion and Sedimentation Control Plan – Chimney Liner Haul Road

NPDES permit modification application for wastewater treatment system – Spring 2005

ATC for the wastewater treatment system

Army Corps permit application to fill wetlands for gypsum storage area – March 2005

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

No equipment testing related to compliance with G.S. 143-215.107D occurred in 2004.

#### **9. The number of tons of oxides of nitrogen (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>) 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.**

The total calendar year 2004 emissions from the affected coal-fired Progress Energy Carolinas units are:

NO<sub>x</sub> 49,959  
SO<sub>2</sub> 195,655

#### **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 2004, PEC acquired 21,894 vintage 2004 SO<sub>2</sub> allowances and 25,200 vintage 2005 SO<sub>2</sub> allowances. PEC did not acquire any NO<sub>x</sub> allowances in 2004.

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

NC Clean Smokestacks Audit Public Staff Data Request No. 2 was issued to Progress Energy Carolinas in January of 2004, and a response was provided in February of 2004. NC Clean Smokestacks Audit Public Staff Data Request No. 3 was issued to PEC in February of 2004, and a response was provided in February of 2004. NC Clean Smokestacks Audit Public Staff Data Request No. 4 was issued to PEC in February of 2004, and a response was provided in March of 2004.

## **Appendix A**

### **Progress Energy's Air Quality Improvement Plan Supplement**

On June 20, 2002 Governor Easley signed into law SB1078, which caps emissions of nitrogen oxides (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>) from utility owned coal-fired power plants located in North Carolina. Progress Energy Carolina's annual NO<sub>x</sub> emissions must be less than 25,000 tons beginning in 2007 and annual SO<sub>2</sub> emissions must be less than 100,000 tons beginning in 2009 and less than 50,000 tons beginning in 2013. The emissions caps are cumulative for all the Company's coal-fired units in North Carolina. These caps represent a 56 percent reduction in NO<sub>x</sub> emissions from 2001 levels and a 74 percent reduction in SO<sub>2</sub> emissions from 2001 levels for Progress Energy.

Progress Energy owns and operates 18 coal-fired units at seven plants in North Carolina. The locations of these plants are shown on Attachment 1.

#### **Nitrogen Oxides Emissions Control Plan**

Progress Energy has been evaluating and installing NO<sub>x</sub> emissions controls on its coal-fired power plants since 1995 in order to comply with Title IV of the Clean Air Act and the NO<sub>x</sub> SIP Call rule adopted by the Environmental Management Commission (EMC). Substantial NO<sub>x</sub> emissions reductions already have been achieved (50,000 tons of NO<sub>x</sub> emitted in 2004 compared with 112,000 tons in 1997), and further reductions will ensure compliance with the Clean Smokestacks Act's target of 25,000 tons in calendar year 2007. This target will be achieved with a mix of combustion controls (which minimize the formation of NO<sub>x</sub>), such as low NO<sub>x</sub> burners and over fire air technologies, and post-combustion controls (which reduce NO<sub>x</sub> produced during the combustion of fossil fuel to molecular nitrogen), such as selective catalytic reduction and selective non-catalytic reduction technologies.

Attachment 2 details PEC's North Carolina coal-fired electric generating units and their name plate generation capacity, and identifies the control technologies already installed and planned for installation. As technologies evolve or circumstances change, a different mix of controls may be selected. Attachment 2 also projects the NO<sub>x</sub> emissions on a unit-by-unit basis based on the energy demand forecast and expected efficiencies of the NO<sub>x</sub> emissions controls employed. This information is provided only to show how compliance may be achieved and is not intended in any way to suggest unit-specific emission limits. Actual emissions for each unit may be substantially different in 2007.

#### **Sulfur Dioxide Emissions Control Plan**

Progress Energy will be utilizing wet flue-gas desulfurization (FGD) technology (known as "scrubbers") to remove 97 percent of the SO<sub>2</sub> from the flue gas of its Asheville, Roxboro and Mayo boilers. Screening studies will be conducted for the Cape Fear 5 and 6 and Sutton 3 units to select the most appropriate technology for these plants. Wet scrubbers produce unique waste and by-product streams. Issues related to wastewater permitting and solid waste disposal are being addressed for each site. The Company plans to treat the scrubber wastewater stream at the Asheville Plant using an innovative constructed wetlands treatment system to ensure compliance

with discharge limits. A bioreactor technology is being evaluated for the Roxboro Plant. A contract has been executed with a gypsum product end-user that will construct a wallboard facility near the Roxboro Plant to use the synthetic gypsum produced by the Roxboro and Mayo plants for the manufacture of drywall products. The Company is also negotiating with another gypsum company for the use of the synthetic gypsum that will be produced at the Asheville Plant

Specific units are listed in Attachment 3 with data on projected schedules and projected annual emissions for 2009 and 2013. These projections are based on a 97 percent SO<sub>2</sub> removal efficiency, forecasted energy demand, 3.3 lbs SO<sub>2</sub>/Mbtu coal on scrubbed units, and 1.2 lbs SO<sub>2</sub>/Mbtu coal on the other units. Please note that the projected schedules, projected annual emissions and the assumptions on which they are based are subject to revision as PEC continues to refine and implement its compliance strategy.

Particular units controlled and control technologies utilized are subject to change depending on future developments in SO<sub>2</sub> removal technologies, energy demand, sulfur content of coal, and other circumstances which may produce a more optimal plan for meeting the SO<sub>2</sub> emissions limits in 2009 and 2013. The Company will communicate with DENR as changing circumstances dictate.





**Attachment 2: Progress Energy Planned NOx Controls for North Carolina**

Unit	MW Rating	Control Technology	Operation Date <sup>1</sup>	Projected NOx Tons, 2007 <sup>2</sup>
Asheville 1	198	LNB/AEFLGR/SCR	2009	2,671
Asheville 2	194	LNB/OFA/SCR		438
Cape Fear 5	143	ROFA/ROTAMIX		600
Cape Fear 6	173	ROFA/ROTAMIX		643
Lee 1	79	WIR		1,015
Lee 2	76	LNB	2006	684
Lee 3	252	LNB/OFA/ROFA/ROTAMIX	2010	2,202
Mayo 1	745	LNB/OFA/SCR		1,840
Roxboro 1	385	LNB/OFA/SCR		1,169
Roxboro 2	670	TFS2000/SCR		1,390
Roxboro 3	707	LNB/OFA/SCR		2,078
Roxboro 4	700	LNB/OFA/SCR		1,909
Sutton 1	97	SAS		932
Sutton 2	106	LNB	2006	1,181
Sutton 3	410	LNB/ROFA/ROTAMIX		3,166
Weatherspoon 1	49			673
Weatherspoon 2	49			684
Weatherspoon 3	78	WIR		882
<b>Total</b>	<b>5,111</b>			<b>24,157</b>

AEFLGR = Amine-Enhanced Flue Gas Reburn  
LNB = Low NOx Burner  
SNCR = Selective Non-Catalytic Reduction  
OFA = Overfire Air  
ROFA = Rotating Opposed-fired Air  
ROTAMIX = Injection of Ammonia to further reduce NOx (used in combination with ROFA)  
WIR = Underfire Air  
TFS2000 = Combination Low-NOx Burner/Overfire Air  
SAS = Separated Air Staging

<sup>1</sup> This is the operation date for the control technology installed to comply with the NC Clean Smokestacks Act (shown in bold).  
<sup>2</sup> Unit by unit emissions are illustrative only and specific emissions limits should not be inferred. Actual emissions in 2007 may be different from unit to unit.

**Attachment 3: Progress Energy Planned SO<sub>2</sub> Controls for North Carolina**

Unit	MW Rating	Technology	Operation Date	Projected SO <sub>2</sub> Tons, 2009 <sup>1</sup>	Projected SO <sub>2</sub> Tons, 2013 <sup>1</sup>
Asheville 1	198	Scrubber	2005	643	584
Asheville 2	194	Scrubber	2006	668	639
Cape Fear 5	143	Scrubber	2012	6,451	553
Cape Fear 6	173	Scrubber	2011	8,430	610
Lee 1	79			3,389	2,918
Lee 2	76			2,824	2,363
Lee 3	252			10,134	7,839
Mayo 1	745	Scrubber	2009	9,923	2,833
Roxboro 1	385	Scrubber	2008	1443	1,451
Roxboro 2	670	Scrubber	2007	2,438	2,627
Roxboro 3	707	Scrubber	2008	2,677	2,142
Roxboro 4	700	Scrubber	2007	2,681	2,505
Sutton 1	97			3,160	3,611
Sutton 2	106			3,711	3,758
Sutton 3	410	Scrubber	2012	15,528	1,541
Wspn 1	49			1,563	1,686
Wspn 2	49			1,796	1,713
Wspn 3	78			3,627	2,756
<b>Total</b>	<b>5,111</b>			<b>81,086</b>	<b>42,129</b>

<sup>1</sup> Unit by unit emissions are illustrative only and specific emissions limits should not be inferred. Actual emissions in 2009 and 2013 may be different from unit to unit.

<sup>2</sup> Projections are based on 97 percent SO<sub>2</sub> removal efficiency, forecasted energy demand, 3.3 lbs SO<sub>2</sub>/Mbtu coal on scrubbed units, and 1.2 lbs SO<sub>2</sub>/Mbtu coal on others

**Appendix B**  
**Progress Energy Actual Costs through 2004 and Projected Costs through 2013**

Unit	Start-up	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Ashville 1 Scrubber	Fall 2005	\$100,000	\$9,691,548	\$32,629,151	\$36,618,365	\$1,899,462	\$851,326							\$81,789,852
Ashville 1 SCR	Fall 2008			\$687,656		\$4,086,163	\$7,548,525	\$13,109,430						\$25,431,774
Ashville 2 Scrubber	Spring 2006	\$100,000	\$7,742,346	\$27,395,701	\$24,456,205	\$10,809,406								\$70,503,658
Ashville Scrubber Common		\$467,025												\$467,025
Cape Fear 5 Scrubber	2012								\$527,500	\$11,011,289	\$20,065,016	\$11,568,736		\$43,172,541
Cape Fear 6 Scrubber	2011							\$527,500	\$9,495,000	\$19,575,625	\$11,286,571			\$40,884,696
Lee 2 Low NOx Burners	2006			\$133,281	\$310,731	\$1,857,908								\$2,301,920
Lee 3 ROPA/Rotamix	2010							\$263,750	\$5,275,000	\$8,440,000				\$13,978,750
Mayo 1 Scrubber	Spring 2009	\$187,073		\$276,011	\$446,384	\$3,037,303	\$35,107,762	\$45,226,945	\$24,444,476	\$2,324,580				\$111,050,534
Roxboro Scrubber Common		\$417,633	\$5,564,784	\$10,091,917	\$48,181,046	\$30,967,038	\$4,553,302	\$4,153,532	\$3,910,560					\$107,839,812
Roxboro 1 Scrubber	Fall 2008													\$72,954,466
Roxboro 2 Scrubber	Spring 2007	\$120,000	\$3,605,521	\$6,864,482	\$32,047,018	\$33,357,410	\$24,243,901	\$22,867,221	\$10,843,083					\$87,173,971
Roxboro 3 Scrubber	Spring 2008			\$243,543	\$9,567,444	\$39,784,111	\$24,239,532	\$7,638,195						\$81,472,825
Roxboro 4 Scrubber	Fall 2007				\$14,702,689	\$36,883,508	\$19,517,920	\$3,732,565						\$73,836,682
Sutton 2 Low NOx Burners	2006				\$276,947	\$1,858,353								\$2,135,300
Sutton 3 Scrubber	2012								\$527,500	\$20,799,101	\$36,367,841	\$18,638,518		\$79,626,836
<b>Total cost, escalated for</b>			\$1,391,731	\$26,604,199	\$78,321,742	\$169,558,648	\$176,591,104	\$96,519,138	\$55,023,119	\$62,150,595	\$67,719,428	\$30,207,254	\$3,293,876	\$894,622,642
<b>Inflation</b>														

**Total cost, escalated for inflation**

**\$894,622,642**


Scrubber Design and Construction  
Scrubber in service

NOx controls Design and Construction  
NOx Controls in service

**Appendix C**  
**Progress Energy Planned NOx and SO<sub>2</sub> Controls for Clean Smokestacks Act Compliance**

Unit	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Asheville 1 Scrubber												
Asheville 1 SCR												
Asheville 2 Scrubber												
Cape Fear 5 Scrubber												
Cape Fear 6 Scrubber												
Lee 2 Low NOx Burners												
Lee 3 ROFA/Rotamix												
Mayo 1 Scrubber												
Roxboro 1 Scrubber												
Roxboro 2 Scrubber												
Roxboro 3 Scrubber												
Roxboro 4 Scrubber												
Sutton 2 Low NOx Burner												
Sutton 3 Scrubber												


Scrubber Design and Construction  
Scrubber in service


NOx controls Design and Construction  
NOx Controls in service


NORTH CAROLINA

VERIFICATION

WAKE COUNTY

Mike Williams, having been first duly sworn, deposes and says that he is Senior Vice President in Power Operations at Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.; that he has read the foregoing North Carolina Clean Smokestacks Act Compliance Report and knows its contents; that the same is true of his own personal knowledge, except for those matters alleged on information and belief, and as to those matters, he is informed and believes them to be true.

This is the 1st day of April, 2005.

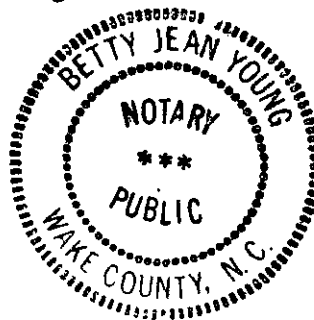
  
Mike Williams

Sworn to and subscribed before  
me this the 1st day of April, 2005.

  
Notary Public

My Commission Expires:

*October 5, 2008*



201437



**NORTH CAROLINA  
PUBLIC STAFF  
UTILITIES COMMISSION**

May 17, 2005

**FILED**  
MAY 17 2005  
Clerk's Office  
N.C. Utilities Commission

Ms. Geneva S. Thigpen, Chief Clerk  
North Carolina Utilities Commission  
4325 Mail Service Center  
Raleigh, North Carolina 27699-4325

Re: Docket No. E-7, Sub 718  
Duke Energy Corporation

Dear Ms. Thigpen:

Enclosed herewith for filing in the above-referenced docket are twenty-one (21) copies of the Report of the Public Staff on Costs Incurred and Amortized by Duke Energy Corporation ("Duke") in Compliance with Session Law 2002-4 ("the Clean Smokestacks Act" or "the Act"). This report presents the results of the Public Staff's review of environmental compliance costs incurred and amortized by Duke through the end of calendar year 2004.

Sincerely,

Antoinette R. Wike  
Chief Counsel

Enclosure

cc: Kodwo Ghartey-Tagoe

Executive Director 733-2435	Communications 733-2810	Economic Research 733-2902	Legal 733-6110	Transportation 733-7766
Accounting 733-4279	Consumer Services 733-9277	Electric 733-2267	Natural Gas 733-4326	Water 733-5610

**REPORT OF THE PUBLIC STAFF ON COSTS  
INCURRED AND AMORTIZED BY DUKE ENERGY CORPORATION  
IN COMPLIANCE WITH SESSION LAW 2002-4**

**Docket No. E-7, Sub 718**

**May 17, 2005**

Section 14 of Session Law 2002-4 ("the Clean Smokestacks Act" or "the Act") requires the Department of Environment and Natural Resources ("DENR") and the Utilities Commission ("Commission") to report, by June 1 of each year, on the implementation of the Act to the Environmental Review Commission and the Joint Legislative Utility Review Committee. The May 30, 2003, report of DENR and the Commission states that the Public Staff will audit the books and records of the investor owned utilities on an ongoing basis in regard to the costs incurred and amortized in compliance with the Act. The Public Staff has undertaken such a review, focusing on the verification of costs related to complying with the Act, the amortization of those costs, and the operating results of emission reduction equipment installed by Duke Energy Corporation ("Duke"). This report is a continuation of the Public Staff's ongoing review and presents the Public Staff's findings for the twelve months ended December 31, 2004.

I. Work To Be Performed

To comply with the emissions limitations for nitrogen oxides ("NO<sub>x</sub>") and sulfur dioxide ("SO<sub>2</sub>") established in the Act, Duke plans to install emission reduction technologies at several of its facilities. The facilities requiring these technologies are as follows and represent no significant changes from the previous twelve months:

<u>Facility</u>	<u>NO<sub>x</sub> Reduction</u>	<u>SO<sub>2</sub> Reduction</u>
Allen, Units 1-5	√	√
Belews Creek, Units 1&2		√
Buck, Units 3-6	√	
Cliffside, Unit 5		√
Dan River, Units 1-3	√	
Marshall, Units 1-4	√	√
Riverbend, Units 4-7	√	

Duke has installed and is currently operating Selective Catalytic Reduction ("SCR") technology to remove NO<sub>x</sub> from its Belews Creek and Cliffside Unit 5 facilities to comply with the North Carolina State Implementation Plan for NO<sub>x</sub> ("NO<sub>x</sub> SIP Call"). Duke initially proposed to install Selective Non-catalytic Reduction ("SNCR") technology to remove NO<sub>x</sub> to comply with the Act. However, Duke is currently re-evaluating the SNCR technology due to increased costs and will decide in 2005 whether to continue its

installation program at the remaining units designated to receive SNCR technology. Given the narrow margin between expected compliance rates and the overall emission limitations of the Act, Duke may need to incorporate additional NO<sub>x</sub> emission control technologies on units not previously earmarked to receive them.

Duke is also considering the retirement of Cliffside Units 1-4. No decisions have been made concerning this retirement or the replacement of the capacity with new generation resources. There is no indication that Duke has incurred any costs for NO<sub>x</sub> removal for units 1-4, and until a final decision is made, Duke will not pursue installation of SNCR technology on units 1-4.

Duke is continuing with its plan to install flue-gas desulfurization ("FGD") technology ("scrubbers") to remove SO<sub>2</sub> to comply with the Act. There have been scheduling changes to accommodate outage schedules and stack height issues raised by DENR.

## II. Environmental Compliance Costs

Duke is required by the Act to submit a report to the Commission and to DENR on or before April 1 of each year containing its actual environmental compliance costs incurred during the previous calendar year. As defined by G.S. 62-133.6(a)(2), "environmental compliance costs" include only capital costs.

In its Compliance Plan Annual Update for 2005 ("2005 Compliance Update"), Duke reported that its actual environmental compliance costs in calendar year 2004 were \$106,834,479. The cumulative environmental compliance costs incurred by Duke through 2004 are \$126,976,146, as follows:

Year 2001	\$ 692,433
Year 2002	1,024,223
Year 2003	18,425,011
Year 2004	106,834,479
Total	\$126,976,146

During 2004, Duke made adjustments to the 2001, 2002, and 2003 environmental compliance costs previously reported to the Commission. Duke personnel have indicated to the Public Staff that, in prior years Duke reported all project actuals as they were incurred, but by Commission Order dated December 11, 2003, Duke was authorized to use certain accounts for recording compliance costs. Although the authorized list of accounts identifies Account 107 ("CWIP"), some of Duke's projects were in a study/investigation phase and were therefore being charged to Account 183.

The 2005 Compliance Update correctly classifies environmental compliance costs as being charged to Account 107 to match the authorized list of accounts. According to Duke personnel, there should be no other changes in reporting prior period costs in the future.



Duke's expenditures to date involve emission reduction technologies at its Allen, Belews Creek, Buck, Cliffside, Dan River, Marshall, and Riverbend facilities. Environmental compliance costs were incurred for project studies and investigations, engineering, equipment procurement, and contracting.

As part of its review, the Public Staff requested information from Duke on the project costs, invoices documenting costs, and the purpose of the costs. Duke provided project cost sheets delineating actual project costs by year into the following categories: (1) direct labor costs; (2) labor loads; (3) contract costs; (4) material costs; (5) overhead costs; and, (6) other costs. These costs are as follows:

Direct Labor	\$ 2,098,311
Labor Loads	1,815,966
Contracts	94,190,236
Materials	4,156,092
Overheads	696,535
Other	3,877,339
Total	\$106,834,479

The project cost sheets were supported by project detail reports that incorporated all expenditures for a particular category or group. The Public Staff selected invoices in each category from the detailed spreadsheets and requested Duke to provide specific information on the selected costs. The Public Staff also had extensive discussions with Duke personnel to gain a better understanding of the cost items charged to each specific project. Duke provided documentation to support each selected cost.

Duke has estimated its environmental compliance costs at \$1,742,079,200, as set forth on Exhibit C in its 2005 Compliance Update. This represents an increase of \$242,079,200 or 16.1% over Duke's original estimate of \$1,500,000,000, as set forth in G.S. 62-133.6(b). According to Duke personnel, several factors have contributed to the increase in the estimated environmental compliance costs.

- The Belews Creek scrubber project required further scope identification related to water quality specifically, the availability of technology for the water treatment. The scope of the wetlands project is significantly greater than the scope of wetlands projects at other plants. Other factors at Belews Creek include stack extensions that are imperative to avoid future environmental issues; and, extensive earthwork required now that final scrubber placement has been determined.
- Factors also include recent escalations in market prices of certain commodities such as steel, concrete, and petroleum based products such as specialty piping as well as escalation of labor costs required by the Contractor to complete the projects.

- Water treatment and unit control systems related to older units have resulted in higher SNCR technology costs, which has led Duke to re-evaluate its use.

The Public Staff did not observe any NO<sub>x</sub> SIP Call related expenditures in the 2004 environmental compliance costs. However, if Duke elects to install SCR technology as previously discussed, those costs will need to be closely evaluated to determine the appropriate levels related to compliance with the Act and compliance with the NO<sub>x</sub> SIP Call.

### III. Amortization of Costs

In Section 9 of the Act [G.S. 62-133.6(b)], the investor owned utilities are allowed to accelerate the recovery of their estimated environmental compliance costs over a seven-year period, beginning January 1, 2003, and ending December 31, 2009. The statute requires that a minimum of 70% of the environmental compliance costs be amortized before December 31, 2007, when the rate freeze period expires. In Duke's case, this amount is \$1,050,000,000. The annual levelized amount is \$214,285,714. The maximum amount that can be amortized in any given year is 150% of the annual levelized environmental compliance costs or \$321,428,000.

Using the protocols established by the Act and subsequent Commission orders, Duke reported that its environmental compliance costs amortization for 2004 is \$211,379,806. The Public Staff has reviewed Duke's quarterly amortization filings and supporting journal entries and concluded that the amounts appear to be accurate. The cumulative amortization to date is \$326,193,142.

### IV. Contracts

The Public Staff reviewed an engineering, procurement, and construction contract to install a compressed air system at the Allen Station. This contract is a fixed price contract with a 1-year performance warranty. The Public Staff also reviewed a specification document associated with the Allen Unit 3 SNCR project. No other contracts were reviewed during this audit period.

### V. Site Inspections

On March 1, 2005, the Public Staff conducted a site inspection of Duke's Marshall Steam Station in Mooresville, North Carolina. Specifically, the Public Staff inspected the construction of the scrubbers and associated wastewater and gypsum handling facilities. The Public Staff confirmed that the installation of scrubbers, stack, conveyor systems, and wastewater treatment systems is progressing on schedule. No other facilities were inspected. It is the intent of the Public Staff to continue inspections of other coal-fired generating facilities as Duke continues to install emission reduction equipment in its boiler units.

VI. Other Issues

- A. In March 2005, the federal Environmental Protection Agency ("EPA") recently adopted rules that will likely affect the emission limitations and the compliance schedules associated with the Act.
1. The Clean Air Interstate Rule ("CAIR") will regulate the interstate transmission of NO<sub>x</sub> and SO<sub>2</sub> in 28 eastern states and the District of Columbia. When fully implemented, CAIR will reduce NO<sub>x</sub> emissions by 60% and SO<sub>2</sub> emissions by 70% from 2003 levels. Each state will become responsible for specific reduction targets. North Carolina and DENR have yet to determine how these reduction targets will be assigned to industrial sectors and the electric utility generating sector. Until that is done, costs related to compliance with the rule and the associated schedule of compliance remain unknown. Additionally, EPA will allow trading of emission credits to achieve compliance, something prohibited by the Act.
  2. The Clean Air Mercury Rule ("CAMR") will regulate mercury emissions from coal-fired power plants across the country. The rule will be implemented in two phases. The first phase will cap mercury emissions at 38 tons beginning in 2010. The second phase will cap mercury emission at 15 tons beginning in 2018. EPA has also instituted a cap and trade system for mercury emissions similar to the acid rain program for SO<sub>2</sub>. The effects of compliance with this rule are unknown, because scrubber technology for SO<sub>2</sub> will also remove a substantial portion of the mercury in coal-fired boiler emissions. While the Act anticipated future reductions in emissions of mercury, no specific limit was established. Instead, the Act only required annual reporting of mercury monitoring data by DENR, with recommendations on mercury emissions by September 1, 2005.

At this time, the Public Staff is unable to offer any specific comments on the impact of the new EPA rules on the electric industry. Duke may have to revise its Clean Smokestack construction projects to incorporate changes needed to meet the new federal requirements. In addition, CAIR is expected to result in more competition for these commodities, thus driving the prices upward. The Public Staff plans to work closely with Duke and DENR to address cost and compliance issues as well as cost allocations among Duke's jurisdictional customers.

- B. The Public Staff's review of environmental compliance costs indicates that there may be incremental capital cost increases associated with future FGD operational savings. The Public Staff will review this matter to determine the significance, of any incremental costs incurred specifically to assist Duke with reducing its operational costs.
- C. At the filing of this report, the Public Staff is still reviewing data provided by Duke. Upon completion of the review, any significant issues that arise will be addressed by the Public Staff in its next report to the Commission.



**NORTH CAROLINA  
PUBLIC STAFF  
UTILITIES COMMISSION**

May 17, 2005

**FILED**  
MAY 17 2005  
Clerk's Office  
N.C. Utilities Commission

Ms. Geneva S. Thigpen, Chief Clerk  
North Carolina Utilities Commission  
4325 Mail Service Center  
Raleigh, North Carolina 27699-4325

Re: Docket No. E-2, Sub 815  
Progress Energy Carolinas, Inc.

Dear Ms. Thigpen:

Enclosed herewith for filing in the above-referenced docket are twenty-one (21) copies of the Report of the Public Staff on Costs Incurred and Amortized by Progress Energy Carolinas, Inc. ("PEC") in Compliance with Session Law 2002-4 ("the Clean Smokestacks Act" or "the Act"). This report presents the results of the Public Staff's review of environmental compliance costs incurred and amortized by PEC through the end of calendar year 2004.

Sincerely,

A handwritten signature in cursive script that reads "Antoinette R. Wike".

Antoinette R. Wike  
Chief Counsel

Enclosure

cc: Len S. Anthony

<b>Executive Director</b> 733-2435	<b>Communications</b> 733-2810	<b>Economic Research</b> 733-2902	<b>Legal</b> 733-6110	<b>Transportation</b> 733-7766
<b>Accounting</b> 733-4279	<b>Consumer Services</b> 733-9277	<b>Electric</b> 733-2267	<b>Natural Gas</b> 733-4326	<b>Water</b> 733-5610

**REPORT OF THE PUBLIC STAFF ON COSTS  
INCURRED AND AMORTIZED BY PROGRESS ENERGY CAROLINAS, INC.  
IN COMPLIANCE WITH SESSION LAW 2002-4**

**Docket No. E-2, Sub 815**

**May 17, 2005**

Section 14 of Session Law 2002-4 ("the Clean Smokestacks Act" or "the Act") requires the Department of Environment and Natural Resources ("DENR") and the Utilities Commission to report, by June 1 of each year, on the implementation of the Act to the Environmental Review Commission and the Joint Legislative Utility Review Committee. The May 30, 2003, report of DENR and the Commission states that the Public Staff will audit the books and records of the investor owned utilities on an ongoing basis in regard to the costs incurred and amortized in compliance with the Act. The Public Staff has undertaken such a review, focusing on the verification of costs related to complying with the Act, the amortization of those costs, and the operating results of emission reduction equipment installed by Progress Energy Carolinas, Inc. ("PEC"). This report is a continuation of the Public Staff's ongoing review and presents the Public Staff's findings for the twelve months ended December 31, 2004.

I. Work To Be Performed

To comply with the emissions limitations for nitrogen oxides ("NO<sub>x</sub>") and sulfur dioxide ("SO<sub>2</sub>") established in the Act, PEC plans to install emission reduction technologies at several of its facilities. The facilities requiring these technologies are as follows and represent no significant changes from the previous twelve months:

<u>Facility</u>	<u>NO<sub>x</sub> Reduction</u>	<u>SO<sub>2</sub> Reduction</u>
Asheville Units 1&2	√(Unit 1 only)	√
Cape Fear Units 5&6		√
Lee Units 2 & 3	√	
Mayo Unit 1		√
Roxboro Units 1-4		√
Sutton Units 2&3	√(Unit 2 only)	√

PEC's original plan to install Selective Catalytic Reduction ("SCR") technology to remove NO<sub>x</sub> and flue-gas desulfurization technology ("scrubbers") to remove SO<sub>2</sub> to comply with the Act, remains essentially the same with only minor changes to the compliance schedule. PEC has also installed SCR technology at other facilities to comply with the NO<sub>x</sub> SIP Call program.

Substantial work has been accomplished at the Asheville and Roxboro plants. The scrubber on Asheville Unit 1 is close to completion with scheduled testing and

startup scheduled for later in 2005. The Roxboro plant construction is also underway with grading and other site preparation being completed before construction begins later this year.

PEC did not report any equipment testing in 2004.

II. Environmental Compliance Costs

PEC is required by the Act to submit a report to the Commission and to DENR on or before April 1 of each year containing the actual environmental compliance costs incurred during the previous calendar year. As defined by G.S. 62-133.6(a)2, "environmental compliance costs" include only capital costs.

In its Calendar Year 2004 Progress Report ("2004 Report"), PEC reported that its actual environmental compliance costs in calendar year 2004 were \$78,321,742. The cumulative environmental compliance costs incurred by PEC through 2004 are \$106,317,672, as follows:

Year 2002	\$ 1,391,731
Year 2003	26,604,199
Year 2004	78,321,742
Total	\$106,317,642 <sup>1</sup>

During 2004, PEC made adjustments to the 2002 and 2003 compliance costs previously reported to the Commission. PEC personnel have indicated to the Public Staff that the amounts reported to the Commission in 2002 and 2003 were reported strictly from a project view, which does not include labor loads and overhead costs, as opposed to a financial view, which includes labor loads and overhead costs. In its report to the Commission dated May 3, 2004, the Public Staff discussed this discrepancy, stating that labor loads and overhead costs typically are treated as project costs. The 2004 Report correctly classifies costs incurred from a financial view, and PEC personnel have indicated that all costs going forward will be reported in this manner.

PEC's expenditures to date involve emission reduction technologies at its Asheville, Mayo, Roxboro, and Lee facilities. Environmental compliance costs were incurred for project studies and investigations, engineering, contracting, and equipment acquisition.

As part of its review, the Public Staff requested information from PEC on the project costs, invoices documenting costs, and the purpose of the costs. PEC provided project cost sheets delineating actual project costs by year into the following categories: (1) company labor costs; (2) materials costs; (3) outside services costs; (4) burdens; and (5) other costs. These costs are as follows:

<sup>1</sup> PEC's estimated and reported environmental compliance costs exclude costs attributable to the portions of its Mayo and Roxboro facilities that are owned by the NC Eastern Municipal Power Agency.

Company Labor	\$ 1,949,388
Material	31,109,202
Outside Services	40,758,305
Labor Loads/Overheads	4,120,639
Other	<u>384,209</u>
Total	\$78,321,742

The project cost sheet was supported by detailed spreadsheets for a particular category. The Public Staff selected invoices in each category from the detailed spreadsheets and requested PEC to provide specific information on the selected costs. The Public Staff has had discussions with PEC personnel regarding the cost items charged to projects. PEC has provided documentation to support the selected costs. During the Public Staff's review it was discovered that interest is being remitted to a particular vendor for deferral of invoices to a later period. Although this amount was insignificant in relation to the dollar amount of invoices sampled, these costs are clearly not compliance costs.

PEC has estimated its environmental compliance costs at \$894,622,642, as set forth on Appendix B in its 2004 Report. This represents an increase of \$81,622,642 or 10.04% over PEC's original estimate of \$813,000,000, as set forth in G.S. 62-133.6(b). According to PEC personnel, several factors have contributed to the increase in the estimate, including a significant increase in the price of steel and an increase in equipment costs due to the limited number of suppliers available, and expenditures associated with reducing PEC's fuel costs.

### III. Amortization of Costs

In Section 9 of the Act [G.S. 62-133.6(b)], the investor owned utilities are allowed to accelerate the cost recovery of their estimated environmental compliance costs over a seven-year period, beginning January 1, 2003, and ending December 31, 2009. The statute requires that a minimum of 70% of the environmental compliance costs be amortized before December 31, 2007, when the rate freeze period expires. In PEC's case, this amount is \$569,100,000. The annual levelized amount is \$116,142,857. The maximum amount that can be amortized in any given year is 150% of the annual levelized environmental compliance costs or \$174,214,285.

Using the protocols established by the Act and subsequent Commission orders, PEC reported that its environmental compliance costs amortization for 2004 is \$174,000,000. The Public Staff has reviewed PEC's quarterly amortization filings, as well as the journal entries recorded, and concluded that the reported amounts appear to be accurate. The cumulative amortization to date is \$248,218,804.

### IV. Contracts

No contracts were reviewed during this audit period. Contracts reviewed in 2004 are still in effect, with only changes relating to cost increases and schedules.



## V. Site Inspections

On April 21, 2005, the Public Staff conducted a site inspection of PEC's Asheville Steam Station at Arden, North Carolina. Specifically, the Public Staff inspected the construction of the scrubbers and associated wastewater and gypsum handling facilities. The Public Staff confirmed the installation of scrubbers, stack, conveyor systems, and wastewater treatment systems are progressing on schedule. No other facilities were inspected. It is the intent of the Public Staff to continue inspections of other coal-fired generating facilities as PEC continues to install emission reduction equipment in its boiler units.

## VI. Other Issues

- A. The Environmental Protection Agency ("EPA") recently adopted rules that will likely affect the emission limitations and the compliance schedules associated with the Act. EPA's new rules are given below:
  1. The Clean Air Interstate Rule ("CAIR") will regulate the interstate transmission of NO<sub>x</sub> and SO<sub>2</sub> in 28 eastern states and the District of Columbia. When fully implemented, CAIR will reduce NO<sub>x</sub> emissions by 60% and SO<sub>2</sub> emissions by 70% from 2003 levels. Each state will become responsible for specific reduction targets. North Carolina and DENR have yet to determine how these reduction targets will be assigned to industrial sectors and the electric utility generating sector. Until that is done, costs related to compliance with the rule and the associated schedule of compliance remains unknown. Additionally, EPA will allow trading of emission credits to achieve compliance, something prohibited by the Act.
  2. Clean Air Mercury Rule ("CAMR") will regulate mercury emissions from coal-fired power plants across the country. The rule will be implemented in two phases. The first phase will cap mercury emissions at 38 tons beginning in 2010. The second phase will cap mercury emission at 15 tons beginning in 2018. EPA has also instituted a cap and trade system for mercury emissions similar to the acid rain program for SO<sub>2</sub>. The effects of compliance with this rule are unknown due to the fact that scrubber technology for SO<sub>2</sub> will also remove a substantial portion of the mercury in coal-fired boiler emissions. While the Act anticipated future reductions in emissions of mercury, no specific limit was established. Instead, the Act only required annual reporting.

of mercury monitoring data by DENR, with recommendations on mercury emissions by September 1, 2005.

At this time, the Public Staff is unable to offer any specific comments on the impact of the new EPA rules on the electric industry. PEC may have to revise its Clean Smokestack construction projects to incorporate changes needed to meet the federal requirements. In addition, CAIR is expected to result in more competition for commodities used in projects to comply with the Act, thus driving costs upward. The Public Staff plans to work closely with PEC and DEHR to address cost and compliance issues as well as cost allocations among the Company's jurisdictional customers.

- B. In response to Item 10 of the 2004 Report, PEC states that it acquired SO<sub>2</sub> allowances as a result of compliance with the Act. However, in a meeting with the Public Staff on April 12, 2005, PEC indicated that these allowances were the result of the Title IV Acid Rain Program and not the result of compliance with the Smokestacks Act. Thus, the response to Item 10 should be zero for both SO<sub>2</sub> and NO<sub>x</sub>.
- C. PEC has indicated that incremental cost increases in environmental compliance costs are the result of unforeseen increases in compliance costs or expenditures made to reduce PEC's fuel costs. PEC's increased costs in excess of its original estimate were the result of changing the technology used so as to enable PEC to burn lower cost / higher sulfur coal. It is the Public Staff's understanding that certain increases in scrubber costs may also provide an offsetting benefit by reducing fuel costs.

The Public Staff will review this matter to determine the significance of any incremental costs that may be incurred specifically to assist PEC with reducing its fuel costs and other operational costs.

- D. At the filing of this report, the Public Staff is still reviewing data responses received from the Company. Upon completion of this review, any significant issues that arise will be addressed by the Public Staff in its next report to the Commission.