

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, 2004

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**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, 2004

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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 Energy and 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, dated March 31, 2004, and April 1, 2004, 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 3, 2004, as follows:

"North Carolina's investor owned electric utilities, Duke Energy and Progress Energy, have filed their compliance plan annual updates for 2004 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 Carolinas, Inc. (Progress Energy) and Duke Power, a division of Duke Energy Corporation (Duke Energy), filed their initial compliance plans as required in June and July of 2002, 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 plan for Progress Energy Carolinas, Inc. was originally submitted on July 29, 2002. Appendix A (of the attached Progress submittal dated April 1, 2004) contains an updated version of this plan, effective April 1, 2004."

Duke Energy Response: "Exhibits A and B (of the attached Duke submittal dated March 31, 2004) outline the technology selections by facility and unit, projected operational dates, expected emission rates, and the corresponding tons of emissions that demonstrate compliance with 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 2003 were \$22.3 million. Construction began at both Roxboro and Asheville plants after receipt of the necessary Title V permits and approval of soil and erosion control plans.

Summary of Duke Energy Report: The actual environmental compliance costs incurred by Duke Energy in calendar year 2003 were \$16.0 million. The Company reported that such costs were incurred for such things as a variety of project studies and investigations, engineering, equipment specifications development, equipment layout, contracting related costs, and logistics.

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 \$74.2 million in 2003. Duke Energy amortized \$114.8 million in 2003. As indicated in the May 30, 2003 report to the Environmental Review Commission and the Joint Legislative Utility Review Committee ("the May 30, 2003 report"), Progress Energy, in response to a data request submitted by the Commission, projected that it would amortize \$100 million of environmental compliance costs in 2003. Also, as indicated in the May 30, 2003 report, Duke Energy, in response to a Commission data request, projected that it would amortize \$70 million of environmental compliance costs in 2003.

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, while some unit total and annual costs have changed, the total project cost in future dollars remains at \$813 million. More specifically, in its 2004 report, the Company estimated such cost to be \$812.968 million, as compared to the \$813.119 million reflected in its 2003 report, a reduction of \$151,000. The Company observed that the projected SO₂ removal rates have increased for scrubbed units. As a result, the planned scrubber for Lee 3 has been cancelled

Summary of Duke Energy Report: Duke Energy reported that its expected costs are not significantly different than the estimates provided in 2003. More specifically, in its 2004 report, the Company estimated its compliance costs to be \$1.526 billion, as compared to the \$1.479 billion reflected in its 2003 report, an increase of \$47 million. The Company also reported that the technologies expected to be required to support compliance have not changed. The Company further stated that the

minor adjustments to the estimates at the project level are the result of additional project scope definition and refinement of project schedules only.

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

- Revised Title V permits to support construction activities have been issued
- NPDES Permit application submitted for required wastewater system modifications
- Soil erosion and sedimentation control plans have been approved

Roxboro Plant

- Revised Title V permits to support construction activities have been issued
- Soil erosion and sedimentation control plans have been approved

Duke Energy Response:

"Allen Steam Station SNCR, Unit 1

- Air Permit Application for temporary trial submitted and final permit received in 2002
- NPDES Permit Modification for temporary trial submitted and permit modification received in 2002
- Air Permit Application for permanent equipment installation submitted and final permit received in 2002

Marshall Steam Station SNCR, Unit 4

- Air Permit Application for temporary trial submitted and final permit received in 2002
- NPDES Permit Modification for temporary trial submitted and permit modification received in 2002
- Marshall Steam Station Scrubbers, Units 1-4
 - Air Permit Application – Submitted 9/17/03; received 2/5/04
 - Sedimentation and Erosion Control Plan – Submitted 9/11/03; received 10/8/03; amended 12/19/03; amendments approved 12/31/03
 - NPDES Modification – Submitted 4/30/03; received 1/23/04
 - Landfill Site Suitability Application – Submitted 9/3/03”

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, 2004, for details of construction and installation of equipment. The Asheville and Roxboro plants will have significant construction in 2004.

Duke Energy Response: See attached letter from Duke Energy dated March 31, 2003, for details of construction anticipated for the next year for:

- Allen Steam Station SNCR, Unit 3
- Allen Steam Station SNCR, Unit 4
- Allen Steam Station Scrubbers
- Belews Creek Steam Station Scrubbers
- Buck Steam Station SNCR, Unit 5
- Buck Steam Station SNCR, Unit 6
- Cliffside Steam Station Scrubbers
- Marshall Steam Station SNCR, Unit 1
- Marshall Steam Station SNCR, Unit 2
- Marshall Steam Station SNCR, Unit 3
- Marshall Steam Station Scrubbers
- Riverbend Steam Station SNCR, Unit 4
- Riverbend Steam Station Burners, Unit 5
- Riverbend Steam Station SNCR, Unit 7

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: "An NPDES permit modification application will be submitted in the 2nd quarter of 2004 to request changes to the existing wastewater discharge permit for the Roxboro Plant. Operation of scrubbers to comply with G.S. 143-214.107D will create a new wastewater stream, which requires modification of our current permit. The application characterizes expected wastewater contaminant concentrations and flows."

Duke Energy Response:

"Allen Steam Station SNCR, Unit 3

- Air Permit Application – Plan to submit 8/1/04

Belews Creek Steam Station Scrubbers, Units 1-2

- Landfill Site Suitability Application – Plan to submit 1/11/05
- Air Permit Application – Plan to submit 5/20/05
- Sedimentation and Erosion Control Plan – Plan to submit 6/6/05
- NPDES Permit Application – Plan to submit 5/25/04

Dan River Steam Station SOFA, Unit 3

- Air Permit Application – Plan to submit January , 2005

Marshall Steam Station SNCR, Unit 2

- Air Permit Application – Plan to submit June, 2005

Marshall Steam Station SNCR, Unit 3

- Air Permit Application – Plan to submit 6/1/04
- NPDES Permit Modification (if required) – Plan to submit 10/27/04

- Sedimentation and Erosion Control (if required) – Plan to submit 11/15/04

Marshall Steam Station Scrubbers

- Landfill Construction Plan Application – Plan to submit 4/1/04
- Sedimentation and Erosion Control Plan for balance of Marshall site work – Plan to submit 6/18/04
- Authorization to Construct (ATC) application for FGD wastewater treatment system – Plan to submit 6/1/04

Riverbend Steam Station SOFA, Unit 5

- Air Permit Application – Plan to submit 5/1/04

Riverbend Steam Station SOFA, Unit 6

- Air Permit Application – Plan to submit January, 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 2003."

Duke Energy Response:

"Allen Steam Station SNCR, Unit 1

- Technology demonstration in December, 2001 (one week test)
 - Nominal 30% reduction in NO_x with ammonia slip of 5 to 10 ppm at full load
 - Average NO_x outlet rate of 0.15 #/MMBTU for the test period
- Equipment acceptance testing in November, 2003
 - Nominal 25% reduction in NO_x with ammonia slip of less than 5 ppm at full load

Marshall Steam Station SNCR, Unit 4

- Technology demonstration in October - November, 2002 (one month test)
 - Average 24% - 25% reduction in NO_x with ammonia slip of 5 to 10 ppm at full load
 - Average NO_x outlet rate of 0.163 #/MMBTU for the test period "

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

Progress Energy Response: "The total calendar year 2003 emissions from the affected coal-fired Progress Energy Carolinas units are:

- NO_x - 56,059
- SO₂ - 196,184"

Duke Energy Response: In the 2003 calendar year, the following were emitted from the North Carolina based Duke Energy coal-fired units:

- NO_x - 75,550 tons
- SO₂ - 264,031 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: "No emissions allowances resulting from compliance with G.S. 143-215.107D were acquired in 2003."

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 data requests to Progress Energy and Duke Energy on April 16, 2004. The information requested, among other things, concerned current projected amortization schedules over the six remaining years of the seven-year accelerated cost recovery period.

Progress Energy Response: Progress Energy responded that it currently expects to amortize its remaining compliance costs as follows: 2004 - \$75 million; 2005 - \$120 to \$140 million; 2006 - \$125 to \$145 million; 2007 - \$130 to \$150 million; 2008 - \$121.5 million; and 2009 - \$121.5 million. The Company noted that those amounts are subject to change.

Duke Energy Response: Duke Energy responded that it currently plans to amortize its remaining compliance costs as follows: 2004 - \$171 million; 2005 - \$277 million; 2006 - \$277 million; 2007 - \$277 million; 2008 - \$214 million; and 2009 - \$169 million.

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 (NO_x) and sulfur dioxide (SO₂) comparable to those required by G.S. 143-215.107D, as*

enacted by Section 1 of this act, on a comparable schedule. The State shall give particular attention to those states and other entities whose emissions negatively impact air quality in North Carolina or whose failure to achieve comparable reductions would place the economy of North Carolina at a competitive disadvantage.

DENR and Division of Air Quality (DAQ) 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 SO₂ 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_x 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_x 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 last month in opposition to a proposed federal rule that would weaken the federal New Source Review program and potentially result in significant new upwind emissions. North Carolina filed a petition on March 18, 2004, calling for the U.S. Environmental Protection Agency to require major reductions of air pollution in 13 upwind states that are significantly impacting this state. Reducing these emissions will substantially improve air quality in North Carolina. The petition, filed pursuant to Section 126 of the Clean Air Act, calls for the EPA to require cuts in fine particle-forming emissions from power plants in Alabama, Georgia, Illinois, Indiana, Kentucky, Michigan, Ohio, Pennsylvania,

South Carolina, Tennessee, Virginia and West Virginia, and ozone-forming emissions in Georgia, Maryland, South Carolina, Tennessee and Virginia.

IV. Section 12 of the Act provides: *The General Assembly anticipates that measures implemented to achieve the reductions in emissions of oxides of nitrogen (NOx) and sulfur dioxide (SO₂) required by G.S. 143-215.107D, as enacted by Section 1 of this act, will also result in significant reductions in the emissions of mercury from coal-fired generating units. The Division of Air Quality of the Department of Environment and Natural Resources shall study issues related to monitoring emissions of mercury and the development and implementation of standards and plans to implement programs to control emissions of mercury from coal-fired generating units. The Division shall evaluate available control technologies and shall estimate the benefits and costs of alternative strategies to reduce emissions of mercury. The Division shall annually report its interim findings and recommendations to the Environmental Management Commission and the Environmental Review Commission beginning 1 September 2003. The Division shall report its final findings and recommendations to the Environmental Management Commission and the Environmental Review Commission no later than 1 September 2005. The costs of implementing any air quality standards and plans to reduce the emission of mercury from coal-fired generating units below the standards in effect on the date this act becomes effective, except to the extent that the emission of mercury is reduced as a result of the reductions in the emissions of oxides of nitrogen (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 a report on September 1, 2003, 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 SO₂ 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. Two public workshops were held in June and July 2003, to meet with all interested stakeholders to offer review of the draft DAQ report. DAQ is presently developing the September 1, 2004 report.

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 (NO_x) and sulfur dioxide (SO₂) required to achieve the emissions limitations set out in G.S. 143-215.107D, as enacted by Section 1 of this act, shall not be recoverable pursuant to G.S. 62-133.6, as enacted by Section 9 of this act.

DAQ Actions to Implement this Section: The DAQ submitted a report on September 1, 2003, as required by this section. The first report primarily focused on the "state of knowledge" and actions being taken or planned elsewhere regarding CO₂ control from coal-fired utility boilers. Two public workshops were held in June and July 2003, to meet with all interested stakeholders to offer review of the draft DAQ report.

VI. Supplementary Information: As stated in the May 30, 2003 report, the Public Staff – North Carolina Utilities Commission (Public Staff) will audit the books and records of Progress Energy and Duke Energy in regard to the costs incurred and amortized by the Companies concerning their compliance with the provisions of the Clean Smokestacks 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 contracts with vendors who will engineer and construct emission reduction equipment. The Public Staff filed its reports with the Commission on May 3, 2004. Attached, and made part of this report, are the Public Staff's reports for Duke Energy and Progress Energy (without Attachment), 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:** Clean Smokestacks Act Compliance Plan Annual Update dated March 31, 2004, Submitted by Duke Power, a Division of Duke Energy Corporation
- Attachment B:** Annual North Carolina Clean Smokestacks Act Compliance Report dated April 1, 2004, Submitted by Progress Energy Carolinas, Inc.
- Attachment C:** Report of the Public Staff on Costs Incurred and Amortized by Duke Energy Corporation in Compliance with Session Law 2002-4
- Attachment D:** Report of the Public Staff on Costs Incurred and Amortized by Progress Energy Carolinas, Inc. in Compliance With Session Law 2002-4



George T. Everett, Ph.D.
Vice President, Environmental and Public Policy

March 31, 2004

Ms. Jo Anne Sanford, Chair
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, NC 27699-4325

Subject: Senate Bill 1078

Duke Power Compliance Plan Annual Update

Record No. NC CAP 003
Certified: 7002 3150 0003 7316 2413

Dear Ms. Sanford:

As required by Senate Bill 1078, Duke Power is required 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.

The current plan to meet the emission requirements for NO_x and SO₂ continues to include:

NO_x Control – The installation of Selective Catalytic Reduction (SCR) on Cliffside Steam Station Unit 5 and Belews Creek Steam Station Units 1&2; the installation of Selective Non Catalytic Reduction (SNCR) with Low-NO_x burners on the 24 remaining units.

SO₂ Control – The installation of wet scrubbers on our twelve largest generating units.

Exhibits A and B outline the unit specific technology selections, projected operational dates, expected emission rates, and the corresponding tons of emissions that demonstrate compliance with the legislative requirements. The projected 'environmental compliance costs' for these pollution control projects are included in Exhibit C.

Duke Power will continue to optimize the technology selection, implementation schedule and cost, and will provide annual updates 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 704-373-4363.

Sincerely,

George T. Everett, Ph.D.
Vice President, Environmental and Public Policy
Duke Power

Enclosure

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

ATTACHMENT A
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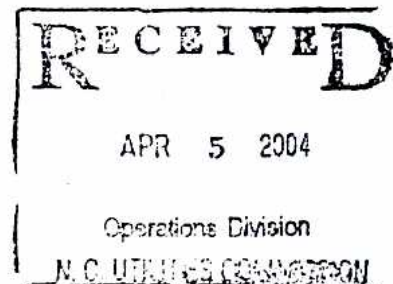
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FILED

APR 03 2004

Clerk's Office
N.C. Utilities Commission

E-7 Sub 718



Duke Power Company

3/31/2004

General Assembly of North Carolina Session 2001

**Senate Bill 1078 – Improve Air Quality/Electric Utilities (NC Clean Air Legislation)
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 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. 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 2003 calendar year, Duke Power Company spent \$16,041,000 on activities in support of compliance with the provisions of G.S. 143-215.107D. Exact amounts associated with each project are provided in Exhibit C, and a description of the associated activities is provided below:

Allen Steam Station SNCR, Unit 1

- Equipment installation completed
- Acceptance testing completed

Allen Steam Station SNCR, Unit 3

- Project planning and scope development initiated
- Boiler testing and modeling completed

Allen Steam Station SNCR, Unit 5

- Project planning and scope development initiated

Allen Steam Station Scrubbers

- Project studies and investigations related to reagent handling, equipment optimization, byproduct handling, equipment layout and logistics completed

Belews Creek Steam Station Scrubbers

- Project studies and investigations related to reagent handling, equipment optimization, byproduct handling, equipment layout and logistics completed

Cliffside Steam Station Scrubbers

- Project studies and investigations related to reagent handling, equipment optimization, byproduct handling, equipment layout and logistics completed

Dan River Steam Station Burners, Unit 3

- Electrical and mechanical design continued

Marshall Steam Station SNCR, Unit 1

- Project planning and scope development initiated

3/31/2004

Marshall Steam Station SNCR, Unit 2

- Project planning and scope development initiated
- Boiler testing and modeling completed

Marshall Steam Station SNCR, Unit 3

- SNCR Equipment engineering completed

Marshall Steam Station SNCR, Unit 4

- SNCR Equipment engineering completed

Marshall Steam Station Scrubbers

- Initial engineering phase for balance of plant (BOP) scope completed
- Approximately 25% of detailed engineering completed
- EPC contract for FGD Project awarded on December 19, 2003

Riverbend Steam Station Burners, Unit 5

- Electrical and mechanical design continued

Riverbend Steam Station Burners, Unit 6

- Electrical and mechanical design continued

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

In the 2003 calendar year, \$114,813,336 was amortized related to construction work activity in support of compliance with the provisions of G.S. 143-215.107D.

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

The estimated 'environmental compliance costs' as defined in G.S. 143-215.107D are provided in Exhibit C.

These expected costs are not significantly different than the estimates provided in the 2003 annual filing. The minor adjustments to the estimates at the project level are the result of additional project scope definition and refinement of project schedules only.

The technologies expected to be required to support compliance have not changed from what was provided in the 2003 annual filing or subsequent data requests. These technology decisions continue to be evaluated more fully, and changes to these technology decisions may ultimately be required in order to comply with emissions limitations.

3/31/2004

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.

Allen Steam Station SNCR, Unit 1

- Air Permit Application for temporary trial submitted and final permit received in 2002
- NPDES Permit Modification for temporary trial submitted and permit modification received in 2002
- Air Permit Application for permanent equipment installation submitted and final permit received in 2002

Marshall Steam Station SNCR, Unit 4

- Air Permit Application for temporary trial submitted and final permit received in 2002
- NPDES Permit Modification for temporary trial submitted and permit modification received in 2002

Marshall Steam Station Scrubbers, Units 1-4

- Air Permit Application – Submitted 9/17/03; received 2/5/04
- Sedimentation and Erosion Control Plan – Submitted 9/11/03; received 10/8/03; amended 12/19/03; amendments approved 12/31/03
- NPDES Modification – Submitted 4/30/03; received 1/23/04
- Landfill Site Suitability Application – Submitted 9/3/03

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.

Allen Steam Station SNCR, Unit 3

- SNCR equipment engineering expected to occur in 2004
- SNCR equipment installation expected to occur in 2nd quarter of 2005

Allen Steam Station SNCR, Unit 4

- Boiler testing and modeling expected to occur in 2004

Allen Steam Station Scrubbers

- No FGD construction planned in 2004-2005, and no further substantial FGD engineering anticipated until 2008

Belews Creek Steam Station Scrubbers

- Further FGD engineering study expected to be awarded in 3rd or 4th quarter of 2004 to finalize FGD project scope, funding, and implementation schedule
- EPC contract expected to be awarded in 3rd quarter of 2005
- Release for detailed engineering and potentially authorization for some early site prep may be awarded under a Limited Notice To Proceed (LNTP) to the EPC Contractor in 2nd quarter of 2005
- Full site mobilization of the EPC Contractor expected to begin in the 3rd quarter of 2005

- Only substantial construction expected to be started in 2005 would be general excavation, grading, and drainage
- Foundations may be started in 4th quarter of 2005

Buck Steam Station SNCR, Unit 5

- Boiler testing and modeling expected to occur in 2004
- SNCR equipment engineering expected to begin in 2004

Buck Steam Station SNCR, Unit 6

- Boiler testing and modeling expected to occur in 2004
- SNCR equipment engineering expected to begin in 2004

Cliffside Steam Station Scrubbers

- No FGD construction planned in 2004-2005, and no further substantial FGD engineering anticipated until 2006

Marshall Steam Station SNCR, Unit 1

- SNCR equipment engineering expected to begin in 2004

Marshall Steam Station SNCR, Unit 2

- SNCR equipment engineering expected to begin in 2004

Marshall Steam Station SNCR, Unit 3

- SNCR equipment installation expected to be completed by 2nd quarter of 2005

Marshall Steam Station Scrubbers

- EPC Contractor began mobilization at site on January 5, 2004
- Site prep (timber clearing) began in January and finished in March, 2004
- General excavation, grading, and drainage expected to start in April, 2004
- Installation of foundations expected to begin in June, 2004
- Erection of new wet stack (concrete wind screen) and installation of undergrounds (electrical duct bank and piping) expected to begin in September, 2004
- Erection of scrubber (absorber) building structural steel expected to begin in January, 2005
- Excavation and drainage for gypsum by-product landfill expected to start in February, 2005
- Erection of FGD ductwork structural support steel expected to begin in June, 2005
- Installation of FGD wastewater pre-treatment package (clarifier for removal of solid fines) expected to begin in July, 2005
- Switchyard tie-in and electrical power backfeed to FGD equipment expected to occur in November 2005.

Riverbend Steam Station SNCR, Unit 4

- Boiler testing and modeling expected to begin in 2004

Riverbend Steam Station Burners, Unit 5

- Installation of burners expected to be completed by 4th quarter of 2004

Riverbend Steam Station SNCR, Unit 7

- Boiler testing and modeling expected to begin in 2004

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.

Allen Steam Station SNCR, Unit 3

- Air Permit Application – Plan to submit 8/1/04

Belews Creek Steam Station Scrubbers, Units 1-2

- Landfill Site Suitability Application – Plan to submit 1/11/05
- Air Permit Application – Plan to submit 5/20/05
- Sedimentation and Erosion Control Plan – Plan to submit 6/6/05
- NPDES Permit Modification – Plan to submit 5/25/04

Dan River Steam Station SOFA, Unit 3

- Air Permit Application – Plan to submit January, 2005

Marshall Steam Station SNCR, Unit 2

- Air Permit Application – Plan to submit June, 2005

Marshall Steam Station SNCR, Unit 3

- Air Permit Application – Plan to submit 6/1/04
- NPDES Permit Modification (if required)- Plan to submit 10/27/04
- Sedimentation and Erosion Control (if required) – Plan to submit 11/15/04

Marshall Steam Station Scrubbers

- Landfill Construction Plan Application – Plan to submit 4/1/04
- Sedimentation and Erosion Control Plan for balance of Marshall site work – Plan to submit 6/18/04
- Authorization to Construct (ATC) application for FGD wastewater treatment system – Plan to submit 6/1/04

Riverbend Steam Station SOFA, Unit 5

- Air Permit Application – Plan to submit 5/1/04

Riverbend Steam Station SOFA, Unit 6

- Air Permit Application – Plan to submit January, 2005

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

Allen Steam Station SNCR, Unit 1

- Technology demonstration in December, 2001 (one week test)
 - Nominal 30% reduction in NO_x with ammonia slip of 5 to 10 ppm at full load
 - Average NO_x outlet rate of 0.15 #/MMBTU for the test period
- Equipment acceptance testing in November, 2003
 - Nominal 25% reduction in NO_x with ammonia slip of less than 5 ppm at full load

Marshall Steam Station SNCR, Unit 4

- Technology demonstration in October - November, 2002 (one month test)
 - Average 24% - 25% reduction in NO_x with ammonia slip of 5 to 10 ppm at full load
 - Average NO_x outlet rate of 0.163 #/MMBTU for the test period

Note: Test results do not necessarily guarantee long term results. Expected annual emission rates are provided in Exhibit A.

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

In the 2003 calendar year, 75,550 tons of NO_x and 264,031 tons of SO₂ 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 Plan for NC Clean Air Plan (Exhibit A)

NO _x							
Facility	Unit	Technology	Operational Date	2007 Compliance		2009 Compliance	
				Expected Rate #/MMBTUs	Tons	Expected Rate #/MMBTUs	Tons
Allen	1	SNCR	2003	0.17	715	0.17	650
Allen	2	SNCR	2007	0.19	703	0.17	829
Allen	3	SNCR	2005	0.17	1,310	0.17	1,086
Allen	4	SNCR	2006	0.17	1,357	0.17	1,458
Allen	5	SNCR	2008	0.23	1,845	0.17	1,516
Belews Creek	1	SCR	2003	0.10	3,482	0.10	3,463
Belews Creek	2	SCR&Burners	2004	0.10	3,540	0.10	3,524
Buck	3	SNCR	2009	0.42	458	0.25	392
Buck	4	SNCR	2008	0.42	285	0.25	238
Buck	5	SNCR	2006	0.21	682	0.17	605
Buck	6	SNCR	2007	0.17	593	0.17	646
Cliffside	1	SNCR	2009	0.35	205	0.25	198
Cliffside	2	SNCR	2009	0.35	201	0.25	199
Cliffside	3	SNCR	2008	0.35	339	0.25	357
Cliffside	4	SNCR	2008	0.35	326	0.25	343
Cliffside	5	SCR	2002	0.07	1,179	0.07	1,225
Dan River	1	SNCR	2009	0.37	374	0.25	349
Dan River	2	SNCR	2009	0.37	410	0.25	378
Dan River	3	SNCR&Burners	2007	0.20	484	0.17	588
Marshall	1	SNCR	2007	0.20	2,107	0.18	2,145
Marshall	2	SNCR	2006	0.18	1,548	0.18	2,153
Marshall	3	SNCR	2005	0.17	3,457	0.17	2,915
Marshall	4	SNCR	2008	0.23	4,447	0.17	3,615
Riverbend	4	SNCR	2007	0.20	359	0.17	397
Riverbend	5	SNCR&Burners	2008	0.24	375	0.17	383
Riverbend	6	SNCR&Burners	2008	0.22	693	0.17	653
Riverbend	7	SNCR	2007	0.17	557	0.17	651
Expected Total:					32,032		30,956
Compliance Limit:					35,000		31,000

Technology
 SNCR - Selective Non Catalytic Reduction.
 SCR - Selective Catalytic Reduction

Expected Duke Power Company Compliance Plan for NC Clean Air Plan (Exhibit B)

SO ₂							2009 Compliance		2013 Compliance	
Facility	Unit	Technology	Operational Date	Expected Rate #/MMBTUs	Tons	Expected Rate #/MMBTUs	Tons	Expected Rate #/MMBTUs	Tons	
Allen	1	Scrubber	2011	1.55	5,931	0.15	707	0.15	707	
Allen	2	Scrubber	2011	1.55	7,554	0.15	765	0.15	765	
Allen	3	Scrubber	2011	1.55	9,905	0.15	1,183	0.15	1,183	
Allen	4	Scrubber	2012	1.55	13,298	0.15	1,238	0.15	1,238	
Allen	5	Scrubber	2012	1.55	13,819	0.15	1,361	0.15	1,361	
Belews Creek	1	Scrubber	2008	0.15	5,355	0.15	5,255	0.15	5,255	
Belews Creek	2	Scrubber	2008	0.15	5,450	0.15	5,331	0.15	5,331	
Buck	3			1.40	2,195	1.40	2,172	1.40	2,172	
Buck	4			1.40	1,333	1.40	1,322	1.40	1,322	
Buck	5			1.40	4,981	1.40	5,093	1.40	5,093	
Buck	6			1.40	5,322	1.40	5,716	1.40	5,716	
Cliffside	1			1.70	1,344	1.70	1,328	1.70	1,328	
Cliffside	2			1.70	1,356	1.70	1,400	1.70	1,400	
Cliffside	3			1.70	2,426	1.70	2,495	1.70	2,495	
Cliffside	4			1.70	2,329	1.70	2,451	1.70	2,451	
Cliffside	5	Scrubber	2009	0.19	3,474	0.15	2,829	0.15	2,829	
Dan River	1			1.40	1,953	1.40	1,949	1.40	1,949	
Dan River	2			1.40	2,114	1.40	2,134	1.40	2,134	
Dan River	3			1.40	4,841	1.40	4,843	1.40	4,843	
Marshall	1	Scrubber	2007	0.15	1,787	0.15	1,776	0.15	1,776	
Marshall	2	Scrubber	2007	0.15	1,794	0.15	1,781	0.15	1,781	
Marshall	3	Scrubber	2006	0.15	2,572	0.15	3,122	0.15	3,122	
Marshall	4	Scrubber	2006	0.15	3,190	0.15	3,147	0.15	3,147	
Riverbend	4			1.60	3,740	1.60	3,867	1.60	3,867	
Riverbend	5			1.60	3,609	1.60	3,581	1.60	3,581	
Riverbend	6			1.60	6,146	1.60	6,260	1.60	6,260	
Riverbend	7			1.60	6,130	1.60	6,230	1.60	6,230	
Expected Total:							123,947	79,339		
Compliance Limit:							150,000	80,000		

Expected Duke Power Company Compliance Plan for NC Clean Air Plan
(Exhibit C)

Facility	Unit(s)	Technology	Operational Date	Spent to Date			Remaining
				2001 (\$000)	2002 (\$000)	2003 (\$000)	
Allen	1	SNCR	2003	\$179	\$160	\$2,883	\$18
Allen	2	SNCR	2007				\$2,503
Allen	3	SNCR	2005			\$216	\$5,936
Allen	4	SNCR	2006				\$3,677
Allen	5	SNCR	2008			\$99	\$3,683
Allen	1-5	Scrubber	2012	\$16	\$429	\$587	\$353,645
Belews Creek	1	Catalyst Add					\$4,636
Belews Creek	2	Catalyst Add					\$4,752
Belews Creek	1-2	Scrubber	2008	\$7	\$502	\$776	\$431,314
Buck	3	SNCR	2009				\$2,790
Buck	4	SNCR	2008				\$1,408
Buck	5	SNCR	2006				\$3,041
Buck	6	SNCR	2007				\$1,658
Cliffside	1	SNCR	2009				\$2,422
Cliffside	2	SNCR	2009				\$1,314
Cliffside	3	SNCR	2008				\$2,147
Cliffside	4	SNCR	2008				\$1,325
Cliffside	5	Catalyst Add					\$2,751
Cliffside	5	Scrubber	2009	\$4	\$529	\$673	\$220,658
Dan River	1	SNCR	2009				\$1,694
Dan River	2	SNCR	2009				\$1,420
Dan River	3	SNCR&Burners	2007	\$8	\$162	\$22	\$6,626
Marshall	1	SNCR	2007			\$1	\$3,443
Marshall	2	SNCR	2006			\$198	\$4,875
Marshall	3	SNCR	2005		\$622	\$956	\$4,661
Marshall	4	SNCR	2008				\$3,258
Marshall	1-4	Scrubber	2007	\$76	\$521	\$9,618	\$413,950
Riverbend	4	SNCR	2007				\$1,965
Riverbend	5	SNCR&Burners	2008	\$365	\$282	\$0	\$5,283
Riverbend	6	SNCR&Burners	2008	\$145	\$415	\$12	\$5,720
Riverbend	7	SNCR	2007				\$2,607
Subtotals:				\$800	\$3,623	\$16,041	\$1,505,178
				Program Total:			\$1,525,642



George T. Everett, Ph.D.
Vice President, Environmental and Public Policy

ATTACHMENT A
PAGE 11 OF 11
Duke Power
526 South Church Street
P.O. Box 1006
Charlotte, NC 28201-1006
704-373-4363
gterrett@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.143-215.107.D (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.
Vice President, Environmental & Public Policy

3/31/04
Date

Subscribed and sworn before me this the 31st day of March, 2004.

Wanda B. Baker
Notary Public

My commission expires My Commission Expires November 19, 2006



E-2, sub 815

FILED
APR 01 2004

Clerk's Office
N.C. Utilities Commission

April 1, 2004

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

Re: Annual NC Clean Smokestacks Legislation Compliance Report

Dear Mrs. Thigpen:

Progress Energy Carolinas, Inc. submits the attached report for calendar year 2003 regarding the status of compliance with the provisions of the North Carolina Clean Smokestacks legislation. Section 9(i) of the legislation 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,

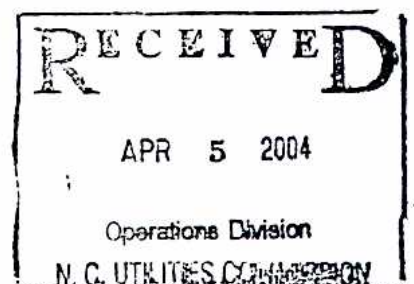
A handwritten signature in black ink, appearing to read 'Len S. Anthony', written over a large, stylized flourish.

Len S. Anthony
Deputy General Counsel

LSA:at

Attachment

201419





Charles R. Wakild, PE
Executive Director
Environment, Health & Safety
Progress Energy Service Company, LLC

April 1, 2004

FILED

APR 01 2004

Clerk's Office
N.C. Utilities Commission

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

Dear Secretary Ross:

Progress Energy Carolinas, Inc. submits the attached report for calendar year 2003 regarding the status of compliance with the provisions of the North Carolina Clean Smokestacks legislation. Section 9(i) of the legislation requires that an annual report of compliance progress be submitted by April 1 of each year for the previous calendar year. Progress Energy Carolinas looks forward to continuing to work with you and your staff in processing the necessary permits that will facilitate the company's compliance with this important legislation.

Please feel free to contact me at (919) 546-2449 if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads 'Chuck'.

Charles Wakild

c: North Carolina Public Utilities Commission
Keith Overcash

bc: Len Anthony
Byron Coyey
Mike Engelman
Jack Keenan
Mike Kennedy
John McArthur
Dwain Lanier
Jeff Stone
Gary Tonnemacher
Patty West
Ben White
Vicky Will
Mike Williams

**Progress Energy Carolinas, Inc.
Senate Bill 1078 – Clean Smokestacks Law
Calendar Year 2003 Progress Report**

On June 20, 2002, North Carolina Senate Bill 1078, also known as the “Clean Smokestacks Law,” was signed into effect. This law requires significant reductions in the emissions of nitrogen oxides (NO_x) and sulfur dioxide (SO₂) 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 Law 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_x) and sulfur dioxide (SO₂) emitted during the previous calendar year from the coal-fired generating units that are subject to the emissions limitations set out in G.S. 143-215.107D.
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 plan for Progress Energy Carolinas, Inc. was originally submitted on July 29, 2002. Appendix A contains an updated version of this plan, effective April 1, 2004.

- 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 costs incurred toward compliance with G.S. 143-215.107D in 2003 and the projected costs for future years through 2013.

Construction began in the fourth quarter of 2003 at both Roxboro and Asheville plants after receipt of the necessary Title V permits and approval of soil and erosion control plans. At Asheville, the general contractor mobilized, soil erosion and control measures were installed, site preparation began, various underground piping was relocated, and production piles for the new chimney and absorber foundations were started.

At the Roxboro plant, soil and erosion control measures were installed, and excavation began for the relocation of the existing coal dumper to allow for installation of the new scrubber absorber towers, chimneys, and other flue gas desulfurization equipment.

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

Progress Energy Carolinas, Inc. amortized \$74,218,806.00 in 2003.

- 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 costs incurred toward compliance with G.S. 143-215.107D in 2003 and the projected costs for future years through 2013. The estimated total capital costs (escalated) remain \$813M. Projected SO₂ removal rates have increased for scrubbed units. As a result, the planned scrubber for Lee 3 has been cancelled.

- 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.**

Revised Title V permits to support construction activities for compliance with G.S. 143-215.107D have been issued for Asheville Plant (WNCRAQA Permit 11-628-03) and Roxboro Plant (NCDENR Permit 01001T31). We have no pending air permit applications. Progress Energy has submitted an NPDES Permit application package for required wastewater system modifications at Asheville Plant, and will be submitting the same for Roxboro Plant in 2004. The Asheville NPDES permit submittal includes an innovative constructed wetland treatment system, and the same is being evaluated for the Roxboro Plant. Soil erosion and sedimentation control plans have been submitted and approval received for the Asheville and Roxboro projects.

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. Note that this is a projected schedule of construction activity through 2013 that will be subject to modification. The schedule will be updated as part of this report each year.

Significant construction activities at Asheville during 2004 will include the erection of a new chimney to handle the lower temperature flue gas from the scrubbers, the absorber towers for both units, and various other scrubber support systems. At Roxboro, the significant construction activities in 2004 will focus on installation of a new limestone unloading facility and coal unloading facility to allow installation of the scrubber equipment beginning in 2005

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.

An NPDES permit modification application will be submitted in the 2nd quarter of 2004 to request changes to the existing wastewater discharge permit for Roxboro Plant. Operation of scrubbers to comply with G.S. 143-214.107D will create a new wastewater stream, which requires modification of our current permit. The application characterizes expected wastewater contaminant concentrations and flows.

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 2003.

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

The total calendar year 2003 emissions from the affected coal-fired Progress Energy Carolinas units are:

NO_x 56,059

SO₂ 196,184

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 resulting from compliance with G.S. 143-215.107D were acquired in 2003.

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. 1 was issued to Progress Energy in September of 2003, and a response was provided on October 6, 2003 .

Appendix A

Progress Energy's Air Quality Improvement Plan Supplement April 1, 2004

On June 20, 2002 Governor Easley signed into law SB1078 which caps emissions of nitrogen oxides (NO_x) and sulfur dioxide (SO₂) from utility owned coal-fired power plants located in North Carolina. Progress Energy's annual NO_x emissions must be less than 25,000 tons beginning in 2007 and annual SO₂ 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 coal-fired units in North Carolina. These caps represent a 56% reduction in NO_x emissions from 2001 levels and a 74% reduction in SO₂ 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_x 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_x SIP Call rule adopted by the Environmental Management Commission (EMC). Substantial NO_x emissions reductions have already been achieved (56,000 tons of NO_x in 2003 compared with 112,000 tons in 1997) and further reductions will ensure compliance with the SB1078 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_x) such as low NO_x burners and over fire air technologies, and post-combustion controls (which reduce NO_x produced during the combustion of fossil fuel to molecular nitrogen) such as selective catalytic reduction and selective non-catalytic reduction technologies. Attachment 2 details Progress Energy's North Carolina coal-fired electric generating units, their name plate generation capacity, and identifies the control technologies already installed and planned for installation. As technologies evolve or other circumstances change, a different mix of controls may be selected. Attachment 2 also projects the NO_x emissions on a unit by unit basis based on the energy demand forecast and expected efficiencies of the NO_x 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.

Flue Gas Desulfurization (FGD)

Progress Energy has completed screening studies on its coal-fired units at Asheville, Roxboro and Mayo plants. Wet scrubbers will be installed at these plants to remove 97% of the SO₂ emissions. Babcock and Wilcox has been selected as the equipment supplier,

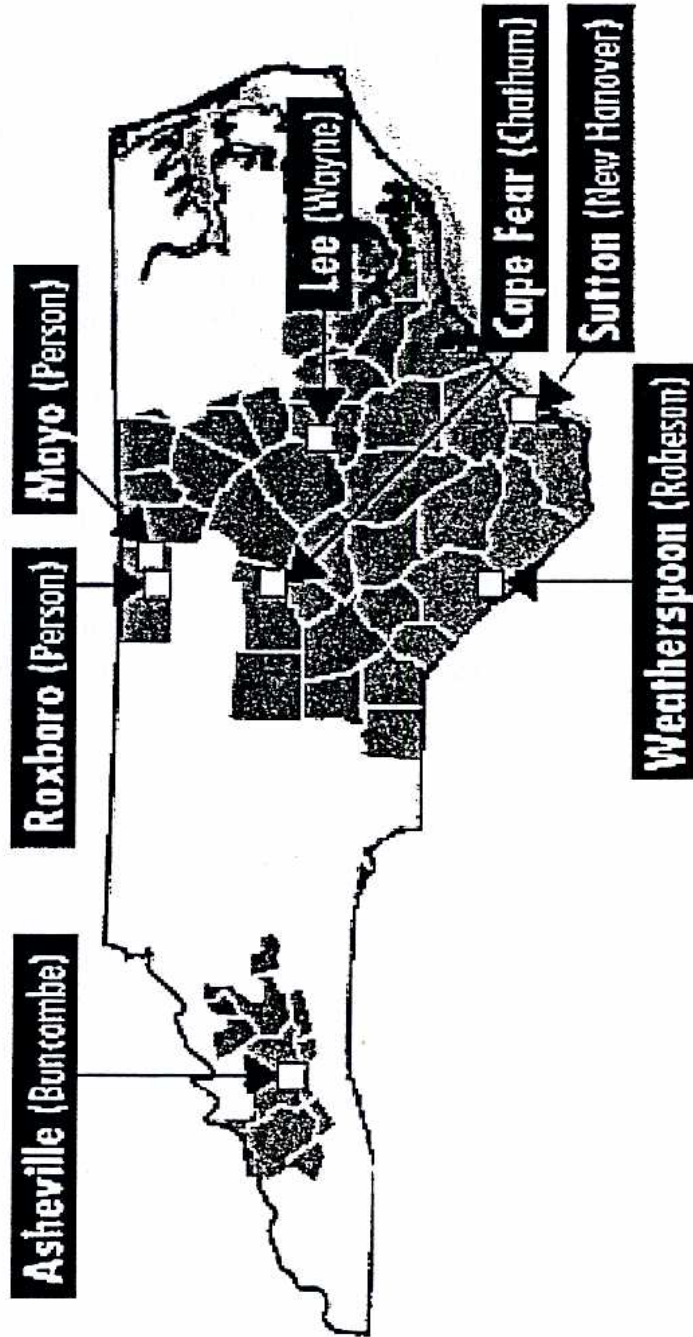
and Fluor Enterprises has been selected as the general contractor for the installation of the SO₂ and NO_x controls.

Wet scrubbers and dry scrubbers produce unique waste and by-product streams. Issues related to wastewater permitting and solid waste disposal are being addressed for each site. A contract was recently signed with a gypsum product end-user that will construct a wallboard facility at our Roxboro Plant. Progress Energy is working to identify beneficial uses for gypsum produced from its other FGD facilities. The Company plans to treat the scrubber wastewater stream at Asheville Plant using an innovative constructed wetland treatment system to ensure compliance with discharge limits. A similar system is being evaluated for Roxboro Plant. Discussions with various permitting divisions within DENR are ongoing.

Specific units are listed on Attachment 3 with data on projected schedules and projected annual emissions for 2009 and 2013. These projections are based on a 97% SO₂ removal efficiency, forecasted energy demand, 3.3 lbs SO₂/Mbtu coal on scrubbed units, and 1.2 lbs SO₂/Mbtu coal on others. Note that these are projected schedules and will be subject to revision. In 2003, foundation work began for Asheville 1 and 2 scrubbers, as well as the new common stack. Construction work also commenced at Roxboro to relocate coal handling facilities in support of upcoming scrubber and stack construction.

Particular units controlled and control technologies utilized are subject to change depending on future developments in SO₂ removal technologies, energy demand, sulfur content of coal, and other circumstances which may produce a more optimal plan for meeting the SO₂ emissions limits in 2009 and 2013. DENR will be advised as changing circumstances dictate.

Attachment 1: Location of Progress Energy's Coal-Fired Power Plants in North Carolina



Attachment 2: Progress Energy NOx Control Plan for North Carolina (April 2004)

Unit	MW Rating	Control Technology	Operation Date ¹	Projected NOx Tons, 2007 ²
Asheville 1	198	LNB/AEFLGR/SCR	2009	2,773
Asheville 2	194	LNB/OFA/SCR		546
Cape Fear 5	143	ROFA/ROTAMIX		1046
Cape Fear 6	173	ROFA/ROTAMIX		1209
Lee 1	79	WIR		708
Lee 2	76	ROFA	2007	561
Lee 3	252	LNB/OFA/SCR	2010	2,686
Mayo 1	745	LNB/OFA/SCR		1,595
Roxboro 1	385	LNB/OFA/SCR		1,264
Roxboro 2	670	TFS2000/SCR		1,463
Roxboro 3	707	LNB/OFA/SCR		2,726
Roxboro 4	700	LNB/OFA/SCR		1,750
Sutton 1	97	SAS		583
Sutton 2	106	ROFA	2006	1,235
Sutton 3	410	LNB/ROFA/ROTAMIX		2,719
Wspn 1	49			495
Wspn 2	49			514
Wspn 3	78	WIR		1109
Total	5,111			24,982

AEFLGR = Amine-Enhanced Flue Lean 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

¹ Note: This is the operation date for the control technology installed to comply with the North Carolina Improve Air Quality/Electric Utilities Act only (shown in bold).

² 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 SO₂ Control Plan for North Carolina (April 2004)

Unit	MW Rating	Technology	Operation Date	Projected SO ₂ Tons, 2009 ¹	Projected SO ₂ Tons, 2013 ¹
Asheville 1	198	Scrubber	2005	605	529
Asheville 2	194	Scrubber	2006	629	621
Cape Fear 5	143	Scrubber	2012	5,767	465
Cape Fear 6	173	Scrubber	2011	7,133	537
Lee 1	79			2,616	2,798
Lee 2	76			2,308	2,429
Lee 3	252			8,733	10,685
Mayo 1	745	Scrubber	2008	2,324	2,889
Roxboro 1	385	Scrubber	2009	6,854	1,475
Roxboro 2	670	Scrubber	2007	1,213	2,213
Roxboro 3	707	Scrubber	2007	2,672	2,740
Roxboro 4	700	Scrubber	2007	2,435	2,404
Sutton 1	97			3,096	3,035
Sutton 2	106			3,945	3,810
Sutton 3	410	Scrubber	2012	17,830	1,206
Wspn 1	49			1,265	1,349
Wspn 2	49			1,384	1,365
Wspn 3	78			3,007	2,889
Total	5,111			73,817	43,441

¹ 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.

² Projections are based on 97% SO₂ removal efficiency, forecasted energy demand, 3.3 lbs SO₂/Mbtu coal on scrubbed units, and 1.2 lbs SO₂/Mbtu coal on others

Appendix B
Actual 2002 and 2003 Costs and Projected Costs Through 2013


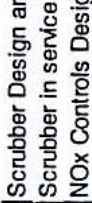
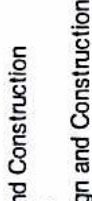

	Start-up	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Asheville 1 FGD	F 2005	\$100,000	\$8,018,400	\$32,250,308	\$35,714,522	\$1,682,090	\$140,736							\$77,906,056
Asheville 1 SCR	2009			\$2,700,000			\$4,600,000	\$8,050,000	\$9,476,000					\$24,826,000
Asheville 2 FGD	S 2006	\$100,000	\$7,125,475	\$21,343,221	\$29,855,959	\$6,513,995	\$684,800							\$65,623,450
Asheville FGD Common	F 2008	\$191,778												\$191,778
Mayo 1 FGD	F 2008	\$155,592		\$436,586	\$2,439,453	\$27,469,519	\$34,304,782	\$28,685,117	\$1,991,773					\$95,482,822
Roxboro FGD Common	S 2009	\$218,351	\$4,781,408	\$13,884,491	\$31,395,184	\$21,387,013	\$22,088,576	\$6,495,926						\$100,250,948
Roxboro 1 FGD	S 2007	\$120,000	\$2,398,510	\$2,000,000	\$19,550,677	\$30,000,000	\$10,100,000	\$27,029,042	\$16,334,345	\$95,976	\$47,988			\$62,094,441
Roxboro 2 FGD	F 2007			\$2,537,313	\$27,319,080	\$31,000,000	\$8,700,000							\$64,169,187
Roxboro 3 FGD	F 2007				\$5,922,829	\$22,154,499	\$16,218,577	\$13,236,425						\$69,556,393
Roxboro 4 FGD	2012								\$500,000	\$10,437,241	\$19,018,972	\$10,965,626		\$57,532,330
Cape Fear 5 FGD	2011							\$500,000	\$9,000,000	\$18,555,095	\$10,698,172			\$40,921,839
Cape Fear 6 FGD	2010							\$5,000,000	\$15,000,000	\$11,696,934				\$38,753,266
Lee 3 SCR	2012								\$500,000	\$19,714,788	\$34,471,887	\$17,666,842	\$3,122,157	\$31,596,934
Sutton 3 FGD	2007					\$1,851,250	\$2,153,781							\$75,475,674
Lee 2 ROFA	2010				\$2,262,816	\$2,319,387								\$4,005,031
Sutton 2 ROFA	2010	\$885,721	\$22,323,793	\$75,151,919	\$154,460,520	\$149,955,784	\$112,000,311	\$88,996,510	\$52,802,118	\$60,400,034	\$64,237,019	\$28,632,468	\$3,122,157	\$812,968,353
Escalated Total														

FGD Design and Construction
 FGD in service
 NOx Controls Design and Construction
 NOx Controls in service
 Total Escalated Cost: \$812,968,353

Appendix C

NC Clean Air Bill Compliance Plan

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
General												
Ashville 1 FGD												
Ashville 1 SCR												
Ashville 2 FGD												
Mayo 1 FGD												
Roxboro 1 FGD												
Roxboro 2 FGD												
Roxboro 3 FGD												
Roxboro 4 FGD												
Cape Fear 5 FGD												
Cape Fear 6 FGD												
Lee 3 SCR												
Sutton 3 FGD												
Lee 2 ROFA												
Sutton 2 ROFA												

 Scrubber Design and Construction
 Scrubber in service
 NOx Controls Design and Construction
 NOx Controls in service


NORTH CAROLINA

VERIFICATION

WAKE COUNTY

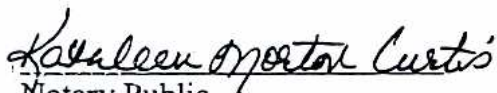
Mike Williams, having been first duly sworn, deposes and says that he is Senior Vice President in Power Operations at Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.; that he has read the foregoing North Carolina Clean Smokestacks Legislation Compliance Report and knows its contents; 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, 2004.



Mike Williams

Sworn to and subscribed before
me this the 1st day of April, 2004.



Notary Public

My Commission Expires:

11-10-08



**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

May 3, 2004

FILED

MAY 03 2004

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

Docket No. E-7, Sub 718

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 in Compliance with Session Law 2002-("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 Energy pursuant to the Act through the end of calendar year 2003. The Public Staff expects to file an update to this report annually.

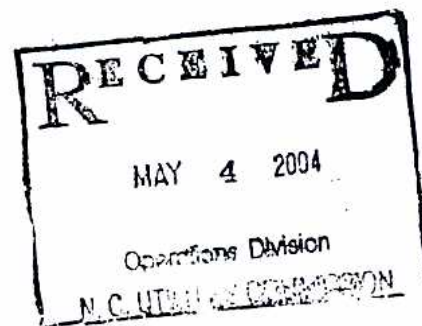
Sincerely,

Antoinette R. Wike

Antoinette R. Wike
Chief Counsel

Enclosure

cc: Robert W. Kaylor



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 3, 2004

Section 14 of Session Law 2002-4 (“the Clean Smokestacks Act” or “the Act”) requires the Department of Environment and Natural Resources 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 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 contracts with vendors who will engineer and construct emission reduction equipment. This report presents the Public Staff’s findings with regard to Duke Energy Corporation (“Duke Energy”).

I. Work to be Performed

To comply with the emissions limitations for nitrogen oxides (“NO_x”) and sulfur dioxide (“SO₂”) established in the Act, Duke Energy plans to install emission reduction technologies at several of its facilities. Duke Energy has proposed to install Selective Non-catalytic Reduction (“SNCR”) technology to remove NO_x and flue-gas desulfurization (“FGD”) technology to remove SO₂. The facilities requiring these technologies are as follows:

<u>Facility</u>	<u>NO_x Reduction</u>	<u>SO₂ Reduction</u>
Allen Units 1-5	√	√
Belews Creek Units 1&2		√
Buck Units 3-6	√	
Cliffside Units 1-5	√ (units 1-4 only)	√ (unit 5 only)
Dan River Units 1-3	√	
Marshall Units 1-4	√	√
Riverbend Units 4-7	√	

In addition, Duke Energy is currently installing Selective Catalytic Reduction (“SCR”) technology to remove NO_x from its Belews Creek and Cliffside Unit 5 facilities to comply with the North Carolina State Implementation Plan for NO_x (“NO_x SIP Call”), which is discussed below.

Duke Energy has conducted preliminary testing on the SNCR equipment at the Allen facility and the SCR equipment at Belews Creek. Such testing is normal for start-

up with new systems. Results indicated that the NO_x emissions targets at both facilities were not achieved. Duke Energy suspects that fuel quality may be the reason for the higher than expected emissions at its Allen facility, but it is still studying the problem at Belews Creek. Further testing will be conducted during the ozone season of 2004, with the results expected in late 2004. Duke Energy has expressed confidence that there is sufficient time to continue shake-down testing and achieve successful results, since the NO_x targets are not triggered until 2007.

II. Capital Costs Associated with the Installation of Emission Reduction Technologies

Duke Energy is required by the Act to report its actual capital costs (“environmental compliance costs”) associated with its plan to install emission reduction technologies pursuant to the Act. Operational costs related to these emission reduction technologies are not environmental compliance costs as defined by the Act.

Duke Energy reported that its actual environmental compliance costs in calendar year 2003 were \$16,041,000. The cumulative environmental compliance costs incurred through 2003 are \$20,464,000, broken down as follows:

Year	2001	\$ 800,000
Year	2002	3,623,000
Year	2003	<u>16,041,000</u>
		\$20,464,000

Duke Energy’s expenditures to date involve emission reduction technologies at its Allen, Belews Creek, 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 Energy on the project costs, invoices documenting costs, and the purpose of the costs. Duke Energy provided project cost sheets delineating actual project costs by year into the following categories: (1) direct labor costs including overtime and premiums; (2) labor loads; (3) contract costs; (4) material costs; (5) overhead costs; and, (6) other costs. These costs are as follows:

Direct Labor	\$ 2,075,949
Labor Loads	1,500,133
Contracts	12,020,087
Materials	3,091,897
Overheads	344,789
Other	<u>1,430,696</u>
	\$20,463,551

The project cost sheets were supported by detailed spreadsheets that incorporated all expenditures to date for a particular category. The Public Staff selected invoices in each category from the detailed spreadsheets, and requested Duke Energy to provide specific information on the selected costs. The Public Staff also had extensive discussions with Duke personnel regarding the individual cost items charged to specific projects. Duke Energy provided sufficient documentation to support each selected cost.

Duke Energy was also requested to delineate costs related to complying with NO_x SIP Call. NO_x SIP Call requires electric utility generating facilities to reduce their emissions of NO_x during the summer ozone season, while the objective of the Clean Smokestacks Act is to reduce overall NO_x emissions for the entire year.

As a result of NO_x SIP Call, Duke Energy has undertaken a program to reconfigure its coal and air injection systems on its boiler units. In two cases, Belews Creek and Cliffside Unit 5, Duke Energy has chosen to install SCR technology to comply with NO_x SIP Call. Costs related to NO_x SIP Call are specifically exempted from the amortization allowed in Section 9 of the Act. The Public Staff has determined that Duke has not included any NO_x SIP Call related costs to date in its reported actual environmental compliance costs. However, Duke Energy may be required to install additional SCR technology on facilities where it initially plans to install SNCR technology to comply with the Act, if the SNCR technology fails to achieve the emission reduction goals set forth in the Act due to matters, such as coal quality, that are beyond the scope of Duke's contracts for work related to the Act.

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. Duke Energy's estimated environmental compliance costs are \$1.5 billion. The statute requires that a minimum of 70% of the environmental compliance costs shall be amortized before December 31, 2007, when the rate freeze period expires. In Duke Energy'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, in Duke Energy's case, \$321,428,000.

On December 11, 2003 the Commission issued an order authorizing Duke Energy to use certain regulatory liability and amortization accounts to record the environmental compliance costs associated with the Act. The Commission further ordered that no accrual of AFUDC would be allowed on any construction expenditures up to the \$1.5 billion required to be amortized pursuant to the Act.

Using the protocols established by the Act and subsequent Commission orders, Duke reported that its environmental compliance costs amortization for 2003 is

\$114,813,336. The Public Staff has reviewed Duke Energy's quarterly amortization filings and concluded that the reported amounts appear to be accurate.

IV. Contracts

The Public Staff also requested Duke Energy to provide for its review copies of any contracts for engineering, procurement, project management, and construction awarded to engineering firms and construction companies for the purpose of installing the emission reduction technologies. Duke Energy complied with the Public Staff's request and provided the applicable contracts.

Duke Energy has contracted with a vendor to install SNCR equipment at its Allen Steam Station. Duke Energy has elected to award separate fixed-price contracts for each project requiring emission reduction technologies to comply with the Act.

Duke Energy has also signed an alliance agreement with two vendors, creating a consortium between the companies for the installation of FGD technology, optimized specifically for Duke Energy. This agreement is a fixed price contract for each of the twelve coal-fired generation units identified by Duke Energy that require emission reduction technology to comply with the Act.

The Public Staff reviewed these contracts and determined that they contain language establishing minimum performance standards on the equipment to be installed. The contracts contain a two-year performance standard that requires the equipment to perform as designed or the vendor would be responsible for replacing, repairing, or redesigning the equipment to achieve the emission reduction target specified by Duke Energy.

V. Site Inspections

On March 9, 2004, the Public Staff conducted a site inspection of Duke Energy's Allen Steam Station in Belmont, North Carolina. Specifically, the Public Staff inspected the SNCR equipment that had been installed on the boilers and the other ancillary equipment used in the reduction of NO_x emissions from those boilers. The Public Staff confirmed the installation of the equipment and discussed the testing procedures with the plant engineer. No other facilities were inspected. It is the intent of the Public Staff to conduct inspections of other coal-fired generating facilities as Duke Energy continues to install emission reduction equipment in its boiler units.



**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

FILED

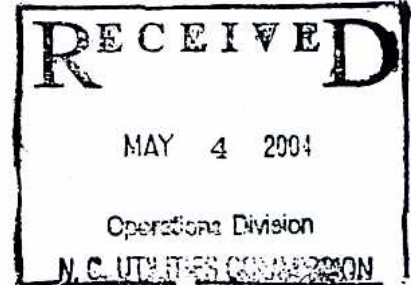
MAY 03 2004

Clerk's Office
N.C. Utilities Commission

May 3, 2004

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



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- ("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 pursuant to the Act through the end of calendar year 2003. The Public Staff expects to file an update to this report annually.

Sincerely,

Antoinette R. Wike
Chief Counsel

Enclosure

cc: Len S. Anthony

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
PROGRESS ENERGY CAROLINAS, INC.
IN COMPLIANCE WITH SESSION LAW 2002-4**

Docket No. E-2, Sub 815

May 3, 2004

Section 14 of Session Law 2002-4 (“the Clean Smokestacks Act” or “the Act”) requires the Department of Environment and Natural Resources 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 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 contracts with vendors who will engineer and construct emission reduction equipment. This report presents the Public Staff’s findings with regard to Progress Energy Carolinas, Inc. (“PEC”).

I. Work to be Performed

To comply with the emissions limitations for nitrogen oxides (“NO_x”) and sulfur dioxide (“SO₂”) established in the Act, PEC plans to install emission reduction technologies at several of its facilities. PEC has proposed to install Selective Catalytic Reduction (“SCR”) technology to remove NO_x and flue-gas desulfurization (“FGD”) technology to remove SO₂ to comply with the Act. The facilities requiring these technologies are as follows:

<u>Facility</u>	<u>NO_x Reduction</u>	<u>SO₂ Reduction</u>
Asheville Units 1&2	√ (Unit 1 only)	√
Cape Fear Units 5&6		√
Lee Unit 3	√	
Mayo Unit 1		√
Roxboro Units 1-4		√
Sutton Unit 3		√

PEC is also installing SCR technology and reconfiguring its coal and air injection systems to remove NO_x from its other coal-fired generating units to comply with the North Carolina State Implementation Plan for NO_x (“NO_x SIP Call”), which is discussed below.

Although PEC initially planned to install a scrubber on Lee Unit 3, PEC indicated in its annual compliance report filed on April 1, 2004, that this work has been cancelled because projected SO₂ removal rates for scrubbed units have increased.

PEC is only in the initial design and engineering phase of construction plan, and therefore no testing data is yet available.

II. Capital Costs Associated with the Installation of Emission Reduction Technologies

PEC is required by the Act to report the actual capital costs (“environmental compliance costs”) associated with its plan to install emission reduction technologies pursuant to the Act. Operational costs related to these emission reduction technologies are not environmental compliance costs as defined in the Act.

PEC reported that its actual environmental compliance costs in calendar year 2003 were \$22,323,791. The cumulative environmental compliance costs incurred through 2003 are \$23,209,512, as follows:

Year	2002	\$ 885,721
Year	2003	<u>22,323,791</u>
		\$23,209,512 ¹

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

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; and (4) other costs. These costs are as follows:

Company Labor	\$ 1,276,561
Materials	68,249
Outside Services	21,631,350
Other	<u>233,351</u>
Total	\$23,209,511

The project cost sheet was supported by detailed spreadsheets that incorporated all expenditures to date for a particular category. The Public Staff selected invoices in each category from the detailed spreadsheets and requested PEC to provide specific

¹ PEC’s estimated and reported environmental compliance costs exclude costs attributable to the portion of its Mayo and Roxboro facilities that is owned by the North Carolina Eastern Municipal Power Agency.

information on the selected costs. The Public Staff also had extensive discussions with PEC personnel regarding the individual cost items charged to specific projects. PEC provided sufficient documentation to support each selected cost.

However, the Public Staff determined that there is a discrepancy between the environmental compliance costs that are being recorded on PEC's books and the environmental compliance costs that are being reported to the Commission. The reported costs do not include labor loads or overhead costs. PEC explained that this practice is consistent with the types of costs considered to be environmental compliance costs in its estimate of \$813,000,000. Typically, these costs are treated as part of project costs, whether they are considered incremental or not. The Public Staff recommends that PEC be required to file a reconciliation showing the per book and reported environmental compliance costs.

As stated above, PEC has cancelled the planned scrubber for Lee Unit 3. However, according to Appendix B to PEC's April 1, 2004, report, PEC's estimated environmental compliance costs remain approximately \$813 million. Attachment I to this report shows the differences in the estimated environmental compliance costs between 2003 and 2004 according to PEC's annual reports.

PEC was also requested to delineate costs related to complying with NO_x SIP Call. NO_x SIP Call requires electric utility generating facilities to reduce its emissions of NO_x during the summer ozone season, while the objective of the Clean Smokestacks Act is to reduce overall NO_x emissions for the entire year.

As a result of NO_x SIP Call, PEC has undertaken a program to reconfigure its coal and air injection systems on its boiler units and/or install SCR technology at its Asheville 2, Cape Fear 5&6, Lee 1, Mayo 1, Roxboro 1-4, Sutton 1&3, and Weatherspoon 1-3. PEC also intends to use this equipment to achieve its emissions limitations as set forth in the Act. However, PEC will also be required to install SCR technology at its Asheville 1 and Lee 3 facilities in order to fully comply with the Act and achieve its required emissions limitations by 2007. The Public Staff has determined that PEC has not included any NO_x SIP Call related costs to date in its reported actual environmental compliance 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. PEC's estimated environmental compliance costs are \$813,000,000. 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, in PEC's case, \$174,214,285.

On December 11, 2003, the Commission issued an order authorizing PEC to use certain regulatory liability and amortization accounts to record the environmental compliance costs associated with the Act. The Commission further ordered that no accrual of AFUDC would be allowed on any construction expenditures up to the \$813,000,000 required to be amortized pursuant to the Act.

Using the protocols established by the Act and subsequent Commission orders, PEC reported that its environmental compliance costs amortization for 2003 is \$74,218,804. The Public Staff has reviewed PEC's quarterly amortization filings and concluded that the reported amounts appear to be accurate.

IV. Contracts

The Public Staff also requested PEC to provide copies of any contracts for engineering, procurement, project management, and construction awarded to engineering firms and construction companies for the purpose of installing the emission reduction technologies. PEC complied with the Public Staff's request and provided the applicable contracts.

PEC has contracted with three vendors for engineering and design work, procurement of equipment, project management, and construction. PEC has elected to use one vendor for overall project management and engineering, another vendor for procurement of equipment, and a general contractor who will actually install the emission reduction technologies to comply with the Act.

PEC's agreements with its vendors are incentive-fee based contracts for all of the thirteen coal-fired generation units identified by PEC that required emission reduction technology to comply with the Act. PEC does not intend to execute separate agreements for each facility.

The Public Staff reviewed these contracts and determined that they contain language establishing minimum performance standards on the equipment to be installed. PEC's contract with its engineering and project management vendor contains a twelve-month performance guarantee from the date of functional operation. PEC's contract with its equipment vendor contains a two-year performance standard that requires the equipment to perform as designed or the vendor will be responsible for replacing or repairing the equipment to achieve the emission reduction target specified by PEC. PEC's contract with its general contractor contains a twelve-month workmanship guarantee.

V. Site Inspections

The Public Staff conducted no site inspections of any PEC facilities in connection with this audit. It is the intent of the Public Staff to conduct inspections of PEC's coal-fired generating facilities as emission reduction equipment is installed.

Progress Energy Carolinas, Inc.
Docket No. E-2, Sub 815
Environmental Compliance Cost Estimates

Attachment I

	planned outage	2003 estimate 1/ (b)	2004 estimate 2/ (c)	difference 3/ (d)
	(a)	(b)	(c)	(d)
General				
Asheville 1 FGD	F2004	\$ 62,750,610	\$ 77,906,056	\$ 15,155,446
Asheville 1 SCR	S2012	25,387,755	24,826,000	(561,755)
Asheville 2 FGD	F2005	63,404,068	65,623,450	2,219,382
Asheville FGD Common		175,887	191,778	15,891
Mayo 1 FGD	S2007	88,849,025	95,482,822	6,633,797
Roxboro FGD Common		51,214,618	100,250,948	49,036,330
Roxboro 1 FGD	S2009	51,244,851	62,094,441	10,849,590
Roxboro 2 FGD	S2005	77,004,137	64,169,187	(12,834,950)
Roxboro 3 FGD	F2006	72,289,067	69,556,393	(2,732,674)
Roxboro 4 FGD	S2008	64,224,392	57,532,330	(6,692,062)
Cape Fear 5 FGD	S2012	41,426,445	40,921,839	(504,606)
Cape Fear 6 FGD	S2011	40,114,613	38,753,266	(1,361,347)
Lee 3 FGD	F2009	53,293,359	-	(53,293,359)
Lee 3 SCR	F2009	35,269,245	31,596,934	(3,672,311)
Sutton 3 FGD	F2012	77,452,773	75,475,674	(1,977,099)
Lee 2 ROFA	F2007	4,460,486	4,005,031	(455,455)
Sutton 2 ROFA	S2010	4,733,504	4,582,203	(151,301)
Total		\$ 813,294,835	\$ 812,968,352	\$ (326,483)

1/ Appendix B attached to PEC's Annual NC Clean Smokestacks Legislation Compliance Report filed April 1, 2003.

2/ Appendix B attached to PEC's Annual NC Clean Smokestacks Legislation Compliance Report filed April 1, 2004.

3/ Column (c) - Column (b).