

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**



May 30, 2003

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Review Committee**

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

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

Signed:

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

Signed:

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

May 30, 2003

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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.

This report is presented to meet this requirement of the Act 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, 2003) contains an updated version of this plan, effective April 1, 2003."

Duke Energy Response: "Exhibits A and B (of the attached Duke submittal dated March 31, 2003) 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 2002 were \$830,000. The Company reported that no construction was undertaken in 2002. Progress Energy further advised that the costs incurred were related primarily to preliminary engineering and planning activities.

Summary of Duke Energy Report: The actual environmental compliance costs incurred by Duke Energy in calendar years 2001 and 2002 were \$800,000 and \$3.6 million, respectively. 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: Neither Progress Energy nor Duke Energy amortized any environmental compliance costs in calendar year 2002.

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. The Company observed that changes at the unit level were due to additional project scope definition and refinement of project schedules.

Summary of Duke Energy Report: Duke Energy reported that its expected costs are not significantly different than the estimates provided in 2002 in its initial filing, and 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. Duke Energy continues to estimate its total program costs, in future dollars, to be in the range of \$1.5 billion.

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: "As of April 1, 2003, Progress Energy Carolinas, Inc. had not yet applied for any permits associated with compliance with G.S. 143-215.107D. A description of the anticipated permit applications is presented in the response to item 7 below." (See Section 7)

Duke Energy Response:

"Allen Steam Station SNCR, Unit 1

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

Marshall Steam Station SNCR, Unit 4

- Air Permit Application completed and final permit received for temporary trial
- NPDES Permit Modification completed and permit modification received for temporary trial"

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, 2003, for details of construction and installation of equipment.

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 Scrubbers
- Belews Creek Steam Station Scrubbers
- Cliffside Steam Station Scrubbers
- Marshall Steam Station Scrubbers
- Allen Steam Station SNCR, Unit 1

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: "Permit applications for the construction and operation of scrubbers for SO₂ control for Asheville Plants Units 1 and 2 and for Roxboro Plant Units 2 and 3 are planned for submittal in the spring of 2003. These permit applications will be for:

- Air construction and operation permit
- Erosion and sediment control permit
- Treatment and processing permit for storage of scrubber by-product
- Wastewater permit to construct for treatment of scrubber blowdown
- A potential permit application for constructed wetlands (not yet determined)"

Duke Energy Response:

Marshall Steam Station Scrubbers, Units 3 & 4

- Landfill Site Suitability Application - Plan to submit 6/6/03
- Sedimentation and Erosion Control - Plan to submit 6/9/03
- Air permit application - Plan to submit 8/22/03
- NPDES Permit Modification - Plan to submit 3/31/04
- Landfill Construction Permit Application - Plan to submit 11/17/04

Allen Steam Station SNCR, Units 2, 3, 4, and 5

- Air Permit application - Plan to submit 10/22/04
- Sedimentation and Erosion control (if needed) - Plan to submit 11/5/04
- NPDES Permit Modification (if needed) - Plan to submit 11/5/04"

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 2002."

Duke Energy Response:

"Allen Steam Station SNCR, Unit 1

- Technology demonstration in December, 2001 (one week test)
 - Nominal 30% reduction in NOx with ammonia slip of 5 to 10 ppm at full load
 - Average NOx outlet rate of 0.15 #/MMBTU for the test period

Marshall Steam Station SNCR, Unit 4

- Technology demonstration in October - November, 2002 (one month test)
 - Average 24% - 25% reduction in NOx with ammonia slip of 5 to 10 ppm at full load
 - Average NOx 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 (NOx) and sulfur dioxide (SO2) emitted during the previous calendar year from the coal-fired generating units that are subject to the emissions limitations set out in G.S. 143-215.107D.*

Progress Energy Response: The total calendar year 2002 emissions from the affected coal-fired Progress Energy Carolinas units were:

- NOx - 58,793 tons
- SO2 - 195,734 tons

Duke Energy Response: In the 2002 calendar year, the following were emitted from the North Carolina based Duke Energy coal-fired units:

- NOx - 81,896 tons
- SO2 - 263,909 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 2002."

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 29 and May 16, 2003. The information requested concerned projected amortization schedules over the entire seven-year

accelerated cost recovery period, whether certain costs deferred in calendar years 2001 and 2002 represented portions of compliance costs that would be amortized over the accelerated cost recovery period, and matters related to how the Companies proposed to account for the present costs.

Progress Energy Response: Progress Energy responded that it currently expects to amortize the compliance costs as follows: 2003 - \$100 million; 2004 - \$106.5 million; 2005 – \$113.5 million; 2006 - \$121 million; 2007 – \$129 million; 2008 - \$121.5 million; and 2009 - \$121.5 million.

Duke Energy Response: Duke Energy responded that it currently expects to amortize the compliance costs as follows: 2003 - \$70 million; 2004 - \$158 million; 2005 – \$281 million; 2006 - \$281 million; 2007 – \$281 million; 2008 - \$214 million; and 2009 - \$214 million.

Attached, and made part of this report, are the statements from Duke Energy and Progress Energy dated March 31, 2003, and April 1, 2003, respectively, which were submitted by the Companies to meet the requirements of G.S. 62-133.6(i).

In addition, the Secretary of DENR wrote the Commission on May 13, 2003, as follows:

“North Carolina’s investor owned electric utilities, Duke Energy and Progress Energy, have filed their compliance plan annual updates for 2003 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 and the initial plans, as proposed, appear adequate to achieve the emission limitations set out in N.C.G.S. 143-215.107D.”

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

DENR and Division of Air Quality (DAQ) Activities to implement this Section:

- The Governor, the Attorney General, the Secretary of DENR, and the Director of DAQ have all sent letters to their counterparts in other States in the region urging similar emissions controls in those States and requesting information in order to evaluate the impacts of upwind sources on North Carolina's air quality.
- DAQ is continuing to identify sources of air pollution problems, including out-of-state contributions. DAQ and the Attorney General's Office are evaluating strategies to achieve compliance with upcoming federal mandates regarding particulate matter and ozone (including visibility), which will improve air quality and alleviate the adverse health and welfare impacts facing North Carolina. The western part of the State will especially benefit from these emission reductions.
- 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.

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 is presently developing a draft report for presentation by September 1, 2003, as required by this section. The first report will primarily focus 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, there will be preliminary estimates 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 are planned for June and July 2003, to meet with all interested stakeholders to begin review of the draft DAQ 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 is presently developing a draft report for presentation by September 1, 2003, as required by this section. The first report will primarily focus on the "state of knowledge" and actions being taken or planned elsewhere regarding CO₂ control from coal-fired utility boilers. Two public workshops are planned for June and July 2003, to meet with all interested stakeholders to begin review of the draft DAQ report.

VI. Supplementary Information: 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 audits are to be of a nature such that they will be on-going, continuing throughout completion of the accelerated cost recovery process and beyond as circumstances and events may require. The Public Staff expects to begin the audits later this calendar year.

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, 2003, Submitted by Duke Power, a Division of Duke Energy Corporation

Attachment B: Annual North Carolina Clean Smokestacks Act Compliance Report dated April 1, 2003, Submitted by Progress Energy Carolinas, Inc.



OFFICIAL COPY

Attachment A
Page 1 of 8

Duke Power
526 South Church Street
P.O. Box 1006
Charlotte, NC 28201-1006

March 31, 2003

FILED

APR 07 2003

Clerk's Office
N.C. Utilities Commission

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

Subject: Senate Bill 1078

Chairman's Office

Duke Power Compliance Plan Annual Update

APR 07 2003

Record No. NC CAP 002
Certified: 7002 0860 0006 5842 6314

Dear Ms. Sanford:

E-7 SUB 718

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 largest twelve 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 Affairs
Duke Power

Enclosure(s)

cc w/ attachments: Robert P. Gruber
Executive Director – Public Staff
1641 Mail Service Center
Raleigh, NC 27699-4326

Nothing Confidential in Filing per G. Everett

Duke Power Company
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 2002 calendar year, Duke Power Company spent \$3,622,600 on activities in support of compliance with the provisions of G.S. 143-215.107D. Exact amounts associated with each project are provided in Exhibit C, and a description of the associated activities is provided below:

Allen Steam Station Scrubbers

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

Belews Creek Steam Station Scrubbers

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

Cliffside Steam Station Scrubbers

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

Marshall Steam Station Scrubbers

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

Allen Steam Station SNCR, Unit 1

- Project study, scope development and equipment specifications completed
- Engineering, Procurement and Construction (EPC) contract awarded

Marshall Steam Station SNCR, Unit 4

- Project study and technology demonstration/testing completed

~~Confidential~~

Page 2

Dan River Steam Station Burners, Unit 3

- Project study and boiler modeling completed
- Electrical and mechanical design continued and specification issued
- CO and O₂ Analyzers installed within scheduled unit outage

Riverbend Steam Station Burners, Units 5&6

- Project study and boiler modeling completed
- Engineering design work completed and specification issued
- CO and O₂ Analyzers installed within scheduled unit outages

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

In the 2002 calendar year, \$0 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 2002 in the initial filing, and the technologies expected to be required to support compliance have not changed. 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. 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 completed and final permit received for temporary trial
- NPDES Permit Modification completed and permit modification received for temporary trial
- Air Permit Application completed and final permit received for permanent equipment installation

Marshall Steam Station SNCR, Unit 4

- Air Permit Application completed and final permit received for temporary trial
- NPDES Permit Modification completed and permit modification received for temporary trial

~~Confidential~~

Page 3

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 Scrubbers

- Continuation of project studies and investigations related to reagent handling, equipment optimization, byproduct handling, equipment layout and logistics throughout year

Belews Creek Steam Station Scrubbers

- Continuation of project studies and investigations related to reagent handling, equipment optimization, byproduct handling, equipment layout and logistics throughout year

Cliffside Steam Station Scrubbers

- Continuation of project studies and investigations related to reagent handling, equipment optimization, byproduct handling, equipment layout and logistics throughout year

Marshall Steam Station Scrubbers

- Continuation of project studies and investigations related to reagent handling, equipment optimization, byproduct handling, equipment layout and logistics throughout year
- EPC contract expected to be awarded in 4th Quarter of 2003
- Earthwork expected to begin in the latter part of 2003
- Site mobilization expected to begin in the latter part of 2003
- Stack foundation work expected to begin in January, 2004
- Underground piping, grounding, duct bank and foundation work expected to begin in the 1st Quarter of 2004
- Fencing, lighting, roadwork and drainage construction expected to begin in the 1st Quarter of 2004

Allen Steam Station SNCR, Unit 1

- Equipment installation expected to be completed in spring 2003
- Equipment testing expected in 2nd and 3rd Quarters of 2003

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.

Marshall Steam Station Scrubbers, Units 3&4

- Landfill Site Suitability Application – Plan to submit 6/6/03
- Sedimentation and Erosion Control – Plan to submit 6/9/03
- Air Permit Application – Plan to submit 8/22/03
- NPDES Permit Modification – Plan to submit 3/31/04
- Landfill Construction Permit Application – Plan to submit 11/17/04

Allen Steam Station SNCR, Units 2 - 5

- Air Permit Application – Plan to submit 10/22/04
- Sedimentation and Erosion Control (if needed) – Plan to submit 11/5/04
- NPDES Permit Modification (if needed) – Plan to submit 11/5/04

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

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: Actual short term 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 2002 calendar year, 81,896 tons of NO_x and 263,909 tons of SO₂ were emitted from the North Carolina based Duke Power Company coal-fired units.

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 as of this date.

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	684	0.17	780
Allen	2	SNCR	2007	0.17	836	0.17	872
Allen	3	SNCR	2005	0.17	1,230	0.17	950
Allen	4	SNCR	2006	0.17	991	0.17	1,399
Allen	5	SNCR	2006	0.17	1,063	0.17	1,508
Belews Creek	1	SCR	2003	0.09	2,996	0.09	2,957
Belews Creek	2	SCR&Burners	2004	0.09	2,962	0.09	3,001
Buck	3	SNCR	2009	0.35	502	0.25	392
Buck	4	SNCR	2008	0.35	290	0.25	234
Buck	5	SNCR	2006	0.17	604	0.17	500
Buck	6	SNCR	2007	0.19	651	0.17	583
Cliffside	1	SNCR	2009	0.35	256	0.25	205
Cliffside	2	SNCR	2009	0.35	256	0.25	205
Cliffside	3	SNCR	2008	0.35	481	0.25	382
Cliffside	4	SNCR	2008	0.35	492	0.25	374
Cliffside	5	SCR	2002	0.07	1,250	0.07	1,298
Dan River	1	SNCR	2009	0.35	500	0.25	383
Dan River	2	SNCR	2009	0.35	544	0.25	413
Dan River	3	SNCR&Burners	2007	0.19	744	0.17	591
Marshall	1	SNCR	2007	0.19	2,159	0.17	1,957
Marshall	2	SNCR	2008	0.22	2,352	0.17	1,921
Marshall	3	SNCR	2008	0.24	5,123	0.19	3,381
Marshall	4	SNCR	2008	0.24	4,847	0.19	4,084
Riverbend	4	SNCR	2007	0.19	469	0.17	464
Riverbend	5	SNCR&Burners	2008	0.40	969	0.17	450
Riverbend	6	SNCR&Burners	2008	0.22	815	0.17	550
Riverbend	7	SNCR	2007	0.17	640	0.17	630
Expected Total:					34,706		30,464
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							
Facility	Unit	Technology	Operational Date	2009 Compliance		2013 Compliance	
				Expected Rate #/MMBTUs	Tons	Expected Rate #/MMBTUs	Tons
Allen	1	Scrubber	2011	1.60	7,342	0.15	688
Allen	2	Scrubber	2011	1.60	8,207	0.15	769
Allen	3	Scrubber	2011	1.60	8,944	0.15	838
Allen	4	Scrubber	2012	1.60	13,165	0.15	1,234
Allen	5	Scrubber	2012	1.60	14,195	0.15	1,331
Belews Creek	1	Scrubber	2008	0.15	4,928	0.15	4,928
Belews Creek	2	Scrubber	2008	0.15	5,002	0.15	5,002
Buck	3			1.60	2,558	1.60	2,558
Buck	4			1.60	1,530	1.60	1,530
Buck	5			1.60	4,710	1.60	4,710
Buck	6			1.60	5,485	1.60	5,485
Cliffside	1			1.60	1,337	1.60	1,337
Cliffside	2			1.60	1,337	1.60	1,337
Cliffside	3			1.60	2,493	1.60	2,493
Cliffside	4			1.60	2,445	1.60	2,445
Cliffside	5	Scrubber	2009	0.40	7,416	0.15	2,781
Dan River	1			1.60	2,499	1.60	2,499
Dan River	2			1.60	2,696	1.60	2,696
Dan River	3			1.60	5,559	1.60	5,559
Marshall	1	Scrubber	2007	0.15	1,727	0.15	1,727
Marshall	2	Scrubber	2007	0.15	1,695	0.15	1,695
Marshall	3	Scrubber	2006	0.15	2,641	0.15	2,641
Marshall	4	Scrubber	2006	0.15	3,191	0.15	3,191
Riverbend	4			1.60	4,368	1.60	4,368
Riverbend	5			1.60	4,234	1.60	4,234
Riverbend	6			1.60	5,177	1.60	5,177
Riverbend	7			1.60	5,927	1.60	5,927
Expected Total:					130,809		79,181
Compliance Limit:					150,000		80,000

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

Expected Costs									
Facility	Unit	Technology	Operational Date	Spent to Date			Remaining	Project Total (\$000)	
				2001 (\$000)	2002 (\$000)	2003 - 2013 (\$000)			
Allen	1	SNCR	2003	\$179	\$160	\$3,057	\$3,397		
Allen	1	Scrubber	2011			\$68,370	\$68,370		
Allen	2	SNCR	2007			\$2,504	\$2,504		
Allen	2	Scrubber	2011			\$68,370	\$68,370		
Allen	3	SNCR	2005			\$6,218	\$6,218		
Allen	3	Scrubber	2011			\$68,370	\$68,370		
Allen	4	SNCR	2006			\$3,677	\$3,677		
Allen	4	Scrubber	2012	\$16	\$429	\$72,704	\$73,149		
Allen	5	SNCR	2006			\$3,782	\$3,782		
Allen	5	Scrubber	2012			\$71,825	\$71,825		
Belews Creek	1	Catalyst Add				\$4,636	\$4,636		
Belews Creek	1	Scrubber	2008	\$7	\$502	\$202,891	\$203,400		
Belews Creek	2	Catalyst Add				\$4,752	\$4,752		
Belews Creek	2	Scrubber	2008			\$205,949	\$205,949		
Buck	3	SNCR	2009			\$2,789	\$2,789		
Buck	4	SNCR	2008			\$1,408	\$1,408		
Buck	5	SNCR	2006			\$3,041	\$3,041		
Buck	6	SNCR	2007			\$1,658	\$1,658		
Cliffside	1	SNCR	2009			\$2,422	\$2,422		
Cliffside	2	SNCR	2009			\$1,314	\$1,314		
Cliffside	3	SNCR	2008			\$2,147	\$2,147		
Cliffside	4	SNCR	2008			\$1,325	\$1,325		
Cliffside	5	Catalyst Add				\$2,751	\$2,751		
Cliffside	5	Scrubber	2009	\$4	\$529	\$183,533	\$184,067		
Dan River	1	SNCR	2009			\$1,694	\$1,694		
Dan River	2	SNCR	2009			\$1,420	\$1,420		
Dan River	3	SNCR&Burners	2007	\$8	\$162	\$6,648	\$6,818		
Marshall	1	SNCR	2007			\$3,443	\$3,443		
Marshall	1	Scrubber	2007			\$82,728	\$82,728		
Marshall	2	SNCR	2008			\$5,073	\$5,073		
Marshall	2	Scrubber	2007			\$82,728	\$82,728		
Marshall	3	SNCR	2008			\$3,257	\$3,257		
Marshall	3	Scrubber	2006	\$76	\$521	\$140,559	\$141,156		
Marshall	4	SNCR	2008		\$622	\$4,496	\$5,118		
Marshall	4	Scrubber	2006			\$137,237	\$137,237		
Riverbend	4	SNCR	2007			\$1,965	\$1,965		
Riverbend	5	SNCR&Burners	2008	\$365	\$282	\$5,283	\$5,930		
Riverbend	6	SNCR&Burners	2008	\$145	\$415	\$5,720	\$6,280		
Riverbend	7	SNCR	2007			\$2,607	\$2,607		
Subtotals:				\$800	\$3,623	\$1,474,350	\$1,478,772		
Program Total:									



FILED

APR 01 2003

Clerk's Office
N.C. Utilities Commission

April 1, 2003

OFFICIAL COPY

E-2. Sub P15

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 2002 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 cursive script that reads 'Len S. Anthony'.

Len S. Anthony
Manager - Regulatory Affairs

LSA:at

Attachment

201419

**Progress Energy Carolinas, Inc.
Senate Bill 1078 – Clean Smokestacks Law
Calendar Year 2002 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, 2003.

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 2002 and the projected costs for future years through 2013. No construction was undertaken in 2002.

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

No costs associated with compliance with G.S. 143-215.107D were amortized in 2002.

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 2002 and the projected costs for future years through 2013. While some unit total and annual costs have changed, the total project cost in escalated dollars remains \$813M.

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.**

As of April 1, 2003, Progress Energy Carolinas, Inc. had not yet applied for any permits associated with compliance with G.S. 143-215.107D. A description of the anticipated permit applications is presented in the response to Item 7 below.

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.

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.**

Permit applications for the construction and operation of scrubbers for the removal of sulfur dioxide are planned for submittal in the spring of 2003. The scrubbers are planned for Asheville Plant Units 1 and 2 and for Roxboro Plant Units 2 and 3. The following permit applications are anticipated to be submitted to the Department of Environment and Natural Resources (DENR) for review and approval:

- Air construction and operation permit
- Erosion and sediment control permit
- Treatment and processing permit for storage of scrubber by-product
- Wastewater permit to construct for treatment of scrubber blowdown
- A potential permit application for constructed wetlands (not yet determined)

Progress Energy Carolinas, Inc. will work with DENR in order to ensure that all applicable permits are obtained in order to support the planned scrubber construction and operation.

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 2002.

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 2002 emissions from the affected coal-fired Progress Energy Carolinas units are:

NO_x 58,793
SO₂ 195,734

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 2002.

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

As of April 1, 2003, no additional information has been requested by the Commission or the Department of Environment and Natural Resources.

Appendix A

Progress Energy's Air Quality Improvement Plan Supplement April 1, 2003

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 (59,000 tons of NO_x in 2002 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 is completing FGD screening studies on its coal-fired units. Babcock and Wilcox has been selected as the equipment supplier. Specific SO₂ control technologies have not yet been finally determined but a combination of wet scrubbers

(limestone forced oxidation) and dry scrubbers (spray absorbers) will likely be selected. Both are proven technologies and provide greater than 90% SO₂ removal efficiencies.

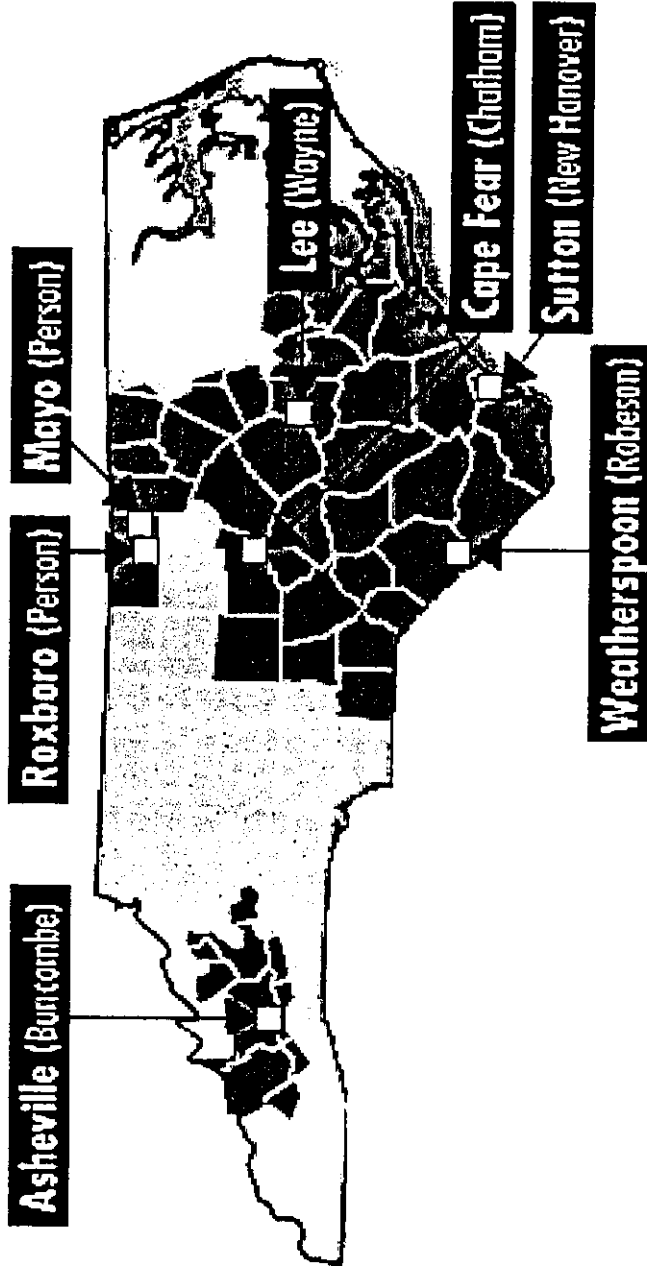
Wet scrubbers and dry scrubbers produce unique waste and by-product streams. Issues related to wastewater permitting and disposal must be addressed for each site. Discussions with various permitting divisions within DENR have begun and a permit application submittal schedule will be provided.

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 92% SO₂ removal efficiency and on forecasted energy demand. Note that these are projected schedules and will be subject to revision. Individual FGD in-service dates may occur later than shown.

During 2002, FGD studies were completed for Asheville , Roxboro , and Mayo Plants. Design activities have begun for Asheville 1 and 2, and Roxboro 2, with construction work anticipated to begin in the fourth quarter of 2003 or first quarter of 2004.

Particular units controlled and control technologies utilized are subject to change depending on future developments in SO₂ removal technologies, energy demand, 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 (July, 2002)

Unit	MW Rating	Control Technology	Operation Date ¹	Projected NOx Tons, 2007 ²
Asheville 1	198	LNB/AEFLGR/SCR	2009	1,804
Asheville 2	194	LNB/OFA/SCR		481
Cape Fear 5	143	ROFA/ROTAMIX		670
Cape Fear 6	173	ROFA/ROTAMIX		878
Lee 1	79	WIR		685
Lee 2	76	ROFA	2007	619
Lee 3	252	LNB/OFA/SCR	2010	2,444
Mayo 1	745	LNB/OFA/SCR		2,140
Roxboro 1	385	LNB/OFA/SCR		1,136
Roxboro 2	670	TFS2000/SCR		1,924
Roxboro 3	707	LNB/OFA/SCR		1,803
Roxboro 4	700	LNB/OFA/SCR		2,123
Sutton 1	97	SAS		411
Sutton 2	106	ROFA	2010	1,765
Sutton 3	410	LNB/ROFA		3,048
Wspn 1	49			598
Wspn 2	49			648
Wspn 3	78	WIR		673
Total	5,111			23,800

AEFLGR = Amine-Enhanced Flue Lean Gas Return

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 (July, 2002)

Unit	MW Rating	Technology	Operation Date	Projected SO ₂ Tons, 2009 ¹	Projected SO ₂ Tons, 2013 ¹
Asheville 1	198	Scrubber	2005	786	857
Asheville 2	194	Scrubber	2006	759	704
Cape Fear 5	143	Scrubber	2012	7,635	630
Cape Fear 6	173	Scrubber	2011	7,966	762
Lee 1	79			3,514	4,725
Lee 2	76			3,384	4,645
Lee 3	252	Scrubber	2010	11,147	978
Mayo 1	745	Scrubber	2007	3,257	3,417
Roxboro 1	385	Scrubber	2009	1,469	1,696
Roxboro 2	670	Scrubber	2005	2,865	2,957
Roxboro 3	707	Scrubber	2008	3,249	3,296
Roxboro 4	700	Scrubber	2007	3,280	3,311
Sutton 1	97			3,292	4,415
Sutton 2	106			5,103	6,204
Sutton 3	410	Scrubber	2013	18,245	1,635
Wspn 1	49			1,422	1,584
Wspn 2	49			1,507	1,839
Wspn 3	78			3,607	4,613
Total	5,111			82,500	48,300

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.

Appendix B

Actual 2002 Costs and Projected Costs Through 2013

Planned Outage	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
General												
Asheville 1 FGD	\$100,000	\$6,653,280	\$29,974,881	\$23,814,287	\$2,208,162	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Asheville 1 SCR	\$0	\$0	\$0	\$0	\$0	\$4,504,650	\$10,338,171	\$17,533,933	\$0	\$0	\$0	\$0
Asheville 2 FGD	\$100,000	\$5,260,328	\$14,990,624	\$29,225,668	\$13,248,970	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Asheville FGD common	\$175,887	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mayo 1 FGD	\$144,637	\$0	\$0	\$5,444,417	\$31,468,732	\$34,458,261	\$17,332,978	\$0	\$0	\$0	\$0	\$0
Roxboro FGD common	\$189,028	\$0	\$15,828,607	\$12,499,494	\$10,624,570	\$5,418,530	\$5,526,901	\$1,127,488	\$0	\$0	\$0	\$0
Roxboro 1 FGD	\$0	\$0	\$0	\$0	\$5,520,404	\$16,892,436	\$22,973,713	\$5,858,297	\$0	\$0	\$0	\$0
Roxboro 2 FGD	\$120,000	\$10,000,000	\$26,530,200	\$27,060,804	\$11,040,808	\$2,252,325	\$0	\$0	\$0	\$0	\$0	\$0
Roxboro 3 FGD	\$0	\$500,000	\$10,612,080	\$16,236,482	\$16,561,212	\$16,892,436	\$11,486,857	\$0	\$0	\$0	\$0	\$0
Roxboro 4 FGD	\$0	\$0	\$0	\$4,711,827	\$19,704,861	\$14,706,555	\$20,000,915	\$5,100,233	\$0	\$0	\$0	\$0
Cape Fear 5 FGD	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$585,830	\$10,755,833	\$18,894,414	\$11,190,369	\$0
Cape Fear 6 FGD	\$0	\$0	\$0	\$0	\$0	\$0	\$574,343	\$10,544,934	\$19,121,481	\$9,873,856	\$0	\$0
Lee 3 FGD	\$0	\$0	\$0	\$0	\$0	\$563,081	\$14,013,965	\$24,136,183	\$14,580,129	\$0	\$0	\$0
Lee 3 SCR	\$0	\$0	\$0	\$0	\$0	\$0	\$5,743,428	\$17,574,891	\$19,338,922	\$0	\$0	\$0
Sutton 3 FGD	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$585,830	\$20,316,574	\$35,350,838	\$18,028,927	\$3,170,604
Lee 2 ROFA	\$0	\$0	\$0	\$0	\$2,208,162	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sutton 2 ROFA	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,343,319	\$0	\$0	\$0	\$0
Total (w/o esc)	\$829,552	\$22,413,608	\$97,936,392	\$118,992,980	\$112,585,880	\$98,519,078	\$107,991,271	\$78,401,939	\$79,115,128	\$64,119,106	\$29,219,296	\$3,170,604

Full Cost (Actual @ 2001\$)

Total escalated cost

\$746,264,857


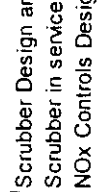
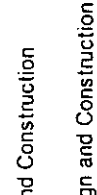

\$813,118,948

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

Appendix C

NC Clean Air Bill Compliance Plan

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
General												
Asheville 1 FGD												
Asheville 1 SCR												
Asheville 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 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

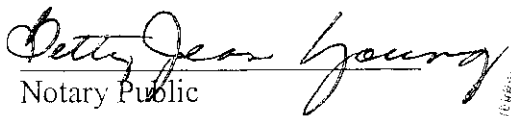
WAKE COUNTY

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, 2003.


Mike Williams

Sworn to and subscribed before
me this the 1st day of April, 2003.


Notary Public

My Commission Expires:

Oct 30, 2005

