

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**



**Report No. VI
June 1, 2008**

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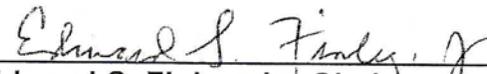
This report is submitted pursuant to the requirement of Section 14 of Session Law 2002-4, Senate Bill 1078 enacted June 20, 2002. The actions taken to date by Progress Energy Carolinas, Inc. and Duke Power, a Division of Duke Energy Corporation, appear to be in accordance with the provisions and requirements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

Signed:



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

Signed:



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

June 1, 2008

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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 Carolinas, LLC (Duke Energy), and Progress Energy Carolinas, Inc. (Progress Energy), to submit annual reports to DENR and the Commission containing certain specified information. Duke Energy and Progress Energy filed reports, with DENR and the Commission, by cover letters dated March 27 and 31, 2008, 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, by letter dated May 14, 2008, the Secretary of DENR wrote to the Commission stating that, pursuant to G.S. 62-133.6(j), DENR has reviewed the information provided and has determined that the submittals comply with the Act. The Secretary further stated that the plans and schedules of the Companies appear adequate to achieve the emission limitations set out in G.S. 143-215.107D.

Significantly, 2007 marked the first step of the emission reductions required by the Clean Smokestacks Act. Specifically, Duke Energy is limited to 35,000 tons of oxides of nitrogen (NO_x) in any calendar year beginning 1 January 2007, and Progress Energy is limited to 25,000 tons of NO_x. Both utilities reported to have met their respective limits as recorded through continuous emission monitoring (CEM) data. Additionally, the raw CEM data is verified by the utilities and reported to the United States Environmental Protection Agency (EPA). The next milestone in reductions occurs in 2009, when Duke Energy must further reduce its NO_x to 31,000 tons, and both utilities must reduce their sulfur dioxide (SO₂) emissions, Duke Energy to 150,000 tons and Progress Energy to 100,000 tons.

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

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

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

Status: North Carolina's investor-owned electric utilities, Progress Energy and Duke Energy, filed their initial compliance plans as required in June and July of 2002, respectively, in accordance with G.S. 62-133.6(c), Section 9(c) of Session Laws 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(d) of the Act, Codified as Section 62-133.6(d) of the North Carolina General Statutes

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

Pursuant to G.S. 62-133(b), Progress Energy and Duke Energy 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. During that period, Progress Energy and Duke Energy, referred to collectively hereafter as the

investor-owned utilities (IOUs), are required to amortize \$813 million and \$1.5 billion, respectively. Subsection (b) further provides that the IOUs shall amortize 70 percent of said costs during the five-year period January 1, 2003 through December 31, 2007. That requirement equates to \$569.1 million for Progress Energy and \$1.05 billion for Duke Energy. According to information provided to the Commission by the IOUs, those amounts had, in fact, been amortized at December 31, 2007, leaving original-estimate, unamortized balances of \$243.9 million¹ and \$450 million² for Progress Energy and Duke Energy, respectively, at December 31, 2007.

Progress Energy: On March 23, 2007, in Docket No. E-2, Sub 900, Progress Energy filed a petition with the Commission seeking authorization (1) to amortize a total of \$243.9 million³ of environmental compliance costs during calendar years 2008 and 2009; (2) to treat environmental compliance costs incurred by Progress Energy in excess of \$813 million as eligible for inclusion in Progress Energy's rate base; (3) to allow the accrual of allowance for funds used during construction (AFUDC) on all environmental compliance costs in excess of \$813 million; (4) to defer any determination of the justness, reasonableness, and prudence of Progress Energy's environmental compliance costs in excess of \$813 million, including associated AFUDC, until Progress Energy's next general rate case; (5) to find that Progress Energy's current estimate of its anticipated environmental compliance costs is the most accurate available estimate of the cost that Progress Energy will incur to comply with the emissions limitation provisions of the Act; and (6) to find that the matters raised by Progress Energy's petition should be resolved based on a record consisting of comments and reply comments.

Progress Energy's petition was scheduled for hearing and a number of parties intervened, including the Public Staff – North Carolina Utilities Commission (Public Staff) and the North Carolina Attorney General's Office (Attorney General). Prior to the hearing, Progress Energy filed a Stipulation Agreement (Settlement Agreement or Stipulation) between the parties, except for the Attorney General.

A number of witnesses testified during the hearing, including Mike Abraczinskas, an employee in the Division of Air Quality of DENR.⁴ Witness Abraczinskas presented testimony that Progress Energy's actual and proposed Clean Smokestacks compliance modifications and permitting and construction schedules are adequate to achieve the

¹ Progress Energy: \$813 million less \$569.1 million = \$243.9 million.

² Duke Energy: \$1.5 billion less \$1.05 billion = \$450 million.

³ As noted above, this amount represents the unamortized balance of environmental compliance costs, as originally estimated, at December 31, 2007.

⁴ As indicated above, G.S. 62-133.6(d), in pertinent part, provides as follows: *In making its decisions pursuant to this subsection, the Commission shall consult with the Secretary of Environment and Natural Resources to receive advice as to whether the investor-owned public utility's actual and proposed modifications and permitting and construction schedule are adequate to achieve the emissions limitations set out in G.S. 143-215.107D.*

emissions limitations set out in G.S. 143-215.107D, indicating that Progress Energy is in compliance with the Act.

Following the hearing and receipt and review of Progress Energy and the Public Staff's Joint Proposed Order in support of all provisions of the Settlement Agreement, the Attorney General's Brief,⁵ and certain additional information, the Commission, by Order issued December 20, 2007, approved the Stipulation on a provisional basis, subject to a review to be initiated by the Commission in 2009. Such review will consider all reasonable alternatives and proposals relating to recovery by Progress Energy of its environmental compliance costs under the Act in excess of \$813 million beginning in calendar year 2010 and thereafter. In particular, the Commission, in its Order provisionally approving the Stipulation Settlement, ruled as follows:

1. That PEC's [that is, Progress Energy's] actual and proposed modifications and permitting and construction schedules under the Clean Smokestacks Act are adequate to achieve the emissions limitations set out in G.S. 143-215.107D.

2. That the most current and accurate estimate of PEC's cost to comply with the requirements of G.S. 143-215.107D is the estimate of \$1.355 billion contained in the Company's March 30, 2007 Annual Clean Smokestacks filing made pursuant to G.S. 62-133.6(i). Any determination of the justness, reasonableness, and prudence of PEC's actual environmental compliance costs, including associated AFUDC, shall be deferred until the Company's next general rate case proceeding.

3. That PEC shall amortize a total of \$813 million of Clean Smokestacks Act environmental compliance costs by December 31, 2009. Pursuant to G.S. 62-133.6(b), PEC shall amortize a total of \$569.1 million of environmental costs by December 31, 2007, and an additional \$243.9 million of such costs during calendar years 2008 and 2009. In accomplishing such amortization, PEC shall be allowed the discretion to amortize up to \$174 million in either of the 2008 or 2009 calendar years.

4. That the appropriate ratemaking treatment for PEC to recover its environmental compliance costs in excess of \$813 million shall not be finally determined at this time. The Commission shall, consistent with the provisions of this Order, initiate a review of this matter in 2009, to consider all reasonable alternatives and proposals relating to recovery by

⁵ Although not a party to the Stipulation, the Attorney General recommended that, if the Commission accepted the proposed Stipulation, the Commission's Order should include a condition that Progress Energy should agree not to seek recovery of any portion of the environmental compliance costs allocated to the wholesale and South Carolina retail jurisdictions, even if those jurisdictions did not allow the recovery of those allocated environmental compliance costs. The Attorney General further recommended that the Commission's Order include a condition that Progress Energy's Clean Smokestacks costs would be reviewed in 2009, for the purpose of considering possible additional accelerated amortization in 2010 and 2011.

PEC of its environmental compliance costs under the Clean Smokestacks Act in excess of \$813 million.

5. That no portion of any environmental compliance costs directly assigned, allocated, or otherwise attributable to another jurisdiction, either through stipulation or by Order of the Commission, shall be recovered from PEC's North Carolina retail customers, even if recovery of those costs is disallowed or denied, in whole or in part, in another jurisdiction.

6. That PEC shall be allowed to accrue AFUDC on all environmental compliance costs in excess of \$813 million. The accrual of AFUDC shall cease when construction of a Clean Smokestacks project is complete and the associated facilities are placed in service. PEC shall, not later than Monday, January 14, 2008, file (a) a statement setting forth the calculation of its currently effective AFUDC rate; (b) a brief description of each item entering into the calculation of said AFUDC rate; and (c) an explanation of the mechanics of its AFUDC accrual procedures, including the items to which the rate is applied.

7. That the amount by which the Power Agency's joint ownership share of the total environmental costs associated with the Mayo and Roxboro 4 units exceeds the \$37.9 million cap on those costs agreed to by PEC and the Power Agency shall be treated in the same manner as PEC's Clean Smokestacks costs in excess of \$813 million, as ultimately determined by the Commission.

Duke Energy: By Order issued March 9, 2007, in Docket No. E-7, Sub 829, the Commission initiated a proceeding, instituted an investigation, and scheduled a hearing in regard to the matter of Duke Energy's environmental compliance costs, as required by G.S. 62-133.6(d).⁶ Said Order, among other things, required Duke Energy to prefile testimony and exhibits setting forth the information and data upon which it would rely to support its position and proposals made pursuant to the provisions of G.S. 62-133.6(d). A number of parties intervened, including the Public Staff and the Attorney General.

Prior to the hearing, the parties filed an Agreement and Stipulation of Partial Settlement, with regard to the consolidated proceedings, setting forth areas of agreement and nonagreement among all of the parties of record. There were no areas of disagreement with respect to matters involving Duke Energy's compliance with the Act, including matters involving Clean Smokestacks compliance costs.

⁶ The Clean Smokestacks docket, Docket No. E-7, Sub 829, was consolidated for hearing with Docket No. E-7, Sub 828, *In the Matter of Duke Energy Carolinas, LLC – Investigation of Existing Rates and Charges Pursuant to Regulatory Condition No. 76 as Contained in the Regulatory Conditions Approved by Order Issued March 24, 2006, in Docket No. E-7, Sub 795.*

In keeping with certain specific requirements of G.S. 62-133.6(d), which have been previously noted, DENR presented the testimony of Brock Nicholson, Deputy Director of the Air Quality Division, regarding Duke Energy's compliance with the emissions limitation provisions of the Act. Witness Nicholson testified, in effect, that actions previously taken by Duke Energy, as of the date of his testimony, appeared to be in accordance with the provisions and the requirements of the Act.

Following the hearing and receipt and review of briefs, proposed orders, and certain additional information and following the issuance of the Commission's Notice of Decision and Order, the Commission, on December 20, 2007, issued Order Approving Stipulation and Deciding Non-Settled Issues. As previously explained, there were no non-settled issues with respect to Duke Energy's Compliance with the Act. In particular, the Commission, in its Order of December 20, 2007, in the present regard, found and concluded as follows:

27. The Stipulating Parties agreed that they will not challenge as unjust, unreasonable or imprudent Duke's [that is, Duke Energy's] expenditures through December 31, 2006, for emission controls required by the Clean Smokestacks Act (Environmental Compliance Costs) in the amount of [\$901.4 million]. The Commission finds and concludes, based on the evidence of record, that these costs were reasonably and prudently incurred.

28. The Commission finds and concludes that, as of December 31, 2007, Duke will have amortized pursuant to G.S. 62-133.6(d) a total of [\$1.05 billion] in Environmental Compliance Costs, as provided in the Stipulation.

29. The Stipulation eliminates [\$225.2 million] of Environmental Compliance Cost amortization from the test-period cost of service.^[7] The Stipulating Parties agree that they will not contest the inclusion in rate base of all prudent and reasonable unamortized Environmental Compliance Costs as the projects are closed to plant in service, with such Environmental Compliance Costs being allocated among all jurisdictions and all customer classes. The Commission finds and concludes that this treatment is just and reasonable, but makes no finding at this time as to the reasonableness or prudence of any such unamortized Environmental Compliance Costs. No portion of any Environmental Compliance Costs directly assigned, allocated, or otherwise attributable to another jurisdiction pursuant to Paragraph 7D of the Stipulation shall be recovered from North Carolina retail customers, even if recovery of those costs is

^[7] The Commission's adoption of this provision of the Stipulation had the following effect: Effective January 1, 2008, Duke Energy will record and recover no further accelerated amortization of Clean Smokestacks compliance costs. But rather, all such unamortized costs will be subject to recovery through the more traditional ratemaking practices and procedures employed by the Commission, as governed by other provisions of Chapter 62 of the General Statutes.

disallowed or denied, in whole or in part, in another jurisdiction.
[Footnote added.]

30. Duke's actual and proposed modifications and permitting and construction schedule are adequate to achieve the emissions limitations set out in G.S. 143-215.107D.

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

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

The following are the 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: "PEC originally submitted its compliance plan on July 29, 2002. Appendix A [of the attached Progress Energy submittal dated March 31, 2008, i.e., Attachment B] contains an updated version of this plan, effective April 1, 2008. We continue to evaluate various design, technology and generation options that could affect our future compliance plans."

Duke Energy Response: "Exhibits A and B [of the attached Duke submittal dated March 27, 2008, i.e., Attachment A] outline the updated plan as of this date for technology selections by facility and unit, projected operational dates, expected emission rates, and the corresponding tons of emissions that demonstrate compliance with the provisions of G.S. 143-215.107D."

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 (capital costs) incurred by Progress Energy in calendar year 2007 were \$330.12 million. Progress Energy completed Clean Smokestacks Act work planned at the Asheville and Lee plants and performed a significant amount of work at the Mayo and Roxboro plants. Progress Energy successfully placed the Asheville Unit 1 selective catalytic reduction (SCR) system into service in May 2007. At the Lee plant, tuning of the Unit 3 Rotamix equipment for NOx control was completed and the system was placed in service in March 2007. With respect to the Mayo plant, Progress Energy executed contracts for the wastewater treatment bioreactor equipment and engineering and initiated work on the wastewater treatment systems. At year-end, the Mayo

scrubber project was 41 percent complete. At the Roxboro plant, successful startup of scrubbers were completed for Unit 2 on April 24, 2007, and for Unit 4 on December 1, 2007, and construction for the scrubber project continued on the other two units in 2007. Specific unit construction activities included, but were not limited to: Unit 1 – completion of foundations for the booster fan and duct supports, completion of fabrication of the duct, completion of the erection of the absorber shell and assembling of the absorber internals began, erection of the pump-house and electrical building structural steel began, as did installation of recycle pumps, bleed pumps, and booster fans; Unit 3 - completed construction of foundations for duct support and booster fan, installation of booster fans, installation of duct support steel and duct work, and installation of the absorber internals and absorber hood/elbow and began preparing for April 2008 tie-in outage and scrubber startup.

Summary of Duke Energy Report: The actual environmental compliance costs incurred by Duke Energy in calendar year 2007 were \$438.4 million. Of this total, \$209.1 million was incurred at the Allen Steam Station flue gas desulfurizations (FGD) and \$128.1 million at Belews Creek Steam Station FGD. Work at Allen included completing site earthwork and access driveway; completion of all deep foundations, major building foundations, and major equipment foundations; completion of initial tie-in outages for Units 1-5 and installation of blanking plates; completion of construction of stack shell; and completion of major process equipment procurement. At Belews Creek, Duke Energy completed construction and commissioning of Unit 1 FGD, continued construction and started commissioning of the Unit 2 FGD, and placed new Sanitary Waste System into operation. For the remaining Steam Stations (Cliffside, Marshall, Buck, Dan River, and Riverbend), Duke Energy reported that costs were incurred for a variety of things such as installation and commissioning of selective noncatalytic reduction (SNCR) equipment, installation of classifiers and burners, etc.

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: In 2007, Progress Energy amortized \$33.9 million and Duke Energy amortized \$187.3 million.

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 its total estimated net capital costs (that is, excluding the portion for which the Power Agency is responsible) are currently projected to be between \$1.5 billion and \$1.6 billion, with the current point estimate being \$1.546 billion, an increase from the 2007 cost estimate of \$1.355 billion. Prior reports have discussed the cost impact of project scope changes and the impact of significant increases in the cost of materials and labor which have impacted construction projects across the Southeast. The current estimates continue to reflect those impacts as well as the impact of additional planning, especially with

respect to the emission controls for Sutton Unit 3 and Cape Fear Units 5 and 6. The current estimate for a dry scrubber at Sutton Unit 3, while still conceptual, reflects the impact of more definitive site characteristics on the overall cost of the project. Space is at a premium at this site, coastal location requires more stringent wind loading criteria, and the soil characteristics are quite different from that of other plants with scrubbers. Installation of the Furnace Sorbent Injection (FSI) test unit at Robinson is nearing completion and the testing should begin this summer with operating results available by the end of the year. The engineering knowledge gained from the FSI test system at Robinson is being reflected in updated cost estimates to install FSI technology at Cape Fear. Because of the increased cost for FSI technology, continuing development of dry scrubber technology, changes in the fuel markets, the long-term impact of the EPA Clean Air Interstate Rule (CAIR) requirements, and continuing evolution of resource plans (including the impact of Senate Bill 3), Progress Energy has initiated a study to revisit the compliance options for Cape Fear Units 5 and 6. At this time, Progress Energy is maintaining an option for either FSI or dry scrubber technology, whichever the studies indicate to be most cost-effective.

Progress Energy's current cost estimate of \$1.546 billion is \$733 million, or 90 percent, higher than the original 2002 cost estimate of \$813 million.

Summary of Duke Energy Report: Duke Energy reported that its current expected costs are lower than the estimates provided in 2007. More specifically, in its 2008 report, the Company estimated its compliance costs to be \$1.843 billion, as compared to the \$1.965 billion reflected in its 2007 report, a decrease of \$122 million, or 6 percent (detailed in Exhibit C of Attachment A of the Duke Energy report). As stated by Duke Energy, the reasons for this decrease were changes to the scope, schedule, commercial terms, and cost estimates of Cliffside Unit 5 and Unit 6 to factor in a single new unit layout, as well as unused contingency or risk items in earlier forecasts for SNCR and burner projects.

Duke Energy's current cost estimate of \$1.843 billion is \$343 million, or 23 percent, higher than the original 2002 cost estimate 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.*

Summary of Progress Energy Response:

Roxboro Plant

- Updates for air permit for coal handling and limestone handling were issued.
- Air permit revision for diesel-fired emergency firewater pump was issued.
- Alternative Method of Reporting Annual Average Opacity for units equipped with Flue Gas Desulfurization (FGD) was approved.
- A Renewal Title V air permit application was submitted.

Mayo Plant

- NPDES (National Pollutant Discharge Elimination System) Permit to construct FGD wastewater treatment system was issued.
- NPDES permit modification for a mixing zone for chlorides was issued.
- Erosion and sedimentation control plan update was approved.

Lee Plant

- Title V air permit application was submitted in association with the construction permit for the low NOx burner.
- NPDES permit revision approved for Rotamix Urea Injection System on Unit 3.

Summary of Duke Energy Response:

Allen

- Received revision to NPDES permit to include FGD wastewater.
- DENR/ACOE (Army Corps of Engineers) Permit received regarding stream crossing of entrance road.
- Air permit received for FGD and SNCRs (Selective Non-Catalytic Reductions) on Units 2, 3, 4, and 5.
- Authorization to Construct (ATC) application for the wastewater treatment system was approved.
- Several soil erosion and sedimentation control permits have been received.
- Stack contractor has received air permit associated with flue liner fabrication.

Belews Creek

- Received revision to NPDES permit to include FGD wastewater.
- Received initial erosion control permit.
- Landfill site suitability approved.
- Landfill construction plan – permit received.
- Air permit for FGD project received.
- ATC application for the wastewater treatment system was approved.
- ATC for constructed wetlands was approved.
- Received permit to construct sanitary waste lagoon.
- Received permit to decommission existing sewage lagoon.
- Received permit to operate the FGD residue landfill.
- Several soil erosion and sedimentation control plans have been approved.

Cliffside

- Air permit received for Unit 5 FGD.
- Received revised NPDES permit.
- Received FAA (Federal Aviation Administration) permit for stack.
- Submitted landfill site suitability application.

Marshall

- Several soil erosion and sedimentation control plans have been approved.
- Landfill construction plan application received.
- Landfill (lining) permit received.
- Permit to operate Marshall FGD landfill received.
- ATC application for solids removal system was approved.
- ATC application for constructed wetlands was approved.
- Air permits received for SNCRs on Units 1-4.

Riverbend

- Air permits received for SNCRs on Units 4-7.
- Burner permits received for Units 5 and 6.

Dan River

- Air permits received for Burners on Units 1-3.

Buck

- Air permits received for Burners on Units 3 and 4 and for SNCRs on Units 5 and 6.

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

Summary of Progress Energy Response: See Appendix C of the attached letter from Progress Energy dated March 31, 2008 (Attachment B of this report) for details of construction and installation of equipment. At the Mayo plant, 2008 construction activities will focus on completion of the chimney liner and installation of absorber internals. At Roxboro, commissioning activities are planned for Units 1 and 3 for the October and April tie-in outages, respectively.

Summary of Duke Energy Response: See attached letter from Duke Energy dated March 27, 2008 (Attachment A), for details of construction anticipated for the next year. Construction is planned at numerous facilities, including commissioning of Allen Unit 1 FGD, commissioning of Allen Unit 5 SNCR, and startup of Belews Creek Unit 1 FGD and Unit 2 FGD.

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:

Roxboro Plant

- Erosion and sedimentation control plan revisions may be necessary as construction plans are further developed.

Mayo Plant

- NPDES Permit: An ATC request for a new oil/water separator was submitted on March 7, 2008 with a response expected by the end of April.
- Erosion and sedimentation control plan revisions may be necessary as construction plans are further developed.

Sutton Plant

- An air permit application for construction of a Dry Scrubber for Unit 3 is expected to be submitted during the fourth quarter 2008 with response expected in the second quarter 2009.

Duke Energy Response:

Cliffside Steam Station Unit 5 FGD

- Landfill construction plan application anticipated September 2008.

Cliffside Steam Station Unit 6

- Air permit issued January 2008.

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: "Performance testing of the SCR at Asheville Unit 1 was completed in October 2007. The testing indicated that the system met its performance guaranteed emissions rate of 0.04 lb NO_x/MMBtu. Performance testing of the SNCR system at Lee Unit 3 was completed in March 2007. The testing demonstrated that the system met its performance guarantee of a 31% reduction in NO_x emissions over the load range of the unit. Performance testing of the Scrubber at Roxboro Unit 2 was completed in September 2007. The testing confirmed that the scrubber achieved its performance guarantee of 97% SO₂ removal efficiency."

Duke Energy Response: "No additional equipment related testing occurred in 2007." Duke Energy included SNCR and SCR tests performed in prior years in the 2008 report for reference.

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

Both utilities determine their actual emissions through continuous emission monitoring (CEM) data. The raw CEM data are recorded and verified by the utilities, and then reported to the EPA.

Progress Energy Response: The affected coal-fired PEC units have achieved a 59% reduction in NO_x and a 25% reduction in SO₂ since 2002. The total calendar year 2007 emissions from the affected coal-fired Progress Energy Carolinas units are:

- NO_x 24,383 tons
- SO₂ 147,242 tons

It should be noted that 2007 marks the first limit imposed by the Clean Smokestacks Act, specifically, 25,000 tons of NO_x for Progress Energy. Progress Energy's reported NO_x emissions for 2007 comply with the Clean Smokestacks Act limit. The Company's next steps are to reduce its SO₂ emissions to 100,000 tons for the 2009 calendar year, and 50,000 tons for 2013.

Duke Energy Response: In the 2007 calendar year, the following were emitted from the North Carolina-based Duke Energy coal-fired units:

- NO_x 33,012.9 tons
- SO₂ 223,096.9 tons

As before, it should be noted that 2007 marks the first limit imposed by the Clean Smokestacks Act, specifically, 35,000 tons of NO_x for Duke Energy. Duke Energy's reported emissions for 2007 comply with the Clean Smokestacks Act NO_x limit, but Duke Energy must further reduce its NO_x emissions to 31,000 tons for 2009. Duke Energy's next steps are to reduce SO₂ to 150,000 tons in 2009, and 80,000 tons in 2013.

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

Progress Energy Response: "During 2007, PEC did not acquire any allowances as a result of compliance with the emission limitations set out in N.C. General Statute 143-215.107D."

Duke Energy Response: "No emissions allowances have been acquired by Duke Energy Carolinas resulting from compliance with the emissions 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 DENR/DAQ Request: The DENR/DAQ submitted informational requests to Progress Energy and Duke Energy on April 25, 2007. The information requested, along with the information contained in the original March 30, 2007 submittals from Progress Energy and Duke Energy, support DENR/DAQ's conclusion that the plans and schedules of the companies appear adequate to achieve the emission limitations set out in G.S 143-215.107D.

The information requested on April 25, 2007, among other things, concerned: operational dates for control units at Progress Energy (answers outlined in Number 6 above); plan and timing if furnace sorbent injection (FSI) testing does not support the FSI installation at Cape Fear (answer outlined in Number 4 above); whether plans for maintaining NO_x emissions at or below the cap(s) consider, for example, growth in energy sales; and an inquiry on how year-to-year meteorological variability affects energy demand and thus affects production from the coal-fired units and the related SO₂ and NO_x emissions.

Progress Energy Response: In response to the DENR/DAQ question, "What are your plans for maintaining NO_x emissions at or below the final (2007) cap considering, for example, growth in energy sales?" Progress Energy responded as follows: "PEC fully intends to comply with the annual NO_x emissions cap. Planning for NO_x emissions is included with planning for unit generation, fuel consumption, and fuel and operations costs. Year-to-date actual emissions with year-end projections are continuously monitored and are updated weekly to ensure annual compliance. High and low cases (energy, outages, performance, etc.) are continuously evaluated and monitored to provide PEC with a range of potential scenarios in order to prepare for additional actions to curb emissions, if needed."

In response to the DENR/DAQ question on how year-to-year meteorological variability affects energy demand and thus affects production from the coal-fired units and the related SO₂ and NO_x emissions, Progress Energy noted, "PEC's base case forecast uses a weather-normalized load and energy forecast. Deviations from normal weather conditions increase or decrease system energy demand (depending on the specific deviation) and thus can result in an increase or decrease in actual emissions. For example, a hotter than normal summer would likely result in an increase in emissions while a milder summer would likely result in lower emissions."

Duke Energy Response: In response to the DENR/DAQ question, "What are your plans for maintaining NO_x emissions at or below the final (2009) cap considering, for example, growth in energy sales?" Duke Energy noted, "The projections above represent a system average capacity factor of 73%. To put this in perspective, the highest annual fossil system capacity factor Duke has ever achieved was 69% in 2005. The projection also includes a substantial amount of bulk power marketing (BPM) sales. If we had BPM sales at a historical high, this could increase NO_x emissions in the 900 tons range to account for this load." Duke stated that they expect to have a comfortable compliance margin even with off-system sales.

In response to the DENR/DAQ question on how year-to-year meteorological variability affects energy demand and thus affects production from the coal-fired units and the related SO₂ and NO_x emissions, Duke Energy noted:

. . . we are planning to a very high system average capacity factor. Historically, we have had very hot summers and very cold winters but have never achieved the 73% annual CF we are currently planning to.

In developing the appropriate compliance margin multiple scenarios were considered that increased NO_x emissions, including forced outages at the nuclear units and units with SCR, increase in BPM sales. Through this analysis it was determined that a 1,000 to 1,500 tons compliance margin was needed going into any year. Though we are installing the Marshall 3 SCR for the Charlotte 8 hour ozone attainment demonstration, it also provides compliance margin for the North Carolina Clean Smokestack Act (NC CSA).

The total NO_x emissions and how each unit is performing is trended on a weekly basis. If the system total NO_x emissions were trending above the firm NC CSA cap, we would attempt to achieve lower NO_x emissions from our generation stations without consideration of performance. We would have the option to change the dispatch of units, limit BPM sales and at a last resort, purchase power and shut down the highest emitting generation units. Our plan is not to exceed the NC CSA firm cap unless under a force majeure situation.

Summary of Commission Request: As observed in Part II of this report (Part II), Subsection (d) of G.S. 62-133.6, in pertinent part, provides as follows:

Subject to the provisions of subsection (f) of this section, the Commission shall hold a hearing to review the environmental compliance costs set out in subsection (b) of this section. The Commission may modify and revise those costs as necessary to ensure that they are just, reasonable, and prudent based on the most recent cost information available and determine the annual cost recovery amounts that each investor-owned public utility shall be required to record and recover during calendar years 2008 and 2009. . . . The Commission shall issue an order pursuant to this subsection no later than December 31, 2007.

As explained in Part II, the Commission initiated proceedings and held hearings in compliance with the foregoing statutory provisions. During these proceedings, the Commission, among other things, received into evidence and/or the record(s) the testimony of a number of expert witnesses, stipulations between the parties, and responses to certain Commission informational requests. Based upon such information and data, the Commission entered Orders ruling upon the present matters. The

Commission's actions, including its findings and conclusions, in pertinent part, are summarized in Part II and need not be repeated here.

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

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

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

1) On January 30, 2006, the State, through the Attorney General, sued the Tennessee Valley Authority (TVA) in federal district court in Asheville. The suit alleges that emissions of SO₂ and NOx from TVA's fleet of coal-fired power plants are inadequately controlled and therefore create a public nuisance. The Attorney General has asked the Court to require TVA to install NOx and SO₂ controls to abate the public nuisance. In July 2006 the District Court denied TVA's motions to dismiss the case, but TVA appealed these rulings to the U.S. Court of Appeals in Richmond, Virginia. Oral argument was not held until October 31, 2007 and as a result the District Court postponed trial until the appeals court ruled. Meanwhile, the parties completed discovery in the case. On January 31, 2008, the Fourth Circuit Court of Appeals upheld the District Court's decision that it had jurisdiction to hear North Carolina's lawsuit. The District Court thereafter denied TVA's motions for summary judgment and scheduled the case for trial in Asheville beginning on July 14, 2008. The trial is estimated to take 3-4 weeks. TVA has recently announced that its Board of Directors had approved the expenditure of more than \$600 million to install NOx and SO₂ controls on its John Sevier plant, which is the closest TVA facility to North Carolina by 2012.

2) On July 8, 2005, the Attorney General filed in the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) a petition for review of the United States Environmental Protection Agency's (EPA) Clean Air Interstate Rule (CAIR). Among other things, the State is alleging that CAIR fails to take into account significant air quality problems in North Carolina, fails to guarantee a remedy to North Carolina because the rule relies too heavily on the trading of pollution credits, and fails to require controls to be installed expeditiously. While North Carolina is seeking to strengthen the

rule, several other parties are challenging various bases for the rule. The Court heard arguments in this matter on March 25, 2008. A decision is expected soon.

3) Also on July 8, 2005, the Attorney General filed a petition with the EPA requesting that the EPA administratively reconsider certain aspects of CAIR. EPA denied this petition. The Attorney General has asked the D.C. Circuit to review this action as well, and this request was heard along with the CAIR case and will be decided at the same time.

4) On March 18, 2004, the State filed a petition under §126 of the Clean Air Act requesting that EPA impose NO_x and/or SO₂ controls on large coal-fired utility boilers in 13 upwind states that impact North Carolina's air quality. On March 15, 2006, the EPA denied the State's petition. The Attorney General has filed a petition in the D.C. Circuit seeking review of the denial of the petition. The Attorney General also petitioned EPA for administrative reconsideration of the §126 petition. This spring (2008), the Court directed that this matter be stayed while the CAIR case was heard and further directed that the parties advise the Court as to how the case should proceed within 30 days after the Court rules on the CAIR matter.

5) Since the enactment of the Clean Smokestacks Act, the Attorney General and DENR have on several occasions presented the Clean Smokestacks Act to other jurisdictions to demonstrate leadership and prompt similar actions in surrounding areas that impact North Carolina. On April 6, 2006, Governor Ehrlich of Maryland signed into law the Healthy Air Act (2006 Md. Laws 301) -- a Clean Smokestacks-type law that significantly limits emissions of SO₂ and NO_x from large coal-fired utility boilers in Maryland, and also regulates mercury and carbon dioxide emissions. Implementing regulations took effect in January 2007.

6) The Attorney General is also reviewing a recently promulgated EPA rule that exempts large stationary sources of NO_x in Georgia from any summertime NO_x cap under EPA's "NO_x SIP Call" rule. The NO_x SIP Call rule was designed to help downwind States reduce ambient levels of ozone.

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

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

Note: Session Law 2006-79 changed the beginning date of the requirements of this Section to September 1, 2007.

Environmental Management Commission and DENR Response: A letter was submitted to the Environmental Review Commission from Dr. David Moreau, Environmental Management Commission Chairman, dated November 8, 2007, which stated the following:

“Since the Clean Smokestacks Act was passed in June 2002, significant Federal regulatory changes have occurred. Specifically, the Clean Air Interstate Rule (CAIR) requires North Carolina’s neighboring states to achieve major reductions in NO_x and SO₂ – reductions that require installation of state-of-the-art control equipment. Although there may be questions about the timing and emissions reductions of CAIR, the Division of Air Quality (DAQ) believes CAIR will ultimately provide major benefits to North Carolina’s air quality.

The Clean Smokestacks Act already requires that state of the art control equipment be installed on many units in North Carolina. CAIR annual NO_x and SO₂ emissions budgets are even lower than those set by the Clean Smokestacks Act. This could result in even more units in North Carolina having state of the art control equipment applied.

Given the recent action by the Federal government regarding power plant emissions, it is recommended that the study as to whether or not further State action is required be deferred until an evaluation is made of the progress of North Carolina and its neighbors in complying with CAIR. The EMC would propose that the reporting begin on December 1, 2013. This will give the specified electric generation facilities in North Carolina time to implement their control strategies and will also give the DAQ time to quantify the air quality impacts. Requiring reporting prior to the complete implementation of these control strategies will provide little new or beneficial information. Furthermore, the evolution of new control technologies is fairly long term and it is recommended that the frequency of the reporting thereafter be on a three-year basis.”

DENR notes that there is significant uncertainty regarding the continuing validity of CAIR. Although the State has argued to the D.C. Circuit that CAIR must be strengthened, others assert that the CAIR SO₂ and NO_x programs are unlawful and must be vacated. The State expects that the Court will decide the fate of CAIR during the summer of 2008. Some aspects of this report may need to be reconsidered upon that disposition.

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

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

Although the courts have since vacated CAMR, and it is unclear when and how EPA will respond, mercury reductions in North Carolina remain on schedule. The controls needed to comply with the North Carolina Clean Smokestacks Act provide significant co-benefits in the form of mercury emission reductions. Therefore, mercury emission reductions in North Carolina will continue through the year 2013. By 2018, all of the Duke Energy and Progress Energy units will either have controls in place or be shut down, as a matter of State law. The North Carolina Clean Smokestacks Act

greatly reduces mercury emissions (as a co-benefit of the NO_x and SO₂ controls) from sources within the State, and CAIR will provide similar mercury reductions from our border states, thus further reducing mercury deposition in North Carolina.

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

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

The North Carolina Global Warming/Climate Change Bill (HB 1191/SB 1134) was enacted during the 2005 Session of the General Assembly. Along with the passage of the bill, the North Carolina 2005 Session of the General Assembly passed the Global Climate Change Act. This act established a Legislative Commission on Global Climate Change (LCGCC). Additionally, a formalized stakeholder group, the Climate Action Plan Advisory Group (CAPAG), was formed by DENR. The CAPAG's purpose is to evaluate, discuss, and formalize consensus-based recommendations for CO₂ and other greenhouse gas reductions through a formal stakeholder process. Determination of economic benefits to North Carolina will be assessed for each prospective recommendation. The CAPAG will work in conjunction with the LCGCC in providing periodic updates. The inaugural meeting of the CAPAG was held on February 16, 2006. The CAPAG completed its work and has made recommendations regarding 56 mitigation options in the following five sectors: 1) Agriculture, Forestry, and Waste;

2) Energy Supply; 3) Transportation and Land Use; 4) Residential, Commercial, and Industrial; and 5) Cross Cutting (for issues that cut across different sectors, such as establishing a greenhouse gas registry). The final draft report is on the CAPAG website at <http://www.ncclimatechange.us/>. Also, the CAPAG has commissioned a secondary economic analysis, including jobs impacts, by Appalachian State University (ASU). This work is completed and is presently undergoing peer review. Upon completion, a summary of the ASU work will be placed in the CAPAG report. Expected final conclusion of the CAPAG work, including the ASU supplemental analysis, is expected by mid-summer. One of the earlier recommendations of the CAPAG, a Renewable Energy and Energy Efficiency Portfolio Standard (REPS), was enacted into law by the North Carolina General Assembly last summer as Senate Bill 3 (SB3), and the Utilities Commission, in the context of an extensive rulemaking proceeding, has developed and issued comprehensive rules implementing the provisions of SB3, including provisions related to REPS.

VIII. Supplementary Information: As noted in earlier reports, the Public Staff - North Carolina Utilities Commission (Public Staff) will audit the books and records of Progress Energy and Duke Energy on an ongoing basis in regard to the costs incurred and amortized in compliance with the provisions of the Act. The Public Staff has undertaken such a review, focusing on the verification of costs related to complying with the Act, the amortization of those costs, and the operating results of emission reduction equipment installed by Progress Energy and Duke Energy.

The Public Staff filed its most recent reports in the present regard with the Commission on May 20, 2008. Such reports, which are a continuation of the Public Staff's ongoing review, present an overview of certain work performed by the Public Staff and its findings for the 12-month period ending December 31, 2007. Attached, and made part of this report, are the Public Staff's reports for Duke Energy and Progress Energy, Attachments C and D, respectively.

IX. Conclusions

The DENR/DAQ carefully reviewed and considered the information provided by Progress Energy and Duke Energy in their March 27 and 31, 2008 compliance plan submittals and their May 2007 supplemental submittals in response to informational requests from DENR/DAQ on April 25, 2007.

Progress Energy has completed installation of its NO_x controls and has met its CSA NO_x limit for 2007 through measured monitoring data. There is reason to believe that it is on track to also meet its SO₂ limits (100,000 tons in 2009 and 50,000 tons in 2013). Progress Energy's SO₂ control plan includes putting scrubbers on eight units and FSI on two others. Progress Energy's 2004 SO₂ emissions were 195,655 tons with no scrubbers. The 2007 emissions were reduced to 147,242 tons with two scrubbers (Asheville) available the entire year and two others (Roxboro) available for part of the year. Two more Roxboro units are to begin operation in 2008 and the Mayo unit in 2009. If two units for the full year and two others for part of the year were able to reduce

SO₂ emissions from 195,655 tons (2004) to 147,242 tons (2007), then it is reasonable that six units for a full year and a seventh for part of the year would reduce emissions to 100,000 tons in 2009. The air permits have been issued for the three units scheduled to come online in 2008 and 2009. Additionally, DAQ field staff noted construction on the Roxboro and Mayo units during inspections since February 2008.

Similarly, Duke Energy has met its CSA NO_x limit for 2007 through measured monitoring data. Its 2007 NO_x emissions of 33,013 tons are below the 2007 limit of 35,000 tons. Duke Energy must further reduce its NO_x emissions to 31,000 tons for 2009. An additional SNCR at Allen expected to come online this spring, along with other NO_x projects at Dan River, Marshall, and Riverbend, indicate that it is reasonable to conclude that Duke Energy will also meet its 2009 NO_x limit. Duke Energy's SO₂ control plan includes 12 scrubbers to meet limits of 150,000 tons in 2009 and 80,000 tons in 2013. The first unit came online in 2006 with two others in 2007, all at Marshall. These units have so far reduced Duke Energy's SO₂ emissions from 298,781 tons (2005) to 223,097 tons (2007). Two scrubbers at Belews Creek are due to come on line this year, as are five scrubbers at Allen in 2009. The air permits for these units have been issued, and the facilities have been inspected by DAQ since August 2007. An inspection in March 2008 confirmed that one of the Belews Creek scrubbers is already operating.

The Commission has also carefully reviewed and considered the information and data provided by the investor-owned public utilities in their 2008 Clean Smokestacks annual reports. Further, as discussed elsewhere herein, the Commission has initiated proceedings, held hearings, and issued Orders pursuant to the provisions of G.S. 62-133.6(d). The Commission's findings and conclusions in those regards are set forth in Part II of this report. As explained in Part II, both Progress Energy and Duke Energy have met the statutorily imposed 70 percent accelerated amortization requirement during the five-year period January 1, 2003 through December 31, 2007, and procedures have been put in place by the Commission which provide for the amortization/recovery of the remaining cost of compliance with the Clean Smokestacks Act, assuming of course, that such costs are reasonable and prudently incurred.

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

Attachments

- Attachment A:** Duke Energy Carolinas, LLC, Clean Smokestacks Compliance Plan Annual Update for 2008, Submitted by Cover Letter Dated March 27, 2008
- Attachment B:** Progress Energy Carolinas, Inc. Annual North Carolina Clean Smokestacks Act Compliance Report, Submitted by Cover Letter Dated March 31, 2008
- Attachment C:** Report of the Public Staff on Costs Incurred and Amortized by Duke Energy Carolinas, LLC in Compliance with Session Law 2002-4, Filed on May 20, 2008
- Attachment D:** Report of the Public Staff on Costs Incurred and Amortized by Progress Energy Carolinas, Inc. in Compliance With Session Law 2002-4, Filed on May 20, 2008



DUKE ENERGY CAROLINAS, LLC
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March 27, 2008

Ms. Renne C. Vance, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, NC 27699-4325

FILED
MAR 27 2008
Clerk's Office
N.C. Utilities Commission

Subject: Docket No. E-7, Sub 718
Duke Energy Carolinas, LLC NO_x and SO₂ Compliance Plan Annual Update
Record No. NC CAP 007

Dear Ms. Vance:

Duke Energy Carolinas, LLC is required by Senate Bill 1078 (the "North Carolina Clean Air Legislation") to file information on or before April 1 of each year to update the North Carolina Utilities Commission on ("Commission") of the progress to date, upcoming activities and expected plans to achieve the emissions limitations set out in G.S. 143-215.107D. Enclosed for filing are the original and thirty (30) copies of Duke Energy Carolinas' Compliance Plan Annual Update for 2008 that fully describe the Company's efforts to comply with the North Carolina Clean Air Legislation.

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

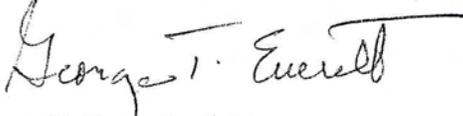
NO_x Control – During the past year, Duke Energy Carolinas has completed the installation of additional SNCR's at Plant Allen and Plan Marshall. Burner work was also completed at two Buck Units during 2007. An additional SNCR installation at Plant Allen in the spring of 2008, along with some final NO_x project tasks at Dan River, Marshall, and Riverbend, will complete the NO_x control projects needed to comply with the Clean Smokestacks mandates. With these installations, the company has demonstrated compliance with the 2007 compliance limit and will also achieve compliance with the 2009 NO_x caps under Senate Bill 1078.

SO₂ Control – The installation of wet scrubbers on our twelve largest generating units continues to be our plan for compliance with the 2009 and 2013 SO₂ caps under the North Carolina Clean Air Legislation. As a result of the installation of wet scrubbers on Units 1-3 at Marshall Steam Station during 2007, all four units at Marshall now are operating with FGD controls in place. Work on Unit 1 and 2 scrubbers at Belews Creek is also substantially complete, and start up for both of these units will occur in early 2008. The company continues to work under an accelerated schedule with respect to the Allen scrubber project to maintain design and construction continuity throughout the scrubber program and also assure compliance with the federal Clean Air Interstate Rule.

Exhibits A and B outline current unit specific technology selections, projected operational dates, expected emission rates, and the corresponding tons of emissions that demonstrate compliance with the legislative requirements to the best of Duke Energy Carolinas' knowledge at this time. The current estimate of Environmental Compliance Costs for these pollution control projects are included in Exhibit C and reflect some improvement since last year.

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

Sincerely,

A handwritten signature in cursive script that reads "George T. Everett". The signature is written in black ink and is positioned above the typed name.

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

Enclosures

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

Duke Energy Carolinas, LLC
General Assembly of North Carolina Session 2001
Senate Bill 1078 – Improve Air Quality/Electric Utilities (NC Clean Air Legislation)
2008 Annual Data Submittal

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

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

NO_x Compliance

- Emission Rate Changes – Expected rates have been adjusted in this 2008 update based on operating experience in 2007 with recently installed controls and targeted future performance.

SO₂ Compliance

- Schedule Changes – Further optimization of the 2009 scrubber tie-in outages for the Allen Units 1 – 5 has resulted in some changes to the expected emission rates by unit for the 2009 year.
- Unit Retirements – Expected retirement of Buck Units 3 & 4 as discussed in the Certificate of Public Convenience and Necessity (“CPCN”) application for the Buck Combined Cycle Project (Docket E-7 Sub 791) are now reflected in the 2013 SO₂ compliance plan.

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 2007 calendar year, Duke Energy Carolinas spent **\$438,400,100** 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 FGD

- Completed site earthwork and access driveway
- Completed all deep foundations, major building foundations, and major equipment foundations
- Completed initial duct tie-in outages for Units 1-5 and installed blanking plates
- Completed construction of stack shell
- Completed major process equipment procurement

Belews Creek Steam Station FGD

- Completed construction and commissioning of the Unit 1 FGD, including common systems
- Continued construction and started commissioning of the Unit 2 FGD
- Placed new Sanitary Waste System into operation

Cliffside Steam Station Unit 5 FGD

- Signed Engineering, Procurement and Construction ("EPC") Agreement with Shaw, Stone & Webster
- Signed Air Quality Control System Agreement with Alstom Power, Inc.
- Completed initial site clearing and relocation of existing plant facility interferences
- Began site preparation and mass soil excavation activities
- Demolished existing Fire Water Storage Tank and installed new Fire Water Storage Tanks and Pumps

Marshall Steam Station FGD

- Achieved substantial completion for the Unit 3 FGD
- Achieved substantial completion for the Units 1 & 2 FGD
- Completed all systems Performance Testing
- Completed all FGD project punch list items
- Achieved overall project completion and closeout milestone

Allen Steam Station SNCR, Unit 2

- Completed material delivery, installation and commissioning of the Unit 2 SNCR equipment

Allen Steam Station SNCR, Unit 5

- Completed detailed engineering and material procurement activities in preparation for 2008 installation

Buck Steam Station Burners, Unit 3

- Completed installation of burners

Buck Steam Station Classifiers, Unit 3

- Completed installation of classifiers

Buck Steam Station Burners, Unit 4

- Completed installation of burners

Buck Steam Station Classifiers, Unit 4

- Completed installation of classifiers

Dan River Steam Station Burners, Unit 1

- Completed installation of burners

Dan River Steam Station Classifiers, Unit 1

- Completed installation of classifiers

Marshall Steam Station SNCR, Unit 2

- Completed installation of the Unit 2 SNCR equipment

Riverbend Steam Station SNCR, Unit 4

- Completed installation and commissioning of the Unit 4 SNCR equipment

Riverbend Steam Station SNCR, Unit 5

- Completed installation and commissioning of the Unit 5 SNCR equipment

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

In the 2007 calendar year, **\$187,334,900** was amortized related to construction work activity in support of compliance with the provisions of G.S. 143-215.107D. **\$1,050,000,000** has now been amortized in total for the program through year-end 2007.

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

The estimated 'environmental compliance costs' as defined in G.S. 143-215.107D are provided in Exhibit C. Changes to the expected costs as compared to past compliance plans are described below:

- Cliffsides Unit 5 FGD Project – The Cliffsides 5 FGD project will be designed and constructed in an integrated manner with the design and construction of the new Advanced Clean Coal Cliffsides Unit 6. After receiving the North Carolina Utilities Commission ("NCUC" or "Commission") order on March 21, 2007 authorizing construction of this new unit, Duke Energy Carolinas began modifying the scope, schedule, commercial terms and cost estimates for these two projects to factor in the single new unit layout, Air Quality Control System ("AQCS") technology choices, infrastructure layout, support infrastructure design, and common system identification. The Cliffsides Unit 5 FGD project estimate included within this report, along with the Cliffsides Unit 6 estimate documented in monthly cost estimate reports (Docket E-7 Sub 790) represent the results of these planning and estimating efforts since the March 21, 2007 order.
- SNCR and Burner Projects – While there has been no significant change to the scope or timing of the NO_x related projects completed in 2007 or remaining to be installed, a few project forecasts have increased but most have decreased as compared to the 2007 filing. The net overall reductions to these SNCR and Burner project estimates is approximately 5% and is most often associated with unused contingency or risk items included in earlier forecasts.

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 FGD

- Request to revise NPDES Permit to include FGD wastewater – Submitted 1/24/06; received revision 9/11/06
- Submittal to DENR/ACOE regarding stream crossing of entrance road – Received permits 5/25/06
- Air Permit Application – Submitted 4/10/06; received Permit 6/30/06
- Authorization to Construct (ATC) application for Wastewater Treatment System – Submitted 9/14/06; received Permit to Construct 12/15/06
- NOTE: all erosion control permits are in EPC contractor's scope for the Allen FGD Project and were received in 2006 (7/13/06 and 12/18/06). Stack contractor has also applied for air permit associated with flue liner fabrication on 11/1/06 and received on 2/2/07.

Belews Creek Steam Station FGD

- Request to revise NPDES Permit to include FGD wastewater – Submitted 6/30/04; received Permit Revision 5/16/05
- Initial Erosion Control Permit – Submitted 2/4/05; received Permit 3/7/05
- Landfill Site Suitability Application – Submitted 3/30/05; received Site Suitability Approval Letter 6/19/06
- Air Permit Application for Belews Creek FGD project – Submitted 4/18/05; received Air Permit 2/6/06
- Authorization to Construct (ATC) application for Wastewater Treatment System – Submitted 7/21/05; received Permit to Construct 12/27/05
- Authorization to Construct (ATC) application for Constructed Wetlands – Submitted 7/21/05; received Permit to Construct 12/27/05
- Revised Landfill Construction Plan Application – Submitted 9/30/05; received Permit to Construct 6/29/06
- Air Permit – Notice of Intent to Construct – Submitted 10/11/05; received Permit to Construct 10/24/05
- Authorization to Construct Sanitary Waste Lagoon – Submitted 3/23/06; received Permit to Construct 9/1/06
- Existing Sewage Lagoon Approval to Decommission – Submitted 10/31/06; received permit 1/25/07
- Permit to operate the FGD Residue Landfill – Submitted Certification Report on 9/28/07; received permit 1/24/08
- NOTE: Revisions to Erosion Control Permit submitted on various dates; most recent revised permit received 3/30/06

Cliffside Steam Station Unit 5 FGD

- Air Permit Application for Cliffside Unit 5 FGD project – Submitted 12/16/05; received 12/15/06

- Request to revise NPDES Permit (including new Cliffside Unit 6) – Submitted 4/30/2007; Received Permit Revision 8/13/2007
- FAA Permit for Stack – received permit 10/30/07
- Landfill Site Suitability Application – Submitted 1/7/2008

Marshall Steam Station FGD

- Landfill Construction Plan Application – Submitted 4/1/04; received 2/4/05
- Sedimentation and Erosion Control Plan Permits
 - Limestone/Gypsum Conveyor – Submitted 6/17/04; received 7/9/04
 - Limestone/Gypsum Conveyor Expansion – Submitted 12/15/04; received 12/30/04
 - Constructed Wetland Treatment System – Submitted 7/26/04; received 8/18/04
 - Gypsum Landfill – Submitted 3/31/04; received 4/21/04
- Authorization to Construct (ATC) application for Solids Removal System – Submitted 11/19/04; received 12/22/04
- Authorization to Construct (ATC) application for Constructed Wetlands – Submitted 5/21/04; received 8/10/04
- Air Permit Revisions (for material handling issues) – Submitted 9/2/05; received 12/7/05
- Landfill Permit Documents (to line landfill) – Submitted 12/15/05; received 6/5/06
- Permit to Operate Marshall FGD Landfill – Submitted 10/27/06; received 11/21/06

Allen Steam Station SNCR, Unit 2

- Air Permit Application – Submitted 4/24/06; Received 6/30/06

Allen Steam Station SNCR, Unit 3

- Air Permit Application – Submitted 7/15/04; Received 2/5/05

Allen Steam Station SNCR, Unit 4

- Air Permit Application – Submitted 7/15/05; Received 1/15/06
- Building/Plumbing permit from Gaston County Building and Standards – Received 4/27/06 for municipal water tie-ins

Allen Steam Station SNCR, Unit 5

- Air Permit Application – Submitted 4/24/06; Received 6/30/06

Buck Steam Station Burners, Unit 3

- Air Permit Application – Submitted 9/15/06; Received 2/15/07

Buck Steam Station Burners, Unit 4

- Air Permit Application – Submitted 9/15/06; Received 2/15/07

Buck Steam Station SNCR, Unit 5

- Air Permit Application – Submitted 3/10/06; Received 5/16/06

Buck Steam Station SNCR, Unit 6

- Air Permit Application – Submitted 3/10/06; Received 5/16/06

Dan River Steam Station Burners, Unit 1

- Air Permit Application – Submitted 2/23/06; Received 9/11/06

Dan River Steam Station Burners, Unit 2

- Air Permit Application – Submitted 2/23/06; Received 9/11/06

Dan River Steam Station Burners, Unit 3

- Air Permit Application – Submitted 2/23/06; Received 9/11/06

Marshall Steam Station SNCR, Unit 1

- Air Permit Application – Submitted 9/18/05; Received 12/20/05

Marshall Steam Station SNCR, Unit 2

- Air Permit Application – Submitted 9/18/05; Received 12/20/05

Marshall Steam Station SNCR, Unit 3

- Air Permit Application – Submitted 5/14/04; Received 10/13/04

Marshall Steam Station SNCR, Unit 4

- Air Permit Application – Submitted 4/28/06; Received 9/12/06

Riverbend Steam Station SNCR, Unit 4

- Air Permit Application – Submitted 3/20/05; Received 8/1/05

Riverbend Steam Station Burners, Unit 5

- Air Permit Application – Submitted 4/2/04; Received 4/30/04

Riverbend Steam Station SNCR, Unit 5

- Air Permit Application – Submitted 3/20/06; Received 8/1/06

Riverbend Steam Station Burners, Unit 6

- Air Permit Application – Submitted 5/14/03; Received September 2003

Riverbend Steam Station SNCR, Unit 6

- Air Permit Application – Submitted 11/5/05; Received 1/1/06

Riverbend Steam Station SNCR, Unit 7

- Air Permit Application – Submitted 11/5/05; Received 1/1/06

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 FGD

- Receive auxiliary transformer on site

- Complete stack construction, including flues and Continuous Emissions Monitoring Systems (CEMS)
- Complete Units 1, 2 and 5 tie-ins to Absorber #1
- Complete installation of Limestone Unloading and Gypsum Stackout Systems
- Complete construction and commissioning of Unit 1 FGD
- Begin initial operation of Unit 1 (Absorber #1)

Belews Creek Steam Station FGD

- Startup Unit 1 FGD and achieve Substantial Completion
- Complete construction, commissioning and startup of Unit 2 FGD and achieve Substantial Completion
- Perform tests to verify contract Performance Guarantees are met
- Complete and closeout project

Cliffside Steam Station Unit 5 FGD

- Complete stack concrete foundation
- Complete site preparation and mass soil excavation activities
- Complete Absorber, Reagent Prep and Dewatering Area concrete foundations
- Complete stack shell and strip formwork
- Complete new site Entrance Bridge
- Mobilize stack liner contractor and begin fabrication
- Begin structural steel erection for Absorber, Reagent Prep and Dewatering Area structures
- Begin Absorber Vessel erection
- Begin delivery of Ball Mill equipment

Allen Steam Station SNCR, Unit 5

- Complete installation and commissioning of SNCR equipment in preparation for operation in summer 2008

Dan River Steam Station Burners, Unit 1

- Perform tests to verify contract Performance Guarantees are met

Marshall Steam Station SNCR, Unit 2

- Complete permanent front wall injectors installation and performance testing/tuning of SNCR equipment

Riverbend Steam Station SNCR, Unit 4

- Complete Ammonia Monitoring System tuning

Riverbend Steam Station SNCR, Unit 5

- Complete Ammonia Monitoring System tuning

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.

Cliffside Steam Station Unit 5 FGD

- Landfill Construction Plan application anticipated September 2008

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

No additional equipment related testing occurred in 2007. The SNCR and SCR tests that occurred in prior years that were used in evaluating technology selections are repeated in this 2008 report for reference.

Allen Steam Station SNCR, Unit 1

- SNCR Equipment installation was completed in May 2003 followed by equipment acceptance testing in late 2003. During this test run, it was determined that the SNCR system met all commercial performance guarantees with approximately a 25% reduction in NO_x with ammonia slip of less than 5 ppm at full load.
- During the 2004 ozone season, Allen Unit 1 achieved a 0.162# NO_x/MMBTU outlet rate, 5% better than the 0.17#/MMBTU target established for the unit.

Belews Creek Steam Station SCR

- SCR Equipment installation was completed in 2003 in support of the EPA/SIP Call requirements for NO_x reduction. While Belews Creek had operational problems in the first half of the 2004 ozone season, many of these issues were addressed on Belews Creek Unit 1 by August, 2004. Subsequently, tests performed during the months of August and September showed that when the SCR Equipment was in service during this time, emissions averaged 0.07# NO_x/MMBTU

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 2007 calendar year, **33,012.9** tons of NO_x and **223,096.9** tons of SO₂ were emitted from the North Carolina based Duke Energy Carolinas coal-fired units located in North Carolina and subject to the emissions limitations set out in G.S. 143-215.107D.

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

No emissions allowances have been acquired by Duke Energy Carolinas 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 Energy Carolinas Compliance for NC Clean Air Legislation as of 4/1/2008
(Exhibit A)

		NO _x						
		2007 Compliance			2009 Compliance			
Facility	Unit	Technology	Operational Date	Actual Rate #/MMBTUs	Tons	Expected Rate #/MMBTUs	Tons	
Allen	1	SNCR	2003	0.176	854	0.170	931	
Allen	2	SNCR	2007	0.172	822	0.170	970	
Allen	3	SNCR	2005	0.174	1,428	0.180	1,492	
Allen	4	SNCR	2006	0.192	1,500	0.180	1,641	
Allen	5	SNCR	2008	0.223	1,837	0.180	1,537	
Belews Creek	1	SCR	2003	0.047	1,308	0.060	2,384	
Belews Creek	2	SCR&Burners	2004	0.063	2,122	0.060	1,838	
Buck	3	Burners	2007	0.255	301	0.270	410	
Buck	4	Burners	2007	0.308	222	0.300	244	
Buck	5	SNCR	2006	0.156	582	0.160	651	
Buck	6	SNCR	2006	0.159	542	0.160	653	
Cliffside	1	Tuning Only	2004	0.417	235	0.430	209	
Cliffside	2	Tuning Only	2004	0.380	279	0.410	216	
Cliffside	3	Tuning Only	2004	0.376	479	0.410	496	
Cliffside	4	Tuning Only	2004	0.403	512	0.410	506	
Cliffside	5	SCR	2002	0.065	998	0.062	1,157	
Dan River	1	Burners	2008	0.342	465	0.250	386	
Dan River	2	Burners	2006	0.231	372	0.250	436	
Dan River	3	Burners	2006	0.219	684	0.210	812	
Marshall	1	SNCR	2006	0.210	5,329	0.200	5,136	
Marshall	2	(combined stack)	2007					
Marshall	3	SNCR/SCR ¹	2005/2009	0.218	5,056	0.061	1,412	
Marshall	4	SNCR	2007	0.204	4,862	0.200	4,671	
Riverbend	4	SNCR	2007	0.248	488	0.190	464	
Riverbend	5	SNCR&Burners	2008	0.241	473	0.190	450	
Riverbend	6	SNCR&Burners	2006	0.213	603	0.180	652	
Riverbend	7	SNCR	2006	0.216	664	0.180	689	
Expected Total:					33,013		30,442	
Compliance Limit:					35,000		31,000	

¹ SNCR Technology in service on Marshall Unit 3 expected be replaced by SCR Technology in 2009 in support of 8-hour ozone attainment demonstration in the Charlotte region. Similar to other SCR additions to comply with other laws besides the North Carolina Clean Air Legislation, costs associated with this Marshall Unit 3 SCR project are not "environmental compliance costs" within the meaning of that term as used in the North Carolina Clean Air Legislation.

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

Expected Duke Energy Carolinas Compliance for NC Clean Air Legislation as of 4/1/2008
(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	2009	0.545	2,987	0.150	821			
Allen	2	Scrubber	2009	0.545	3,112	0.150	790			
Allen	3	Scrubber	2009	0.941	8,023	0.150	1,372			
Allen	4	Scrubber	2009	0.809	7,378	0.150	1,447			
Allen	5	Scrubber	2009	0.611	5,368	0.150	1,277			
Belews Creek	1	Scrubber	2008	0.150	5,960	0.150	5,586			
Belews Creek	2	Scrubber	2008	0.150	4,594	0.150	4,850			
Buck	3			1.400	2,127	0.000	0			
Buck	4			1.400	1,140	0.000	0			
Buck	5			1.400	5,699	1.400	5,529			
Buck	6			1.400	5,712	1.400	5,484			
Cliffside	1			1.600	778	0.000	0			
Cliffside	2			1.600	845	0.000	0			
Cliffside	3			1.600	1,934	0.000	0			
Cliffside	4			1.600	1,973	0.000	0			
Cliffside	5	Scrubber	2010	1.600	30,862	0.150	2,974			
Cliffside	6	Scrubber	2011		0	0.080	2,074			
Dan River	1			1.400	2,162	1.400	443			
Dan River	2			1.400	2,444	1.400	523			
Dan River	3			1.400	5,410	1.400	1,855			
Marshall	1	Scrubber	2007	0.150	3,951	0.150	3,939			
Marshall	2	(combined stack)	2007							
Marshall	3	Scrubber	2007	0.150	3,530	0.150	3,531			
Marshall	4	Scrubber	2006	0.150	3,503	0.150	3,489			
Riverbend	4			1.550	3,785	1.550	3,190			
Riverbend	5			1.550	3,669	1.550	2,932			
Riverbend	6			1.550	5,610	1.550	4,989			
Riverbend	7			1.550	5,932	1.550	5,222			
Expected Total:					128,488	62,318				
Compliance Limit:					150,000	80,000				

Expected Duke Energy Carolinas Compliance Costs for NC Clean Air Legislation as of 4/1/2008
(Exhibit C)

Facility	Unit(s)	Technology	Operational Date	Spent to Date								Remaining		Project Total (\$000)
				2001 (\$000)	2002 (\$000)	2003 (\$000)	2004 (\$000)	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008-2010 (\$000)			
Allen	1-5	Scrubber	2009	\$0.9	(\$0.9)	\$1,099.8	(\$11.8)	\$5,348.3	\$62,752.8	\$209,063.2	\$224,716.3	\$502,988.7		
Belews Creek	1-2	Scrubber	2008	\$0.0	\$0.0	\$1,121.3	\$5,999.1	\$106,433.5	\$250,648.5	\$128,058.2	\$50,204.2	\$542,464.8		
Cliffside	5	Scrubber	2010	\$0.0	\$0.0	\$978.5	\$287.5	\$112.0	\$3,175.2	\$57,777.9	\$223,678.9	\$286,009.9		
Marshall	1-4	Scrubber	2007	\$0.0	\$0.0	\$10,213.7	\$92,096.3	\$218,129.8	\$74,162.8	\$23,632.0	(\$390.0)	\$417,844.6		
Allen	1	SNCR	2003	\$177.3	\$162.4	\$2,884.1	\$364.9	\$0.0	\$0.0	\$0.0	\$0.0	\$3,588.7		
Allen	2	SNCR	2007	\$0.0	\$0.0	\$0.0	\$0.0	\$239.3	\$2,710.6	\$2,331.9	\$11.5	\$5,293.4		
Allen	3	SNCR	2005	\$0.0	\$0.0	\$215.7	\$2,584.1	\$4,091.5	\$32.5	\$0.0	\$0.0	\$6,923.9		
Allen	4	SNCR	2006	\$0.0	\$0.0	\$0.0	\$217.9	\$1,122.2	\$4,258.0	\$170.9	\$0.0	\$5,769.0		
Allen	5	SNCR	2008	\$0.0	\$0.0	\$98.9	\$164.6	\$122.3	\$22.7	\$3,564.6	\$3,043.5	\$5,612.9		
Buck	3	Burner	2007	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$614.5	\$2,160.9	\$0.0	\$4,179.1		
Buck	3	Classifier	2007	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$216.0	\$0.0	\$216.0		
Buck	4	Burner	2007	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$358.3	\$1,882.2	\$0.7	\$2,241.1		
Buck	4	Classifier	2007	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$93.1	\$0.0	\$93.1		
Buck	5	SNCR	2006	\$0.0	\$0.0	\$0.0	\$268.2	\$345.9	\$4,836.8	\$182.7	\$90.4	\$5,723.9		
Buck	6	SNCR	2006	\$0.0	\$0.0	\$0.0	\$265.8	\$335.3	\$3,814.2	(\$685.2)	(\$28.8)	\$3,701.4		
Dan River	1	Burner	2008	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1,560.3	\$1,490.3	\$3,050.6		
Dan River	1	Classifier	2008	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$124.4	\$0.0	\$124.4		
Dan River	2	Burner	2006	\$0.0	\$0.0	\$0.0	\$0.0	\$775.4	\$1,693.6	\$238.8	\$0.0	\$2,707.8		
Dan River	2	Classifier	2005	\$0.0	\$0.0	\$0.0	\$0.0	\$130.8	\$0.0	\$0.0	\$0.0	\$130.8		
Dan River	3	Burner	2006	\$7.5	\$162.3	\$22.2	\$512.8	\$679.0	\$1,441.4	\$377.2	\$0.0	\$3,202.4		
Dan River	3	Classifier	2005	\$0.0	\$0.0	\$0.0	\$0.0	\$184.3	\$0.0	\$0.0	\$0.0	\$184.3		
Marshall	1	SNCR	2006	\$0.0	\$0.0	\$0.8	\$167.2	\$1,418.4	\$2,106.3	\$181.7	\$0.0	\$3,874.4		
Marshall	2	SNCR	2007	\$0.0	\$0.0	\$197.6	\$185.4	\$778.3	\$2,760.7	\$1,382.3	\$404.6	\$5,708.8		
Marshall	3	SNCR	2005	\$0.0	\$0.0	\$1,577.4	\$652.1	\$2,042.4	\$32.0	\$0.0	\$0.0	\$4,303.8		
Marshall	4	SNCR	2007	\$0.0	\$0.0	\$0.0	\$0.0	\$43.3	\$2,613.6	\$494.2	\$0.0	\$3,151.0		
Riverbend	4	SNCR	2007	\$0.0	\$0.0	\$0.0	\$45.6	\$474.3	\$1,082.2	\$1,981.8	(\$30.8)	\$3,553.1		
Riverbend	5	Burner	2005	\$362.8	\$284.3	\$2.8	\$2,313.4	\$180.0	\$0.0	\$0.0	\$0.0	\$3,143.3		
Riverbend	5	Classifier	2005	\$0.0	\$0.0	\$0.0	\$159.6	\$0.0	\$0.0	\$0.0	\$0.0	\$159.6		
Riverbend	5	SNCR	2008	\$0.0	\$0.0	\$0.0	\$1.5	\$321.7	\$1,474.6	\$2,586.5	\$210.0	\$4,594.3		
Riverbend	6	Burner	2005	\$144.0	\$416.1	\$12.2	\$510.4	\$2,096.4	\$0.0	\$0.0	\$0.0	\$3,179.1		
Riverbend	6	Classifier	2005	\$0.0	\$0.0	\$0.0	\$0.0	\$189.4	\$0.0	\$0.0	\$0.0	\$189.4		
Riverbend	6	SNCR	2006	\$0.0	\$0.0	\$0.0	\$0.0	\$340.3	\$3,454.1	\$503.7	\$0.0	\$4,299.7		
Riverbend	7	SNCR	2006	\$0.0	\$0.0	\$0.0	\$48.5	\$485.8	\$3,939.0	\$520.9	\$0.0	\$4,994.1		
Subtotals:				\$692.4	\$1,024.2	\$18,424.9	\$106,834.5	\$346,420.0	\$427,984.4	\$438,400.1	\$503,401.0	\$1,843,181.5		

NC Clean Air Legislation program forecast¹:

¹ The NC Clean Air Legislation program forecast excludes AFUDC associated with non-amortized capital expenditures

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 Energy Carolinas, LLC; 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
Director, Environmental and Legislative Affairs

March 27, 2008

Date

Subscribed and sworn to before me,
this 27th day of March, 2008.

Maria Edwards
NOTARY PUBLIC



My commission expires: 3/2/2013

CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Carolinas, LLC's Annual Update in Docket No. E-7, Sub 718, has been served by electronic mail (e-mail), hand delivery or by depositing a copy in the United States Mail, first class postage prepaid, properly addressed to parties of record.

This the 27th day of March, 2008.

BY: George T. Everett
George T. Everett
Director Environmental/Legislative Affairs



March 31, 2008

FILED

MAR 31 2008

Chief's Office
N.C. Utilities Commission

Ms. Renne Vance
Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, NC 27699-4325

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

Dear Ms. Vance:

Progress Energy Carolinas, Inc. submits the attached report for calendar year 2007 regarding the status of compliance with the provisions of the North Carolina Clean Smokestacks Act. Section 9(i) of the Act requires that an annual report of compliance progress be submitted to the Commission by April 1 of each year for the previous calendar year.

Very truly yours,

Len S. Anthony (by dls)
Len S. Anthony
General Counsel-Progress Energy Carolinas

LSA:mhm

Attachment

232822



March 31, 2008

FILED
MAR 31 2008
CLERK OF SUPERIOR COURT
N.C. DEPARTMENT OF ENVIRONMENT & NATURAL RESOURCES

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

Dear Secretary Ross: *Bill*

Progress Energy Carolinas, Inc. (PEC, Company) submits the attached report for calendar year 2007 regarding the status of its compliance with the provisions of the North Carolina Clean Smokestacks Act (Act).

As you know, 2007 was a significant year for the Clean Smokestacks Act – the first year in which the nitrogen oxides (NOx) emissions cap became effective. During 2007, we completed installation of the NOx controls necessary to meet our limit. As the report shows, the Company's annual NOx emissions from its North Carolina coal-fired units totaled less than 25,000 tons. We have developed plans and processes to assure that we continue to meet the requirement.

We regularly review and refine our compliance strategy, weighing a number of factors such as system load projections, expected fuel selection, available control equipment and anticipated performance and costs of emissions controls. Because of the increased cost for Furnace Sorbent Injection (FSI) technology, continuing development of dry scrubber technology, changes in the fuel markets, long-term impact of (Clean Air Interstate Rule) requirements and continuing evolution of our resource plans (including the impact of Senate Bill 3), we are studying the compliance options for Cape Fear 5 and 6 to determine whether FSI still represents the most cost-effective long-term compliance option. This study, to be completed later this year, will reflect the results of the Robinson FSI testing and the latest available information regarding FSI and dry scrubber costs and performance. At this time, we are maintaining an option for either FSI or dry scrubber technology for Cape Fear 5 and 6, whichever our studies indicate to be most cost-effective.

We appreciate the excellent work of the Department staff, particularly those in the Air Quality and Water Quality divisions, who support our efforts to complete the projects in a timely manner to assure compliance with the Act's requirements. We look forward to continuing our positive working relationship to facilitate fulfillment of the Company's obligations with this important law.

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

Sincerely,

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

Caroline Choi
Director, Energy Policy and Strategy

c: North Carolina Utilities Commission
Keith Overcash, DAQ

Progress Energy Carolinas, Inc. (PEC)
North Carolina Clean Smokestacks Act
Calendar Year 2007 Progress Report

On June 20, 2002, North Carolina Senate Bill 1078, also known as the "Clean Smokestacks Act," 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), which is now incorporated as Section 62-133.6(i) of the North Carolina General Statutes, requires that an annual progress report regarding compliance with the Clean Smokestacks Act be submitted on or before April 1 of each year. The report must contain the following elements, taken verbatim from the statute:

1. A detailed report on the investor-owned public utility's plans for meeting the emissions limitations set out in G.S. 143-215.107D.
2. The actual environmental compliance costs incurred by the investor-owned public utility in the previous calendar year, including a description of the construction undertaken and completed that year.
3. The amount of the investor-owned public utility's environmental compliance costs amortized in the previous calendar year.
4. An estimate of the investor-owned public utility's environmental compliance costs and the basis for any revisions of those estimates when compared to the estimates submitted during the previous year.
5. A description of all permits required in order to comply with the provisions of G.S. 143-215.107D for which the investor-owned public utility has applied and the status of those permits or permit applications.
6. A description of the construction related to compliance with the provisions of G.S. 143-215.107D that is anticipated during the following year.
7. A description of the applications for permits required in order to comply with the provisions of G.S. 143-215.107D that are anticipated during the following year.
8. The results of equipment testing related to compliance with G.S. 143-215.107D.
9. The number of tons of oxides of nitrogen (NO_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.

Under G.S. § 143-215.107D(f), "each investor-owned public utility...may determine how it will achieve the collective emissions limitations imposed by this section." PEC originally submitted its compliance plan on July 29, 2002. Appendix A contains an updated version of this plan, effective April 1, 2008. We continue to evaluate various design, technology and generation options that could affect our future compliance plans.

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.

In 2007, Progress Energy Carolinas, Inc. incurred actual capital costs of \$330,124,000.

Asheville

Construction was completed, and Asheville Unit 1 SCR was successfully placed in service in May 2007. This completed the Clean Smokestacks Act work planned for the Asheville plant.

Lec

For Unit 3, we completed tuning of the Rotamix equipment for NOx emissions control and placed the system in service in March 2007. This completed the Clean Smokestacks Act work planned for the Lee plant.

Mayo

In 2007, we executed contracts for the wastewater treatment bioreactor equipment and engineering, and initiated work on the wastewater treatment systems. With respect to wet scrubber scope of work, engineering, procurement and construction activities continued throughout 2007. Major milestones include: completed construction of the chimney shell; initiated installation of the absorber tower internals; received onsite a majority of absorber recycle pump, oxidation air blower, ID Fan and ball mill pieces/parts; and obtained authorization to construct the wastewater treatment facility. At year end, the Mayo scrubber project was 41% complete.

Roxboro

Construction work on the scrubber project continued for all four units in 2007. Specific project activities include the following:

Common

In the common area, construction of the limestone handling and preparation, gypsum dewatering and handling, oxidation air system, make-up and service water system, and

major piping was completed and commissioned in support of Unit 2 scrubber startup in April. Work was also started on installation of the limestone silo. Limestone conveyors and stack-out conveyors were completed as well.

Unit 1

Significant construction included completion of foundations for the booster fan and duct supports. Fabrication of the duct was also completed. Erection of the absorber shell was completed in October, and assembly of the absorber internals began. Erection of the pump-house and electrical building structural steel started in September 2007 and is planned to be completed in the first quarter of 2008. We also started installation of the recycle pumps, bleed pumps, and booster fans.

Unit 2

Significant milestones for 2007 include completion of the duct tie-in outage in April and the successful startup of the Unit 2 scrubber on April 24, 2007.

Unit 3

Significant construction included completion of the duct support and booster fan foundations, installation of the booster fans, and installation of duct support steel and duct work. The absorber erection was completed as well as installation of absorber internals and absorber hood/elbow. Commissioning began checkout of several systems in preparation for the April 2008 tie-in outage and scrubber startup.

Unit 4

The significant milestone was completion of the duct tie-in outage in December and the successful startup of the Unit 4 scrubber on December 1, 2007.

Wastewater Project

Significant construction activities included completion of the wastewater blow-down line, settling and flush ponds. Construction of the bio-reactor facility was started and completed in 2007. Commissioning activities started in December with the first two trains planned to be operational in early 2008. The remaining two trains are planned for commissioning later in the second quarter of 2008.

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

Progress Energy Carolinas, Inc. amortized \$33,881,190 in 2007.

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

Appendix B contains the capital costs incurred toward compliance with G.S. § 143-215.107D through 2007 and the projected costs for future years through 2013. The costs shown are the net costs to PEC, excluding the portion for which the Power Agency is

responsible. The estimated total capital costs, including escalation, are currently projected to be between \$1.5 and \$1.6 billion, with the current point estimate being \$1.546 billion. This represents an increase from the 2007 cost estimate of \$1.355 billion. Prior reports have discussed the cost impact of project scope changes and the impact of significant increases in the cost of materials and labor which have impacted construction projects across the Southeast. The current estimates continue to reflect those impacts as well as the impact of additional planning, especially with respect to the emission controls for Sutton Unit 3 and Cape Fear Units 5 and 6.

The current estimate for a dry scrubber at Sutton 3, while still conceptual, reflects the impact of more definitive site characteristics on the overall cost of the project. Space is at a premium at this site, the coastal location requires more stringent wind loading criteria, and the soil characteristics are quite different from what we have at our other plants where we have installed scrubbers. As these criteria are reflected in the conceptual design, we are seeing quantity increases (structural steel, concrete, and piping) due to the need for stronger foundations, increased structural steel, longer duct runs and other utilities than previously envisioned. To the extent that these increases can be quantified based on the limited engineering completed to date, the costs have been reflected in the current estimate.

In our last filing we noted that Furnace Sorbent Injection (FSI) technology offered a potentially more cost effective compliance option for our Cape Fear Units 5 and 6 and discussed our plans to test that technology at our Robinson Unit 1. Installation of the test unit at Robinson is nearing completion and the testing should begin this summer with operating results available by the end of the year. The engineering knowledge we have gained to date from the installation of the FSI test system at Robinson is being reflected in updated cost estimates for the installation of FSI technology at Cape Fear. One significant unknown regarding the use of this technology at Cape Fear is whether the precipitator will have to be replaced in order to maintain compliance with existing particulate emission limits. A final determination will require further engineering analysis and the benefit of test results from the Robinson demonstration. At this time, the estimate for Cape Fear Units 5 and 6 includes an allowance for replacement of the precipitator.

Because of the increased cost for FSI technology, continuing development of dry scrubber technology, changes in the fuel markets, the long term impact of the CAIR requirements, and continuing evolution of our resource plans (including the impact of Senate Bill 3), PEC has initiated a study to revisit the compliance options for Cape Fear 5 and 6. This study, to be completed later this year, will reflect the results of the Robinson FSI testing and the latest available information regarding FSI and dry scrubber costs and performance. At this time, we are maintaining an option for either FSI or dry scrubber technology, whichever our studies indicate to be most cost-effective.

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.

Progress Energy applied for the following permits in 2007:

Roxboro Plant

Air Permit

An update to the air permit for coal handling and limestone equipment was submitted on November 14, 2006. This request was approved on March 15, 2007.

A Notice for Intent to Construct for a diesel-fired emergency fire water pump was approved on February 8, 2007 and Air Quality Permit revision No. 01001T39 was issued on April 5, 2007.

Agency approval was received August 22, 2007 for our request for Alternative Method of Reporting of Annual Average Opacity for units equipped with Flue Gas Desulfurization.

A Renewal Title V Air Permit application was submitted on November 27, 2007. This renewal application met the requirements of the Construction Permit for the Flue Gas Desulfurization (FGD) System to submit a complete Title V Air Quality Permit Application on or before 12 months after commencing operation.

Mayo Plant

NPDES

A request for authorization to construct a Flue Gas Desulfurization (FGD) Wastewater Treatment System, submitted May 4, 2007, was approved and issued on November 28, 2007.

NPDES Permit modification approving our request for a mixing zone for chlorides was issued on December 14, 2007.

Erosion and Sediment Control Plan

Revision G. to the Erosion and Sediment Control Plan for the increase in disturbed land (from 35 acres to 98 acres) for the flue gas desulfurization system was submitted January 29, 2007 and was approved on April 12, 2007.

Lee Plant

Air Permit

A Title V Air Permit application was submitted on April 19, 2007 in accordance with permit requirements associated with the Low NOx Burner installation. This application was required by the Construction Permit to be submitted within 12 months after

commencing operation of the low-NOx Burner.

NPDES

The NPDES Permit revision for the Rotamix Urea Injection System on Unit 3 was issued on March 23, 2007.

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.

Mayo

During 2008, construction activities will focus on completion of the chimney lining and installation of absorber internals. Concurrently, placement of ID fan foundations, placement of the wastewater treatment bioreactor cells, erection of structural steel, fabrication of field erected tanks, and installation of electrical and I&C will be completed. Engineering activities will continue, with the focus shifting to the wastewater treatment related scope of work. Starting in the summer, commissioning activities will intensify in preparation for the spring 2009 plant outage and subsequent mechanical completion and placement in service of the wet scrubber and wastewater treatment systems.

Roxboro

Common

For 2008, significant construction activities planned in the common area include completion of the railroad track installation, and final site grading and paving. Specific unit activities are described below:

Unit 1

Significant construction activities planned include completion of Unit 1 absorber internals, installation of the absorber hood/elbow, completion of the pump-house and electrical building, and installation of the booster fans and duct work. Commissioning is planning to start activities in June in preparation for the October tie-in outage.

Unit 3

Significant construction activities planned include completing electrical power and control cabling and the balance of commissioning activities in preparation for the April tie-in outage.

Unit 4

In service. Major activities include issue of as-built drawings, evaluation of performance, and conducting performance tests as needed.

Wastewater

Significant construction activities planned for the bio-reactor include completing

commissioning activities for the first two bio-reactor trains with a continuation of commissioning activities on the remaining two bio-reactor trains in the 2nd quarter.

- 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.**

General

We appreciate the collaborative efforts the DAQ and DWQ staffs have made to assure our construction and installation schedules remain on track. However, the potential for longer permit processing times continue to be a serious concern for future projects. PEC will work collaboratively with the agency staff to prevent any delays from occurring.

The following permit applications and permit approvals are anticipated for 2008:

Roxboro Plant

Erosion and Sedimentation Control Plan

Plan revisions may be necessary as construction plans are further developed.

Mayo Plant

NPDES Permit

A request for authorization to construct a new oil/water separator was submitted on March 7, 2008 with a response expected by the end of April.

Erosion and Sedimentation Control Plan

Plan revisions may be necessary as construction plans are further developed.

Sutton Plant

Air Permit

An application for construction of a Dry Scrubber for Unit 3 is expected to be submitted during the fourth quarter 2008 with response expected in the second quarter 2009.

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

Performance testing of the SCR at Asheville Unit 1 was completed in October 2007. The testing indicated that the system met its performance guaranteed emissions rate of 0.04 lb NO_x/MMBtu.

Performance testing of the SNCR system at Lee Unit 3 was completed in March 2007. The testing demonstrated that the system met its performance guarantee of a 31% reduction in NO_x emissions over the load range of the unit.

Performance testing of the Scrubber at Roxboro Unit 2 was completed in September 2007. The testing confirmed that the scrubber achieved its performance guarantee of 97% SO₂ removal efficiency.

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 affected coal-fired PEC units have achieved a 59% reduction in NO_x and a 25% reduction in SO₂ since 2002. The total calendar year 2007 emissions from the affected coal-fired Progress Energy Carolinas units are:

NO_x 24,383 tons
SO₂ 147,242 tons

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

During 2007, PEC did not acquire any allowances as a result of compliance with the emission limitations set out in N.C. General Statute 143-215.107D.

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

There have been no additional requests for information from the North Carolina Utilities Commission or the Department of Environment and Natural Resources since the last report.

Appendix A

Progress Energy Carolinas, Inc's (PEC) Air Quality Improvement Plan Supplement

April 1, 2008

On June 20, 2002, Governor Easley signed into law SB1078, which caps emissions of nitrogen oxides (NOx) and sulfur dioxide (SO₂) from utility owned coal-fired power plants located in North Carolina. Under the law, G.S. § 143-215.107D, PEC's annual NOx emissions must not exceed 25,000 tons beginning in 2007 and annual SO₂ emissions must not exceed 100,000 tons beginning in 2009 and 50,000 tons beginning in 2013. These caps represent a 56% reduction in NOx emissions from 2001 levels and a 74% reduction in SO₂ emissions from 2001 levels for PEC.

PEC owns and operates 18 coal-fired units at seven plants in North Carolina. The locations of these plants are shown on Attachment 1. Under G.S. § 143-215.107D(f), "each investor-owned public utility...may determine how it will achieve the collective emissions limitations imposed by this section."

Nitrogen Oxides Emissions Control Plan

PEC has been evaluating and installing NOx emissions controls on its coal-fired power plants since 1995 in order to comply with Title IV of the Clean Air Act and the NOx SIP Call rule adopted by the Environmental Management Commission (EMC). Substantial NOx emissions reductions have been achieved (24,383 tons of NOx in 2007 compared with 112,000 tons in 1997), and compliance with the Clean Smokestacks Act's 25,000 ton cap was achieved in calendar year 2007. This target was achieved with a mix of combustion controls (which minimize the formation of NOx), such as low-NOx burners and over-fire air technologies, and post-combustion controls (which reduce NOx produced during the combustion of fossil fuel to molecular nitrogen), such as selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR) technologies.

Attachment 2 details PEC's North Carolina coal-fired electric generating units, their name plate generation capacity, and installed NOx control technologies.

Sulfur Dioxide Emissions Control Plan

PEC is installing wet flue gas desulfurization systems (FGD or "scrubbers") to remove 97% of the SO₂ from the flue gas at its Asheville, Roxboro and Mayo boilers. PEC is continuing its evaluation of the potential to use Furnace Sorbent Injection (FSI) technology at our Cape Fear Plant. Use of the FSI technology eliminates the need for a costly wastewater treatment system. We plan to test the FSI technology at PEC's Robinson Unit 1 beginning in summer 2008. Since Robinson Unit 1 is similar in design to the Cape Fear units, the Robinson test will indicate whether the use of this technology will be effective at Cape Fear. While PEC continues to evaluate the use of FSI at Cape

Fear, because of expected increased cost for Furnace Sorbent Injection (FSI) technology, continuing development of dry scrubber technology, changes in the fuel markets, the long term impact of the CAIR requirements and continuing evolution of our resource plans (including the impact of Senate Bill 3), we are re-evaluating all compliance options for Cape Fear 5 and 6.

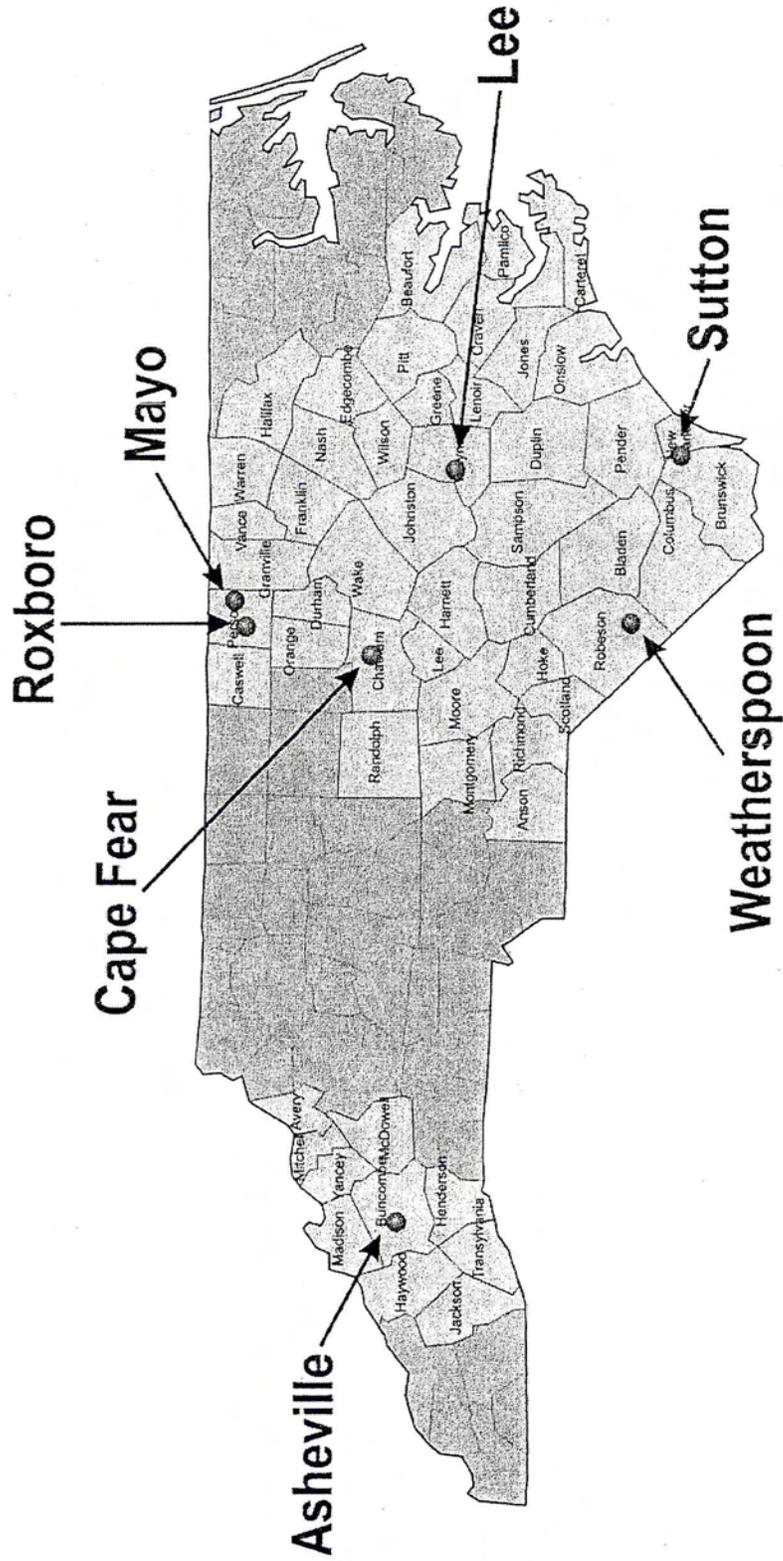
The current compliance plan also contemplates the use of a dry scrubber at Sutton Unit 3. A dry scrubber at that unit represents a more cost-effective compliance solution and also eliminates the need for a costly wastewater treatment system.

Wet scrubbers produce unique waste and byproduct streams. Issues related to wastewater permitting and solid waste disposal are being addressed for each site. PEC is treating the scrubber wastewater stream at the Asheville Plant using an innovative constructed wetlands treatment system to ensure compliance with discharge limits. A bioreactor technology will be used for the Roxboro and Mayo Plants

A contract has been executed with a gypsum product end-user that will construct a facility near the Roxboro Plant to use the synthetic gypsum produced by the Roxboro and Mayo Plants for the manufacture of drywall products. PEC also has entered into an agreement that enables PEC to market and sell synthetic gypsum produced at the Asheville Plant.

Attachment 3 details PEC's North Carolina coal-fired electric generating units, their summer net generation capability, installed SO₂ control technologies and those planned for installation. As technologies evolve or other circumstances change, a different mix of controls may be selected. Attachment 3 also projects annual SO₂ emissions on a unit-by-unit basis based on the energy demand forecast and expected efficiencies of the SO₂ emissions controls employed. These projections are based on the planned removal technologies and PEC's current fuel and operating forecasts. 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.

**Attachment 1: Location of PEC's Coal-Fired
Power Plants in North Carolina**



Attachment 2: PEC's 2008 NOx Control Plan for North Carolina Coal-fired Units

Unit	MW Rating	Control Technology	Operation Date ¹
Asheville 1	191	LNB/AEFLGR/SCR	2007
Asheville 2	185	LNB/OFA/SCR	
Cape Fear 5	144	ROFA/ROTAMIX	
Cape Fear 6	172	ROFA/ROTAMIX	
Lee 1	74	WIR	
Lee 2	77	LNB	2006
Lee 3	248	LNB/ROTAMIX	2007
Mayo 1	742	LNB/OFA/SCR	
Roxboro 1	369	LNB/OFA/SCR	
Roxboro 2	671	TFS2000/SCR	
Roxboro 3	705	LNB/OFA/SCR	
Roxboro 4	698	LNB/OFA/SCR	
Sutton 1	93	SAS	
Sutton 2	102	LNB	2006
Sutton 3	403	LNB/ROFA/ROTAMIX	
Weatherspoon 1	48		
Weatherspoon 2	49		
Weatherspoon 3	76	WIR	
Total	5,047		

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 urea to further reduce NOx
WIR = Underfire Air
TFS2000 = Combination Low-NOx Burner/Overfire Air
SAS = Separated Air Staging

¹ 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).

Attachment 3: PEC's 2008 SO₂ Control Plan for North Carolina Coal-Fired Units

Unit	MW Rating	Technology	Operation Date	Projected SO ₂ Tons, 2009 ¹	Projected SO ₂ Tons, 2013
Asheville 1	191	Scrubber	2005	296	333
Asheville 2	185	Scrubber	2006	280	352
Cape Fear 5	144	FSI	2011	6,791	3,634
Cape Fear 6	172	FSI	2012	8,274	4,330
Lee 1	74			2,947	2,902
Lee 2	77			2,694	2,671
Lee 3	248			9,906	9,265
Mayo 1	742	Scrubber	2009	7,183	1,602
Roxboro 1	369	Scrubber	2008	685	942
Roxboro 2	671	Scrubber	2007	1,048	1,235
Roxboro 3	705	Scrubber	2008	1,046	1,493
Roxboro 4	698	Scrubber	2007	976	1,394
Sutton 1	93			4,534	3,851
Sutton 2	102			5,381	4,429
Sutton 3	403	Scrubber	2012	19,614	884
Weatherspoon 1	48			1,628	1,138
Weatherspoon 2	49			1,583	1,214
Weatherspoon 3	76			2,997	2,792
Total	5,047			77,863	44,461

FSI = Furnace Sorbent Injection

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
PEC's Actual Costs Through 2007 and Projected Costs Through 2013
for Clean Smokestacks Act Compliance (in thousands)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Asheville 1 FGD	\$ 100	\$ 9,652	\$ 33,574	\$ 35,769	\$ 3,930	-\$ 1,850	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 81,175
Asheville 1 SCR	\$ 0	\$ 0	\$ 688	\$ 1,423	\$ 14,608	\$ 11,942	-\$ 262	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 28,400
Asheville 2 FGD	\$ 100	\$ 7,742	\$ 28,390	\$ 24,238	\$ 11,701	-\$ 1,543	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 70,629
Asheville FGD Common	\$ 467	\$ 0	\$ 0	\$ 0	\$ 0	-\$ 479	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	-\$ 12
Mayo 1 FGD	\$ 187	\$ 0	\$ 276	\$ 644	\$ 22,794	\$ 104,886	\$ 70,996	\$ 34,623	\$ 0	\$ 0	\$ 0	\$ 0	\$ 234,405
Roxboro FGD Common	\$ 419	\$ 5,560	\$ 10,030	\$ 51,717	\$ 72,934	\$ 36,491	\$ 11,893	\$ 2,208	\$ 0	\$ 0	\$ 0	\$ 0	\$ 191,252
Roxboro 1 FGD	\$ 0	\$ 0	\$ 0	\$ 3,135	\$ 12,164	\$ 32,841	\$ 42,475	\$ 3,791	\$ 0	\$ 0	\$ 0	\$ 0	\$ 94,406
Roxboro 2 FGD	\$ 120	\$ 3,574	\$ 6,848	\$ 30,782	\$ 46,014	\$ 18,975	\$ 573	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 106,885
Roxboro 3 FGD	\$ 0	\$ 0	\$ 244	\$ 10,628	\$ 36,661	\$ 49,985	\$ 13,555	\$ 1,275	\$ 0	\$ 0	\$ 0	\$ 0	\$ 112,349
Roxboro 4 FGD	\$ 0	\$ 0	\$ 0	\$ 9,075	\$ 28,550	\$ 57,610	\$ 2,704	\$ 916	\$ 0	\$ 0	\$ 0	\$ 0	\$ 98,854
Cape Fear 5 FSI	\$ 0	\$ 0	\$ 0	\$ 0	\$ 88	\$ 0	\$ 0	\$ 7,752	\$ 42,383	\$ 11,914	\$ 0	\$ 0	\$ 62,137
Cape Fear 6 FSI	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 39,636	\$ 27,191	\$ 0	\$ 66,828
Lee 3 Rotamix	\$ 0	\$ 0	\$ 0	\$ 198	\$ 6,424	\$ 600	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 7,222
Sutton 3 FGD	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 760	\$ 49,926	\$ 152,772	\$ 111,683	\$ 958	\$ 316,100
Lee 2 LNB	\$ 0	\$ 0	\$ 133	\$ 273	\$ 1,886	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 2,292
Sutton 2 LNB	\$ 0	\$ 0	\$ 0	\$ 236	\$ 1,900	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 2,136
Total without Wastewater	\$ 1,393	\$ 26,528	\$ 80,184	\$ 168,118	\$ 259,654	\$ 309,456	\$ 141,934	\$ 51,324	\$ 92,309	\$ 204,323	\$ 138,875	\$ 958	\$ 1,475,056
Asheville WWT	\$ 0	\$ 0	\$ 0	\$ 12,365	\$ 1,289	-\$ 306	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 13,348
Mayo WWT	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 4,042	\$ 15,059	\$ 3,120	\$ 0	\$ 0	\$ 0	\$ 0	\$ 22,221
Roxboro WWT	\$ 0	\$ 0	\$ 0	\$ 791	\$ 11,965	\$ 16,932	\$ 5,203	\$ 142	\$ 0	\$ 0	\$ 0	\$ 0	\$ 35,033
Sutton WWT	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Total Wastewater Treatment	\$ 0	\$ 0	\$ 0	\$ 13,156	\$ 13,253	\$ 20,668	\$ 20,262	\$ 3,263	\$ 0	\$ 0	\$ 0	\$ 0	\$ 70,601
Total NC Clean Smokestacks Act	\$ 1,377	\$ 26,528	\$ 80,187	\$ 181,274	\$ 272,819	\$ 330,124	\$ 162,196	\$ 54,587	\$ 92,309	\$ 204,323	\$ 138,875	\$ 958	\$ 1,545,657
Estimated AFUDC							\$ 7,029	\$ 3,877	\$ 4,571	\$ 18,214	\$ 27,760	\$ 0	\$ 60,919

Notes: Costs reflect the Power Agency contribution. Historic year costs are actual, current year costs are projected, and future year costs are escalated.

- SO2 Controls Design and Construction
- SO2 Controls In-service
- NOx Controls Design and Construction
- NOx Controls In-service

Appendix C PEC's Clean Smokestacks Act Compliance Plan

Plant Project	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 FSI												
Cape Fear 6 FSI												
Lee 3 Rotamix												
Sutton 3 FGD												
Lee 2 LNB												
Sutton 2 LNB												

	SO2 Controls Design and Construction
	SO2 Controls In-service
	NOx Controls Design and Construction
	NOx Controls In-service



**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

FILED
MAY 20 2008
Clerk's Office
N.C. Utilities Commission

May 20, 2008

Ms. Renné Vance, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4325

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

Dear Ms. Vance:

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 Carolinas, LLC ("Duke") in Compliance with Session Law 2002-4 ("the Clean Smokestacks Act" or "the Act"). This report presents the results of the Public Staff's review of environmental compliance costs incurred and amortized by Duke through the end of calendar year 2007.

Inasmuch as Duke is not required to amortize any environmental compliance costs above the \$1,050,000,000 amortized as of December 31, 2007, the Public Staff requests the Commission to confirm that its audit and reporting responsibilities with respect to the costs incurred and amortized by Duke in compliance with the Act have been fulfilled with the filing of this report.

Sincerely,

Antoinette R. Wike

Antoinette R. Wike
Chief Counsel

ARW/clp

Enclosure

cc: Robert W. Kaylor
Lara Nichols

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 CAROLINAS, LLC,
IN COMPLIANCE WITH SESSION LAW 2002-4

Docket No. E-7, Sub 718

May 20, 2008

Section 14 of Session Law 2002-4 ("the Clean Smokestacks Act" or "the Act") requires the Department of Environment and Natural Resources ("DENR") and the Utilities Commission ("Commission") to report, by June 1 of each year, on the implementation of the Act to the Environmental Review Commission and the Joint Legislative Utility Review Committee. The May 30, 2003, report of DENR and the Commission states that the Public Staff will audit the books and records of the investor owned utilities on an ongoing basis in regard to the costs incurred and amortized in compliance with the Act. The Public Staff has undertaken such a review, focusing on the verification of costs related to complying with the Act, the amortization of those costs, and the operating results of emission reduction equipment installed by Duke Energy Carolinas, LLC ("Duke"). This report presents the Public Staff's findings for the twelve months ended December 31, 2007.

I. Compliance Plan Summary

Duke's original plan to install Selective Non-catalytic Reduction ("SNCR") and burner technology to remove NO_x and flue-gas desulfurization technology ("FGD" or "scrubbers") to remove SO₂ to comply with the Act remains practically the same with only minor changes to the compliance schedule and plan. With regard to the emission requirements for NO_x, Duke indicated that within the last year it completed installation of and placed in service additional SNCRs at the Allen and Marshall Plants. A final SNCR installation at the Allen Plant planned for the spring of 2008, as well as some final project tasks at other plants, will complete the NO_x control projects needed for compliance. For SO₂ emissions compliance during 2007, Duke declared operational the scrubbers on Units 1-3 at the Marshall Plant. Currently, all four units at the Marshall Plant have been retrofitted with scrubbers and are operational. Work on the scrubber controls continues at the Allen Plant with plans for both absorbers to be ready in late 2008 to move into the commissioning stage, with commercial operation of the entire FGD system anticipated for mid-2009. The scrubbers on Units 1 and 2 at the Belews Creek Station were commissioned in early 2008.

II. Environmental Compliance Costs

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

In its Compliance Plan Annual Update for 2008 ("2008 Compliance Update"), Duke reported that its actual environmental compliance costs in calendar year 2007 were \$438,400,080. The cumulative environmental compliance costs incurred by Duke through 2007 were \$1,339,780,565, as follows:

Year 2001	\$ 692,433
Year 2002	1,024,223
Year 2003	18,424,921
Year 2004	106,834,479
Year 2005	346,420,000
Year 2006	427,984,429
Year 2007	<u>438,400,080</u>
Total	\$1,339,780,565

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

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

Direct Labor	\$ 4,652,830
Labor Loads	1,419,588
Contracts	413,489,432
Materials	7,792,527
Overheads	878,097
Other	<u>10,167,606</u>
Total	\$438,400,080

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

Duke has estimated its environmental compliance costs at \$1,843,181,500, as set forth on Exhibit C in its 2008 Compliance Update. The current total project estimate represents an increase of \$343,181,500 or 23% over the original estimate of \$1,500,000,000, as set forth in G.S. 62-133.6(b). According to Duke personnel, several factors have contributed to the increase in the estimate, including an industry-wide

ramp-up of similar environmental compliance work nationwide and its effect on labor availability, and increases in the prices for materials.

III. Amortization of Costs

In Section 9 of the Act [G.S. 62-133.6(b)], the investor owned utilities are allowed to accelerate the recovery of their estimated environmental compliance costs over a seven-year period, beginning January 1, 2003, and ending December 31, 2009. The statute requires that a minimum of 70% of the environmental compliance costs be amortized before December 31, 2007, when the rate freeze period expires. In Duke's case, this amount is \$1,050,000,000. The annual levelized amount is \$214,285,714. The maximum amount that can be amortized in any given year is 150% of the annual levelized environmental compliance costs or \$321,428,571.

Using the protocols established by the Act and subsequent Commission Orders, Duke reported that its environmental compliance costs amortization for 2007 was \$187,334,900. The Public Staff reviewed Duke's quarterly amortization filings and supporting journal entries and concluded that the amounts appear to be accurate. The cumulative amortization as of December 31, 2007, was \$1,050,000,000.

IV. Contracts

The Public Staff reviewed an Engineering, Procurement and Construction Contract with Shaw, Stone & Webster for the construction of the Unit 5 Scrubber at Cliffside steam Station. The Public Staff also reviewed a contract with Aistom Power, Inc. for the engineering, fabrication and delivery of the Air Quality Control System for Cliffside Unit 5.

V. Site Inspections

On May 6, 2008, the Public Staff conducted an inspection of Duke's Allen Steam Station in Belmont, North Carolina. The construction and commissioning of the Unit 2 SNCR was completed during 2007, and the Unit 5 SNCR is expected to be completed in 2008. The scrubbers for Units 1-5 are currently under construction and are expected to be operational in 2009. All of the related facilities (reagent storage and processing, wastewater disposal system, and byproduct removal) for the scrubbers are also under construction.

The Public Staff will continue to inspect other facilities as Duke implements its compliance plan.

VI. Commission Proceedings

Subsection (d) of G.S. 62-133.6 requires the Commission to hold a hearing to review the environmental compliance costs set out in subsection (b) and to determine the annual cost recovery the utility should be required to amortize during calendar years

2008 and 2009. This subsection further requires the Commission to consult with the Secretary of DENR as to whether the utility's actual and proposed modifications and permitting and construction schedule are adequate to achieve the emissions limitations set out in the Act.

Subsection (f) of G.S. 62-133.6 provides that in any general rate case initiated to adjust rates effective on and after January 1, 2008, the utility shall be allowed to recover its actual environmental compliance costs in accordance with provisions of Chapter 62 concerning rates of public utilities. In 2007, the Commission initiated a general rate case for Duke pursuant to G.S. 62-133 along with the proceeding required by G.S. 62-133.6(d).

In an Order issued December 20, 2007, in Docket No. E-7, Subs 828 and 829, the Commission found that Duke's environmental compliance costs through December 31, 2006, were reasonably and prudently incurred. The Commission also approved a stipulation providing for the inclusion in Duke's rate base of all reasonable and prudent unamortized environmental compliance costs as the projects are closed to plant in service, with such costs being allocated among all jurisdictions and all customer classes. Finally, the Commission found Duke's actual and proposed modifications and permitting and construction schedule adequate to achieve the emissions limitations set out in the Act.



**NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION**

May 20, 2008

FILED
MAY 20 2008
Clerk's Office
N.C. Utilities Commission

Ms. Renné Vance, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4325

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

Dear Ms. Vance:

Enclosed herewith for filing in the above-referenced docket are twenty-one (21) copies of the Report of the Public Staff on Costs Incurred and Amortized by Progress Energy Carolinas, Inc. ("PEC"), in Compliance with Session Law 2002-4. This report presents the results of the Public Staff's review of environmental compliance costs incurred and amortized by PEC through the end of calendar year 2007.

Sincerely,

Antoinette R. Wike
Chief Counsel

ARW/clp

Enclosure

cc: Len S. Anthony

Executive Director
733-2435

Communications
733-2810

Economic Research
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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 20, 2008

Section 14 of Session Law 2002-4 ("the Clean Smokestacks Act" or "the Act") requires the Department of Environment and Natural Resources ("DENR") and the Utilities Commission to report, by June 1 of each year, on the implementation of the Act to the Environmental Review Commission and the Joint Legislative Utility Review Committee. The May 30, 2003, report of DENR and the Commission states that the Public Staff will audit the books and records of the investor owned utilities on an ongoing basis in regard to the costs incurred and amortized in compliance with the Act. The Public Staff has undertaken such a review, focusing on the verification of costs related to complying with the Act, the amortization of those costs, and the operating results of emission reduction equipment installed by Progress Energy Carolinas, Inc. ("PEC"). This report presents the Public Staff's findings for the twelve months ended December 31, 2007.

I. Compliance Plan Summary

PEC's original plan to install Selective Catalytic Reduction ("SCR") technology to remove NO_x and flue-gas desulfurization technology ("scrubbers") to remove SO₂ to comply with the Act remains practically the same with minor changes being made to the compliance schedule and plan.

The SCR at Asheville Unit 1 was placed into operation in May 2007. This completed the planned compliance work at the Asheville Plant.

The Roxboro and Mayo scrubber construction projects continue with substantial work being done at both facilities. The scrubbers for Roxboro Units 2, 3, and 4 started operation in April 2007, May 2008, and December 2007, respectively. The Roxboro Unit 1 scrubber is expected to be operational by December 2008.

Lee Unit 3 began operation of a "Rotamix" system in March 2007. This completed the planned compliance work at the Lee Plant.

In previous filings, PEC indicated that it is considering the installation of Furnace Sorbent Injection ("FSI") on Cape Fear Units 5 and 6. The FSI technology is currently being installed at the Robinson Plant in South Carolina, and a determination of its use at Cape Fear has not yet been finalized.

II. Environmental Compliance Costs

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

In its calendar year 2007 Progress Report ("2007 Report"), PEC reported that its actual environmental compliance costs in calendar year 2007 were \$330,123,942. The cumulative environmental compliance costs incurred by PEC through 2007 are \$890,534,578, as follows:

Year 2002	\$ 1,391,731 ¹
Year 2003	26,604,199
Year 2004	78,321,742
Year 2005	181,273,566
Year 2006	272,819,398
Year 2007	<u>330,123,942</u>
Total	\$890,534,578 ²

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

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

¹ Per Appendix B of the 2007 Report, costs for 2002, 2003, and 2004 are slightly different from the costs reported for those years in previous reports. For 2004, a majority of the difference relates to a Company adjustment to include Asheville wastewater treatment ("WWT") costs in the FGD line items for Asheville. In 2005, PEC began reporting WWT project costs separately.

² PEC's estimated and reported environmental compliance costs exclude certain costs attributable to the portions of its Mayo and Roxboro facilities that are owned by the NC Eastern Municipal Power Agency ("NCEMPA"). According to PEC's FERC Form No. 1 for 2005, PEC entered into an agreement with NCEMPA in 2005 to limit its aggregate cost associated with PEC's environmental compliance costs to approximately \$38,000,000. In a November 2, 2006, filing with the Commission in this docket, PEC stated that its estimated compliance costs have now further increased and that the \$37.9 million cap is \$29.1 million less than NCEMPA's full ownership share of the total environmental compliance costs under the Act.

Company Labor	\$ 4,912,405
Material	126,203,843
Outside Services	163,810,787
Labor Loads/Overheads	5,402,962
Other	21,329,534
Excess PA Cap	<u>8,464,411³</u>
Total	\$330,123,942

The project cost sheet was supported by detailed spreadsheets for a particular category. The Public Staff selected invoices from the detailed spreadsheets and requested PEC to provide specific information on the selected costs. The Public Staff had discussions with PEC personnel regarding the cost items charged to projects, and PEC provided documentation to support the selected costs.

PEC has estimated its environmental compliance costs at \$1,545,657,000, as set forth on Appendix B in its 2007 Report. This represents an increase of \$732,657,000 or 90% over PEC's original estimate of \$813,000,000, as set forth in G.S. 62-133.6(b).

According to PEC personnel, several factors continue to contribute to the increase in the estimate, including significant increases in the price of skilled labor and materials, increases in equipment costs due to the limited number of suppliers available, and adjustments of future costs based on actual costs of projects already completed or substantially completed.

PEC has previously cited its decision to change the scrubber technology on its units from a dry scrubber to a wet scrubber. This decision has further increased the costs because of the need for wastewater treatment. In its 2007 Report, PEC indicated that it is still considering a dry scrubber for Sutton Unit 3, due in part to the unique site characteristics at the Sutton Plant. At Sutton, space is at a premium, the coastal location requires more stringent wind loading criteria, and the soil characteristics are much different than at any other North Carolina facility. The costs associated with this "still conceptual" system have been included in the current estimates to the extent they can be quantified.

In the 2007 Report, PEC noted that the FSI technology offered a potentially more cost effective compliance option for the Cape Fear Units 5 and 6. Installation of the test unit at the Robinson plant in South Carolina is nearing completion, and the testing should begin this summer with results available by the end of the year. According to PEC, any engineering knowledge that has been gained thus far from the installation at Robinson is reflected in the latest cost estimates.

³ By Order issued December 20, 2007, in Docket No. E-2, Sub 900, the Commission ruled that the amount by which the NCEMPA's joint ownership of the total environmental compliance costs associated with the Mayo and Roxboro 4 units exceeds the \$39.7 million cap on those costs agreed to by PEC and NCEMPA shall be treated in the same manner as PEC's environmental compliance costs in excess of \$813 million, as ultimately determined by the Commission.

The Public Staff understands that unit specific criteria, system-wide emission targets, technology performance, and costs are all factors involved in the decision-making process. The Public Staff will continue to monitor this development.

III. Amortization of Costs

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

Using the protocols established by the Act and subsequent Commission orders, PEC reported that its environmental compliance costs amortization for 2007 was \$33,881,190. The Public Staff has reviewed PEC's quarterly amortization filings, as well as the journal entries recorded, and concluded that the reported amounts appear to be accurate. The cumulative amortization to date is \$569,100,000.

IV. Contracts

No contracts were reviewed during this audit period.

V. Site Inspections

On May 8, 2008, the Public Staff conducted a site inspection of PEC's Roxboro facility. Currently, the scrubbers on Roxboro Units 2, 3, and 4 are operational, with gypsum being temporarily trucked to a holding area until the wallboard facility is completed. The Roxboro Unit 1 scrubber is expected to be operational by December 2008.

The Public Staff will continue inspections of other coal-fired generating facilities as PEC continues to install emission reduction equipment in its boiler units.

VI. Commission Proceedings

Subsection (d) of G.S. 62-133.6 requires the Commission to hold a hearing to review the environmental compliance costs set out in subsection (b) and to determine the annual cost recovery the utility should be required to amortize during calendar years 2008 and 2009. This subsection further requires the Commission to consult with the Secretary of DENR as to whether the utility's actual and proposed modifications and permitting and construction schedule are adequate to achieve the emissions limitations set out in the Act.

Subsection (f) of G.S. 62-133.6 provides that in any general rate case initiated to adjust rates effective on and after January 1, 2008, the utility shall be allowed to recover its actual environmental compliance costs in accordance with provisions of Chapter 62 concerning rates of public utilities.

In an Order issued December 20, 2007, in Docket No. E-2, Sub 900, the Commission found that PEC's actual and proposed modifications and permitting and construction schedules are adequate to achieve the emissions limitations set out in the Act and that the most current and accurate estimate of PEC's environmental compliance costs is the \$1.355 billion estimate contained in PEC's Calendar Year 2006 Report. The Commission required PEC to amortize \$569.1 million of environmental compliance costs by December 31, 2007, and an additional \$243.9 million of such costs during calendar years 2008 and 2009, with the discretion to amortize up to \$174 million in either year. The Order stated that the appropriate ratemaking treatment of PEC's environmental compliance costs could not be fairly determined at that time and that the Commission would initiate a review of the matter in 2009 to consider all reasonable alternatives and proposals related to PEC's recovery of those costs.