

# Implementation of the "Clean Smokestacks Act"

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

May 30, 2003

The General Assembly of North Carolina, Session 2001, passed Session Law 2002-4 also known as Senate Bill 1078. This legislation is titled "*An Act to Improve Air Quality in the State by Imposing Limits on the Emission of Certain Pollutants from Certain Facilities that Burn Coal to Generate Electricity and to Provide for Recovery by Electric Utilities of the Costs of Achieving Compliance with Those Limits*" ("the Clean Smokestacks Act" or "the Act"). The Clean Smokestacks Act, in Section 14, requires the Department of Environment and Natural Resources (DENR) and the Utilities Commission ("Commission") to report annually, i.e., by June 1 of each year, on the implementation of the Act to the Environmental Review Commission and the Joint Legislative Utility Review Committee.

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

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

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

**Status:** North Carolina's investor-owned electric utilities, Progress Energy Carolinas, Inc. (Progress Energy) and Duke Power, a division of Duke Energy Corporation (Duke Energy), filed their initial compliance plans as required in June and July of 2002, in accordance with G.S. 62-133.6(c), Section 9(c) of S.L. 2002-4, the Clean Smokestacks Act. DENR reviewed this information and determined that the submittals comply with the Act and, as proposed, appear adequate to achieve the emission limitations set out in G.S. 143-215.107D.

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

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

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

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

**Progress Energy Response:** "The plan for Progress Energy Carolinas, Inc. was originally submitted on July 29, 2002. Appendix A (of the attached Progress submittal dated April 1, 2003) contains an updated version of this plan, effective April 1, 2003."

**Duke Energy Response:** "Exhibits A and B (of the attached Duke submittal dated March 31, 2003) outline the technology selections by facility and unit, projected operational dates, expected emission rates, and the corresponding tons of emissions that demonstrate compliance with G.S. 143-215.107D."

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

**Summary of Progress Energy Report:** The actual environmental compliance costs incurred by Progress Energy in calendar year 2002 were \$830,000. The Company reported that no construction was undertaken in 2002. Progress Energy further advised that the costs incurred were related primarily to preliminary engineering and planning activities.

**Summary of Duke Energy Report:** The actual environmental compliance costs incurred by Duke Energy in calendar years 2001 and 2002 were \$800,000 and \$3.6 million, respectively. The Company reported that such costs were incurred for such things as a variety of project studies and investigations, engineering, equipment specifications development, equipment layout, contracting related costs, and logistics.

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

**Summary of Progress Energy and Duke Energy Reports:** Neither Progress Energy nor Duke Energy amortized any environmental compliance costs in calendar year 2002.

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

**Summary of Progress Energy Report:** Progress Energy reported that, while some unit total and annual costs have changed, the total project cost in future dollars remains at \$813 million. The Company observed that changes at the unit level were due to additional project scope definition and refinement of project schedules.

**Summary of Duke Energy Report:** Duke Energy reported that its expected costs are not significantly different than the estimates provided in 2002 in its initial filing, and the technologies expected to be required to support compliance have not changed. The Company further stated that the minor adjustments to the estimates at the project level are the result of additional project scope definition and refinement of project schedules only. Duke Energy continues to estimate its total program costs, in future dollars, to be in the range of \$1.5 billion.

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

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

**Duke Energy Response:**

"Allen Steam Station SNCR, Unit 1

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

Marshall Steam Station SNCR, Unit 4

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

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

**Progress Energy Response:** See Appendix C of the attached letter from Progress Energy dated April 1, 2003, for details of construction and installation of equipment.

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

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

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

**Progress Energy Response:** "Permit applications for the construction and operation of scrubbers for SO<sub>2</sub> control for Asheville Plants Units 1 and 2 and for Roxboro Plant Units 2 and 3 are planned for submittal in the spring of 2003. These permit applications will be for:

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

**Duke Energy Response:**

Marshall Steam Station Scrubbers, Units 3 & 4

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

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

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

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

**Progress Energy Response:** "No equipment testing related to compliance with G.S. 143-215.107D occurred in 2002."

**Duke Energy Response:**

"Allen Steam Station SNCR, Unit 1

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

Marshall Steam Station SNCR, Unit 4

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

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

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

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

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

- NOx - 81,896 tons
- SO2 - 263,909 tons

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

**Progress Energy Response:** "No emissions allowances resulting from compliance with G.S. 143-215.107D were acquired in 2002."

**Duke Energy Response:** "No emissions allowances have been acquired by Duke Power Company resulting from compliance with the limitations set out in G.S. 143-215.107D."

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

**Summary of Commission Request:** The Commission submitted data requests to Progress Energy and Duke Energy on April 29 and May 16, 2003. The information requested concerned projected amortization schedules over the entire seven-year

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

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

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

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

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

“North Carolina’s investor owned electric utilities, Duke Energy and Progress Energy, have filed their compliance plan annual updates for 2003 in accordance with N.C.G.S. 62-133.6(i), Section 9(i) of S.L. 2002-4, known as the ‘Clean Smokestacks Act’. Pursuant to N.C.G.S. 62-133.6(j), the Department of Environment and Natural Resources has reviewed this information, and the submittals comply with the Act and the initial plans, as proposed, appear adequate to achieve the emission limitations set out in N.C.G.S. 143-215.107D.”

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

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

- The Governor, the Attorney General, the Secretary of DENR, and the Director of DAQ have all sent letters to their counterparts in other States in the region urging similar emissions controls in those States and requesting information in order to evaluate the impacts of upwind sources on North Carolina's air quality.
- DAQ is continuing to identify sources of air pollution problems, including out-of-state contributions. DAQ and the Attorney General's Office are evaluating strategies to achieve compliance with upcoming federal mandates regarding particulate matter and ozone (including visibility), which will improve air quality and alleviate the adverse health and welfare impacts facing North Carolina. The western part of the State will especially benefit from these emission reductions.
- A meeting was held between DENR/DAQ and the Tennessee Valley Authority (TVA) and the Tennessee air program officials in August 2002, to discuss actions planned by TVA that would be comparable to the Clean Smokestacks Act. TVA presented their plans to add five additional SO<sub>2</sub> scrubbers to power plants primarily in the eastern portion of the TVA system. These new scrubbers should benefit North Carolina most. TVA plans to complete installation of the new facilities by 2010 and the first plant, Paradise, will be installed by 2006. Regarding NO<sub>x</sub> control, TVA is on schedule to have the first 8 of its selective catalytic reduction (SCR) systems in place. TVA plans to have 25 boiler units controlled by 2005 at a cost of \$1.3 billion which will reduce ozone season NO<sub>x</sub> by 75 percent.
- Through DENR's efforts, the Clean Smokestacks Act is achieving notoriety nationally and is being touted in other States as a model for State action. The Secretary of DENR and the Chief of Planning of DAQ made presentations about the Clean Smokestacks Act at two national state environmental organization meetings in the fall of 2002. The Chief of Planning of DAQ testified in 2002, at a U.S. Senate Environment and Public Works Committee Hearing on the features and benefits of North Carolina's Clean Smokestacks Act. The Deputy Director of DAQ participates on a national dialogue workgroup addressing ideal features of national multi-pollutant legislation for coal-fired utility boilers. The Clean Smokestacks Act is held up as an ideal example.
- The State also has been active in maintaining federal standards. In an April 2003 letter to EPA Administrator Whitman, Governor Easley urged the Administration to ensure that the federal Clear Skies bill not override State initiatives such as the Clean Smokestacks Act. The Governor also indicated the State's opposition to bill text that would extinguish the statutory rights of States regarding interstate pollution abatement. DAQ and the Attorney General commented last month in opposition to a proposed federal rule that would

weaken the federal New Source Review program and potentially result in significant new upwind emissions.

**IV. Section 12 of the Act provides:** *The General Assembly anticipates that measures implemented to achieve the reductions in emissions of oxides of nitrogen (NOx) and sulfur dioxide (SO<sub>2</sub>) required by G.S. 143-215.107D, as enacted by Section 1 of this act, will also result in significant reductions in the emissions of mercury from coal-fired generating units. The Division of Air Quality of the Department of Environment and Natural Resources shall study issues related to monitoring emissions of mercury and the development and implementation of standards and plans to implement programs to control emissions of mercury from coal-fired generating units. The Division shall evaluate available control technologies and shall estimate the benefits and costs of alternative strategies to reduce emissions of mercury. The Division shall annually report its interim findings and recommendations to the Environmental Management Commission and the Environmental Review Commission beginning 1 September 2003. The Division shall report its final findings and recommendations to the Environmental Management Commission and the Environmental Review Commission no later than 1 September 2005. The costs of implementing any air quality standards and plans to reduce the emission of mercury from coal-fired generating units below the standards in effect on the date this act becomes effective, except to the extent that the emission of mercury is reduced as a result of the reductions in the emissions of oxides of nitrogen (NOx) and sulfur dioxide (SO<sub>2</sub>) required to achieve the emissions limitations set out in G.S. 143-215.107D, as enacted by Section 1 of this act, shall not be recoverable pursuant to G.S. 62-133.6, as enacted by Section 9 of this act.*

**DAQ Actions to Implement this Section:** The DAQ is presently developing a draft report for presentation by September 1, 2003, as required by this section. The first report will primarily focus on the "state of knowledge" of the co-benefit of mercury control that will result from the control of NOx and SO<sub>2</sub> from coal-fired utility boilers. Also, there will be preliminary estimates made for this co-benefit for the North Carolina utility boilers based on the initial plans submitted by Progress Energy and Duke Energy. Two public workshops are planned for June and July 2003, to meet with all interested stakeholders to begin review of the draft DAQ report.

**V. Section 13 of the Act provides:** *The Division of Air Quality of the Department of Environment and Natural Resources shall study issues related to the development and implementation of standards and plans to implement programs to control emissions of carbon dioxide (CO<sub>2</sub>) 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 (CO<sub>2</sub>). 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 (CO<sub>2</sub>) 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 (CO<sub>2</sub>) is reduced as a result of the reductions in the emissions of oxides of nitrogen (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>) required to achieve the emissions limitations set out in G.S. 143-215.107D, as enacted by Section 1 of this act, shall not be recoverable pursuant to G.S. 62-133.6, as enacted by Section 9 of this act.*

**DAQ Actions to Implement this Section:** The DAQ is presently developing a draft report for presentation by September 1, 2003, as required by this section. The first report will primarily focus on the "state of knowledge" and actions being taken or planned elsewhere regarding CO<sub>2</sub> control from coal-fired utility boilers. Two public workshops are planned for June and July 2003, to meet with all interested stakeholders to begin review of the draft DAQ report.

**VI. Supplementary Information:** The Public Staff – North Carolina Utilities Commission (Public Staff) will audit the books and records of Progress Energy and Duke Energy in regard to the costs incurred and amortized by the Companies concerning their compliance with the provisions of the Clean Smokestacks Act. The audits are to be of a nature such that they will be on-going, continuing throughout completion of the accelerated cost recovery process and beyond as circumstances and events may require. The Public Staff expects to begin the audits later this calendar year.

## **CONCLUSION**

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

## **ATTACHMENTS**

**Attachment A:** Clean Smokestacks Act Compliance Plan Annual Update dated March 31, 2003, Submitted by Duke Power, a Division of Duke Energy Corporation

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