

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date:

Region: Fayetteville Regional Office
County: Robeson
NC Facility ID: 7800147
Inspector's Name: Robert Hayden
Date of Last Inspection: 08/31/2006
Compliance Code: 3/In Compliance - Inspection

Facility Data			Permit Applicability (this application only)		
Applicant (Facility's Name): Progress Energy Carolinas, Inc., W.H. Weatherspoon Plant Facility Address: Progress Energy Carolinas, Inc., W.H. Weatherspoon Plant 491 Power Plant Road Lumberton, NC 28358 SIC: 4911 / Electric Services NAICS: 221112 / Fossil Fuel Electric Power Generation Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: NSPS: NESHAP: PSD: PSD Avoidance: NC Toxics: 112(r): Other:		
Contact Data			Application Data		
Facility Contact	Authorized Contact	Technical Contact	Application Number: 7800147.05A Date Received: 01/26/2005 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 06094/T13 Existing Permit Issue Date: 06/01/2005 Existing Permit Expiration Date: 10/31/2005		
Larry Baxley Environmental Specialist (910) 671-1206 491 Power Plant Road Lumberton NC, 28358	J. Frederick Plant Manager (910) 671-1200 491 Power Plant Road Lumberton NC, 28358	Scott Lane Senior Environmental Specialist (919) 546-5538 410 South Wilmington Street Raleigh NC, 27601			
Review Engineer: Ed Martin Review Engineer's Signature: _____ Date: _____ PROPOSED - FOR PUBLIC NOTICE			Comments / Recommendations: Issue 06094/T14 Permit Issue Date: Permit Expiration Date:		

I. Purpose of Application:

This permit revision is to renew the existing Title V permit pursuant to 2Q .0513. The renewal application was received on January 31, 2005, or at least nine months prior to the expiration date. Therefore, the existing permit, which has an expiration date of October 31, 2005, will not expire on that date and all terms and conditions of the existing permit shall remain in effect until the renewed permit has been issued.

The federal opacity language is being revised as a result of EPA's approval of the revised 2D .0521 visible emissions rule. Progress Energy petitioned the previous Permits No. 06094T11, 06094T12 and 06094T13 (as noted in Section III below) on the basis that they objected to the monitoring and reporting provisions for the federal opacity requirements for the boilers under 40 CFR 52 SUBPART II: NORTH CAROLINA STATE IMPLEMENTATION PLAN in Part I, Section 2.1 A.3 of those permits. These federal opacity requirements were added to Permit No. 06094T11 and have remained in the permit since that time. Resolution of the petitions was pending approval of the revised SIP 2D .0521 opacity rule (which had been revised to include requirements for sources using COMs) by EPA. EPA has now approved the 2D .0521 opacity rule (ref: letter to Mr. William G. Ross, Secretary NCDENR from J. I. Palmer, EPA Regional Administrator dated October 11, 2005) and it became effective on November 25, 2005. Because Permits

No. 06094T11, 06094T12 and 06094T13 were petitioned and were therefore generally not in effect, the facility has been operating under Permit No. 06094T10. However, from December 30, 2006 through February 8, 2007, Permit No. 06094T13 (which was originally adjudicated in June 2005) was effective, rather than Permit No. 06094T10, because Progress withdrew their objections to Permit No. 06094T13 under the mistaken belief that it had been reissued with the updated opacity language. When it was discovered that wasn't the case, Progress requested, and DAQ did not oppose, the judge to reinstate that portion of the petition case. As part of the reinstatement of the petition, DAQ insisted that for the period from December 30, 2006 through February 8, 2007, Progress would need to comply with Permit No. 06094T13.

Other miscellaneous changes are shown in Section II below.

II. Permit Changes:

The following changes were made to the Progress Energy Weatherspoon Steam Electric Plant Air Permit No. 06094T14:

Page(s)	Part, Section	Change
Insignificant Activities List		
-	-	Updated ID Nos. 1-20 to IS-1 to IS-20 to match ESM. <u>Added to list:</u> ID No. IS-21 4,000 gallon No. 2 oil storage tank ID No. IS-22 Emergency propane generator – 17kW ID No. IS-23 Propane storage tank ID No. IS-24 Emergency propane generator – 19kW ID No. IS-25 Propane storage tank
Part I		
Cover	-	Amended permit numbers and dates.
3	Part I, table of permitted emission sources	Changed ID Nos. for the four combustion turbines to match ESM.
5	Part I, Section 2.1 A regulation table	Replaced Federal-only 40 CFR 52 Subpart II and State-only 2D .0521 visible emission limits/standards with new approved SIP 2D .0521 visible emission limits/standards.
		Removed “State-only” from regulation 2D .0606 for excess emissions/good operations and maintenance practices (making it both a State and Federal requirement) and removed the Federal-only 40 CFR 52 Subpart II (Federal-only requirement) regulation since 2D .0606 is federally approved.
		Added 2D .0614 CAM.
7	Part I, Section 2.1 A.3 (old sections 2.1 A.3 and 4)	Replaced Federal-only 40 CFR 52 Subpart II and State-only 2D .0521 visible emission Sections 2.1 A.3 and 4 with new approved SIP 2D .0521 visible emission Section 2.1 A.3.
9-10	Part I, Section 2.1 A.7 (old sections 2.1 A.8 and 9)	Removed “State-only” heading from 2D .0606 in old section 2.1 A.8 (making it both a State and Federal requirement) and removed the old Federal-only section 2.1 A.9 since 2D .0606 is federally approved.
10	Part I, Section 2.1 A.8	Revised recycled fuel oil condition.
12-13	Part I, Section 2.1 A.12	Removed NOx allocations for years 2004 and 2005.

13	Part I, Section 2.1 A.12.e	Removed NOx interim reporting which required reporting tons of nitrogen oxides emitted during the previous May and June no later than July 30 of each year, since this requirement has been removed from the 2D .1404(g) rule.
13-14	Part I, Section 2.1 A.13	Added 2D .0614 CAM requirements.
14	Part I, Section 2.1 B regulation table	Replaced Federal-only 40 CFR 52 Subpart II and State-only 2D .0521 visible emission limits/standards with new approved SIP 2D .0521 visible emission limits/standards.
14-15	Part I, Section 2.1 B.2 (old sections 2.1 B.2 and 3)	Replaced Federal-only 40 CFR 52 Subpart II and State-only 2D .0521 visible emission Sections 2.1 B.2 and 3 with new approved SIP 2D .0521 visible emission Section 2.1 B.2.
15	Part I, Section 2.1 B.3.d.	Removed NOx interim reporting which required reporting tons of nitrogen oxides emitted during the previous May and June no later than July 30 of each year, since this requirement has been removed from the 2D .1404(g) rule.
22-29	Part I, Section 3	Added new set of general conditions.

III. Changes to Permit Since Initial Title V Was Issued

Permit No.	Type of Modification	Reason for Permit	Issue Date
06094T10	Initial Title V permit	-	11-28-00
06094T11	2Q .0514 Administrative Amendment	Add federal opacity, remove old SOC	2-26-04 (petitioned 3-18-04)
06094T12	2Q .0501(d)(1) Reopen for Cause	Acid Rain renewal	4-29-05 (petitioned 5-27-05)
06094T13	2Q .0501(c)(1) Reopen for Cause	Revises notification general condition I.A	6-1-05 (petitioned 6-28-05)
06094T14	Renewal	-	

IV. Facility Description

Progress Energy's Weatherspoon Steam Electric Plant is an electric utility that generates electrical power using boilers and combustion turbines. It has two used oil/ coal/natural gas-fired electric utility boilers (ID Nos. Unit 1 Boiler and Unit 2 Boiler), one used oil/pelletized paper and/or cardboard fuel/coal/natural gas-fired utility boiler (ID No. Unit 3 Boiler), and four natural gas/No. 2 fuel oil-fired internal combustion turbines (ID Nos. IC-1, IC-2, IC-3, and IC-4).

V. Statement of Compliance

Based on the most recent inspection for this facility on August 31, 2006, by Robert Hayden, as well as source test results and reported data and DAQ-AQAB analyses, Progress Energy-Weatherspoon Plant appeared to be in compliance with all requirements outlined in their air permit. However, as discussed in Section 1 above, as part of the reinstatement of their petition, Progress must comply with Permit No. 06094T13 for the period from December 30, 2006 through February 8, 2007.

VI. Summary of Changes to Emission Sources and Control Devices

There are no changes to emission sources or control devices (except to the insignificant activities list as shown in Section II above).

VII. Emission and Regulatory Evaluation

The following new regulations were added:

1. 2D .0614: COMPLIANCE ASSURANCE MONITORING (40 CFR 64)

Compliance Assurance Monitoring (CAM) Analysis

This facility is subject to a CAM analysis as required for renewal of a Title V permit. CAM applies to the Unit 1, 2 and 3 boilers since these sources have an electrostatic precipitator (ESP) for control of PM-10 emissions and have potential pre-control device emissions of the applicable regulated air pollutant of more than 100 tons per year each (ie: the amount to be classified as a major source). As stated in §64.3(d)(1) of 40 CFR 64, if a continuous opacity monitoring system (COMS) is required pursuant to other authority under the Act or state or local law, the owner or operator shall use such system to satisfy the requirements of Part 64. As submitted with the application, Progress has proposed an opacity excursion level of 22% for Unit 1, 23% for Unit 2 and 28% for Unit 3 based on a plot of opacity vs. PM emissions using data points from annual 1-hour stack tests performed to show compliance with the 2D .0536 requirements since 1985. The data was fit with a logarithmic curve, which Progress states best correlates with the data. Progress is proposing these opacity excursion points based on taking the opacity value at the intersection of the curve with the PM limits of 0.14 lb/mmBtu for Unit 1, 0.14 lb/mmBtu for Unit 2, and 0.15 lb/mmBtu for Unit 3, then adding 5% "...to account for monitor variability..." However, at these opacity values, the PM limits will have already been exceeded. Therefore, in order to provide a reasonable assurance of compliance with the emission limitation, a lower opacity excursion point is needed to trigger action before the PM limit is reached. EPA's proposed CAM Technical Guidance: *CAM Protocol for an ESP Controlling PM from a Coal-Fired Boiler* recommends that the indicator range for opacity be established at a level equal to or less than an opacity at which the source has demonstrated a margin of compliance with the PM emissions limit of at least 10%. Using the logarithmic equations developed by Progress of:

$$\text{Unit 1: } y = 7.1815\text{Ln}(x) + 31.345$$

$$\text{Unit 2: } y = 6.959\text{Ln}(x) + 32.049$$

$$\text{Unit 3: } y = 9.3265\text{Ln}(x) + 40.314$$

results in opacity levels of 16% for Unit 1, 17% for Unit 2, and 21% for Unit 3 in order to be at least 10% below the PM limit. Three-hour block average opacity values are to be used to eliminate any short-term excursions during startup or shutdown.

Monitoring/Recordkeeping

To provide a reasonable assurance of compliance with the particulate matter limit of:

Unit 1 Boiler 0.14 lb/mmBtu

Unit 2 Boiler 0.14 lb/mmBtu

Unit 3 Boiler 0.15 lb/mmBtu

for the ESP control devices on these sources, the Permittee shall determine and record opacity using a continuous opacity monitoring system (COMS) meeting the requirements of Appendix B of 40 CFR Part 60. Any three-hour block average opacity value in excess of the following indicator ranges shall be deemed an excursion as defined in 40 CFR Part 64:

Unit 1 Boiler - 16 percent

Unit 2 Boiler - 17 percent

Unit 3 Boiler - 21 percent

The appropriate averaging period for which an excursion shall be determined is each 3-hour block average of six-minute opacity averages beginning at midnight (total of eight 3-hour block periods each day). Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for data averages and calculations.

For any excursion, the Permittee shall initiate an inspection of the control equipment and/or the COMS and initiate the necessary repairs. In addition to implementing procedures outlined in the malfunction abatement plan, as required in Section 2.1 A.6, the following corrective actions shall be taken as soon as practical:

- i. Control operator shall notify the shift supervisor or responsible official (plant manager or representative) in accordance with plant procedures.
- ii. System dispatcher shall be alerted if load reductions are anticipated.
- iii. The following operating practices and procedures shall be initiated as necessary:
 - Identify cause of excursion
 - Isolate ESP field or increase power input to other fields if necessary
 - Reduce load, as necessary, to help minimize emissions
 - Proceed to shutdown or confirm malfunction conditions exist if emissions cannot be controlled appropriately
 - Initiate work order for ESP inspection and repair as needed
- iv. Nature and cause of excursion shall be documented in operations log.
- v. Provide notification to DAQ as necessary.

If 5.0 percent or greater of the three-hour block averaged COMS data (excluding startup, shutdown, and malfunction periods) recorded in a calendar quarter exceeds the opacity value, the Permittee shall perform a stack test in the following calendar quarter to demonstrate compliance with the particulate standard of 0.20 pounds per million Btu heat input. In the event that a unit exceeds 80 percent of its particulate emission limit during the stack test, the Permittee shall schedule and conduct another stack test within 6 months. Upon demonstration that the source is operating under 80 percent of its particulate limit, as shown by three consecutive semiannual stack tests, the source may resume annual stack tests. If a source operates less than 2200 hours during any quarter, the source may evaluate three-hour opacity values using operating data for the current quarter and the preceding quarters until 2200 hours of data are obtained. If opacity is not determined and recorded, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0614. If the result of any stack test is greater than the particulate standard above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0536.

Reporting

The results of any stack test shall be reported within 30 days, and the test report shall be submitted within 60 days after the test. In addition, the Permittee shall submit the following reports as required under §64.9 of 40 CFR Part 64 no later than January 30, April 30, July 30, and October 30 of each calendar year:

- i. Summary information on the number, duration, and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken; and
- ii. Summary information on the number, duration, and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable).

VIII. Public Notice and EPA Review of the Draft Permit

Pursuant to 15A NCAC 2Q .0521, a notice of the draft Title V Operating Permit will be published in a newspaper of general circulation in the area where the facility is located, to provide for a 30 day comment period, with an opportunity for a public hearing. Copies of the public notice will be sent to persons on the Title V mailing list, EPA, Fayetteville Regional Office, the facility, and affected states for review.

IX. Recommendations

later after public notice