

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date:

Region: Washington Regional Office
County: Wayne
NC Facility ID: 9600017
Inspector's Name: Bernie Pittman
Date of Last Inspection: 12/11/2007
Compliance Code: C/In Compliance With
 Procedural Reqr

Facility Data			Permit Applicability (this application only)
Applicant (Facility's Name): Progress Energy - F Lee Plant Facility Address: Progress Energy - F Lee Plant 1677 Old Smithfield Road Goldsboro, NC 27530 SIC: 4911 / Electric Services NAICS: 335999 / All Other Miscellaneous Electrical Equipment and Component Manufacturing 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: CAM
Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	Application Number: 9600017.05A Date Received: 02/16/2005 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 01812/T32 Existing Permit Issue Date: 06/04/2008 Existing Permit Expiration Date: Upon Renewal
Ricky Miller Engineer (919) 580-3983 1677 Old Smithfield Road Goldsboro NC, 27530	Tim Hill Plant Manager (919) 580-3983 1677 Old Smithfield Road Goldsboro NC, 27530	Ricky Miller Engineer (919) 580-3983 1677 Old Smithfield Road Goldsboro NC, 27530	
Review Engineer: Mike Gordon Review Engineer's Signature: Date:		Comments / Recommendations: Issue 01812/T33 Permit Issue Date: Permit Expiration Date:	

1. Purpose of Application

Progress Energy Carolinas, Inc. (PEC) submitted an application for renewal of their Title V permit on February 16, 2005. In addition to this renewal the DAQ is revising the permit consistent with the December 8, 2000 open for cause letter (ID 9600017.01A) to modify criteria and operating conditions that determine excess emissions. This application (.01A) and application (9600017.07A), which incorporates the low NOx burner system on the Unit 2 Boiler, will be consolidated with the renewal (.05A).

2. Application Chronology

Refer to “Comprehensive Application Report” for complete details. A significant amount of additional information (email correspondence, spreadsheets, etc.) is part of the application process and will be available in IBEAM for review

3. Facility Description

Progress Energy’s Lee Plant is a major coal-fired electrical generating plant in North Carolina. The facility produces steam in three coal-fired boilers. The steam from these boilers is routed to steam turbines that produce electricity for sale to residential or industrial consumers.

4. Statement of Compliance

Based on the last inspection performed by WaRO (Betsy Huddleston) on 4/26/2007 and 7/26/2007, Progress Energy’s Lee Plant appeared to be in compliance with all requirements outlined in the air permit 01812T30.

5. Permit Modifications/Changes

5.1 Defining Startup and Shutdown (Reopen for Cause Application No. 01A)

The DAQ opened the permit with a letter sent to Progress Energy on December 8, 2000 to modify the operating conditions that define startup and shutdown for the unit. It was determined that if the units operate at less than 50% load they emit significantly higher levels of pollutants and therefore could be considered as entering startup and shutdown at those levels. This has been incorporated into various sections of the permit including section 2.1.C.3.j that states:

“Excess emissions resulting from start-up, shutdown, or malfunction shall be permitted provided that optimal operational practices are adhered to and periods of excess emissions are minimized. Periods of excess emissions or operation below 50% load shall in no case exceed two hours in any 24-hour period. Start-up is defined as the period from zero load (unfired) to 50% load. Shutdown is defined as the period from 50% load to zero load (unfired).”

5.2 CAM Application

Unit’s 1, 2, and 3 are subject to 40 CFR 64 for particulate emissions dealing with the Electrostatic Precipitator and therefore it was required by the facility to determine the necessary Compliance Assurance Monitoring (CAM) levels for each of the affected units. Progress energy submitted a CAM plan that used the opacity data from each COMS unit on the boilers and correlated that with the PM emissions recorded during stack testing for the previous 25+ years. Opacity values determined by the facility were found by the DAQ to not be representative of present operation and had been skewed high due to data used from the 1980’s and 1990’s. The DAQ then determined that using data from the previous 5-10 years from 1994-2004 the trigger values were more representative of normal source

operation. It was determined from this data, a copy of which is attached to the review, that the excursion values should be set at 14% opacity for Unit 1, 8% for Unit 2, and 9% for Unit 3.

5.3 Low NOx Burner (15 NCAC 2Q .0501(c)(2) Title V Application No. 07A)

Permit application 9600017.07A has been consolidated with the renewal. The Part II requirements of the low NOx burner system on the Unit 2 Boiler and associated references in Part I have been removed. The requirements for the burner system are incorporated into Part I of the permit.

5.4 Table of Changes

Old Page No.	New Page No.	Condition No.	Changes
-	-	Throughout	Incorporated 501(c)2 conditions for the installation of a low NOx burner on the Unit 2 boiler into the Title V permit, removed Part II and all references
-	-	General Conditions	Updated permit to the latest revision of the General Conditions (v. 2.20)
4	4	Emission Source Table	Corrected tank capacity according to manufacturers specification (3,061,500 gallons each)
-	6	Section 2.1.A Table	Added Particulate Matter to the list of regulated pollutants as part of the CAM addition in Section 2.1.A.12
-	15-16	2.1.A.12	Incorporated CAM requirements for Unit Boilers 1, 2, and 3 according to 15A NCAC 2D .0614
17	19	2.1.C.2.b	Added emission limitations from listed in 40 CFR 60 Subpart GG applicable to the units
17	19	2.1.C.2.c	Added noncompliance statement to monitoring condition.
21	23	2.1.C.3.j	Added permit condition defining the maximum allowable time (2 hours per 24 hour period) at which a unit can operate at 50% load or less as it pertains to limiting excess emissions

6. NSPS, NESHAPS, Attainment Status, NSR, 112(r), and CAM

NSPS

The coal-fired boilers at the Lee Plant are not subject to NSPS Subpart Da.

NESHAPS

Not applicable to this modification.

Attainment Status and NSR

For Attainment Status and NSR, refer to Section 5.1 above.

112(r)

This facility is not subject to Section 112(r) of the Clean Air Act requirements.

CAM

Coal Fired Units 1, 2, and 3 are subject to CAM for PM emissions from the ESP.

7. Permit History

Permit No.	Issuance Date	Description of Revision
01812T24	December 2000	Initial TV Permit
01812T25	February 18, 2004	Permit revision to incorporate second No. 2 fuel oil storage tank, revisions to the visible emissions standards in 15A NCAC 2D .0521, remove a SOC that expired, and to add 15A NCAC 2D .1400 NOx SIP Call Regulations.
01812T26	April 29, 2005	Title IV Acid Rain Permit Renewal and removal of language dealing with permit shield not applicable since this permit was to be public noticed
01812T27	June 1, 2005	Reopened for cause to revise General Condition I.A for reporting requirements and was a significant modification.
01812T28	March 21, 2006	Part II for Low NOx Burner installation on Unit 2 and relevant PSD review
01812T29	June 30, 2006	Added Urea injection system to Unit 3 Boiler and relevant Part II language.
01812T30	October 30, 2006	Removed NSPS Subpart Kb applicability to I-23, added new simple cycle combustion turbine ID No. ES-14, added PSD label for CT-Heater and applicable .0530 requirements, and all requirements for new ES-14 unit.
01812T31	February 29, 2008	Added required Toxics regulation and language dealing with the combustion of waste EDTA solution in the coal-fired boilers. Updated General Conditions.
01812T32	June 4, 2008	15 NCAC 2Q .0501(c)(2) permit. Added Part II requirements and associated permit changes to NSPS Subpart GG requirements with using CEMS as an alternative method of compliance

8. Facility Emissions Review

The following is an emission summary for this facility. Actual emissions are for year 2006, as reported by the company to DAQ through submittal of annual emission inventory.

Pollutant	Actual Emissions	Potential Emissions
	Tons/Yr	Tons/Yr
PM	580.2	> 100
PM10	390.7	> 100
PM2.5	166.8	> 100
CO	239.0	> 100
NOx	4,724.8	> 100
SO ₂	13,770.3	> 100
VOC	29.9	> 100
Single HAP (HCl)	795.4	> 10
Total HAP	> 795.4	> 25

9. Public Notice / EPA and Affected States Review

Permit application processed shall be reviewed by EPA and is required to be noticed in the newspaper for public comments.

10. Conclusions, Comments, and Recommendations

This is a permit renewal for the facility under consolidated applications 9600017.01A, 9600017.05A (the permit renewal application), and 9600017.07A. CAM is a major change in this permit and should be closely monitored in the next few years to ensure it is an effective tool as written. The facility is required to inspect and take corrective action (if required) at any time it experiences an opacity excursion. An excursion is defined in the CAM plan as a three-hour average opacity level greater than the levels specified in the permit. Furthermore, the permit now states:

“If five (5) percent or greater of COMS data (averaged over a three hour block period and excluding startup, shutdown, and malfunction periods) recorded in a calendar quarter show opacity values higher than those listed above, a stack test shall be performed in the following calendar quarter to demonstrate compliance with the particulate standard. If the stack test exceeds 80 percent of the PM limit then retesting shall be conducted in accordance with 2.1.A.4.c.”

The regional office has submitted comments for review and incorporation into the permit. WaRO requested that RCO review Permit Condition 2.1.A.11.h to see if it needs to be rewritten. RCO determined the condition is effective as written and the current compliance report method is effective for monitoring SO₂ emissions to ensure they do not reach the threshold of significance for PSD purposes. Keep in mind that the facility is tracking

emissions each year and comparing them to the initial baseline level (actual emissions prior to low NOx burner installation) in order to demonstrate that the unit was not subject to PSD review for SO₂.

WaRO has requested a draft copy of this permit. WaRO has commented on the permit and comments submitted to RCO have been incorporated where applicable.