

Air Permit Review

Region: Washington Regional Office
County: Wayne
NC Facility ID: 9600017
Inspector's Name: Robert Bright
Date of Last Inspection: 05/27/2009
Compliance Code: 3 / Compliance - inspection

Permit Issue Date:

Facility Data			Permit Applicability (this application only)
Applicant (Facility's Name): Progress Energy - H.F. Lee Plant Facility Address: Progress Energy - H.F. Lee Plant 1677 Old Smithfield Road Goldsboro, NC 27530 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: 2D .2400 (CAIR), 2Q .0400 (Acid Rain) NSPS: NESHAP: PSD: PSD Avoidance: NC Toxics: 112(r): Other: 15A NCAC 2D .1109 (112(j) – Part 2 Case-by-Case MACT Hammer for Boilers & Process Heaters)
Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	Application Number: 9600017.09A Date Received: 12/23/2008 Application Type: Modification Application Schedule: TV-Significant Existing Permit Data Existing Permit Number: 01812/T35 Existing Permit Issue Date: 08/11/2010 Existing Permit Expiration Date: 08/31/2013
Ricky Miller Engineer (919) 580-3983 1677 Old Smithfield Road Goldsboro, NC 27530	Kris Edmundson 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: Ed Martin Review Engineer's Signature: _____ Date: _____		Comments / Recommendations: Issue 01812/T36 Permit Issue Date: Permit Expiration Date:	
DRAFT FOR PUBLIC NOTICE			

I. Purpose of Application

The purpose of this permit modification is to make the following changes:

1. Application 9600017.09A
 Incorporate the Clean Air Interstate Rule (CAIR) requirements into the permit. This rule replaces the 2D .1416, .1417, .1418 and 40 CFR 52 Subpart II NO_x rules previously in the permit.
2. Application 9600017.09B (consolidated with Application 9600017.09A)
 To renew the Title IV Acid Rain portion of the Title V permit extending the effective dates for the calendar years 2010-2014. Progress Energy submitted an Acid Rain Permit Application, a Phase II NO_x Compliance Plan, and a revised Phase II NO_x Averaging Plan all dated May 5, 2009, which will become part of the Title V permit (as attachments).
3. Application 9600017.09C
 Progress has submitted a 112(j) Case-By-Case Part 2 MACT "Hammer" permit application for the sources shown below which are covered by the vacated Boiler MACT (see discussion in Section V.3). The initial application, received September 1, 2009, was for the existing natural gas-fired heater (ID No. CT Heater). Progress amended the 112(j) application on June 25, 2010, to include new sources which were recently added to the permit with the new combustion turbines (Units 15, 16 and 17) on August 11, 2010 (Permit No. 01812T35). The new sources subject to 112(j) MACT are: one natural gas-fired auxiliary boiler (ID No. AB1), one natural gas-fired fuel gas heater (ID No. FGH1), and three natural gas-fired dew point heaters (ID Nos. DPH1, DPH2 and DPH3). Note, Progress' amended

application received June 25, 2010, also listed the natural gas-fired duct burners for combustion turbines Units 15, 16 and 17 as being subject to the 112(j) MACT. However, in accordance with the vacated Boiler MACT (§63.7491(c)), a fossil fuel-fired electric utility steam generating unit of more than 25 MW that serves a generator that produces electricity for sale is not subject to the Boiler MACT. The recently issued permit did not include specific monitoring conditions under 112(j) MACT, but only a requirement to submit a 112(j) MACT application for these 112(j) sources. This was because Progress requested the two-step significant Title V permit modification process be used pursuant to rule 15A NCAC 2Q .0501(c)(2), where public notice was not required at that time, therefore reducing the time it would take to issue the combustion turbine permit in order to meet the project construction schedule.

In addition to the above permit changes, several other miscellaneous administrative-type changes are being made as shown below in Section II. This change is a significant permit modification being made in accordance with 15A NCAC 2Q .0501(d)(1). Public notice of the draft permit is required at this time.

II. Permit Changes

The following changes were made to the Progress Energy Carolinas, Inc. H. F. Lee Steam Electric Plant Air Permit No. 01812T35:

Page	Section	Description of Changes
Cover	--	Amended permit numbers and dates.
TOC	--	Added Section 2.5 - Clean Air Interstate Rule (CAIR) Permit Requirements.
		Revised dates for Acid Rain Permit Application, Phase II NO _x Compliance Plan, and Phase II NO _x Averaging Plan attachments.
		Added CAIR Application as an attachment.
6-7	2.1 A, regulation table	Added 15A NCAC 2D .2404 CAIR permit requirements as an applicable regulation for sulfur dioxide and 15A NCAC 2D .2403 and .2405 CAIR permit requirements as applicable regulations for nitrogen oxides.
		Removed 15A NCAC 2D .1416 as this NO _x rule has been superseded by the CAIR permit requirements added in Section 2.5.
13	2.1 A.10 (old section)	Removed this section as this 15A NCAC 2D .1416 NO _x rule has been superseded by the CAIR permit requirements added in Section 2.5.
17	2.1 B, regulation table	Added 15A NCAC 2D .2404 CAIR permit requirements as an applicable regulation for sulfur dioxide and 15A NCAC 2D .2403 and .2405 CAIR permit requirements as applicable regulations for nitrogen oxides for Lee IC Unit Nos. 5, 6 and 7.
		Removed 15A NCAC 2D .1416/.1417 as these NO _x rules have been superseded by the CAIR permit requirements added in Section 2.5 for Lee IC Unit Nos. 5, 6 and 7.
18	2.1 B.3 (old section)	Removed this section as these 15A NCAC 2D .1416/.1417 NO _x rules have been superseded by the CAIR permit requirements added in Section 2.5 for Lee IC Unit Nos. 5, 6 and 7.
19	2.1 C, regulation table	Added 15A NCAC 2D .2404 CAIR permit requirements as an applicable regulation for sulfur dioxide and 15A NCAC 2D .2403 and .2405 CAIR permit requirements as applicable regulations for nitrogen oxides.
		Added 15A NCAC 2Q .0402 as an applicable regulation for sulfur dioxide and nitrogen oxides to correct previous permit.
		Removed 15A NCAC 2D .1417 as this NO _x rule has been superseded by the CAIR permit requirements added in Section 2.5.
20	2.1 C.2.b	Corrected table ID Nos. under AFFECTED UNIT.

Page	Section	Description of Changes
25	2.1 C.5 (old section)	Removed this section as this 15A NCAC 2D .1417 rule has been superseded by the CAIR permit requirements added in Section 2.5.
26	Section 2.1.E, regulation table	Added limit for 2D .1109 MACT CAA § 112(j).
27	Section 2.1.E.3	Added 2D .1109 112(j) Case-by-Case MACT requirements.
28	2.1 F, regulation table	Added 15A NCAC 2D .2404 CAIR permit requirements as an applicable regulation for sulfur dioxide and 15A NCAC 2D .2403 and .2405 CAIR permit requirements as applicable regulations for nitrogen oxides.
		Removed 15A NCAC 2D .1418 as this NOx rule has been superseded by the CAIR permit requirements added in Section 2.5.
		Added 15A NCAC 2Q .0402 as an applicable regulation for sulfur dioxide and nitrogen oxides to correct previous permit.
40	2.1 F.6 (old section)	Removed 15A NCAC 2D .1418 as this NOx rule has been superseded by the CAIR permit requirements added in Section 2.5.
47	Section 2.1.H, regulation table	Added limit for 2D .1109 MACT CAA § 112(j).
49-50	Section 2.1 H.5	Added 2D .1109 Case-by-Case MACT requirements.
50	Section 2.1.I, regulation table	Added limit for 2D .1109 MACT CAA § 112(j).
51	Section 2.1 I.4	Added 2D .1109 Case-by-Case MACT requirements.
52	Section 2.1.J, regulation table	Added limit for 2D .1109 MACT CAA § 112(j).
53	Section 2.1 J.4	Added 2D .1109 Case-by-Case MACT requirements.
65-69	2.4	Revised Acid Rain effective dates.
		Revised NOx limits and heat inputs in accordance with new averaging plan in Section 2.4 B.
		Revised dates for Acid Rain Permit Application, Phase II NOx Compliance Plan, and Phase II NOx Averaging Plan attachments in Section 2.4 D.
69-71	2.5	Added Section 2.5 - CAIR Permit Requirements.

III. Facility Description

Progress Energy’s H. F. Lee Steam Electric Plant is an electric utility that generates electrical power using boilers and combustion turbines. The emission sources at the H. F. Lee facility include three coal/No. 2 fuel oil/used oil-fired electric utility boilers (Unit 1 Boiler, Unit 2 Boiler and Unit 3 Boiler), four No. 2 fuel oil-fired simple-cycle internal combustion turbines (Lee IC Unit Nos. 4, 5, 6 and 7), five No. 2 fuel oil/natural gas-fired simple-cycle internal combustion turbines (Lee IC Unit Nos. 10, 11, 12, 13 and 14), two No. 2 fuel oil storage tanks (ST1 and ST2) and one natural gas-fired heater (CT-Heater) used to heat natural gas prior to combustion in the natural gas-fired simple-cycle combustion turbines.

IV. Summary of Changes to Emission Sources and Control Devices

NA

V. Regulatory Evaluation

1. CAIR

North Carolina's CAIR rules were approved into the SIP by EPA on November 17, 2009 and published in the Federal Register on November 30, 2009. This rule replaces the 2D .1416, .1417 and .1418 NOx SIP Call rules previously in the permit.

The applicable CAIR rules, as specified in the CAIR Permit Application attached to the permit, includes the emission and monitoring requirements shown below for the following affected CAIR sources:

PERMITTED SOURCE ID No.	CAIR ID No.
Unit 1 Boiler	1
Unit 2 Boiler	2
Unit 3 Boiler	3
Lee IC Unit No. 5	5
Lee IC Unit No. 6	6
Lee IC Unit No. 7	7
Lee IC Unit No. 10	10
Lee IC Unit No. 11	11
Lee IC Unit No. 12	12
Lee IC Unit No. 13	13
Lee IC Unit No. 14	14

15A NCAC 2D .2400 "Clean Air Interstate Rule" (STATE-ONLY REQUIREMENT)

This rule implements the federal Clean Air Interstate Rule under 40 CFR Part 96. The following 2D .2400 sections apply:

15A NCAC 2D .2403 "Nitrogen Oxide Emissions"

This section specifies the total annual NOx allocations and includes the compliance, emissions measurements recording and reporting, excess emissions and liability requirements.

15A NCAC 2D .2405 "Nitrogen Oxide Emissions During Ozone Season"

This section specifies the NOx allocations during the ozone season and includes the compliance, emissions measurements recording and reporting, excess emissions and liability requirements.

15A NCAC 2D .2404 "Sulfur Dioxide Emissions"

This section specifies the annual SO₂ allocations and includes the compliance, emissions measurements recording and reporting, excess emissions and liability requirements.

2. Acid Rain

15A NCAC 2Q .0400 "Acid Rain Procedures" (40 CFR Part 72 "Permits Regulation")

North Carolina air quality regulation 15A NCAC 2Q .0400 implements Phase II of the federal acid rain program pursuant to Title IV of the CAA as provided in 40 CFR Part 72. Issuance or denial of acid rain permits shall follow the procedures under 40 CFR Part 70 (Title V) and Part 72. If the provisions or requirements of Part 72 conflict or are not included in Part 70, the Part 72 provisions and requirements shall apply and take precedence.

15A NCAC 2Q .0400 "Acid Rain Procedures" (40 CFR Part 73 "Sulfur Dioxide Allowance System")

Establishes the procedures for allocation, tracking, holding and transfer of sulfur dioxide emission allowances, including the allowances allocated to each applicable Phase II unit account to be held in each calendar year as specified in 40 CFR 73.10.

15A NCAC 2Q .0400 “Acid Rain Procedures” (40 CFR Part 76 “Acid Rain Nitrogen Oxides Emission Reduction Program”)

Each coal-fired utility unit that is subject to an Acid Rain emissions limit for SO₂ under Phase I or Phase II of the CAA must meet the NO_x emission limitations under 40 CFR Part 76. Progress Energy has revised their Phase II NO_x Averaging Plan to comply with the NO_x emissions limits. NO_x emissions averaging is a NO_x compliance option under 40 CFR 76.11 which allows any affected units subject to a NO_x emissions limit under 40 CFR 76.5, 76.6 or 76.7, under the control of the same owner and operator, and with the same designated representative, to average their NO_x emissions under an approved averaging plan. It has been verified that the averaging plan proposed meets the criteria that the Btu-weighted annual emission rate averaged over the units if they are operated in accordance with the proposed averaging plan is less than or equal to the Btu-weighted annual average emission rate for same units operated in compliance with 40 CFR 76.5, 76.6 or 76.7, as shown in the application.

3. 15A NCAC 2D .1109: CAA § 112(j); CASE-BY-CASE MACT FOR BOILERS & PROCESS HEATERS

The sources subject to the §112(j) MACT are:

- one natural gas-fired heater (ID No. CT Heater)
- one natural gas-fired auxiliary boiler (ID No. AB1)
- one natural gas-fired fuel gas heater (ID No. FGH1)
- three natural gas-fired dew point heaters (ID Nos. DPH1, DPH2 and DPH3).

These sources fire only natural gas.

On July 30, 2007, the US Appeals Court for the D.C. Circuit Court vacated the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters, promulgated under 40 CFR 63, Subpart DDDDD (the Boiler MACT). On February 24, 2009, the North Carolina Attorney General’s office had opined that the vacatur of any Maximum Achievable Control Technology (MACT) standard is tantamount to EPA’s failure to promulgate a valid Section 112(d) standard under CAA. As a result, the requirement of site-specific MACT standard under CAA §112(j), commonly referred to as the MACT “hammer” provision, has been triggered. North Carolina regulations implementing the “MACT hammer” are found at 15A NCAC 2D .1109.

No control technologies for the control of CO, metals, Hg, or HCl were identified for natural gas fired boilers or process heaters in the state of North Carolina, nor were any such technologies identified in a North Carolina query using U.S. EPA’s AirControlNet software (v4.1). The NC DAQ has determined that MACT for these sources is the use of best work practice standards for natural gas combustion sources of this size, consistent with the provisions in CAA §112(d)(2)(D). Best work practice standards in this case shall include an annual inspection and maintenance of the source as follows:

To assure compliance, the Permittee shall perform an annual boiler inspection and maintenance as recommended by the manufacturer, or as a minimum, the inspection and maintenance requirement shall include the following:

- i. Inspect the burner, and clean or replace any components of the burner as necessary;
- ii. Inspect the flame pattern and make any adjustments to the burner necessary to optimize the flame pattern; and,
- iii. Inspect the system controlling the air-to-fuel ratio, and ensure that it is correctly calibrated and functioning properly.

The Permittee shall conduct at least one tune-up per calendar year to demonstrate compliance with this requirement. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1109 if the affected boilers are not inspected and maintained as required above.

In addition, the Permittee will be required to record the results of the annual inspection in a logbook (written or electronic format), which shall be retained on-site and made available to an authorized representative upon request.

VI. Public Notice

Pursuant to 15A NCAC 2Q .0521, a notice of the draft Title V Operating Permit will be published on the DAQ website, to provide for a 30-day comment period with an opportunity for a public hearing. Copies of the draft (proposed) permit, review and public notice will be sent to EPA for their 45-day review, to persons on the Title V mailing list, and to the Permittee for review.

VII. Other Requirements

PE Seal

NA. No control devices are being added.

Zoning

There is no expansion of the facility, therefore Zoning consistency is not required.

Fee Classification

The facility fee classification before and after this modification will remain as "Title V".

VIII. Recommendations

later after public notice