

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date:

Region: Raleigh Regional Office
County: Person
NC Facility ID: 7300045
Inspector's Name: Steven Carr
Date of Last Inspection: 04/22/2009
Compliance Code: 3 / Compliance - inspection

Facility Data			Permit Applicability (this application only)
Applicant (Facility's Name): Progress Energy - Mayo Facility Facility Address: Progress Energy - Mayo Facility 10660 Boston Road Roxboro, NC 27574 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: 7300045.07B Date Received: 11/30/2007 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 03478/T30 Existing Permit Issue Date: 05/27/2009 Existing Permit Expiration Date: 08/31/2013
Dulcie Phillips Senior Environmental Specialist (336) 597-7331 10660 Boston Road Roxboro, NC 27574	Eric Northeim Plant Manager (336) 599-0218 10660 Boston Road Roxboro, NC 27574	Stephen Boone Lead Environmental Specialist (919) 546-4798 410 S. Wilmington Street Raleigh, NC 27601	
Review Engineer: Mike Gordon Review Engineer's Signature: _____ Date: _____		Comments / Recommendations: Issue 03478/T31 Permit Issue Date: Permit Expiration Date:	

1. Purpose of Application

Progress Energy Carolinas, Inc. (Progress) submitted an application for renewal of their Title V permit on November 30, 2007. The facility will be incorporating CAM requirements into the existing coal fired boilers for the electrostatic precipitators (ESP). Also the permit is being modified to incorporate existing CAIR requirements under 15A NCAC 2D .2400, State-Only requirements for 15A NCAC 2D .2500 "Mercury Rules for Electric Generators", and the removal of 15A NCAC 2D .1400 rules that are replaced by 2D .2400. This renewal includes consolidated applications 7300045.08A (an administrative amendment) and 7300045.10A that is part two of the 2Q .0501(c)2 process for the installed PM CEMS, dry sorbent injection system, flyash handling, etc.

2. Application Chronology

Refer to "Comprehensive Application Report" for complete details.

3. Facility Description

Progress Energy's Mayo Plant is a coal-fired electric power plant located on the Mayo Reservoir near the North Carolina/Virginia border. The plant receives low sulfur, high Btu coal via rail cars (approximately 10-12 trains/month, 100 cars/train, 100 tons/car). The coal from the rail cars is dumped into the rotary drum hopper. The coal is then transferred to the crusher house for required crushing (from approximately 2 inches to approximately 1/8-inch). After crushing, the coal is transported to the coal pile. From the coal pile, the coal is transferred to the surge bins and then to the coal silos. Finally, the coal reaches the boilers after passing through a volumetric feeder and pulverizer.

The Mayo plant began operation in 1983 and typically averages 10-14 days per year of maintenance downtime. Currently, approximately 75 employees work at this facility. The plant operates two boilers with a net generating capacity 745 megawatts per hour. Each boiler is equipped with a low nitrogen oxides (NO_x) burner system, a selective catalytic reduction (SCR) system, and two electrostatic precipitators (ESP's) installed in parallel. The plant has recently installed a Flue Gas Desulfurization (FGD) limestone slurry tray tower scrubber to serve as an additional control device for the two boilers in order to reduce sulfur dioxide (SO₂) emissions in accordance with Clean Smokestacks Act of 2002.

4. Statement of Compliance

Based on the last full inspection performed by the RRO (Steven Carr) on 4/22/2009, Progress Energy Carolinas – Mayo Facility appeared to be in compliance with all requirements outlined in the air permit 03478T29.

5. Permit Modifications/Changes

5.1 Clean Air Interstate Rules

On December 23, 2008 The U.S. Court of Appeals for the D.C. Circuit ruled to remand the Clean Air Interstate Rule (CAIR) to the EPA and therefore leave CAIR and the CAIR Federal Implementation Plans, including the CAIR trading programs, in place until EPA issues a new rule to replace CAIR in accordance with the July 11, 2008 decision. EPA informed the Court that development and finalization of a replacement rule could take about two years.¹ On July 1, 2006 (Amended May 1, 2008) North Carolina issued rules under 15A NCAC 2D .2400 for implementation of the CAIR Program. North Carolina's rules have been approved by the Environmental Management Commission (EMC) and have now been approved by the EPA in December 2009; therefore the .2400 rules are now part of the State Implementation Plan. A permit section has been created for the incorporation of CAIR related rules under Section 2.5.

¹ See "State of North Carolina vs. EPA" Case No. 05-1244 U.S. Court of Appeals for the District of Columbia. December 23, 2008

5.2 Mercury Rules for Electric Generators

On February 8, 2008, the D.C. Circuit vacated EPA's rule removing power plants from the Clean Air Act list of sources of hazardous air pollutants. At the same time, the Court vacated the Clean Air Mercury Rule.² North Carolina issued rules under 15A NCAC 2D .2500 on January 1, 2007 specifically for the reduction of mercury emissions within the State in conjunction with the Federal CAMR Rules. After the vacatur, the State of North Carolina has opted to retain the 2D .2500 rules under a State-Only enforceable program since they had not yet been adopted into the SIP. Language previously used in the federal CAMR rules has been retained in the state rules by reference even though the federal requirements have subsequently been vacated.

5.3 Table of Changes

Old Page No.	New Page No.	Part, Section, or Condition No.	Change
-	-	Cover	Amended to reflect current permit number, issue date, effective date, and associated application information
-	-	Table of Contents	Revised dates for Acid Rain Permit Application, Phase II NOx Compliance Plan, and Phase II NOx Averaging Plan attachments.
-	-	Emissions Source Table	Updated Table to reflect changes to permit
5-6	5-6	Table 2.1.A	Incorporated additional permit requirements
5-9	5-9	2.1.A	Removed references to .0501(c)2 and shielded the PM CEMS, dry ash handling, sorbent injection, etc.
5-9	5-9	2.1.A	Added NSPS 30 day testing notification requirement to several specific conditions in lieu of the existing 45 day requirement located in General Condition JJ
9	10	2.1.A.5	Removed NOx SIP requirements incorporated under 2D .2400. Requirements have been placed in the new Section 2.5 for CAIR
-	14	2.1.A.7	Incorporated applicable requirements of 15A NCAC 2D .2500 for Mercury emissions from Coal fired Boilers (Unit ID No.'s 1A and 1B)
27-28	30-31	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.
-	34-35	2.5	Added CAIR Permit Section and attached associated application as part of this permit

² See "State of New Jersey et al. vs. EPA" Case No. 05-1097 U.S. Court of Appeals for the District of Columbia. February 8, 2008

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

NSPS

The Limestone Receiving, Storage, Transfer, and Grinding system listed under Section 2.1.F of the permit is subject to NSPS Subpart OOO for PM emissions. Coal Unloading (ID No. COALDUMP), Five coal storage silos (ID Nos. SILO2 through SILO6) with bagfilter (ID No. BF2), the Coal crusher (ID No. CRUSHER), and the three conveyor drop points (ID Nos. CV2, CV9A and CV9B) with bagfilter (ID No. BF3) are subject to NSPS Subpart Y for visible emissions.

NESHAPS

One Emergency No. 2 fuel oil fired Generator (ID No. EMGEN) is subject to 40 C.F.R. 63 Subpart ZZZZ with no applicable requirements.

Attainment Status and NSR

Person County is in attainment. There is no NSR for this renewal.

112(r)

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

PSD

The Mayo Facility is a major stationary source. Unit Boilers 1A and 1B have established BACT for PSD in the permit under specific condition 2.1.A.2 for particulates, NO_x, and SO₂. No increase in emissions will occur as a result of this permit.

CAM

Coal Fired Units 1A and 1B are not subject to CAM for PM emissions from the Electrostatic Precipitators (ESP's). Units are exempt under 15A NCAC 2D .0614 for specification of a continuous compliance determination method under 15A NCAC 2D. 0524 NPSP (as promulgated in 40 CFR 60 Subpart D).

7. Permit History

Permit No.	Issuance Date	Description of Revision
03478T23	March 3, 2003	Initial TV Permit
03478T24	September 4, 2003	Reissued Initial Title V Permit due to Progress Energy Adjudication
03478T25	April 29, 2005	Significant modification that revised NO _x requirements and Acid Rain effective dates with new attached application.
03478T26	June 1, 2005	Reopen for cause to revise general condition I.A
03478T27	July 28, 2006	Significant modification that added Flue Gas Desulfurization, various conveyer systems, storage, and the wastewater bioreactor
03478T28	February 27, 2008	2Q .0316 modification (administrative amendment) to include 2D .1100 for toxics
03478T29	September 8, 2008	Typographical errors in NSPS Subpart D standards (administrative amendment)
03478T30	May 27, 2009	2Q .0501(c)(2) modification to add sorbent silos and injection system as well as precursors to CAIR final rules.
03478T31	October 15, 2009	Added PM CEMS into the permit

8. Facility Emissions Review

The following is an emission summary for this facility. Actual emissions are for year 2009, as reported by the company to DAQ through submittal of annual emission inventory.

Pollutant	Actual Emissions (Tons/Yr)
PM	949.17
PM10	690.06
PM2.5	391.72
CO	447.04
NO _x	1935.12
SO ₂	20072.20
VOC	53.56
Single HAP (HCl)	1691.22
Total HAP	1831.29

9. Public Notice / EPA and Affected States Review

Public notice for this permit is required. The EPA Review period applies. This permit will affect no additional states.

10. Conclusions, Comments, and Recommendations

This is a permit renewal for the Progress Energy Carolinas, Inc. - Mayo Steam Electric Generation Plant. CAM is not required as part of this permit due to the specification of a continuous compliance determination method for the particulate standard under Section 2.1.A.1. The facility has installed PM CEMS that it will use to monitor the particulates generated from the unit boilers.

Please see Section 5.1 and 5.2 for discussion on CAIR and implemented mercury rules.

A minor change to the permit involved notification requirements. Progress requested that the DAQ allow the facility to give thirty days notification to the regional office prior to stack testing on the coal-fired boilers in accordance with NSPS requirements and that the requirement of 45 days notification under General Condition JJ not apply. The DAQ granted this request on the basis that the facility is under specific NSPS requirements for the coal-fired boilers (40 CFR 60 Subpart D) that cover notification.

Application 7300045.10A was consolidated into this renewal as the second part in the 501(c)2 process for the sorbent silos and injection system permitted under T30 as well as the PM CEMS under T31

RRO has requested a draft copy of this permit.