

Air Permit Review

Permit Issue Date: **February 12, 2010**

Region: Winston-Salem Regional Office
County: Rockingham
NC Facility ID: 7900156
Inspector's Name: Eric Hudson
Date of Last Inspection: 03/24/2009
Compliance Code: 3 / Compliance – insp.

Facility Data			Permit Applicability	
Applicant: Duke Energy Carolinas, LLC - Rockingham Co. Comb. Turbine 240 Ernest Drive Reidsville, NC 27320 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 .0516, .0521, .0530, and .2400 NSPS: 40 CFR Part 60, Subpart GG NESHAP: 40 CFR Part 63, Subpart ZZZZ PSD: 2D .0530 PSD Avoid: N/A NC Toxics: N/A 112(r): N/A Other: 2D .1806 and 2Q .0400	
Contact Data			Application Data	
Facility Contact	Authorized Contact	Technical Contact	Application Number: 7900156.09C Date Received: 03/01/2007 Application Type: Renewal Application Schedule: Title IV Existing Permit Data Existing Permit Number: 08731/T09 Existing Permit Issue Date: 09/16/2009 Existing Permit Expiration Date: 08/31/2014	
David Brooks EHS Professional (336) 637-1370 240 Ernest Drive Reidsville, NC 27320	Albert Smith VP Regulated CC/CT Operations (704) 382-5371 526 South Church Street Charlotte, NC 28202	William Horton Senior Scientist (980) 373-3226 P.O. Box 1006 Charlotte, NC 28202		
Review Engineer: David Putney Review Engineer's Signature: _____ Date: _____			Comments / Recommendations: Issue 08731/T10 Permit Issue Date: February 12, 2010 Permit Expiration Date: August 31, 2014	

I Reason for Application:

Facility Description: Duke Energy Carolinas, LLC currently operates the Rockingham County Combustion Turbine Facility in Reidsville, North Carolina under Permit No. 08731T09. This facility is operated during periods of peak demand (typically the summer months) for distribution and sale on the electric power grid throughout the Duke Energy Carolinas, LLC service area.

Permit Modification: The Permittee submitted application 7900156.07A to renew (without any modifications) Permit No. 08731T08. That application also included a request to renew the acid rain permit for this facility in order to align the renewal schedules. DAQ did not make this change in Permit No. 08731T09 since Title IV (acid rain) permits are issued for calendar years and, therefore, future Title IV and Title V permit renewal dates will not align anyway. The DAQ generated a separate Title IV permit renewal application (i.e. this application 7900156.09C) to renew the Title IV permit for 01/01/10 – 12/31/14 from the information included in application 7900156.07A.

The Permittee also submitted an application (i.e. application 7900156.09D, which was subsequently consolidated into application 7900156.09C) for an administrative amendment to Permit No. 08731T09. Specifically, the description of the combustion turbines (CTs) in Section 2.1 A of that permit incorrectly lists the maximum heat input rate of the CTs as 1,875 and 1,839 million Btu per hour while burning natural gas. The maximum heat input of 1,839 million Btu per hour applies when burning No. 2 fuel oil.

This technical review addresses only the sources associated with the requested changes (i.e. the five combustion turbines) and only the rules affected by those changes (i.e. 2Q .0400 “Acid Rain Procedures,” 2D .1417 “Nitrogen Oxides,” and 2D .2400 “Clean Air Interstate Rules”).

II Regulatory Review:

A. Five natural gas/No. 2 fuel oil-fired simple-cycle internal combustion turbines (1,875 million Btu per hour maximum heat input rate while firing natural gas, 1,839 million Btu per hour maximum heat input rate while firing No. 2 fuel oil, each; ID Nos. ES-CT-1 through ES-CT-5) each equipped with dual-fuel dry low-NO_x combustors and water injection

These Westinghouse Model No. 501F combustion turbines are used to generate electric power for distribution and sale. According to the initial application, each of these combustion turbines is capable of a nominal maximum power output of 180 megawatts. Nitrogen oxide emissions from these turbines are controlled via water injection (when burning No. 2 fuel oil – this control is implemented by mixing the water and No. 2 fuel oil prior to injection into the turbine) and dual-fuel dry low-NO_x combustors (when burning natural gas). Natural gas is the predominant fuel used in these turbines. These turbines were first permitted on June 30, 1999 and have been in operation since June of 2000.

i. 2D .1417 “Nitrogen Oxides”

Current Permit No. 08731T09 includes the NO_x SIP Call requirements pursuant to 2D .1417 as a federally-enforceable only condition with 40 CFR 52, Subpart II (i.e. 40 CFR 51.121 - the approved NC SIP at that time) cited as the regulatory basis. However, the EPA signed (approved) the North Carolina Clean Air Interstate Rules (CAIR) into the State Implementation Plan (SIP) on 11/17/09. Further, rule 2D .1417 has been repealed, effective 09/29/09. Therefore, all references to rule 2D .1417 are removed from Permit No. 08731T10.

ii. 2D .2400 “Clean Air Interstate Rules”

This facility is subject to the MRR requirements of 40 CFR Part 96 “NO_x Budget Trading Program and CAIR NO_x and SO₂ Trading Programs for State Implementation Plans” pursuant to 2D .2403(c), 2D .2405(e) and 2D .2407. Current Permit No. 08731T09 includes the standard CAIR permit language developed by NC DAQ, but as a state-enforceable only condition. Since the NC CAIR has been approved by EPA and is now part of the SIP (see discussion in Section II A.i, above), the CAIR permit language is maintained in Permit No. 08731T10, but is changed to federally-enforceable and state-enforceable.

iii. 2Q .0400 “Acid Rain Procedures”

Section 2Q .0400 implements Phase II of the federal Acid Rain Program in North Carolina pursuant to Title IV of the Clean Air Act as provided in 40 CFR Part 72 and includes the requirements for the installation, certification, operation, and maintenance of continuous emissions or opacity monitoring equipment found in 40 CFR Part 75. Permit application 7900156.09C represents a renewal of these requirements without modification.

III NSPS/NESHAP/PSD/Toxics/112(r)/CAM/RACT Applicability:

NSPS: The combustion turbines at this facility are subject to 40 CFR Part 60, Subpart GG (i.e. the NSPS for stationary gas turbines). Both the emergency generator and emergency fire pump at this facility pre-date 40 CFR Part 60, Subpart IIII (i.e. the NSPS for compression ignition reciprocating internal combustion turbines) and are therefore not subject to that regulation.

NESHAP: The emergency generator and emergency fire pump at this facility are both subject to 40 CFR Part 63, Subpart ZZZZ (i.e. the MACT for reciprocating internal combustion turbines) but with no applicable requirements. The combustion turbines are not subject to 40 CFR Part 63, Subpart YYYYY (i.e. the MACT for stationary combustion turbines). That rule only applies to sources located at facilities classified as major for purposes of Title III (see §63.6085). This facility is not classified as major under Title III.

PSD: This facility does not fall into one of the PSD categories listed at 40 CFR §51.166(b)(1)(i)(a) with a 100 tons per year threshold but does qualify as a major stationary source for PSD purposes under 40 CFR §51.166(b)(1)(i)(b) since it has the potential to emit NO_x and CO at rates in excess of 250 tons of per consecutive 12-month period. BACT limits were applied to the combustion turbines, the No. 2 fuel oil storage tanks, the emergency generator, and the emergency fire water pump via a previous permit application. Applications 7900156.09C and 7900156.09D do not affect emissions from this facility – therefore a PSD review is not triggered at this time.

Toxics: The Permittee has not yet demonstrated compliance (and is not required to demonstrate compliance yet) with the NC toxics program. The combustion turbines, emergency generators and emergency fire pump fall under the definition of “combustion sources” found in 2Q .0703(6) and are therefore currently exempted from the requirement to demonstrate compliance with the NC toxics program pursuant to 2Q .0702(18). The No. 2 fuel oil storage tanks are exempted from the requirement to demonstrate compliance with the NC toxics program pursuant to 2Q .0702(19)(B). Applications 7900156.09C and 7900156.09D do not affect emissions from this facility – therefore a toxics review is not triggered at this time.

112(r): According to Section A3 of Application No. 7900156.09C, this facility does not use, handle, or store any regulated materials onsite in quantities in excess of the associated thresholds (except for propane which is used as a fuel and therefore exempt) and is therefore not subject to the requirements of this regulation.

RACT: This facility is not located in one of the areas listed in 2D .0902(f) or 2D .1402(d) and is therefore not subject to the existing source RACT requirements.

CAM: This facility is not subject to CAM requirements (see Appendix A of the review associated with Permit No. 08731T09 for more details).

IV Permit Modifications/Changes:

The following table summarizes the substantive changes in Permit No. 08731T10 resulting from Permit Application Nos. 7900156.09C and 7900156.09D:

Old Page(s)	New Page(s)	Condition/Item	Description of Change(s)
Global	Global	N/A	Change the issuance/effective dates of the permit and the permit revision number to T10
2	2	Table of Contents	Update to reflect latest submittal of the Title IV renewal application dated 02/20/07
4	4	2.1 A	Correct description to show natural gas and No. 2 fuel oil firing rates and modify limits/standards summary table to remove the reference to 2D .1417
8	NA	2.1 A.4 (08731T09)	Delete this section since 2D .1417 has been repealed and the SIP that includes CAIR has been approved
14	14	2.3	Update section to reflect Title IV renewal application
15 - 16	15 - 16	2.4	Remove “State-Enforceable Only” from section (CAIR is now federally-enforceable and state-enforceable)
17 - 24	17 - 25	Section 3	Update to current shell (i.e. version 3.0)

Note: Condition/Item are as they appear on Permit No. 08731T09, unless otherwise noted.

V Application Fee/Zoning Consistency:

No fee or zoning consistency determination is required for the renewal (without modification) of the Acid Rain (i.e. Title IV) permit requested via application 7900156.09C or the administrative amendment requested via application 7900156.09D (consolidated into application 7900156.09C).

VI Title V Permit History:

The following table provides a very brief summary of Title V permit revisions for this facility:

Permit No.	Issuance	Description of Revision
08731T04	12/19/02	Issuance of initial Title V permit
08731T05	03/15/05	Renewal of the Title IV (acid rain) permit.
08731T06	06/30/06	Add monitoring/reporting requirements for the CO CEMs
08731T07	11/10/06	Ownership change
08731T08	04/07/08	Allow a “look back” of up to 200 hours to determine NO _x and CO CEM monitor data availability where $\geq 95\%$ availability is required
08731T09	09/16/09	Renewal of the Title V permit, addition of CAIR, and replacement of limit on heat input rate of turbines while burning No. 2 fuel oil with a lower limit on sulfur content of No. 2 fuel oil (i.e. 0.025%).
08731T10	02/12/10	Renew the Title IV permit, remove 2D .1417, and modify to reflect that 2D .2400 is federally-enforceable and state-enforceable

VII Compliance Status:

The facility was most recently inspected on 03/24/09 (see report dated 03/26/09) by Eric Hudson of WSRO and appeared to be compliance with DAQ requirements during that inspection.

VIII Certification by Responsible Official:

In accordance with 2Q .0520, Albert J. Smith III (i.e. the responsible official for Duke Energy Carolinas, LLC – Rockingham County Combustion Turbine Facility) provided the required certification on Form E5 of application 7900156.09C.

IX Permit Review:

Application Shield: An application shield applies to this facility in accordance with 2Q .0512(b) since the applicant submitted a timely and complete application for permit issuance.

Draft Permit: A draft version of Permit No. 08731T10 and the associated review were sent to the Permittee and the WSRO for a review and comment period on 12/11/09.

Public Participation: In accordance with 2Q .0521, NC DAQ must provide the opportunity for public participation during the renewal of a Title IV permit (such as that represented by application 7900156.09C). NC DAQ met this obligation with the public notice posted in “a newspaper of general circulation in the area where the facility is located” and “mailed to persons who are on the Division’s mailing list for air quality permit notices” on 12/25/09.

EPA & Affected States Review: In accordance with 2Q .0522, NC DAQ must provide EPA and Affected States [as defined at 2Q .0503(1)] staff the opportunity to review a proposed renewal of this Title IV permit. NC DAQ met this obligation by sending those agencies a copy of Proposed Permit No. 08731T10 on 12/25/09.

X Recommendation:

The Title IV Permit renewal application for the Duke Energy Carolinas, LLC – Rockingham County Combustion Turbine Facility in Reidsville, Rockingham County, NC has been reviewed by NC DAQ personnel to determine compliance with all applicable procedures and requirements. NC DAQ personnel have determined that this facility is complying with or will achieve compliance with all applicable requirements as specified in Permit No. 08731T10.

Issuance of Permit No. 08731T10 is recommended.