

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date:

Region: Washington Regional Office
County: Dare
NC Facility ID: 2800021
Inspector's Name: Steven Daniels
Date of Last Inspection: 07/28/2005
Compliance Code: C/In Compliance With
 Procedural Requirement

Facility Data			Permit Applicability (this application only)		
Applicant (Facility's Name): NC Electric Membership Corporation CDS No.: 3705500021 Facility Address: N C Electric Membership Corporation 47123 Light Plant Road Buxton, NC 27920 SIC: 4911 / Electric Services NAICS: 221122 / Electric Power Distribution Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: 2D .0516 and .0521 NSPS: NESHAP: PSD: PSD Avoidance: 2Q .0317 (NO ₂) NC Toxics: 112(r): Other:		
Contact Data			Application Data		
Facility Contact	Authorized Contact	Technical Contact	Application Number: 2800021.05A Date Received: 01/26/2005 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 06612/T07 Existing Permit Issue Date: 11/03/2000 Existing Permit Expiration Date: 10/31/2005		
Randy Jordan Manager (252) 995-4096 Light House Road Ocracoke, NC 27960	Barbara Ziberna Senior Vice President (919) 875-3032 3400 Sumner Boulevard Raleigh, NC 27616	June Small Director of Environmental Affairs (919) 875-3116 3400 Sumner Boulevard Raleigh, NC 27616			
Review Engineer: Jeff Twisdale Review Engineer's Signature:		Date:	Comments / Recommendations: Issue 06612/T08 Permit Issue Date: XX/XX/2006 Permit Expiration Date: XX/XX/2011		

I. Purpose of Application:

This permitting action is a renewal of an existing Title V permit pursuant to 2Q .0513. The existing Title V permit (06612T07) was issued on November 3, 2000 and expired on October 31, 2005. The renewal application was initially received on January 26, 2005 by the Washington Regional Office (WaRO) and deemed complete on March 22, 2006. The renewal application was received at least nine months prior to the expiration date. Therefore, the existing permit will **not** expire until the renewal permit has been issued or denied with submittal of a complete and timely application, and the terms and conditions of the existing permit will remain in effect until the renewal permit has been issued or denied pursuant to 2Q .0513.

II. Facility Description

North Carolina Electric Membership Corporation (NCEMC) is a facility that generates electrical power during peak electric demand requirements using five No. 2 fuel oil-fired stationary internal combustion generators that are rated at 27.8 million Btu per hour (MBtu/hr) OR 2.865 megawatts (MW) OR 3,842 horsepower (hp) each.

III. History/Background/Application Chronology

November 3, 2000 – Initial Title V permit (06612T07) issued by Booker Pullen, RCO Permit Engineer.

January 26, 2005 – Received application for renewal of existing Title V permit. This modification will be processed as a renewal pursuant to 2Q .0513.

March 3, 2006 – DRAFT permit forwarded to Title V Permit Coordinator (Charlie Yirka) for review.

March 6, 2006 – DRAFT permit sent to NCEMC and WaRO for review via email.

March 6, 2006 – No comments on DRAFT permit received from Steven Daniels of WARO via email.

March 17, 2006 – Comments on DRAFT permit received from NCEMC via email. See Section XII D.

March 22, 2006 – Received additional information about day tanks and revised PSD Avoidance condition.

IV. Permit Modification/Changes

The following table describes the modifications to the current permit as part of the renewal process:

Old Page	New Page	Section	Change
None	None	Insignificant Activity List (Attachment) – No. 2 fuel oil storage tank (ID No. IST-1)	added No. 2 fuel oil storage tank to insignificant activities list per 2Q .0503(8)
None	None	Insignificant Activity List (Attachment) – Six No. 2 fuel oil day tanks (ID Nos. IDT-001 through IDT-005 and IDT-EG1)	added six No. 2 fuel oil day tanks to insignificant activities list per 2Q .0503(8)
Page 3	Page 3	Section 1 - Emission Source Table – No. 2 fuel oil storage tank (ID No. IST-1)	removed No. 2 fuel oil storage tank due to low vapor pressure exemption per 2D .0524 (NSPS Subpart Kb – amended 10/15/2003)
Page 3	Page 3	Section 2.1 A - Emission Source Description / Table of Standards	revised limit for PSD Avoidance (2D .0530) for NO ₂ emissions to 247.8 tons per year
Page 3	Page 3	Section 2.1 A - Emission Source Description / Table of Standards	added 2Q .0317 citation for PSD Avoidance (2D .0530) for NO ₂ emissions
Page 4	Page 4	Section 2.1 A.3.a. – 2Q .0317 (2D .0530 avoidance) - NO ₂ emissions limit	revised limit for PSD Avoidance (2Q .0317) for NO ₂ emissions to 247.8 tons per year
Page 4	Page 4	Section 2.1 A.3.c. – 2Q .0317 (2D .0530 avoidance) - NO ₂ emissions monitoring and recordkeeping – annual No. 2 fuel oil limit and NO ₂ emission factor based on the vendor's source testing data.	revised annual No. 2 fuel oil limit to 958,607 gallons per year and added NO ₂ emission factor (<i>0.5170 pounds of nitrogen dioxide per gallon of No. 2 fuel oil fired</i>) for PSD Avoidance (2D .0530) for NO ₂ emissions
Page 4	Page 5	Section 2.1 A.3.d. – 2Q .0317 (2D .0530 avoidance) - NO ₂ emissions reporting	updated reporting to semiannual for PSD Avoidance (2D .0530) for NO ₂ emissions
Page 5	None	Section 2.1 B - Emission Source Description / Table of Standards – No. 2 fuel oil storage tank – 2D .0524 (NSPS Subpart Kb)	removed No. 2 fuel oil storage tank due to low vapor pressure exemption per 2D .0524 (NSPS Subpart Kb – amended 10/15/2003)
Pages 5-12	Pages 5-13	Section 3 – General Conditions	updated permit w/ latest general conditions

V. Regulatory Review

The facility is subject to the following regulations:

15A NCAC 2D .0516: Sulfur Dioxide Emissions from Combustion Sources

15A NCAC 2D .0521: Control of Visible Emissions

15A NCAC 2Q .0317: Avoidance Condition for 15A NCAC 2D.0530 (Prevention of Significant Deterioration)

The facility is no longer subject to the following regulations:

15A NCAC 2D .0524: New Source Performance Standards – 40 CFR Part 60 Subpart Kb

No new or additional requirements have been added to this renewed permit since the Initial Title V Permit was issued. Therefore, a specific regulatory review will **not** be included in this document. The same regulations (2D .0516, .0521, and .0530 avoidance (actually 2Q .0317 now) and associated specific conditions with some minor updating will continue to apply to the existing generators; however, 2D .0524 (Subpart Kb) will no longer apply to the former NSPS affected No. 2 fuel oil storage tank that will become an insignificant activity (see Section VI – NSPS below for more details). The PSD Avoidance condition (2Q .0317) will be revised to more accurately reflect the potential emissions from the generators (see Section VI – PSD). Continued compliance with the above regulations and the associated specific conditions is expected.

VI. NSPS, NESHAPS, PSD, Attainment Status, 112(r), CAM, NO_x SIP Call

NSPS

The No. 2 fuel oil storage tank (60,000 gallon capacity, ID No. ST-1) is no longer subject to NSPS Subpart Kb since the rule was amended 10/15/2003, and No. 2 fuel oil has a vapor pressure (normally 0.01 psia) less than 0.5 psia for the listed tank size. Therefore, NCEMC does not have to continue to maintain records of the dimensions and an analysis showing the capacity of the storage tank for the life of the tank. The permit will be revised to remove that specific condition, and the storage tank will be added to the insignificant activities list.

NESHAP/MACT

Based on a review of the facility's current operations, the facility is **NOT** subject to the **National Emission Standards for Hazardous Air Pollutants (HAPs)** for the **Reciprocating Internal Combustion Engines (RICE) (40 CFR Part 63 Subpart ZZZZ)** NOR for the **Industrial, Commercial and Institutional Boilers and Process Heaters (40 CFR Part 63 Subpart DDDDD)** since the facility is considered to be a minor source of HAPs (potential to emit < 10 tpy) (Ref. Major Source definition under Section 112(a)(1) of the Clean Air Act). The facility's potential HAP emissions (mainly benzene) are less than 10 tpy.

PSD/NSR

This existing facility is considered to be a minor stationary source for PSD/NSR purposes because the facility does **not** have the potential to emit more than 250 tons per year (tpy) of nitrogen dioxide (NO₂). The facility will limit the potential NO₂ emissions [**< 247.8 tpy**] for the five power generators by limiting the No. 2 fuel combustion to less than **958,607** gallons in any 12-month period. *[Note: The potential NO₂ emissions (247.8 tpy) from the five power generators was reduced from 250 tpy since the potential NO₂ emissions (2.2 tpy based on an AP-42 emission factor and 500 hours of operation per EPA guidance) from the emergency generator were not included during the original determination. The annual fuel use limit was calculated using vendor's source testing data (0.5170 lb NO₂/gal No. 2 fuel oil) and was requested by the facility to avoid PSD.]*

In order to continue to avoid applicability of this regulation, calculations of NO₂ emissions will be made at the end of each month, and a monthly log will be kept of the amount of No. 2 fuel oil usage. A summary report including monthly NO₂ emissions and monthly quantities of No. 2 fuel oil usage will be submitted within 30 days after each calendar year semiannual period.

The minor source baseline date has **not** been triggered for Dare County for any pollutant. Therefore, PSD increment will **not** need to be tracked for PM-10, SO₂ nor NO₂ in the future since the facility is **not** a major stationary source. No increase of any emissions is expected during the renewal process.

Attainment Status

This facility is located in Dare County that is currently in attainment for all pollutants. No increase in emissions is expected during the renewal process.

112(r)

This facility is **not** subject to Section 112(r) of the Clean Air Act requirements because it does **not** store any of the regulated substances in quantities above the thresholds in the Rule.

CAM

40 CFR 64 requires that a continuous assurance monitoring plan be developed for all equipment located at a major facility that have pre-controlled emissions above the major source threshold and use a control device to meet an applicable standard. This facility does **not** utilize any control to reduce potential NO₂ emissions to less than 250 tpy from the five generators; therefore, CAM does **not** apply.

NOx SIP Call

The power generators (ID Nos. ES-001 – ES-005) are stationary internal combustion engines that have a rated capacity of 3842 hp each and would normally be subject to 2D .1418(c) that applies statewide; however, these sources were permitted prior to October 31, 2000 (actually 1990). In lieu of 2D .1418, the power generators would normally be subject to 2D .1409(a); however, these sources are **not** located in the specified areas listed in 2D .1402(d). Therefore, the power generators are **not** subject to the 2D .1400 requirements. Also, the emergency generator (ID No. I-EG1) is exempt from the 2D .1400 requirements per 2D .1402(h)(3).

VII. Facility-wide Air Toxics

The facility has **not** triggered the state-only toxics regulations (2Q .0700). Therefore, the facility is **not** subject to a facility-wide air toxics review at this time. Also, the facility does **not** have to submit a facility-wide air toxics review required by the compliance date of the last applicable MACT pursuant to 2Q .0705 since the facility is **not** subject to a MACT (see Section VI above).

VIII. Statement of Compliance

The DAQ has reviewed the compliance status of this facility. Based on visual observations and review of records at the time of the inspection (07/28/2005 by Steven Daniels of WaRO), this facility appeared to be operating in compliance with Air Quality standards and regulations.

IX. Facility Emissions Review

There is no change in emissions for this renewal. The following table represents facility-wide actual emissions as submitted by the facility in its latest (2004) emissions inventory:

Pollutant	2004 Emissions (tons per year)
Nitrogen Oxides	15.3
Carbon Monoxide	0.42
Particulate Matter	0.39
Sulfur Dioxide	0.67
Volatile Organic Compounds	0.20
(all other HAPs/TAPs)	< 0.01 ton

X. Stipulation Review

The permit modification/changes (where needed) were incorporated into the permit (see table of changes in Section IV of this document).

XI. Public Notice / EPA and Affected State Review

Pursuant to 2Q .0521, a notice of the draft Title V Permit will be placed in a newspaper of general circulation in the area where the facility is located. The notice will 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 and EPA. Pursuant to 2Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant will be provided to EPA. Also pursuant to 2Q .0522, a notice of the draft Title V Permit will be provided to each affected State at or before the time notice provided to the public under 2Q .0521 above. There are no affected States for this facility.

XII. Conclusions, Comments, and Recommendations

- A. A professional engineer's seal was **not** required for this renewal.
- B. A consistency determination was **not** required for this renewal.
- C. DAQ recommends issuance of the permit after completion of the public notice and EPA review periods.
- D. Comments received on DRAFT permit:

NCEMC

- Facility made the following comments and requests:

1. Completeness: As far as we know, the applications for renewal of the Title V operating permits for both facilities were timely and complete. So, we believe this should be stated in the cover letter.
DAQ concurs.
2. Insignificant Sources: We believe the day tanks on the generator equipment should be listed as insignificant sources. If you concur, we will provide additional details on these tanks for inclusion.
DAQ concurs.
3. Fuel Storage Tank: The NSPS Subpart Kb requirements no longer apply to the fuel storage tank at the Buxton Plant. Therefore, this tank should not be listed in Section 1 of the Permit document. This storage tank can now be listed as an insignificant source.
DAQ concurs.
4. PSD Avoidance Limitation: We believe the PSD avoidance limitation should be indicated as a facility-wide limitation, rather than a limitation specific to the emissions sources listed in Section 1 of the permits. If the DAQ agrees, this should be changed in the table at Specific Condition 2.1 A and at the fuel limitation shown at Specific Condition 2.1.A.3.c.
DAQ concurs; however, emergency generator, an insignificant source, has potential NO₂ emissions (2.2 tpy based on an AP-42 emission factor and 500 hours of operation per EPA guidance) that should be subtracted from facility-wide potential NO₂ emissions resulting in revised limit of 247.8 tpy.
5. Reporting: The language of Specific Condition 2.1 A.3.d. should be revised as follows:
 - (i) Delete the language pertaining to sulfur dioxide and particulate matter reporting (*specify NO₂*).
 - (ii) Delete the language pertaining to the reporting of natural gas and #6 fuel oil, since these are not used as generator fuels at either facility (*specify No. 2 fuel oil*).
 - (iii) Delete the language pertaining to reporting of the average sulfur content of the fuel. As indicated in our cover letter dated August 12, 1996, this reporting is not required.
DAQ concurs.

6. NSPS Language: In the Buxton Permit, the language pertaining to 40 CFR Part 60, Subpart Kb at Specific Condition 2.1 B and Specific Condition 2.1.B.1. should be deleted. As stated above, this regulation no longer applies to the main fuel storage tank at the Buxton facility.
DAQ concurs.

7. General Conditions: We request that the General Conditions be updated during the remaining permit review and comments periods. For example, the provisions of 15A NCAC 2D .0535, as cited in General Condition I, are currently anomalous, and these are scheduled for revisions during the coming months. If this happens prior to the effective date of the permits, then the permits should reflect the revised rules.
DAQ concurs.

8. Typos: There are a number of typos and spelling errors in the document, including those in the General Conditions, and we recommend these should be corrected.
DAQ concurs.