NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date:

Region: Fayetteville Regional Office
County: Anson
NC Facility ID: 0400050
Inspector's Name: Joshua Loehman
Date of Last Inspection: 08/29/2024
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): North Carolina Electric Membership Corporation (NCEMC) - Anson Plant

Facility Address:
NCEMC - Anson Plant
749 Blewett Falls Road
Lilesville, NC 28091

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

Permit Applicability (this application only)

SIP: 15A NCAC 02D .0521, .0524, .0530
15A NCAC 02Q .0402, 02Q .0317 of 02D. 0530
NSPS: Subpart KKKK
NESHAP: N/A
PSD: CO
PSD Avoidance: NOx
NC Toxics: N/A
112(r): N/A
Other: Cross State Air Pollution Rule (40 CFR Part 97, Subparts AAAAA, BBBBB, CCCCC)

Phase II Acid Rain

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Tony Phillips Manager 749 Blewett Falls Road Lilesville, NC 28091 (919) 875-7106 barry.phillips@ncemcs.com	John Cook VP, Asset Management 3400 Sumner Boulevard Raleigh, NC 27616 (919) 875-3046 john.cook@ncemcs.com	Khalil Porter Manager, Environmental Affairs 3400 Sumner Boulevard Raleigh, NC 27616 (919) 875-3088 khalil.porter@ncemcs.com

Application Data

Application Number: 0400050.24A and .24B
Date Received: 10/15/2024 and 10/15/2024
Application Type: Renewal and Acid Rain
Application Schedule: Title V and Title IV

Existing Permit Data
Existing Permit Number: 09492T10
Existing Permit Issue Date: 10/08/2020
Existing Permit Expiration Date: 06/30/2025

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2023	---	58.80	6.60	55.10	2.20	0.5022	0.3352 [Formaldehyde]
2022	---	184.57	21.06	191.89	9.90	1.97	1.34 [Formaldehyde]
2021	---	55.56	7.43	65.85	3.01	0.6107	0.4203 [Formaldehyde]
2020	---	41.94	6.06	51.37	2.35	0.4750	0.3268 [Formaldehyde]
2019	---	48.86	6.98	59.21	2.70	0.5460	0.3755 [Formaldehyde]

Review Engineer: Booker Pullen

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue: 09492T11
Permit Issue Date: XXXX xx, 2025
Permit Expiration Date: XXXX, xx, 2030

1.0 Purpose of Application(s)

The North Carolina Electric Membership Corporation – Anson Plant (NCEMC – Anson) is an electric power generating station located in Lilesville, North Carolina. The Applicant currently holds Title V and Acid Rain Permit No. 09492T10 with an expiration date of June 30, 2025.

For this proposed modification of the permit, Application No. 0400050.24A is for a Title V permit renewal without modifications, changes, or confidential or trade secret information requests. The renewal application was received on October 15, 2024 in the Fayetteville Regional Office (FRO), or at least six months prior to the expiration date (June 30, 2025). Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

Also, as part of this permit modification, Application 0400050.24B is for the renewal of the Acid Rain permit. There were no modifications, changes, or confidential or trade secret information requests. The Acid Rain renewal application was also received on October 15, 2024 in the Fayetteville Regional Office (FRO), or at least six months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

The permit modification for this renewal of the Title V operation permit and the Acid Rain permit will be required to go through both a 30-day public notice and a 45-day EPA review.

2.0 Facility Description

The Anson Plant located at 749 Blewett Falls Road in Lilesville, Anson County, North Carolina, is comprised of six simple cycle, natural gas-fired (low sulfur No. 2 fuel oil backup) Pratt and Whitney FT-8 combustion turbine (CT) sets, commonly known as “Swift-Pacs”. Each FT-8 Swift-Pac consists of two turbines (designated A and B) which each drive a single electric generator. The facility can produce 340 Mega Watts of electrical power for retail distribution during periods of high demand or during emergencies. The facility has chosen to use a predictive emission monitor system (PEM) to monitor NOx emission in lieu of CEMs. The predictive emission monitor systems have been proven to be as accurate as the CEMs and are in fact more economical (cost and maintenance). The facility uses this software program to monitor and determine NOx emissions from the gas turbines in real time.

The facility is a Title V facility because the potential emissions of at least one criteria pollutant exceeds a Title V threshold.

3.0 History/Background/Application Chronology

<u>History/Background</u>

July 14, 2020	TV permit renewal and Acid Rain Permit issued. Air Permit No. 09492T09 was issued on July 14, 2020, with an expiration date of June 30, 2025.
October 8, 2020	Air Permit No. 09492T10 was issued for a Reopen For Cause (See Russell Braswell TV review). On July 14, 2020, the NC DAQ issued to the North Carolina Electric Membership Corporation – Anson Plant (NCEMC-Anson) a combined Title V and Title IV renewal permit (09492T09) replacing permit number 09492T08 with an expiration date of November 30, 2020. However, it was determined that NCDAQ did not properly notice the draft materials on our webpage or through our full email distribution list as is required by 15A NCAC 02Q .0521 “Public Participation” and 15A NCAC 02Q .0522 “Review by EPA and Affected States”.

In essence, neither the required 30-day public comment period nor the 45-day EPA review period took place. Permit revision T10 was sent through the 30-day Public Notice period and the 45-day EPA review period before being signed on October 8, 2020.

Application Chronology

October 15, 2024	Permit applications 0400050.24A (TV) and .24B (Acid Rain) were scanned into Laserfiche by the Fayetteville Regional Office.
October 15, 2024	Permit applications 0400050.24A (TV) and .24B (Acid Rain) were received for the renewal of the operating permit and renewal of the Acid Rain permit. Applications were received in the Fayetteville Regional Office, then forwarded to the Raleigh Central Office. These applications were considered complete on this date.
October 21, 2024	DAQ Central Office sent acknowledgment letters indicating that applications (0400050.24A and B) for permit renewal of the operating permit and the Acid Rain permit were complete.
November 26, 2024	Draft permit and review forwarded to Supervisor for comments. Comments were received from Supervisor on December 17, 2024.
December 17, 2024	Draft permit and review forwarded to Stationary Source Compliance Branch (SSCB). SSCB (Samir) responded on December 19, 2024 that they had no comments.
December 17, 2024	Draft permit and review forwarded to the Fayetteville Regional Office. Comments were received on January 17, 2025 and all relevant comments were incorporated into the review and draft permit.
December 17, 2024	Draft permit was sent to the applicant. A response was received on January 13, 2025 stating that they had no comments.
XXXXXX, 2024	Draft permit and permit review forwarded to public notice via DAQ website.
XXXXXX, 2025	Public comment period ends. Comments were/were not received. See Section 11 this document for summary of comments and responses.
XXXXXX, 2025	EPA comment period ends. Comments were/were not received. See Section 11 this document for summary of comments and responses.
XXXXXX, 2025	Permit issued.

4.0 Permit Modifications/Changes and TVEE Discussion

The following table describes the modifications to the current permit (09492T10) as part of the renewal process to reissue as 09492T11. This summary is not meant to be an exact accounting of each change but a summary of those changes.

Page(s)	Section in T11	Description of Changes
Page 1	Cover Letter	• Updated letterhead and permit using new permit shell. • Updated permit revision numbers and dates throughout.
Page 2	Cover Letter	• Changed engineer's name and contact information to Booker T. Pullen.
Page 3	Cover Letter	• Added page containing "Notice Regarding The Right to Contest A Division Of Air Quality Permit".
Page 4	Cover Letter	• Revised the Summary of Changes to the Permit page.
Page 1 of Permit	Permit	• Changed Permit number, changed "Replaces Permit" number, changed effective date of Permit, revised the application number and the complete application date.
Page 2	Permit	• Revised the "Table of Contents" to reflect the most current shell language/format. Placed "Acid Rain Permit Requirements" and "Cross State Air Pollution Rules" under the heading "other Applicable Requirements.
Page 3	Permit	• Added the List of Acronyms.
Page 4	Permit, Section 1	• Revised the descriptions for "NSPS" and "PSD" under the Emission Source ID Nos.
Page 11 and 12	Permit, Section 2.2	• Changed Section 2.2 to "Other Applicable Requirements" and added "Phase II Acid Rain Permit Requirements" and "Cross State Air Pollution Rules (CSAPR) Permit Requirements" under this Section.
Page 12	Permit, Section 2.3	• Changed Section 2.4 to 2.3 "Permit Shield for Non-applicable Requirements"
Page 13	Permit, Section 3.0	• Added Section 3.0 "Insignificant Activities".
Pages 14 - 22	Permit, Section 4.0	• Added the most current version of General Conditions (version 8.0, 7/10/2024).
Page 16	Permit, Section 4.0	• Removed Condition K from General Conditions (version 8.0, 7/10/2024).

This permit renewal for applications 0400050.24A and .24B is being processed without modifications but with minor changes to the Title V Equipment Editor.

As stated previously, the Title V permit was most recently renewed on July 14, 2020, for a combined Title V and Title IV renewal permit (09492T09) with an expiration date of June 30, 2025. However, it was later determined that NCDAQ did not properly notice the draft materials on the webpage or through the full email distribution list as is required by 15A NCAC 02Q .0521, Public Participation, and 15A NCAC 02Q .0522 for review by EPA and the affected states. In essence, neither the required 30-day public comment period nor the 45-day EPA review period took place. The permit for this facility was "Reopened for Cause" (August 6, 2020) and sent through public notice and EPA notice before being signed on October 8, 2020.

5.0 Existing Permitted Sources and Associated Pollution Controls and Appurtenances

The following table contains a summary of all permitted emission sources and associated air pollution control devices and appurtenances:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-1A and ES-1B ES-2A and ES-2B ES-3A and ES-3B ES-4A and ES-4B ES-5A and ES-5B ES-6A and ES-6B **NSPS KKKK, PSD BACT**	Twelve Pratt & Whitney FT8 Swift-Pac simple cycle gas turbines (300 million Btu per hour nominal heat input capacity when firing natural gas), and (281 million Btu per hour nominal heat input when firing No. 2 fuel oil (≤ 0.002% sulfur by weight), including one generator per each turbine.	CD-1A, CD-1B CD-2A, CD-2B CD-3A, CD-3B CD-4A, CD-4B CD-5A, CD-4B CD-6A, CD-6B	Water injection system (one system per turbine)

6.0 Regulatory Review

This facility is subject to the following regulations. The facility's equipment and operations have not changed since the last renewal in 2020. The permit was updated to reflect the most current stipulations for all applicable regulations, where necessary.

15A NCAC 02D .0521 "Control of Visible Emissions"
15A NCAC 02D .0524 "New Source Performance Standards" (40 CFR Part 60, Subpart KKKK)
15A NCAC 02D .0530 "Prevention of Significant Deterioration"
15A NCAC 02D .0317 "Avoidance Conditions for 02D .0530"
15A NCAC 02D .0400 "Acid Rain Procedures"
15A NCAC 02D .0512 "Permit shield and Application Shield"

In addition to the above SIP rules, NCEMC - Anson Plant is also subject to the Cross State Air Pollution Rule. This rule is not included in North Carolina's SIP.

NCEMC's requirements under each rule that applies to this facility are discussed below. In addition, some rules that do not apply to this facility are also discussed below. NCEMC's applicability to various Federal programs (e.g. NSPS, MACT, PSD, 112(r), and CAM) are discussed in Section 7.0 below of this review.

a. 15A NCAC 02D .0521 "Control of Visible Emissions"

These turbines are subject to New Source Performance Standards Subpart KKKK, but his standard does not include a particulate emissions standard. Therefore, 02D .0521 is included in the Title V permit for this facility.
15A NCAC 02D .0521 limits visible emissions ("VE") from emission sources with no other specific VE emission limit. For sources constructed after 1971, the opacity limit is 20% over any six-minute period, with the following exceptions: (1) No six-minute period exceeds 87 percent opacity; (2) No more than one six-minute period exceeds 20 percent opacity in any hour; and (3) No more than four six-minute periods exceed 20 percent opacity in any 24-hour period. Each turbine at this facility is subject to this rule.

In general, no VE is expected from properly operated turbines that fire natural gas or low-sulfur No. 2 oil. Given that NCEMC is operating the turbines in accordance with NSPS Subpart KKKK and PSD, the Title V includes no additional requirements for 02D .0521. Based on the most recent inspection report (dated 9/12/2024), NCEMC appears to be in compliance with this rule. Thus, there is no justification for any need for monitoring for VE for the subject combustion turbines to ensure compliance with the standard.

b. 15A NCAC 02D .0524 "New Source Performance Standards" (40 CFR Part 60)
The turbines at this facility are subject to NSPS Subpart KKKK. Please see discussion in Section 7.0 below.

c. 15A NCAC 02D .0530
The turbines at this facility are subject to "Prevention of Significant Deterioration" (PSD) for Carbon Monoxide. Please see PSD discussion in Section 7.0 below.

d. 15A NCAC 02Q .0512 "Permit Shield and Application Shield"
Paragraph 02Q .0512(a)(1)(B) allows Title V permits to specifically identify rules that are not applicable to the facility (referred to as a "permit shield"). The existing permit includes a permit shield for 15A NCAC 02D .2400 and the federal Clean Air Interstate Rules in Section 2.4 of the Permit. This regulation will no longer be included in the Permit shield in the permit since this rule is now vacated rule (CAIR). We did it in the past for this facility when these rules were in flux.

We can include a permit shield for 40 CFR 63 for facility turbines since that requirement specifically does not apply to the facility as they have shown even with no restrictions on operating hours the facility is not major and thus, NESHAP YYYY does not apply. See the facilities PTE calcs located in section 6 .e. iii of the permit review. We can also provide a permit shield for non-applicability of 02D .0614 (CAM regulation) for CTs for their NOx emissions.

There are no compliance requirements associated with a permit shield.

e. Non-applicable Rules (CAM, MACT/NESHAP, 112(r), CAM)
There are several SIP and Federal rules that could potentially apply to this renewal/modification, but ultimately do not.

i. 15A NCAC 02D .0614 "Compliance Assurance Monitoring" ("CAM"; 40 CFR Part 64)
This rule incorporates the requirements of 40 CFR Part 64 into North Carolina's SIP. CAM applies to individual emission sources based on the following criteria:
- The source is equipped with a control device,
- The source being controlled is subject to a non-exempt emission standard (defined by 02D .0614(b)(1)),
- The control device is being used to comply with the emission standard, and
- The source being controlled has potential emissions of the pollutant subject to the emission standard greater than major source thresholds.

Each turbine (pollutant-specific emission units) at this facility is controlled using water injection systems, which are used to control NOx emissions. However, the units at this facility are exempt from 02D .0614 (CAM) because their operation falls under several of the exemptions that are specifically listed in 02D .0614(b)(1) of this Rule.

Emission Limit Rule	Triggers CAM? (Yes/No)	Notes
02Q .0317 for 02D .0530 (PSD Avoidance)	No	This constitutes an emissions cap that is approved pursuant to the rules of Subchapters 02D and 02Q .0500 in accordance with 02D .0614(b)(1)(E).
02Q .0400 (Acid Rain Permit)	No	This constitutes an emission limitation or standard or other applicable requirement that applies solely under an emissions trading program approved under the rules of Subchapters 02D and 02Q that are incorporated in a permit issued pursuant to 15A NCAC 02Q .0500 in accordance with 02D .0614(b)(1)(D).

40 CFR Part 97 (CSAPR)	No	This constitutes an emission limitation or standard or other applicable requirement that applies solely under an emissions trading program approved under the rules of Subchapters 02D and 02Q that are incorporated in a permit issued pursuant to 15A NCAC 02Q .0500 in accordance with 02D .0614(b)(1)(D).

ii. 15A NCAC 02D .0900 "Volatile Organic Compounds" and 02D .1400 "Nitrogen Oxides" (a.k.a. "Reasonably Available Control Technology"; "RACT")

In general, RACT rules apply to areas currently considered as nonattainment for ozone (see 02D .0902(f) and 02D .1402(d)). Richmond County is not such an area. Therefore, no RACT rules apply to this facility.

iii. 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (MACT, 40 CFR Part 63)
This rule incorporates the MACT rules into North Carolina's SIP.

This facility is not considered a major source of hazardous air pollutants ("HAPs") because it does not have the potential to emit more than 10 tons of any individual HAP or 25 tons of total combined HAPs. This was verified by looking at the most recent Emissions Inventory (year 2023). Therefore, rules that apply specifically to major sources such as 40 CFR Part 63, Subpart YYYY for combustion turbines, do not apply to this facility. Also, there are no non-major source MACT rules that apply to this facility.

Also, the insignificant activity, IES-11 is not subject to the GACT for boilers because the natural gas heater for warming the pipeline is not included in the definition of a boiler for 40 CFR 63, Subpart JJJJJJ (GACT standards for industrial, commercial, or institutional boiler).

The following calculation of HAPs were included in the application for NCEMC – Anson Plant:

NCEMC Anson Plant
Natural Gas/Fuel Oil Operation - Limited By Current Permit Conditions
HAP Emissions

Pollutant	Emission Factor AP-42 Section 3.1 04/00 - Combustion Turbine Distillate Oil		Emission Factor AP-42 Section 3.1 04/00 - Combustion Turbine Natural Gas			CT Oil Emissions Emission Rate Per CT		CT Gas Emissions Emission Rate Per CT		Total Emissions Emission Rate 12 CTs	
						Max Hourly [b]	Annual [c]	Max Hourly [b]	Annual [c]	Max Hourly [d]	Annual [d]
	(lb/MMBtu)	Rating	(lb/10^6 scf)	(lb/MMBtu) [b]	Rating	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
1,3-Butadiene	1.60E-05	D [f]		4.30E-07	D [f]	4.58E-03	1.60E-03	1.35E-04	7.93E-05	5.49E-02	2.01E-02
Acetaldehyde				4.00E-05	C			1.26E-02	7.38E-03	1.51E-01	8.86E-02
Acrolein				6.40E-06	C			2.02E-03	1.18E-03	2.42E-02	1.42E-02
Benzene	5.50E-05	C		1.20E-05	A	1.57E-02	5.49E-03	3.78E-03	2.21E-03	1.89E-01	9.24E-02
Ethylbenzene				3.20E-05	C			1.01E-02	5.90E-03	1.21E-01	7.08E-02
Formaldehyde	3.19E-04 [j]			2.67E-04 [j]		9.12E-02	3.18E-02	8.42E-02	4.93E-02	1.09E+00	9.73E-01
Naphthalene	3.50E-05	C		1.30E-06	C	1.00E-02	3.49E-03	4.10E-04	2.40E-04	1.20E-01	4.48E-02
PAHs	4.00E-05	C		2.20E-06	C	1.14E-02	3.99E-03	6.93E-04	4.06E-04	1.37E-01	5.28E-02
Propylene Oxide				2.90E-05	D [f]			9.14E-03	5.35E-03	1.10E-01	6.42E-02
Toluene				1.30E-04				4.10E-02	2.40E-02	4.91E-01	2.88E-01
Xylene				6.40E-05	C			2.02E-02	1.18E-02	2.42E-01	1.42E-01
Arsenic [g]	1.10E-05	D [f]	2.00E-04	1.96E-07	E	3.15E-03	1.10E-03	6.18E-05	3.62E-05	3.78E-02	1.36E-02
Barium [g]				4.40E-03	4.31E-06	D			1.36E-03	7.96E-04	1.63E-02	9.55E-03
Beryllium [g]	3.10E-07	D [f]	1.20E-05	1.18E-08	E [f]	8.87E-05	3.09E-05	3.71E-06	2.17E-06	1.06E-03	3.97E-04
Cadmium [g]	4.80E-06	D	1.10E-03	1.08E-06	D	1.37E-03	4.79E-04	3.40E-04	1.99E-04	1.65E-02	8.13E-03
Chromium [g]	1.10E-05	D	1.40E-03	1.37E-06	D	3.15E-03	1.10E-03	4.32E-04	2.53E-04	3.78E-02	1.62E-02
Cobalt [g]			8.40E-05	8.24E-08	D			2.59E-05	1.52E-05	3.11E-04	1.82E-04
Copper [g]			8.50E-04	8.33E-07	C			2.63E-04	1.54E-04	3.15E-03	1.85E-03
Lead [g]	1.40E-05	D	5.00E-04	4.90E-07	D	4.00E-03	1.40E-03	1.54E-04	9.04E-05	4.80E-02	1.78E-02
Manganese [g]	6.00E-06 [j]		3.80E-04	3.73E-07	D	1.72E-03	5.99E-04	1.17E-04	6.87E-05	2.06E-02	8.01E-03
Mercury [g]	1.20E-06	D	2.60E-04	2.55E-07	D	3.43E-04	1.20E-04	8.03E-05	4.70E-05	4.12E-03	2.00E-03
Molybdenum [g]			1.10E-03	1.08E-06	D			3.40E-04	1.99E-04	4.08E-03	2.39E-03
Nickel [g]	4.60E-06	D [f]	2.10E-03	2.06E-06	C	1.32E-03	4.59E-04	6.49E-04	3.80E-04	1.58E-02	1.01E-02
Selenium [g]	2.50E-05	D [f]	2.40E-05	2.35E-08	E [f]	7.15E-03	2.49E-03	7.41E-06	4.34E-06	8.58E-02	3.00E-02
Vanadium [g]			2.30E-03	2.25E-06	D			7.10E-04	4.16E-04	8.52E-03	4.99E-03
Zinc [g]			2.90E-02	2.84E-05	E			8.96E-03	5.25E-03	1.07E-01	6.29E-02
										CTs HAPs Total:	2.04
										Max single HAP:	0.97

Assumptions:

			Distillate Oil	Natural Gas
Number of CTs	12	Max Heat Input per CT (MMBtu/hr) [h]	286	315
		Average Heat Input per CT (MMBtu/hr) (HHV) [h]	281	300
		Operating hours per year	710	1,230
Natural Gas Heating Value	1,020	Btu/SCF (HHV)		

Notes:
(a) Emission Factor (lb/MMBtu) = (Emission Factor, lb/10^6 scf) / (Volumetric Heat Content, Btu/scf) if lb/10^6 scf is given.
(b) Max Hourly Emission Rate (lb/hr) = [Max Heat Input (MMBtu/hr) * Emission Factor (lb/MMBtu)]
(c) Annual Emission Rate (ton/yr) = [Heat Input (MMBtu/yr) * Emission Factor (lb/MMBtu) / 2000 lb/ton]
(d) Total Max Hourly Emissions (lb/hr) = Natural Gas (lb/hr) if fuel oil operating hours = 0
Total Max Hourly Emissions (lb/hr) = [maximum(Natural Gas (lb/hr), Distillate Oil (lb/hr)] if fuel oil operating hours > 0
(e) Total Annual Emissions represent combined emissions for gas and oil together (ton/yr) = 12 turbines* (Natural Gas (ton/yr) + Distillate Oil (ton/yr))
(f) Emission Factor based on 1/2 the detection limit.
(g) Emission Factor for natural gas from AP-42 Section 1 4 07/98 - Natural Gas Combustion.
(h) Maximum heat input rate is based on data at an average ambient temperature of 32 °F and maximum load operating conditions.
(i) Average emission rate for turbines with water injection, EPA's AP42, Fifth Edition Chapter 3 MS Access database ,https://www3.epa.gov/ttn/chief/ap42/ch03/index.html.
(j) Emission Factor for fuel oil from AP-42 Section 1 3 05/10 - Fuel Oil Combustion.

NCEMC Anson Plant
Natural Gas/Fuel Oil Operation - Unlimited Operation
HAP Emissions

Pollutant	Emission Factor AP-42 Section 3.1 04/00 - Combustion Turbine Distillate Oil		Emission Factor AP-42 Section 3.1 04/00 - Combustion Turbine Natural Gas			CT Oil Emissions Emission Rate Per CT		CT Gas Emissions Emission Rate Per CT		Total Emissions Emission Rate 12 CTs	
						Max Hourly [b]	Annual [c]	Max Hourly [b]	Annual [c]	Max Hourly [d]	Annual [e]
	(lb/MMBtu)	Rating	(lb/10^6scf)	(lb/MMBtu) [g]	Rating	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
1,3-Butadiene	1.60E-05	D [f]		4.30E-07	D [f]	4.58E-03	1.97E-02	1.35E-04	5.65E-04	5.49E-02	2.43E-01
Acetaldehyde				4.00E-05	C			1.26E-02	5.26E-02	1.51E-01	6.31E-01
Acrolein				6.40E-06	C			2.02E-03	8.41E-03	2.42E-02	1.01E-01
Benzene	5.50E-05	C		1.20E-05	A	1.57E-02	6.77E-02	3.78E-03	1.58E-02	1.89E-01	1.00E+00
Ethylbenzene				3.20E-05	C			1.01E-02	4.20E-02	1.21E-01	5.05E-01
Formaldehyde	3.19E-04 (i)			2.67E-04 (i)		9.12E-02	3.92E-01	8.42E-02	3.51E-01	1.09E+00	8.92E+00
Naphthalene	3.50E-05	C		1.30E-06	C	1.00E-02	4.31E-02	4.10E-04	1.71E-03	1.20E-01	5.37E-01
PAHs	4.00E-05	C		2.20E-06	C	1.14E-02	4.92E-02	6.93E-04	2.89E-03	1.37E-01	6.25E-01
Propylene Oxide				2.90E-05	D [f]			9.14E-03	3.81E-02	1.10E-01	4.57E-01
Toluene				1.30E-04				4.10E-02	1.71E-01	4.91E-01	2.05E+00
Xylene				6.40E-05	C			2.02E-02	8.41E-02	2.42E-01	1.01E+00
Arsenic [g]	1.10E-05	D [f]	2.00E-04	1.96E-07	E	3.15E-03	1.35E-02	6.18E-05	2.58E-04	3.78E-02	1.66E-01
Barium [g]			4.40E-03	4.31E-06	D			1.36E-03	5.67E-03	1.63E-02	6.80E-02
Beryllium [g]	3.10E-07	D [f]	1.20E-05	1.18E-08	E [f]	8.87E-05	3.82E-04	3.71E-06	1.55E-05	1.06E-03	4.76E-03
Cadmium [g]	4.80E-06	D	1.10E-03	1.08E-06	D	1.37E-03	5.91E-03	3.40E-04	1.42E-03	1.65E-02	8.79E-02
Chromium [g]	1.10E-05	D	1.40E-03	1.37E-06	D	3.15E-03	1.35E-02	4.32E-04	1.80E-03	3.78E-02	1.84E-01
Cobalt [g]			8.40E-05	8.24E-08	D			2.59E-05	1.08E-04	3.11E-04	1.30E-03
Copper [g]			8.50E-04	8.33E-07	C			2.63E-04	1.10E-03	3.15E-03	1.31E-02
Lead [g]	1.40E-05	D	5.00E-04	4.90E-07	D	4.00E-03	1.72E-02	1.54E-04	6.44E-04	4.80E-02	2.15E-01
Manganese [g]	6.00E-06 (j)		3.80E-04	3.73E-07	D	1.72E-03	7.38E-03	1.17E-04	4.90E-04	2.06E-02	9.45E-02
Mercury [g]	1.20E-06	D	2.60E-04	2.55E-07	D	3.43E-04	1.48E-03	8.03E-05	3.35E-04	4.12E-03	2.17E-02
Molybdenum [g]			1.10E-03	1.08E-06	D			3.40E-04	1.42E-03	4.08E-03	1.70E-02
Nickel [g]	4.60E-06	D [f]	2.10E-03	2.06E-06	C	1.32E-03	5.66E-03	6.49E-04	2.71E-03	1.58E-02	1.00E-01
Selenium [g]	2.50E-05	D [f]	2.40E-05	2.35E-08	E [f]	7.15E-03	3.08E-02	7.41E-06	3.09E-05	8.58E-02	3.70E-01
Vanadium [g]			2.30E-03	2.25E-06	D			7.10E-04	2.96E-03	8.52E-03	3.56E-02
Zinc [g]			2.90E-02	2.84E-05	E			8.96E-03	3.74E-02	1.07E-01	4.48E-01
									CTs HAPs Total:		17.91
									Max single HAP:		8.92

Assumptions:

			Distillate Oil	Natural Gas
Number of CTs	12	Max Heat Input per CT (MMBtu/hr) [h]	286	315
		Average Heat Input per CT (MMBtu/hr) (HHV) [h]	281	300
		Operating hours per year	8,760	8,760
Natural Gas Heating Value	1,020	Btu/SCF (HHV)		

Notes:
(a) Emission Factor (lb/MMBtu) = (Emission Factor, lb/10^6 scf) / (Volumetric Heat Content, Btu/scf) if lb/10^6 scf is given.
(b) Max Hourly Emission Rate (lb/hr) = [Max Heat Input (MMBtu/hr) * Emission Factor (lb/MMBtu)]
(c) Annual Emission Rate (ton/yr) = [Heat Input (MMBtu/yr) * Emission Factor (lb/MMBtu) / 2000 lb/ton]
(d) Total Max Hourly Emissions (lb/hr) = Natural Gas (lb/hr) if fuel oil operating hours = 0
Total Max Hourly Emissions (lb/hr) = (maximum(Natural Gas (lb/hr), Distillate Oil (lb/hr)] if fuel oil operating hours > 0
(e) Total Annual Emissions represent combined emissions for gas and oil together (ton/yr) = 12 turbines* (Natural Gas (ton/yr) + Distillate Oil (ton/yr))
(f) Emission Factor based on 1/2 the detection limit.
(g) Emission Factor for natural gas from AP-42 Section 1.4 07/98 - Natural Gas Combustion.
(h) Maximum heat input rate is based on data at an average ambient temperature of 32 °F and maximum load operating conditions;
(i) Average emission rate for turbines with water injection, EPA's AP42, Fifth Edition Chapter 3 MS Access database ,https://www3.epa.gov/ttn/chief/ap42/ch03/index.html.
(j) Emission Factor for fuel oil from AP-42 Section 1.3 05/10 - Fuel Oil Combustion.

iv. 15A NCAC 02D .2100 "Risk Management Program" (a.k.a. "Section 112(r) of the Clean Air Act")
This facility does not store any material listed in 40 CFR 68.130 above its respective threshold. Therefore, this rule does not apply to this facility. In addition, this facility does not have any increased requirements under Section 112(r) of the Clean Air Act. This was concluded in the most recent Inspection Report dated 9/12/2024.

7.0 NSPS, PSD Avoidance (Nitrogen Oxides), PSD (Carbon Monoxide)

a. NSPS (40 CFR Part 60, Subpart GG "Standards of Performance for Stationary Gas Turbines")
This rule applies to stationary gas turbines constructed or modified after October 3, 1977. However, 40 CFR 60.4305(b) specifically states that turbines subject to NSPS Subpart KKKK are exempt from this rule. Each turbine at this facility is subject to NSPS Subpart KKKK, and therefore are exempt from Subpart GG.

b. NSPS (40 CFR Part 60, Subpart TTTT "Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units")
In accordance with 40 CFR 60.5508, this subpart establishes emission standards and compliance schedules for the control of greenhouse gas (GHG) emissions from a steam generating unit or an integrated gasification combined cycle (IGCC) facility that commences construction after January 8, 2014, commences reconstruction after June 18, 2014, or commences modification after January 8, 2014, but on or before May 23, 2023.

This subpart also establishes emission standards and compliance schedules for the control of GHG emissions from a stationary combustion turbine that:
- commences construction after January 8, 2014, but on or before May 23, 2023, or
- commences reconstruction after June 18, 2014, but on or before May 23, 2023.

An affected steam generating unit, IGCC, or stationary combustion turbine shall, for the purposes of this subpart, be referred to as an affected electric generating unit (EGU). The turbines at this facility were constructed prior to January 8, 2014 (in 2007) and have not been reconstructed. Therefore, NSPS Subpart TTTT does not apply to these turbines.

NSPS (40 CFR Part 60, Subpart TTTTa "Standards of Performance for Greenhouse Gas Emissions for Modified Coal-Fired Steam Electric Generating Units and New Construction and Reconstruction Stationary Combustion Turbine Electric Generating Units"

This subpart establishes emission standards and compliance schedules for the control of GHG emissions from a stationary combustion turbine that commences construction or reconstruction after May 23, 2023. The turbines at this facility were constructed prior to May 23, 2023 and have not been reconstructed. Therefore, NSPS Subpart TTTTa does not apply to this facility.

c. NSPS (Subpart KKKK "Standards of Performance for Stationary Combustion Turbines")
This rule incorporates the NSPS rules into North Carolina's SIP. The only NSPS rule that applies to this facility is Subpart KKKK for Stationary Combustion Turbines.

Subpart KKKK applies to those stationary combustion turbines that commenced construction, modification, or reconstruction after February 18, 2005, and that have a base load rating equal to or greater than 2.9 megawatts (10 million British thermal units per hour). The Swift Pac turbines at this facility are each 300 million Btu per hour nominal heat input capacity when firing natural gas and 281 million Btu per hour nominal heat input capacity when firing No. 2 fuel oil. Therefore, each turbine at this facility is subject to this rule.

In general, this rule limits the emissions of nitrogen oxides ("NOx") and sulfur dioxide ("SO_2") based on the type of fuel being fired. In order to demonstrate compliance with the emission limits, NCEMC limits the sulfur content of fuels burned in the turbines and estimates NOx emissions based on protocol in Appendix E to 40 CFR Part 75. Records of monitoring activities must be kept and reported twice per year. Based on the most recent inspection report (dated 9/12/2024), NCEMC appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

d. PSD Avoidance (02Q .0317 for 02D .0530)

This rule allows facilities to accept an enforceable limit in order to avoid the applicability of another rule. NCEMC has accepted limits on NOx emissions in order to avoid additional requirements under 02D .0530 (PSD).

Anson County is currently designated as attainment for all National Ambient Air Quality Standards. Gas turbines used without heat recovery, such as simple-cycle peaking units like at this facility, have been determined to fall outside the 28-source category list. As such, they are subject to PSD review if the potential emission of any regulated pollutant exceeds 250 tons per 12-month period. As this site is a peaking facility, the facility operates on a limited annual basis, primarily during periods when short-term electrical demand exceeds the base load supply. In order to be permitted as a minor PSD source, the facility was restricted to the emissions of each criteria pollutant to less than 250 tons per 12-month period. Nitrogen oxide was determined to be the limiting pollutant. However, to make operation of the oxidation catalyst enforceable, carbon monoxide was also originally included with its own 250 limitation in the original permit R00. The performance parameters of the oxidation catalyst have been monitored through the years when the turbines included the catalyst to ensure optimum control of carbon monoxide emissions. Therefore, both carbon monoxide and nitrogen oxide emissions were limited to less than 250 tons per 12-month period initially.

The sources subject to the initial less than 250-ton per year restriction were the combustion turbines (ES-1A and B through ES-6A and B, the diesel emergency generator (ES8), and a fire pump (ES7). The potential nitrogen oxide emissions from the emergency generator and fire pump were estimated using AP-42 emission factors and 350 hours per year of operation for each source [Permittee requested limitation], and equaled 3.7 tons per year. The PSD avoidance limit for the combustion turbines was then less than [250 tpy – 3.7 tpy] = 246.3 tons per 12-month period. The applicant initially requested a more conservative limit for the combustion turbines of 240.6 tons per 12-month period.

When permit 09492R02 was issued on June 16, 2006, the applicability of the turbines was changed to NSPS Subpart KKKK requirements, which superseded the Subpart GG requirements previously in the permit. Subpart KKKK applies to combustion turbines with heat input at full load equal or greater than 10 million Btu per hour which commenced construction, modification, or reconstruction after February 18, 2005. Subpart GG no longer applies to these new units for which construction had not yet commenced. The construction of the turbines at NCEMC – Anson began in June 2006 and startup of each unit began in January 2007. The PSD avoidance condition was changed to 245 tons per year for NOx in permit No. 09492R02 to take into account the removal of the diesel emergency generator (ES8), and a fire pump (ES7) from the permit.

Monitoring

The tracking of actual NOx emissions has historically been determined by using emission rates developed by the manufacturer of the combustion turbines [Pratt & Whitney]. These emission rates were developed with ambient temperatures ranging from 32 to 90 degrees F. and load ranges from 40 percent natural gas and 25 percent fuel oil up to 100 percent. A multiple regression analysis was performed and the upper 95th percentile confidence interval used as a model to estimate the NOx emissions. Compliance test data that is approved by the DAQ may be used to validate and update this model for estimating NOx emissions.

NOx emissions from turbine startup and shutdown, are calculated using the manufacturer's data assuming a loading/unloading rate of 5 MW per minute. Each startup and shutdown is to be recorded daily for each turbine.

The table below summarizes the PSD avoidance limits applicable to NCEMC:

Emission Source	Requirements	Demonstrate compliance by:	Notes
Swift Pac units 1 through 6	Less than 245 tons of NOx per 12-month period combined	- Monitor NOx emissions according to NSPS Subpart KKKK - Report NOx emissions twice per year	Limits and compliance methods first included in Title V permit 09492T07 (issued March 28, 2013).

Based on the most recent inspection report (dated 9/12/2024), NCEMC appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

e. PSD (40 CFR Part 51 and State SIP 02D .0530)

This facility is currently considered a major stationary source under PSD because the potential emissions of CO are greater than 250 tons per year. As a result of a previous PSD review (Permit Revision 09492T07), the Title V permit included an annual emission limit and Best Available Control Technology ("BACT") emission limits for Carbon Monoxide (CO), however it did not include any specific method of demonstrating continued compliance with the PSD requirements. This was changed to require NCEMC to monitor, record, and report the hours of operation of each turbine. In addition, NCEMC will use the sulfur content monitoring requirements of NSPS Subpart KKKK to demonstrate compliance with the PSD sulfur content requirement.

Emission Source	Requirements	Demonstrate compliance by:	Notes
Swift Pac units 1 through 6	- Annual emission limit for CO. - CO BACT standards based on load and ambient temperature.	- Limit annual hours of operation on natural gas and No. 2 fuel oil. - Limit fuel oil sulfur content.	Limits and compliance methods first included in Title V permit 09492T07 (issued March 28, 2021).

Based on the most recent inspection report (dated 9/12/2024), NCEMC appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections.

f. 15A NCAC 02Q .0317 "Avoidance Conditions" (PSD avoidance for Nitrogen Oxides (NOx):

This rule allows facilities to accept an enforceable limit in order to avoid applicability of another rule. NCEMC has accepted limits on NOx emissions in order to avoid additional requirements under 02D .0530 (a.k.a. "PSD avoidance").

The table below summarizes the PSD avoidance limits applicable to NCEMC:

Emission Sources	Requirements	Demonstrate compliance	
ES-1A and ES-1B ES-2A and ES-2B ES-3A and ES-3B ES-4A and ES-4B ES-5A and ES-5B ES-6A and ES-6B	Less than 245 tons of NOx per consecutive 12-month time period	Monitor NOx emissions according to NSPS Subpart KKKK Report NOx emissions twice per year	Limits and compliance methods first included in Title V permit 09492T07.

Based on the most recent inspection report (dated 9/12/2024), NCEMC appears to be in compliance with this rule. Continued compliance will be determined with subsequent inspections and reports.

g. 15A NCAC 02Q .0400 "Acid Rain Procedures"

This rule incorporates the acid rain program (40 CFR Part 72) into North Carolina's SIP. The specific requirements for acid rain program are included in the Phase II permit application submitted by NCEMC. The Phase II permit application is included in the Title V permit as an attachment (Attachment 1, signed October 8, 2024, five pages).

15A NCAC 02Q .0402 "Acid Rain Permitting Procedures" (40 CFR Part 72 "Permits Regulation")

As specified above, North Carolina air quality regulation 15A NCAC 02Q .0400 implements Phase II of the federal acid rain program, pursuant to Title IV of the CAA, as provided in 40 CFR Parts 72 and 76. 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 with or are not included in Part 70, the Part 72 provisions and requirements shall apply and take precedence. SO_2 allowances are not allocated by U.S. EPA for new units under 40 CFR Part 73; however, the sources must hold enough SO_2 allowances to cover their annual SO_2 emissions. There are no NOx emission limits for gas or oil-fired units pursuant to Part 76; however, NOx emissions monitoring is required.

15A NCAC 02Q .0402 "Acid Rain Permitting Procedures" (40 CFR Part 75 "Continuous Emissions Monitoring")

This regulation establishes requirements for the installation, certification, operation, and maintenance of continuous emissions or opacity monitoring systems. The Permittee must monitor and report emissions of both SO_2 and NO_x for the combustion turbine pursuant to Part 75.

Finally, it is noted that compliance with the acid rain program is determined by USEPA, not DAQ. Continued compliance will be determined by US EPA.

h. Cross State Air Pollution Rule ("CSAPR"; 40 CFR Part 97, Subparts AAAAA and CCCCC)

This group of rules applies to fossil-fuel-fired combustion sources that: 1) produce electricity for sale, and 2) have a generator capacity greater than 25 megawatts. Each combustion turbine at this facility is subject to CSAPR. CSAPR limits NOx and SO_2 emissions. Compliance with CSAPR is determined by USEPA, not DAQ. The Title V permit contains a reference to CSAPR, but no specific compliance requirements.

40 CFR 97, Subpart BBBBB no longer applies to the combustion sources at this facility. EPA removed NC from its obligations under the good neighbor provision with respect to the ozone season NOx requirements that are contained in BBBBB of Part 97. With EPA's removal of NC ozone season NOx reductions requirements for 1997 ozone NAAQS and EPA's determinations that NC is not subject to ozone season NOx reductions requirements for 2008 ozone NAAQS or newer 2015 ozone NAAQS. Going forward, the DAQ will revise Title V permits for all affected units in NC under the original CSAPR by removing the previously applicable requirements in Subpart BBBBB (40 CFR 97) for ozone season NOx.

History for the removal of BBBBB:
The EPA established the original Cross-State Air Pollution Rule (CSAPR or "Transport Rule")[1] to address the interstate transport of emissions with respect to the 1997 ozone National Ambient Air Quality Standards (NAAQS) and the 1997 and 2006 fine particulate matter (PM2.5) NAAQS. This CSAPR was a federal implementation plan (FIP), requiring the upwind states to eliminate their "significant" contributions to the downwind states' non-attainment of these pollutants. With regard to the NOx ozone season trading program under this rule, EPA required NOx reductions in two phases (Phase 1 and Phase 2) for the affected states including NC.

Then the EPA finalized the CSAPR Update (CSAPR Update)[2] to address the interstate transport of emissions with respect to the 2008 ozone NAAQS. Through this rulemaking, EPA determined that NC did not contribute significantly to nonattainment in or interference with maintenance for the 2008 ozone standard for any downwind states[3].

[1] 76 FR 48208 (August 8, 2011).
[2] 81 FR 74504 (October 26, 2016).
[3] 81 FR 74506, 74507.

Thus, EPA did not finalize the FIP for NC for this NAAQS, because the EPA's analysis supporting the final rule did not indicate that NC was linked to any identified downwind nonattainment or maintenance receptors with respect to the 2008 ozone standard[4].

In addition, because the 2008 ozone NAAQS is more stringent than the 1997 ozone NAAQS, EPA concluded that North Carolina was not linked to any remaining air quality concerns with respect to the 1997 ozone standard for which the state was regulated in the original CSAPR as above[5].

Addressing the D. C. Circuit Court[6] remand with respect to NC's Phase 2 NOx budget under the 1997 ozone standard, EPA concluded that the emissions from the state did not significantly contribute to nonattainment or interfere with maintenance of either the 1997 ozone NAAQS or 2008 ozone NAAQS in other states, and removed the state from the CSAPR ozone season trading program beginning in 2017 when the Phase 2 ozone season emission budget was scheduled to be implemented[7]. Accordingly, starting with the 2017 ozone season, NC was no longer subject to the CSAPR NOx ozone season trading program requirements (40 CFR 97 Subpart BBBBB) and electric generating units (EGUs) in the state were not allocated further allowances by EPA nor obligated to demonstrate compliance with CSAPR NOx ozone season requirements[8][9].

Finally, it needs to be noted that even for the more stringent 2015 ozone NAAQS, EPA proposed[10] to approve NC's State Implementation Plan (SIP), concluding that North Carolina sources would not significantly contribute to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in any other state. EPA supplemented[11] this approval with the updated modeling analysis based on the most current and technically accurate information, supporting its finding that NC's implementation plan contained adequate measures to prohibit emissions that would significantly contribute or interfere with the maintenance of the 2015 ozone standard in any other states.

i. Accidental Release Prevention/Risk Management Plan 112(r)
The 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 112(r) thresholds. No change with respect to 112(r) is anticipated under this permit renewal.

8.0 Facility Wide Air Toxics

This is a "grandfathered" facility for Air Toxics modeling. This facility was first permitted for construction in January 2005 when combustion sources that burned unadulterated fuels such as combustion turbines were exempt from triggering a toxics evaluation. After that date, the regulation was revised to include language that stated that combustion sources that burned unadulterated fuels would trigger a toxics review if they were new or modified on or after July 10, 2010.

15A NCAC 02Q .0702 (a)(18) still reads as follows:
(a) A permit to emit toxic air pollutants shall not be required pursuant to this Section for:
(1) residential wood stoves, heater, or fireplaces;
(2) ……
(3) ……

[4] Id., 81 FR 74524.
[5] Id.
[6] *EME Homer City Generation, L.P., v. EPA*, No. 795 F.3d 118, 129–30, 138, July 28, 2015.
[7] Id.
[8] 81 FR 74555.
[9] States that are Affected by the Cross-State Air Pollution Rule (CSAPR) | US EPA and 40 CFR 97.510(a)(16).
[10] 84 FR 71854 (December 30, 2019).
[11] 86 FR 37942 (July 19, 2021).

(18) combustion sources such as defined in 15A 02Q .0703 "Definitions" (combustion sources means boilers, space heaters, process heaters, process heaters, internal combustion engines, and combustion turbines), except new or modified combustion sources permitted on or after July 10, 2010;

No new turbines have been built at the NCEMC Anson facility and none of the turbines have been modified since installation.

The following is a brief history of the facility for toxic air pollutant applicability.

Permit No. 09492R00 was issued on January 21, 2005 (all fuel sources burning unadulterated fuel).

- This was the initial permit that added six (6) Pratt & Whitney FT8 Swift-Pac simple-cycle gas turbine generator sets. A Swift-Pac unit consists of two turbines, each equipped with water injection and an oxidation catalyst system, and one generator each. Each turbine has a nominal HHV rating of 300 million Btu per hour heat input capacity when firing natural gas, and a nominal HHV rating of 281 million Btu per hour heat input capacity when firing No. 2 fuel oil (ID Nos. ES1-A, ES1-B, ES2-A, ES2-B, ES3-A, ES3-B, ES4-A, ES4-B, ES5-A, ES5-B, ES6-A, ES6-B),
- Added one diesel fire water pump (150 horsepower, ID No. ES7)
- Added one diesel emergency generator (700 kW, 778 horsepower, ID No. ES8), and
- Two 500,000 gallon No. 2 fuel oil storage tanks (ID Nos. ES9 and ES10) [permit exempt, 15A NCAC 02Q .0102(c)(1)(d)(i)]

Permit No. 09492R01 was issued on January 20, 2006 (all fuel sources burning unadulterated fuel).

- Modification to relax the number of operating hours allowed when burning fuel oil with lower sulfur contents than originally permitted. The original restriction was permitted under 15A NCAC 02D .0501(e) "Compliance with National Ambient Quality Standards" in condition 2. However, since 02D .0501(e) is specifically related to any limits that are more stringent that otherwise allowed to protect the NAAQS (not AALs), the regulatory citation was changed from 02D .0501(e) to 02D .1100. The original restriction was that the 12 turbines could not operate more than a total of 204 hours per day when burning fuel oil. This was based on burning fuel oil with a sulfur content of 0.05%.
- The number of hours for each new fuel oil sulfur content was determined by modeling for sulfuric acid, which is formed in the CO oxidation catalyst where a portion of SO_2 in the exhaust is oxidized to SO_3 and then forms sulfuric acid mist. Otherwise, toxics are not triggered from unadulterated fuel.

Permit No. 09492R02 was issued on June 15, 2006 (all fuel sources burning unadulterated fuel).

- NCEMC applied to modify their permit to reflect a change in the facility design.
- They updated performance and emissions data from Pratt & Whitney which resulted in revised modeling.
- The facility layout was revised which was incorporated into the revised modeling.
- Removal of the diesel fire-water pump (ID No. ES7).
- Removal of the diesel emergency generator (ID No. ES8).
- Request for a revised and relaxed short-term number of operating hours for different levels of fuel oil sulfur content.
- The PSD avoidance limit for nitrogen dioxide and carbon monoxide emissions was revised for the turbines as a result of removal of the fire-water pump and emergency generator.
- Change responsible official from Mr. David Beam to Ms. Barbara Ziberna and change name of facility from Anson County Generation Facility to the Anson Plant.
- In addition, a letter was received from NCEMC dated March 15, 2006, requesting that the permit be revised to incorporate the new NSPS Subpart KKKK and that this change be considered an amendment to the original application received December 21, 2005.

An air toxics review was not triggered with this modification.

Permit No. 09492R03 was issued on October 11, 2006 (all fuel sources burning unadulterated fuel).

- Construct a pipeline quality natural gas-fired heater at this electricity generation facility that will be used to warm up the natural gas fuel that will be fired in the six sets of simple cycle combustion turbines at this facility. The heater is anticipated to operate a maximum of 1,700 hours annually, but the NCEMC is requesting that the heater be permitted for 8760 hours per year. [Insignificant activity]
- An air toxics review was not triggered for this modification because the heaters combusted an unadulterated fuel (natural gas) and the modification was prior to July 10, 2010.

Permit No. 09492R04 was issued on March 5, 2007 (all fuel sources burning unadulterated fuel).

- Modification of the current monitoring and testing permit conditions for the oxidation catalyst to remove the control efficiency testing requirement, to use new vendor data for the oxidation catalyst, and to revise the monitoring temperature range and clarification of monitoring port.
- Revise the definition of startup and shutdown of the turbines.
- Revise the monitoring and requirements to demonstrate compliance with 15A NCAC 02D .1418.

An air toxics review was not triggered with this modification.

Permit No. 09492T05 was issued on June 24, 2010 (all fuel sources burning unadulterated fuel).

- Apply for renewal of the permit and for a first time Title V permit.
- 15A NCAC 02D .1100 "Control of Toxics Air Pollutants"
  Since the combustion turbines burn unadulterated fossil fuels, these sources were exempt under 02Q .0702(18) from triggering a toxics review (still prior to July 10, 2010). However, the applicant did model sulfuric acid mist that results from the use of the oxidation catalyst. The modeling results showed that the 1-hour maximum concentrations were approximately 67 percent of the acceptable ambient level [AAL] and that the 24-hour maximum concentrations were approximately 96 percent of the AAL.

  As required by 15A NCAC 02D .1100 "Control of Toxic Air Pollutants," operation of the combustion turbines shall be limited while burning No. 2 fuel oil as follows:

Fuel Oil Sulfur Content	Maximum Turbine-Hours/Day (total 12 turbines)
0.050 % or less	132
0.045 or less	144
0.040 or less	168
0.030 or less	204
0.025 or less	unlimited

Permit No. 09492T06 was issued on April 11, 2012 (all fuel sources burning unadulterated fuel).

- Application 0400050.11B was submitted to revise the Title IV Acid Rain portion of the Title V permit.
- Application 0400050.12A was submitted to incorporate the Clean Air Interstate Rule (CAIR) requirements into the permit. This rule replaces the 02D .1418 NOx SIP Call rule previously in the permit.
- This change was a significant permit modification being made in accordance with 15A NCAC 02Q .0501(d)(1). Public notice of the draft permit was required.

An air toxics review was not triggered with this modification.

Permit No. 09492T07 was issued on March 28, 2013 (all fuel sources burning unadulterated fuel).

- Removal of the oxidation catalysts from each of the existing six Swift Pac™ units (ES-1A and B through ES-6A and B).
- Request by the facility to be restricted to combust only natural gas and ultra-low sulfur fuel oil No. 2 (0.002% sulfur by weight). Combustion turbines used without heat recovery, such as simple cycle peaking units have been determined to fall outside of the PSD 28 source category list. Thus, the PSD threshold for this facility is 250 tons per year. This facility is currently a minor source for PSD because the existing permit (revision T06) contains a PSD Avoidance condition (less than 245 tpy) for both Carbon Monoxide, and Nitrogen Oxide.

The modification in this project will result in a significant emissions increase of at least 250 tons for Carbon monoxide, due to removal of the catalysts on these existing units. No additional significant increases of other criteria pollutants should occur due to the carbon monoxide oxidation catalyst removal.

An air toxics review and evaluation was not triggered with the removal of the carbon monoxide catalyst and the lowering of the sulfur content of the fuel combusted at the NCEMC Anson County facility. Toxic air pollutants were not increased.

Permit No. 09492T08 was issued on December 15, 2015 (all fuel sources burning unadulterated fuel).
- Application 0400050.14B was submitted to revise the Title IV Acid Rain portion of the Title V permit.
- Application 0400050.14A was submitted for the renewal of the Title V permit.

An air toxics review is not triggered with this modification.

Permit No. 09492T09 was issued on July 14, 2020 (all fuel sources burning unadulterated fuel).
- Application 0400050.20B was submitted to revise the Title IV Acid Rain portion of the Title V permit.
- Application 0400050.20A was submitted for the renewal of the Title V permit.

An air toxics review was not triggered with this modification.

Permit No. 09492T10 was issued on October 8, 2020 (all fuel sources burning unadulterated fuel).
After the issuance of permit 09492T09, it was determined that NC DAQ did not properly notice the draft materials via NC DAQ's webpage or through NC DAQ's full email distribution list as is required by 02Q .0521 "Public Participation" and 02Q .0522 "Review by EPA and Affected States". In essence, neither the required 30-day Public Notice period nor the 45-day EPA Review period took place. In order to allow for the proper notice periods as required by 02Q .0513(a), 02Q .0521, and 02Q .0522, NC DAQ initiated a new permit application as allowed by 02Q .0517 "Reopening for Cause". NC DAQ is required by 02Q .0571(d) to provide the facility a 60-day period before reopening the permit, but NCEMC has waived that period.

An air toxics review was not triggered with this modification.

9.0 Facility Emissions Review

The facility-wide potential emissions have not changed because of this TV permit renewal. Actual emissions for criteria pollutants and HAPs for the previous five years reporting periods are provided in the header of this permit review.

10.0 Compliance Status

DAQ has reviewed the compliance status of the facility. During the most recent inspection, conducted on 9/12/2024, the facility appeared to be in compliance with all applicable requirements. Further, the facility has had no air quality violations within the last five years. The facility's last Annual Compliance Certification was received on 2/19/2024 and indicated compliance with all applicable requirements in 2023. Finally, the responsible official (RO) for the facility has indicated that "the facility is in compliance with all applicable requirements" through the completion of Form E5 "Title V Compliance Certification".

11.0 Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA.

Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. No affected states or local agencies are within 50 miles of this facility. Regardless of distance, all nearby states and local air programs will be notified in accordance with DAQ policy.

12.0 Other Regulatory Considerations

- A P.E. seal is NOT required for this renewal application.
- A zoning consistency determination is NOT required for this renewal application.
- A permit fee is NOT required for this renewal application.
- Removal of General Condition J "Emergency Provisions [40 CFR 70.6(g)]"
  - EPA has promulgated a rule (88 FR 47029, July 21, 2023), with an effective date of August 21, 2023, removing the emergency affirmative defense provisions in operating permits programs, codified in both 40 CFR 70.6(g) and 71.6(g). EPA has concluded that these provisions are inconsistent with the EPA's current interpretation of the enforcement structure of the CAA, in light of prior court decisions[1]. Moreover, per EPA, the removal of these provisions is also consistent with other recent EPA actions involving affirmative defenses[2] and will harmonize the EPA's treatment of affirmative defenses across different CAA programs.
  - As a consequence of this EPA action to remove these provisions from 40 CFR 70.6(g), it will be necessary for states and local agencies that have adopted similar affirmative defense provisions in their Part 70 operating permit programs to revise their Part 70 programs (regulations) to remove these provisions. In addition, individual operating permits that contain Title V affirmative defenses based on 40 CFR 70.6(g) or similar state regulations will need to be revised.
  - Regarding NCDAQ, it has not adopted these discretionary affirmative defense provisions in its Title V regulations (15A NCAC 02Q .0500). Instead, DAQ has chosen to include them directly in individual Title V permits as General Condition (GC) J.
  - Per EPA, DAQ is required to promptly remove such impermissible provisions, as stated above, from individual Title V permits, after August 21, 2023, through normal course of permit issuance.

13. Recommendations

The permit renewal application for the North Carolina Electric Membership Corporation located at 749 Blewett Falls Road in Lilesville, Anson County, North Carolina has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. DAQ recommends___ _____ of Air Permit No. 09492T11.