NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date: DRAFT

Region: Mooresville Regional Office
County: Iredell
NC Facility ID: 4900225
Inspector's Name: Brian Huang
Date of Last Inspection: 08/07/2024
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Transcontinental Gas Pipe Line Company, LLC - Station 150

Facility Address:
Transcontinental Gas Pipe Line Company, LLC - Station 150
236 Transco Road
Mooresville, NC 28117

SIC: 4922 / Natural Gas Transmission
NAICS: 486210 / Pipeline Transportation of Natural Gas

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 .0501(c), 02D .0516, 02D .0521, 02D .1408, 02D .1806
NSPS: 02D .0524 (Subparts KKKK, OOOOa, JJJJ)
NESHAP: 02D .1111 (Subparts YYYY, ZZZZ)
PSD: NA
PSD Avoidance: NOx and $PM_{2.5}$
MACT Avoidance: NA
NC Toxics: 02D .1100
112(r): N/A
Other: N/A

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Jeff King Operations Manager (704) 892-7631 236 Transco Road Mooresville, NC 28117	Glen Jasek VP GM Eastern Interstates (713) 215-2134 2800 Post Oak Boulevard, Suite 600 Houston, TX 77056-6156	Michael Callegari Senior Environmental Specialist (832) 794-0612 2800 Post Oak Boulevard, Suite 600 Houston, TX 77056-6156

Application Data

Application Number: 4900225.24A
Date Received: 10/18/2024
Application Type: Modification
Application Schedule: TV-Sign-501(b)(2) Part II

Existing Permit Data
Existing Permit Number: 08044/T19
Existing Permit Issue Date: 07/26/2023
Existing Permit Expiration Date: 06/30/2026

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2023	0.1500	246.79	92.38	182.21	13.27	59.24	41.19 [Formaldehyde]
2022	0.1700	267.19	99.92	207.29	15.13	65.47	45.53 [Formaldehyde]
2021	0.2000	259.51	99.89	218.76	16.08	65.51	45.55 [Formaldehyde]
2020	0.1600	227.97	97.65	192.59	13.94	64.04	44.54 [Formaldehyde]
2019	0.1800	231.44	99.80	200.94	14.68	64.99	45.19 [Formaldehyde]

Review Engineer: Connie Horne

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

Comments / Recommendations:
Issue 08044/T20
Permit Issue Date: DRAFT
Permit Expiration Date: June 30, 2026

1. Purpose of Application

This permit action is for Part II of a two-step process allowed under 15A NCAC 02Q .0501(b)(2). The Rule states:

(c) With the exception in Paragraph (d) of this Rule, the owner or operator of an existing facility, new facility, or modification of an existing facility (except for minor modifications under Rule .0515 of this Section), including significant modifications that would not contravene or conflict with a condition in the existing permit, subject to the requirements of this Section shall not begin construction without first obtaining:

(1) a construction and operation permit following the procedures under this Section (except for Rule .0504), or
(2) a construction and operation permit following the procedures under Rule .0504 and filing a complete application within 12 months after commencing operation to modify the construction and operation permit to meet the requirements of this Section.

The Permittee submitted an application for a significant 501(b)(2) Part I permit (4900225.22A) on September 8, 2022. The Part I permit was issued on July 26, 2023 and included the following approved permit modifications:

Equipment to be ADDED

- Two natural gas-fired Solar Titan 130-23502S combustion turbines (ES-M/L17 and ES-M/L18)
- Two natural gas-fired four-stroke, lean-burn (4SLB) emergency generator engines (EGEN-01 and EGEN-02)

Equipment to be DELETED

- 15 existing two-stroke, lean-burn (2SLB) mainline compressor engines (ES-M/L1 through ES-M/L15)
- Three existing emergency-use generator engines (ES-AUX1 through ES-AUX3)
- Two air compressor engines (ES-A/C5 and ES-A/C6)

In addition to the above equipment modifications, Transco requested that the grouping of blowdowns as Source ES-BDO be removed from the permit and replaced by separate compressor blowdown source insignificant activities shown below for each compressor plus the suction header and discharge header.

The existing natural gas-fired dry low NO_x combustion turbine (ES M/L16) will remain in the permit.

As part of this modification, Transco also planned to add the following ancillary equipment (insignificant activities):

- M/L16CB Compressor Blowdowns
- M/L17CB Compressor Blowdowns
- M/L18CB Compressor Blowdowns
- TANK-01 Natural gas condensate liquid storage tank
- TANK-02 Oily Wastewater Storage Tank
- TTLO Tank truck loadout (condensate and oily wastewater)
- FUGS Piping Component Fugitives
- SHB Suction Header Blowdowns
- DHB Discharge Header Blowdowns
- Pigging Pipeline Pigging

On October 18, 2024, DAQ received this Part II application (4900225.24A) from Transco to complete the process to include the above-listed changes as required in condition 2.2 D.4 of Permit 08044T19. According to this application, emission sources ES-M/L17, ES-M/L18, EGEN-01 and EGEN-02 were installed in May 2024 and began operation on October 2, 2024. Therefore, this application was received in the required 12-month timeframe after commencing operation. The technical review for the Part I application (4900225.22A) is attached to this document.

2. Facility Description

Transco Compressor Station 150 is a natural gas compressor station that operates under Standard Industrial Classification (SIC) code 4922 and North American Industry Classification System (NAICS) code 486210 and delivers natural gas through a 10,000-mile interstate transmission pipeline system extending from south Texas to New

York City, transporting approximately 15% of the nation's natural gas with 57 stations. Compressor Station 150 is an existing major source with respect to both the Prevention of Significant Deterioration (PSD) and Title V permitting programs. Once these planned modifications become operational, Transco anticipates the facility's potential emissions will be reduced significantly, to below major source levels for both PSD and Title V permitting programs.

3. Application Chronology

October 18, 2024	Part II application received and deemed complete.
October 21, 2024	Sent acknowledgment letter.
December 3, 2024	Draft to applicant and regional office
December 3, 2024	Draft to public notice and EPA
December 26, 2024	Public comment period ends
January 17, 2025	EPA Comment period ends
Draft	Permit issued

4. Permit Modifications/Changes

The table below outlines the proposed changes to the current permit (08044T19):*

Page No.	Section	Description of Changes
Cover Letter	---	Modified to reflect current permit number, issue and effective dates
All	Headers	Amended permit revision number
1-36	Entire permit, where applicable	Modified to reflect current permit number, issue and effective dates
4	Section 1 Equipment Table	Removed sources: ES-M/L1 through ES-M/L15, ES-AUX1 through ES-AUX3, ES-A/C5 and ES-A/C6 Removed footnote regarding requirement to file application within one year of the issuance of Air Quality Permit 08044T19
5-20	2.1	Removed sections A, C, D & E and renumbered remaining sections
21-26	2.2	Removed sections A & B and renumbered remaining sections Removed "15A NCAC 02Q .0504: OPTION FOR OBTAINING CONSTRUCTION AND OPERATION PERMIT". This requirement was satisfied with application 4900225.24A received October 18, 2024
29-36	Section 4	Updated General Conditions from version 6.0 (01/07/2022) to version 8.0 (07/10/24)

* This list is not intended to be a detailed record of every change made to the permit but a summary of those changes.

5. General Condition J Removed from Permit (see discussion below)

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

[1] NRDC v. EPA, 749 F.3d 1055 (D.C. Cir. 2014).

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.

6. Other Requirements

- No application fee was required for this application.
- The appropriate number of application copies were received on 10/18/24.
- The application was signed by Mr. Glen Jasek, VP GM Eastern Interstates, on 10/16/24 as the Responsible Official.
- Iredell County has triggered increment tracking under PSD for PM_{10}, SO_X and NO_X. Any increment changes associated with this modification were addressed in the Part I permit application (No. 4900225.22A).
- The associated dates are listed in the Application Chronology section above.

7. Public Notice

Public notice and EPA review is required for the completion of this two-step significant process. 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. 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 15A NCAC 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 15A NCAC 02Q .0521, above.

8. Facility Compliance Status

This facility was last inspected on August 12, 2024 by Brian Huang of the Mooresville Regional Office. According to Mr. Huang's report, this facility appeared to operate in compliance with the applicable air quality regulations at the time of the inspection.

9. Conclusions, Comments and Recommendations

The issuance of Air Quality Permit No. 08044T20 to Transcontinental Gas Pipe Line Company, LLC - Station 150 is recommended.

[2] In newly issued and revised New Source Performance Standards (NSPS), emission guidelines for existing sources, and NESHAP regulations, the EPA has either omitted new affirmative defense provisions or removed existing affirmative defense provisions. See, e.g., National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants; Final Rule, 80 FR 44771 (July 27, 2015); National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 80 FR 72789 (November 20, 2015); Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units; Final Rule, 81 FR 40956 (June 23, 2016).

ATTACHMENT

Technical Review for Part I
Permit Application No. 3900009.21A

NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date: 07/26/2023

Region: Mooresville Regional Office
County: Iredell
NC Facility ID: 4900225
Inspector's Name: Denise Hayes
Date of Last Inspection: 02/16/2022
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Transcontinental Gas Pipe Line Company, LLC - Station 150

Facility Address:
Transcontinental Gas Pipe Line Company, LLC - Station 150
236 Transco Road
Mooresville, NC 28117

SIC: 4922 / Natural Gas Transmission
NAICS: 48621 / Pipeline Transportation of Natural Gas

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 .0501(c), 02D .0516, 02D .0521, 02D .1408, 02D .1806
NSPS: 02D .0524 (Subparts KKKK, OOOOa, JJJJ)
NESHAP: 02D .1111 (Subparts YYYY, ZZZZ)
PSD: NA
PSD Avoidance: For NOx and $PM_{2.5}$
MACT Avoidance: NA
NC Toxics: 02D .1100
112(r): NA
Other: NA

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Jeff King Operations Manager (704) 655-1816 236 Transco Road Mooresville, NC 28117	Glen Jasek VP GM, Eastern Interstates (713) 215-2134 2800 Post Oak Blvd, Suite 900 Houston, TX 77056+6147	Michael Callegari Senior Environmental Specialist (832) 794-0612 2800 Post Oak Boulevard, Suite 900 Houston, TX 77056+6147

Application Data

Application Number: 4900225.22A
Date Received: 09/08/2022
Application Type: Modification
Application Schedule: TV-Sign-501(b)(2) Part I

Existing Permit Data
Existing Permit Number: 08044/T18
Existing Permit Issue Date: 07/13/2021
Existing Permit Expiration Date: 06/30/2026

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2021	0.2000	259.51	99.89	218.76	16.08	65.51	45.55 [Formaldehyde]
2020	0.1600	227.97	97.65	192.59	13.94	64.04	44.54 [Formaldehyde]
2019	0.1800	231.44	99.80	200.94	14.68	64.99	45.19 [Formaldehyde]
2018	0.1700	223.97	87.87	171.12	12.47	56.84	39.52 [Formaldehyde]
2017	0.1300	199.86	82.79	147.80	10.88	53.93	37.50 [Formaldehyde]

Review Engineer: Ed Martin

Review Engineer's Signature: **Date:** 07/26/2023

Comments / Recommendations:
Issue 08044/T19
Permit Issue Date: 07/26/2023
Permit Expiration Date: 06/30/2026

1. Purpose of Application

Transcontinental Gas Pipe Line Company, LLC (Transco), a subsidiary of The Williams Companies, Inc., submitted an application for Compressor Station 150, located approximately 5 miles south of Mooresville in Iredell County, North Carolina. As part of Transco's Emissions Reduction Program (ERP), the following modifications are planned for Compressor Station 150:

At Compressor Station 150, Transco plans to retire the following:

- 15 existing two-stroke, lean-burn (2SLB) mainline compressor engines (ES-M/L1 through ES-M/L15)
- Three existing emergency-use generator engines (ES-AUX1 through ES-AUX3)
- Two air compressor engines (ES-A/C5 and ES-A/C6)

The following new sources will be installed:

- Two natural gas-fired Solar Titan 130-23502S combustion turbines (ES-M/L17 and ES-M/L18)
- Two natural gas-fired four-stroke, lean-burn (4SLB) emergency generator engines (EGEN-01 and EGEN-02)

In addition to the above equipment modifications, Transco requested that the grouping of blowdowns as Source ES-BDO be removed from the permit and replaced by separate compressor blowdown source insignificant activities shown below for each compressor plus the suction header and discharge header.

The existing natural gas-fired dry low NO_x combustion turbine (ES M/L16) will remain in the permit.

As part of this modification, Transco also plans to add ancillary equipment (insignificant activities), which includes the following:

- M/L16CB Compressor Blowdowns
- M/L17CB Compressor Blowdowns
- M/L18CB Compressor Blowdowns
- TANK-01 Natural gas condensate liquid storage tank
- TANK-02 Oily Wastewater Storage Tank
- TTLO Tank truck loadout (condensate and oily wastewater)
- FUGS Piping Component Fugitives
- SHB Suction Header Blowdowns
- DHB Discharge Header Blowdowns
- Pigging Pipeline Pigging

The facility currently operates under Title V Operating Permit No. 08044T18, issued by the North Carolina Department of Environmental Quality (NCDEQ) on July 13, 2021.

The application was initially assigned as a one-step TV-Significant application schedule (with public notice) and DAQ believes (after discussing with Mark Cuilla and Booker Pullen) that it should be changed to Part I Significant modification since the existing sources will be operating for a period of time before those sources are replaced with the new sources and HAPs are then reduced to an area source level. The facility cannot be made an area source as requested in the application and there is no reason for going through a Title V Significant one-step process at this time. An email was received from the applicant on April 24, 2023, requesting the application be changed from TV-Significant to a TV-Sign-501(b)(2) Part I. Accordingly, this is Part I of the two-step procedure being processed in accordance with 15 NCAC 02Q .0501(b)(2) for a significant modification that would not contravene or conflict with a condition in the existing permit set forth in 15A NCAC 02Q .0504. A complete Part II application is required to be filed within 12 months after commencing operation of the new equipment to modify the permit to meet the Title V requirements Section 15A NCAC .0500. Public notice is not required at this time but will be required when the Part II permit is issued.

There will be a period of approximately 1-2 months when some of the existing legacy sources shown above as

being retired could operate while the newly-installed NG-fired turbine compression replacement equipment above is commissioned. The commissioning process involves intermittent runtime testing of the new replacement turbines for proper functionality while some of the existing legacy compression equipment operates to ensure natural gas flow across the station to be transported along the Transco interstate pipeline system before the new turbines are placed into operational service. Therefore, the sources shown above as being retired will be removed from the permit at the time the Part II application is processed.

2. Facility Description

Transco Compressor Station 150 is a natural gas compressor station that operates under Standard Industrial Classification (SIC) code 4922 and North American Industry Classification System (NAICS) code 486210 and delivers natural gas through a 10,000-mile interstate transmission pipeline system extending from south Texas to New York City, transporting approximately 15% of the nation's natural gas with 57 stations.

Compressor Station 150 is an existing major source with respect to both the Prevention of Significant Deterioration (PSD) and Title V permitting programs. Once these planned modifications become operational, Transco anticipates the facility's potential emissions will be reduced significantly, to below major source levels for both PSD and Title V permitting programs.

An Area Map of Compressor Station 150 is provided in Figure 1 below.

3. Application Chronology

September 8, 2022	Application 4900225.22A was received and considered complete for processing on this date.
October 18, 2022	AQAB modeling after the commissioning period received from Nancy Jones.
April 19, 2023	Sent an email to Michael Callegari informing him that when the application came in it was assigned as a one-step TV-Significant application schedule (with public notice) and DAQ believes (after discussing with Mark Cuilla and Booker Pullen) that it should be

	changed to Part I Significant modification since the existing sources will be operating for a period of time before those sources are replaced with the new sources and HAPs are then reduced to an area source level. Therefore, the facility cannot be made an area source as requested in the application and there is no reason for going through a Title V Significant one-step process at this time. It was requested that Transco send an email from the Responsible Official (or have him copied) to request the application be changed to a TV-Sign-501(b)(2) Part I application schedule.
April 24, 2023	An email was received from Michael Callegari requesting the application be changed to a TV-Sign-501(b)(2) Part I. The Ibeam application schedule was changed from TV-Significant to a TV-Sign-501(b)(2) Part I.
May 9, 2023	A Teams call was held among Michael Callegari, Kevin Scott, James Raschke, Booker Pullen, Mark Cuilla and Ed Martin to discuss issues related to possible NAAQS modeling that was performed around 1997 that apparently resulted in several 02D .0501 ambient NOx limits in the permit. The concern is that, during the commissioning period when some legacy sources and the new sources will be operating, emissions of NOx will need to be kept below the rates in the permit which appear to be based on the previous modeling. Certain legacy sources could be excluded from operating at the same time that the new sources operate to show that the existing NOx limits and therefore the NAAQS would not be exceeded.
June 1, 2023	A Teams call was held among Michael Callegari, Kevin Scott, James Raschke, Booker Pullen, Rahul Thaker and Ed Martin to discuss how to ensure the permit 02D .0501 NOx limits are not exceeded during the commissioning period. Also, the PSD pollutants need to stay below the PSD annual significance thresholds during the commissioning period. Transco will confirm that the offsets from not operating engines M/L3, M/L6, and M/L12 will keep that from happening at the pounds per hour rates for the other legacy sources that could operate, depending on what time of year it is during the commissioning period.
June 19, 2023	Received supplemental toxics modeling for the commissioning period from Transco. Also received the analysis for PSD avoidance and hourly NOx demonstration during the commissioning period.
June 26, 2023	AQAB modeling memo for the commissioning period received from Justin McKee.
June 27, 2023	Sent the draft permit to Supervisor.
June 27, 2023	Sent the draft permit to the Stationary Source Compliance Branch and Mooresville Regional Office for review.
July 14, 2023	Sent the draft permit to the Applicant for review.
July 20, 2023	Held a Teams call to discuss Transco's preliminary comments on the draft permit followed by an email from Kevin Scott/Michael Callegari with the final comments.
July 26, 2023	Permit was issued.

4. Permit Changes

The following changes were made to Air Permit No. 08044T18:*

Page No.	Section	Description of Changes
Cover Letter	--	Added new cover letter with new format. Amended permit numbers and dates.
Throughout	--	Corrected 02D .0501(e) to 02D .0501(c).
4	1, table	Removed source ES-BDO. Added sources ES-M/L17, ES-M/L18, EGEN-01 and EGEN-02. Added footnote 1.
5-6	2.1 A, regulation table	Added: 02D .0524 (40 CFR Part 60, Subpart OOOOa).
8	2.1 B, regulation table	Added: 02D .0524 (40 CFR Part 60, Subpart OOOOa).
11	2.1 C, regulation table	Added: 02D .0524 (40 CFR Part 60, Subpart OOOOa).
13	2.1 D, regulation table	Added: 02D .0524 (40 CFR Part 60, Subpart OOOOa).
15	2.1 E, regulation table	Added: 02D .0524 (40 CFR Part 60, Subpart OOOOa).
13 Old page	2.1 F Old section	Removed this section for the Natural Gas Pipeline Blowdown Operations (ID No. ES-BDO) as these sources have been included as insignificant activities in Section 3.
17-23	2.1 F	Added this section for two natural gas-fired Solar Titan 130 combustion turbines with dry low NOx (ID Nos. ES-M/L17 and ES-M/L18).
24-28	2.1 G	Added this section for two natural gas-fired four-stroke lean-burn emergency generators (ID Nos. EGEN-01 and EGEN-02).
34-36	2.2 C	Added to this section: • Sections 2.2 C.2 and 2.2 C.3 for 02D .1100. • Section 2.2 C.4 for 02Q .0711.
37-39	2.2 D	Added this section for: • 02Q .0317 02Q .0317 (PSD Avoidance). • 02Q .0317 (PSD Avoidance) during the commissioning period. • 02D .0501(c) during the commissioning period. • 02Q .0504.
40-42	2.2 E	Added this section for: • 02D .0524 (40 CFR Part 60, Subpart OOOOa)
43-44	3	Created this new section for insignificant activities and added: I-TANK-01, I-TANK-02, I-TTLO, I-FUGS-NEW, I-SHB, I-DHB, I-PIGGING, I-M/L16-CB, I-M/L17-CB, and I-M/L18-CB
45-53	4	Created this new section and moved General Conditions to this section. Updated General Conditions to version 6.0, dated 01/07/2022.

* This list is not intended to be a detailed record of every change made to the permit but a summary of those changes.

5. Project Emissions

Pipeline natural gas enters the facility via Transco's existing pipeline and then passes through filter separation to remove any small amounts of entrained water and hydrocarbon liquids that may accumulate. The water and hydrocarbon liquids removed during filter separation are then routed to the natural gas condensate liquid storage tank and trucked offsite as needed. The filter-separated natural gas then undergoes recompression by the three natural gas-fired combustion turbine-driven compressor units where it is pressurized and discharged to the pipeline to be transported to market.

The compressor station is also equipped with station suction, station discharge, and unit piping routed to blowdown vent stacks for managed blowdowns when necessary due to compressor starts and stops and maintenance-related requirements associated with equipment in natural gas service (e.g. compressors, suction header piping, and discharge header piping). Start-up and shutdown operations occur periodically based on market demand and maintenance-related requirements to ensure the protection of the equipment and safety of operations personnel.

The oily wastewater storage tank stores oily wastewater from process equipment such as the gas turbines, compressors, and vessels that may accumulate used oil and water from equipment operation and maintenance activities. The oily wastewater is trucked offsite as-needed.

Two natural gas-fired auxiliary generators will provide on-demand back-up power for the station's operational electrical needs and one emergency use-only natural gas-fired generator will be used to provide power in the event of a power outage for the main office building. Fugitive emissions are also expected to occur from piping components in natural gas service.

The individual emission sources are described as follows:

Natural Gas-Fired Solar Combustion Turbines

Normal Operation

The Solar Titan 130-23502S natural gas-fired combustion turbines will be equipped with Solar's dry-low nitrogen oxide (NO_X) combustion technology (SoLoNO$_{XTM}$) and will be capable of achieving the following exhaust gas concentrations while in SoLoNO$_{XTM}$ mode:

- 9 parts per million by volume (dry basis) (ppmvd) at 15% oxygen (O_2) for NO_X
- 10 ppmvd at 15% O_2 for carbon monoxide (CO)
- 25 ppmvd at 15% O_2 for unburned hydrocarbons (UHC)
- 91 ppmvd at 15% O_2 for formaldehyde

Emission calculations for the combustion turbines during normal operation were based on the maximum predicted horsepower (HP) and fuel flow ratings provided in Solar's Summary of Engine Exhaust Analysis at 100% load and 0 degrees Fahrenheit (°F). The lb/hr and tpy emission calculations for NO_X, CO, UHC, and formaldehyde were obtained from Solar's Summary of Engine Exhaust Analysis. UHC emissions were converted to volatile organic compound (VOC) emissions by applying Solar's recommended 20% conversion factor provided in Product Information Letter (PIL) 168. The remaining 80% of the UHC was assumed to be methane (CH_4). Emission calculations for particulate matter (PM_{10} and $PM_{2.5}$) and sulfur dioxide (SO_2) were based on emission factors obtained from Table 3.1-2a of the US Environmental Protection Agency's (EPA) *Compilation of Air Emission Factors (AP-42)*. Solar's Summary of Engine Exhaust Analysis and PILs are provided in Appendix D. Emission calculations for hazardous air pollutants (HAP), except formaldehyde, were estimated using emission factors obtained from Table 3.1-3 of AP-42. The formaldehyde emission factor used for the turbines is 4.00E-02 lb/hr (or 2.00E-04 lb/mmBtu at the 199.77 mmBtu/hr HHV fuel flow rate) versus the AP-42 factor of 7.1E-04 in AP-42 Table 3.1-3 for natural gas fired combustion turbines. EPA has issued guidance that vendor guarantees are a better indicator of actual emissions compared to emission factors in AP-42.

Emission calculations for greenhouse gases (GHGs) were estimated using emission factors obtained from Solar's Exhaust Gas Analysis, Solar's PIL 168, and 40 CFR Part 98 Subpart C. The carbon dioxide equivalent

(CO_2e) emissions were determined by applying the global warming potentials (GWPs) obtained from 40 CFR Part 98 Subpart A.

Start-Up and Shutdown Operations
Emission calculations for the Solar Titan 130 combustion turbines during start-up and shutdown operations were estimated using a conservative number of events per year based on operational knowledge and NO_X, CO, UHC, VOC and carbon dioxide (CO_2) emission factors obtained from Solar's Product Information Letter (PIL) 170. Emission factors for CH_4 were obtained from Solar's PIL 168. Solar's emission factors are based on 10-minute start-up and shutdown events; however, to be conservative, and based on operational knowledge, the start-up and shutdown event durations were increased to 15 minutes per event and a factor of 1.5 was applied to Solar's emission factors. SO_2, PM_{10}, $PM_{2.5}$, and nitrous oxide (N_2O) emissions are a function of fuel content and are expected to be equivalent to the normal emissions rates. HAP during normal operation. Solar's PIL 170 is provided in Appendix D of the application. The Solar Titan 130 combustion turbines will be equipped with electric starters.

Natural Gas-Fired Auxiliary and Emergency Generator Engines
Transco plans to install two natural gas-fired lean burn emergency Caterpillar G3512 auxiliary generators (EGEN-01 and EGEN-02), each rated at 1468 hp. The emission calculations for NO_X, CO, and VOC (excluding formaldehyde) are based on federal standards provided in Table 1 of New Source Performance Standard (NSPS) Subpart JJJJ. Emission calculations for PM_{10}, $PM_{2.5}$, SO_2, and HAPs are based on emission factors obtained from Table 3.2-2 in the US EPA's AP-42. The AP-42 SO_2 emission factor was conservatively adjusted using a ratio of 1.0/0.2 grains of sulfur per 100 standard cubic feet (scf) conversion based on Transco's typical natural gas quality.

Emission calculations for GHGs were estimated using emission factors obtained from 40 CFR Part 98 Subpart C. The emission factor for CO_2 was obtained from Table C-1 and the emission factors for CH_4 and N_2O were obtained from Table C-2. The CO_2e emissions were determined by applying the GWPs obtained from 40 CFR Part 98 Subpart A. Potential emission calculations for the two non-emergency units are representative of continuous operation for 8,760 hours per year. The potential emissions from the emergency-use generator are based on operating 500 hours per year.

Natural Gas Condensate Liquid Storage Tank, Oily Wastewater Storage Tank, and Tank Truck Loadout Operations
Emission calculations for the natural gas condensate liquid storage tank and associated tank truck loadout were estimated using ProMax simulation (version 5.0.21190.0), a representative natural gas analysis, and conservative process temperatures and pressures. The ProMax simulation includes working, breathing, flashing, and loading emission estimates. The natural gas condensate liquid storage tank emissions and associated tank truck loading are provided in the detailed emissions calculations in Appendix C of the application. The ProMax output report is provided in Appendix D of the application. Potential emissions from the condensate liquid storage tank and the condensate truck loading qualify as insignificant activities as defined in 15A NCAC 2Q.0503(8).

Emission calculations for the oily wastewater storage tank were estimated using the Mitchell Scientific program, Emission Master. Emission calculations for the oily wastewater tank truck loading were estimated using the results of Emission Master and the loading loss equations from AP-42, Chapter 5, Section 5.2 (Transportation and Marketing of Petroleum Products). Detailed emissions calculations for the oily wastewater storage tank and associated tank truck loading are provided in Appendix C of the application. The Emission Master output report is also provided in Appendix C of the application. Potential emissions from the oily wastewater storage tank and the oily wastewater tank truck loading qualify as insignificant activities as defined in 15A NCAC 2Q.0503(8).

Piping Component Fugitive Emissions
At this time, the Project design has not been finalized and the exact number of fugitive components is not available. In lieu of the exact component count, fugitive emissions from the station's piping components are conservatively estimated using a representative component count from another station along Transco's pipeline and scaled based on facility HP capacity. The total organic carbon (TOC) emission factors were obtained from

the US EPA's *Protocol for Equipment Leak Emission Estimates*. For components in gas service, VOC, HAP, and GHG emissions were estimated by applying component weight fractions obtained from monthly natural gas chromatograph readings from Compressor Station 150. For components in light liquid service, VOC, HAP, and GHG emissions were estimated by applying component weight fractions from a natural gas condensate liquids composition derived from ProMax simulation. Potential emissions from equipment/component leaks qualify as an insignificant activity/source as defined in 15A NCAC 2Q .0503(8).

Natural Gas Venting Operations

In accordance with US Department of Transportation (DOT) requirements, the proposed modifications for the compressor station will be equipped with an emergency shutdown (ESD) system that blocks natural gas out of the station and blows it down the station piping. The station will also be equipped with pressure relief devices (or other suitable protective devices) to ensure the maximum operating pressure is not exceeded. The ESD system and pressure relief devices (or other suitable protective devices) are required to be inspected and tested on an annual basis. Transco will conduct annual ESD system testing in accordance with the applicable US DOT requirements and will utilize double valve systems on the blowdown system to significantly reduce the volume of natural gas released during these required tests. In addition, natural gas blowdowns will occur when necessary due to compressor starts, stops, and maintenance-related requirements associated with equipment in natural gas service. These natural gas blowdowns will be directed to blowdown stacks equipped with silencers. Emissions from natural gas venting activities were estimated by applying component weight fractions obtained from monthly natural gas chromatograph readings from the station. These emissions include natural gas venting associated with station suction and discharge header piping blowdowns and blowdowns from the turbine-driven compressors. In addition, the small quantities of natural gas directed to the blowdown silencers during the annual ESD system testing are also accounted for in the emission estimates. The blowdowns for existing equipment and operations are currently permitted as a single grouped source ES-BDO with a PSD avoidance emissions cap of 40 tpy VOC. With this project, Transco requested that this source be redefined in the permit as separate blowdown insignificant activities for each compressor (M/L-16CB, M/L-17CB and M/L-18CB) plus the suction header and discharge header (SHB and DHB) since they are not interdependent. The redefined potential-to-emit qualifies each a as insignificant activity in accordance with 15A NCAC 02Q .0503(8) and negates the need for the 40 tpy VOC emissions cap. Potential VOC emissions from these insignificant activities are:

SHB	0.65 tpy
DHB	1.25 tpy
M/L16CB	0.30 tpy
M/L16CB	0.04 tpy
M/L16CB	0.04 tpy

6. PSD Applicability

This section includes two parts: (A) an analysis for the original scope of the project through completion of the Part II application, and (B) a separate analysis for the commissioning period to ensure PSD levels are not exceeded when some remaining legacy sources may operate.

A. PSD Review of the Original Project Scope Through Completion of the Part II Application

The facility is located in Iredell County, which is currently in attainment (or unclassified) with the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants. Therefore, with respect to the federal New Source Review (NSR) permitting program, only PSD requirements potentially apply. PSD applies both to new major stationary sources and to major modifications to existing major stationary sources. Major stationary sources are defined in 40 CFR 51.166 as follows:

- Any of the 28 listed stationary source categories of air pollutants that emits, or has the potential to emit, 100 tons per year or more of any pollutant subject to regulation under 40 CFR 52.21; or
- Any stationary source, other than one of the 28 listed stationary source categories, that emits, or has the potential to emit, 250 tons per year or more of any air pollutant subject to regulation under 40 CFR 51.166.

Compressor Station 150 is an existing major stationary source with respect to the PSD permitting program (for stationary sources other than one of the 28 listed source categories) as the facility has the potential to emit 250 tpy or more of NOx, CO, and VOC emissions.

An applicability analysis was performed to determine whether the project would be a major PSD modification as a result of an emission increase of any regulated NSR pollutant above the applicable significance levels listed in 40 CFR 51.166(b)(23)(i). The PSD applicability analysis evaluated all PSD-regulated air pollutants to be emitted, including PM (filterable), PM_{10}, $PM_{2.5}$, NOx, SO_2, CO, VOCs, and carbon dioxide as CO_2e.

The PSD requirements apply to any project at an existing major stationary source in an area designated as attainment or unclassifiable.

A project is a major modification for a regulated NSR pollutant if it causes two types of emissions increases - a *significant emissions increase* (as defined in 40 CFR 51.166(b)(39)), and a *significant net emissions increase* (as defined in 40 CFR 51.166(b)(3) and (b)(23)). A project is not a major modification if it does not cause a *significant emissions increase*. If a project does cause a significant emissions increase, then the project is a major modification only if it also results in a *significant net emissions increase*.

For the Transco 150 project, the procedure for calculating whether a *significant emissions increase* (*i.e.*, the first step of the process) will occur is based on the applicable provisions in 40 CFR 51.166 paragraphs (a)(7)(iv)(*c*) through (*f*) as discussed below for the new units and the existing units being shut down. The procedure for calculating whether a *significant net emissions increase* will occur at the source (*i.e.*, the second step of the process) is contained in 40 CFR 51.166 paragraphs (b)(3) and (b)(23), where any other increases and decreases in actual emissions that are contemporaneous with the particular change are considered.

A major modification results if the project causes a *significant emissions increase* and a *significant net emissions increase*. However, in this case, the project does not result in a *significant emissions increase* and therefore it is not necessary to proceed to the second step of the process to determine whether there is a *significant net emissions increase*.

PSD Applicability Test for New Units

For the two new Solar Titan 130-23502S combustion turbines (ES-M/L17 and ES-M/L18) and two new generator engines (EGEN-01 and EGEN-02), the *actual-to-potential test* is used in accordance with 40 CFR 51.166(a)(7)(iv)(*d*) to compare the difference between the *potential to emit* from each new emissions unit following completion of the project and the *baseline actual emissions* as follows:

Potential to Emit

In accordance with 15A NCAC 02D .0530(b)(4), *potential to emit* means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source.

Baseline Actual Emissions

In accordance with 15A NCAC 02D .0530(b)(1)(B), for a new emissions unit the *baseline actual emissions* shall equal zero and thereafter, for all other purposes, shall equal the unit's potential to emit.

PSD Applicability Test for Units Being Shut Down

For the existing units being shut down, the *actual-to-projected-actual applicability test* is used in accordance with 40 CFR 51.166(a)(7)(iv)(*c*) to compare the difference between the *projected actual emissions* (as defined in 40 CFR 51.166(b)(40)) and the *baseline actual emissions*.

Projected Actual Emissions

In this case, these existing units are being shut down and therefore the projected actual emissions are zero and the decrease is due only to the baseline actual emissions.

Baseline Actual Emissions

In accordance with 15A NCAC 2D .0530(b)(1)(A), *baseline actual emissions* for an existing emissions unit are calculated as the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the five-year period immediately preceding the date that a complete permit application is received. However, the Director shall allow a different time period, not to exceed 10 years immediately preceding the date on which a complete permit application is received by the Division, if the owner or operator demonstrates that it is more representative of normal source operation. In accordance with 15A NCAC 2D .0530(b)(1)(a)(v), for a regulated NSR pollutant, if a project involves multiple emissions units, only one consecutive 24-month period shall be used to determine the baseline actual emissions for all the emissions units being changed. A different consecutive 24-month period for each regulated NSR pollutant may be used for each regulated NSR pollutant.

For decommissioning of the existing 15 mainline units, the three emergency generator engines, and two air compressor engines Transco used pa conservative approach by using a five-year period preceding the date of the permit application submission in lieu of using a 10-year lookback period as allowed per regulation; for calculating baseline emissions. The consecutive 24-month baseline period for actual emissions is from November 2019 to October 2021. See "Baseline Actual Emissions" in Appendix C of the application for additional details.

As an example of how the numbers in Table 1 below were determined, the Net Emissions Change for NOx is calculated as follows:

The total Project Emissions Increases of 57.31 tpy are the potential emissions from the new sources (ES-M/L17, ES-M/L18, EGEN-01, and EGEN-02) as shown on page 1 in Appendix C of the application. The contribution to this number for the potential NOx emissions, for example, for ES-M/L17 of 26.24 tpy are taken from page 5 of Appendix C using the Solar Exhaust Analysis emission factor of 6.07 lb/hr as shown on the third page of the Solar specification sheet in Appendix D of the application at the potential operation of 8760 hrs/yr as follows:

$$\frac{(6.07 \text{ lb/hr}) \times (8760 \text{ hrs/yr})}{(2000 \text{ lb/ton})} = 26.58 \text{ tpy (with some rounding error versus the 26.24 tpy above)}$$

Therefore, the Net Emissions Change for NOx in Table 1 is:

Project Emissions Increases - Actual Emissions Decreases from the Project = Net Emissions Change

57.31 tpy - 247.87 tpy = - 190.56 tpy

As shown in Table 1 below, the calculations demonstrate that the PSD requirements are not triggered because the project does not result in a *significant emissions increase*. Appendix C of the application contains the project emissions calculations. Note that this PSD applicability analysis covers both this Part I application and the Part II application to be submitted within one year from the date of beginning operation of any of the new sources (see Section 7.D.2 below).

Table 1 – PSD Applicability Analysis, tons per year

Regulated NSR Pollutant	Project Emissions Increases[1]	Actual Emissions Decreases from the Project [2,3]	Net Emissions Change	PSD Significant Emissions Rate	Significant Project Emissions Increase?[4]	Subject to PSD Review?
NOx	57.31	247.87	-190.56	40	No	No
CO	51.45	Not needed since the emission increases alone for these pollutants are below PSD significance		100	No	No
VOC	16.57			40	No	No
SO_2	5.96			40	No	No
PM	11.60			25	No	No
PM10	11.60			15	No	No
PM2.5	11.60	14.81	-3.21	10	No	No
CO_2e	209,667.20	NA[4]	NA	75,000	NA	No

[1] The project emissions increases are the potential emissions from the new sources.

[2] The emission decreases from the project are the baseline actual emissions for the existing sources being shut down in accordance with 40 CFR 51.166(b)(47)(ii). As a conservative approach Transco has identified a five-year period preceding the date of this permit application submission in lieu of using a 10-year lookback period as allowed per regulation.

[3] The 24-month baseline period for actual emissions is from November 2019 to October 2021. The baseline actual emissions decreases include the decommissioning of 15 mainline units, three auxiliary generators, and one air compressor.

[4] Per the PSD regulations of 40 CFR 51.166, GHG emissions are subject to PSD regulation only if the project is already subject to PSD for another regulated NSR pollutant. Therefore, baseline CO_2e emissions for the project were not needed and the project is not a major modification under NSR permitting procedures.

Therefore, the project is not subject to PSD review and permitting requirements.

B. PSD Review During the Commissioning Period

A supplemental application was received from Transco on June 19, 2023, to demonstrate that the PSD significance thresholds will not be exceeded during the commissioning period when some remaining legacy sources may operate along with the new equipment.

Prior to the commencement of the commissioning period, the following three mainline compressor engines will be retired:

- ES M/L3
- ES M/L6
- ES M/L12

To net out of PSD during the commissioning period, the increases from the new combustion equipment must be offset by the emission reductions from the above three engines to be retired.

The reductions from these three engines will be the baseline actual emissions during the 24-month period from November 2019 to October 2021 as shown in Appendix C of the September 6, 2022 application. This is as described in Section 6.A above for existing units being shut down using the *actual-to-projected-actual applicability test* in accordance with 40 CFR 51.166(a)(7)(iv)(*c*) to compare the difference between the *projected actual emissions* (as defined in 40 CFR 51.166(b)(40)) and the *baseline actual emissions*. Where the existing units are being shut down and therefore the projected actual emissions are zero and the decrease is due only to the baseline actual emissions.

For this analysis, to be conservative, potential emissions from the new equipment are used, as provided in the September 6, 2022 application, whereas the actual emissions from the new equipment during commissioning will be intermittent and, therefore, much lower than what is used here.

Accounting for the potential increase in emissions as given in the application for the new equipment, the net change in emissions at the commencement of the commissioning period is summarized as follows:

Table 2 - PSD Netting Detail During Commissioning, tons per year

	NOx	CO	VOC	SO2	PM	PM10	PM2.5
Total Project Emission Increases (see 9/6/22 application, Appx C)	57.31	51.45	16.47	0.07	11.60	11.60	11.60
Decreases from Sources Retired prior to Commissioning (M/L3, M/L6, M/L12)	-42.81	-21.66	-6.73	-0.033	-2.71	-2.71	-2.71
Net Emissions Increase	14.5	29.8	9.74	0.037	8.89	8.89	8.89
PSD Significance Thresholds	40	100	40	40	25	15	10
Is there a Significant Emissions Increase During Commissioning?	No	No	No	No	No	No	No

Since the net change in emissions are below the PSD significance levels, a PSD review is not required.

The decreases due to the baseline emissions for each pollutant in Table 2 above for the three engines being retired are calculated in Table 3 below.

Table 3 - Decreases from Sources Retired prior to Commissioning

	Heat Input	24-Month Utilization	NOx EF *	24-Month Emissions	12-Month Average
Source	(MMBtu/hr)	(hr)	(lb/hr)	(tons)	(tons per year)
ES-M/L3	15.4	3,275.5	14.54	23.81	11.91
ES-M/L6	15.4	2,868.8	14.54	20.86	10.43
ES-M/L12	23.3	5,574.0	14.69	40.94	20.47
				Total	**42.81**
* Emission factor based on historical stack testing reports					

	Heat Input	24-Month Utilization	CO EF *	24-Month Emissions	12-Month Average
Source	(MMBtu/hr)	(hr)	(lb/MMBtu)	(tons)	(tons per year)
ES-M/L3	15.4	3,275.5	0.386	9.74	4.87
ES-M/L6	15.4	2,868.8	0.386	8.53	4.26
ES-M/L12	23.3	5,574.0	0.386	25.07	12.53
				Total	**21.66**
* Emission factor from AP-42 Section 3.2					

	Heat Input	24-Month Utilization	VOC EF *	24-Month Emissions	12-Month Average
Source	(MMBtu/hr)	(hr)	(lb/MMBtu)	(tons)	(tons per year)
ES-M/L3	15.4	3,275.5	0.12	3.03	1.51
ES-M/L6	15.4	2,868.8	0.12	2.65	1.33
ES-M/L12	23.3	5,574.0	0.12	7.79	3.90
				Total	**6.73**
* Emission factor from AP-42 Section 3.2					

	Heat Input	24-Month Utilization	SO2 EF *	24-Month Emissions	12-Month Average
Source	(MMBtu/hr)	(hr)	(lb/MMBtu)	(tons)	(tons per year)
ES-M/L3	15.4	3,275.5	0.000588	0.015	0.007
ES-M/L6	15.4	2,868.8	0.000588	0.013	0.006
ES-M/L12	23.3	5,574.0	0.000588	0.038	0.019
				Total	**0.033**
* Emission factor from AP-42 Section 3.2					

	Heat Input	24-Month Utilization	PM / PM10 / PM2.5 EF *	24-Month Emissions	12-Month Average
Source	(MMBtu/hr)	(hr)	(lb/MMBtu)	(tons)	(tons per year)
ES-M/L3	15.4	3,275.5	0.04831	1.22	0.61
ES-M/L6	15.4	2,868.8	0.04831	1.07	0.53
ES-M/L12	23.3	5,574.0	0.04831	3.14	1.57
				Total	**2.71**
* Emission factor from AP-42 Section 3.2					

7. Regulatory Evaluation

Individual New Sources (Sections A and B below)

A. Two natural gas-fired Solar Titan 130-23502S combustion turbines (ES-M/L17 and ES-M/L18)

1. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS
   Visible emissions from these sources shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

   Monitoring/Recordkeeping/Reporting
   No monitoring/recordkeeping/reporting is required for visible emissions from the firing of natural gas in these sources.

2. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS
   New Source Performance Standards (NSPS) as promulgated in 40 CFR Part 60 Subpart KKKK, "Standards of Performance for Stationary Combustion Turbines", including Subpart A "General Provisions." These turbines each have a heat input of 199.5 million Btu per hour.

   This subpart applies to stationary combustion turbines with a heat input capacity greater than or equal to 10 million British thermal units per hour which commenced construction, modification, or reconstruction after February 18, 2005.

   Emission Limitations
   The proposed combustion turbines will combust only pipeline natural gas and will have a heat input rating between 50 and 850 million Btu per hour. Therefore, NOx emissions from each combustion turbine shall not exceed 25 ppm at 15 percent O_2 as shown in 40 CFR Part 60 Subpart KKKK, Table 1.

   SO_2 emissions from the combustion turbines shall not exceed 0.060 pounds per million Btu heat input (fuel sulfur content limit) as shown in 40 CFR 60.4330(a)(2).

   Testing
   The Permittee shall demonstrate compliance with the NOx emission limits above by conducting an initial performance test as required by 40 CFR 60.8 and 40 CFR 60.4400, in accordance with General Condition JJ within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup (initial firing) for each combustion turbine.

Monitoring/Recordkeeping

The Permittee shall operate and maintain the combustion turbines, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown and malfunction.

The Permittee shall comply with the following NO_x monitoring and recordkeeping requirements:

- The Permittee shall install, calibrate, maintain and operate a continuous emissions monitoring system (CEMS) consisting of NO_x and O_2 monitors, to determine the hourly NO_x emission rate in parts per million (ppm).
- The CEMS shall meet the installation, certification and operating requirements of 40 CFR 60.4345.
- Hourly average NO_x emission rates shall be calculated pursuant to 40 CFR 60.4350(a) through (f). The hourly average NO_x emission rates shall be used to assess excess emissions on a 30-unit operating day rolling average basis, as described in 40 CFR 60.4380(b)(1).

The Permittee shall demonstrate compliance with the applicable SO_2 emission limit by using the fuel quality characteristics in a current, valid purchase contract, tariff sheet, or transportation contract for the fuel, specifying that the total sulfur content for natural gas use in continental areas is 20 grains of sulfur or less per 100 standard cubic feet and has the potential sulfur emissions of less than 0.060 pounds SO_2 per million Btu heat input.

Reporting

The Permittee shall submit a notification of the date of construction of an affected facility is commenced postmarked no later than 30 days after such date, a notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date, and shall provide the DAQ at least 30 days prior notice of any performance test.

The Permittee shall submit a written report of the results of each initial performance test required in 40 CFR 60.8 before the close of business on the 60th day following the completion of the performance test, and a written report of the results of each annual performance test before the close of business on the 60th day following the completion of the performance test, and a semiannual summary report of monitoring and record keeping activities.

The Permittee shall submit a summary report of the fuel purchase contracts, tariff sheets or transportation contracts.

3. 15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

Maximum Achievable Control Technology (MACT) as promulgated in 40 CFR 63, Subpart YYYY "National Emission Standards of Hazardous Air Pollutants for Stationary Combustion Turbines" and Subpart A “General Provisions.”

Subpart YYYY establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emissions from stationary combustion turbines located at major sources of HAP emissions, and requirements to demonstrate initial and continuous compliance with the emission and operating limitations. These are new natural gas-fired turbines. A stationary combustion turbine is new if construction is commenced after January 14, 2003. If a new stationary combustion turbine starts up, which is a lean premix gas-fired stationary combustion turbine or a diffusion flame gas-fired stationary combustion turbine as defined in Subpart YYYY after March 9, 2022, the affected source must comply with the emissions limitations and operating limitations upon startup. This subpart applies to stationary combustion turbines with a rated peak power output of 1.0 megawatt (MW) or more which is located at a major source of HAP. This facility is currently a major source of HAP emissions.

General Provisions

The Permittee must comply with the applicable General Provisions in 40 CFR 63 Subpart A as shown in Table 7 of 40 CFR 63 Subpart YYYY.

Emission Standards

The Permittee shall limit the concentration of formaldehyde to 91 ppbvd or less at 15-percent O_2, except during turbine startup as shown in Table 1 of 40 CFR 63 Subpart YYYY. The period of time for turbine startup is subject to the limits specified in the definition of startup in 40 CFR 63.6175.

Operating Limitations

For each stationary combustion turbine that is required to comply with the emission limitation for formaldehyde and is using an oxidation catalyst, the Permittee shall maintain the 4-hour rolling average of the catalyst inlet temperature within the range suggested by the catalyst manufacturer as shown in Table 2 of 40 CFR 63 Subpart YYYY. The catalyst inlet temperature data that is recorded during engine startup is not required to be used in the calculations of the 4-hour rolling average catalyst inlet temperature.

For each stationary combustion turbine that is required to comply with the emission limitation for formaldehyde and is not using an oxidation catalyst, the Permittee shall maintain any operating limitations approved by the Administrator.

General Requirements

At all times, the Permittee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved.

Performance Testing

- The initial applicable performance tests or other initial compliance demonstrations in Table 4 of 40 CFR 63 Subpart YYYY must be conducted within 180 calendar days after startup and according to the provisions in 40 CFR 63.7(a)(2).
- Subsequent performance tests must be performed on an annual basis as specified in Table 3 of 40 CFR 63 Subpart YYYY.
- The Permittee shall conduct each applicable performance test in Table 3 of 40 CFR 63 Subpart YYYY. Each performance test must be conducted according to the requirements in Table 3 of 40 CFR 63 Subpart YYYY. Performance tests must be conducted at high load, defined as 100 percent plus or minus 10 percent. Performance tests shall be conducted under such conditions based on representative performance of the affected source for the period being tested. Representative conditions exclude periods of startup and shutdown. The Permittee may not conduct performance tests during periods of malfunction. The Permittee must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. Upon request, the Permittee shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests. Three separate test runs for each performance test must be conducted, and each test run must last at least 1 hour.
- If the stationary combustion turbine is not equipped with an oxidation catalyst, the Administrator must be petitioned for operating limitations that will be monitored to demonstrate compliance with the formaldehyde emission limitation in Table 1 of 40 CFR 63 Subpart YYYY. These operating parameters must be measured during the initial performance test and continuously monitored thereafter. Alternatively, the Administrator may be petitioned for approval of no additional operating limitations. If a petition is submitted under this section, the initial performance test must not be conducted until after the petition has been approved or disapproved by the Administrator.
- If the stationary combustion turbine is not equipped with an oxidation catalyst and the Administrator is petitioned for approval of additional operating limitations to demonstrate compliance with the formaldehyde emission limitation in Table 1 of 40 CFR 63 Subpart YYYY, the petition must include the information described in paragraphs (f)(1) through (5) of 40 CFR 63.6120.

- If the Administrator is petitioned for approval of no additional operating limitations, the petition must include the information described in paragraphs (g)(1) through (7) of 40 CFR 63.6120.

Monitoring

- If the stationary combustion turbine is required to comply with the formaldehyde emission limitation and is equipped with an oxidation catalyst emission control device, the catalyst inlet temperature must be monitored on a continuous basis in order to comply with the operating limitations in Table 2 of 40 CFR 63 Subpart YYYY and as specified in Table 5 of 40 CFR 63 Subpart YYYY.
- If the stationary combustion turbine is required to comply with the formaldehyde emission limitation and is not equipped with an oxidation catalyst, any parameters specified in the approved petition to the Administrator must be continuously monitored in order to comply with the operating limitations in Table 2 of 40 CFR 63 Subpart YYYY and as specified in Table 5 of 40 CFR 63 Subpart YYYY.
- If a continuous monitoring system (CMS) required, a CMS quality control program that includes written procedures for CMS according to 40 CFR 63.8(d)(1) through (2) must be developed and implemented. Written procedures must keep on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If the performance evaluation plan is revised, the owner or operator shall keep previous (*i.e.,* superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. The program of corrective action should be included in the plan required under 40 CFR 63.8(d)(2).

Initial Compliance

- The Permittee shall demonstrate initial compliance with the average formaldehyde concentration specified in Table 1 of 40 CFR 63 Subpart YYYY.
- The Notification of Compliance Status must be submitted containing results of the initial compliance demonstration according to the requirements in 40 CFR 63.6145(f).

Continuous Compliance

- Except for monitor malfunctions, associated repairs, and required quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments of the monitoring system), all parametric monitoring must be conducted at all times the stationary combustion turbine is operating.
- Do not use data recorded during monitor malfunctions, associated repairs, and required quality assurance or quality control activities for meeting the requirements of this subpart, including data averages and calculations. All data collected during all other periods must be used in assessing the performance of the control device or in assessing emissions from the stationary combustion turbine.
- The Permittee shall demonstrate continuous compliance with each emission limitation and operating limitation in Table 1 and Table 2 of 40 CFR 63 Subpart YYYY according to methods specified in Table 5 of 40 CFR 63 Subpart YYYY.
- Each instance in which each emission limitation or operating limitation was not met must be reported. Also, each instance in which the applicable requirements in Table 7 of 40 CFR 63 Subpart YYYY was not met must be reported. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in 40 CFR 63.6150.

Notifications

- All applicable notifications in 40 CFR 63.7(b) and (c), 40 CFR 63.8(e), 40 CFR 63.8(f)(4), and 40 CFR 63.9(b) and (h) must be submitted by the dates specified.
- As specified in 40 CFR 63.9(b), an Initial Notification must be submitted no later than 120 calendar days after the combustion turbine becomes subject to 40 CFR 63 Subpart YYYY.

- A notification of intent to conduct an initial performance test must be submitted at least 60 calendar days before the initial performance test is scheduled to begin as required in 40 CFR 63.7(b)(1).
- A Notification of Compliance Status must be submitted according to 40 CFR 63.9(h)(2)(ii). For each performance test required to demonstrate compliance with the emission limitation for formaldehyde, the Notification of Compliance Status must be submitted, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test.

Recordkeeping

- The Permittee must keep the following records:
  - A copy of each notification and report submitted to comply with 40 CFR 63 Subpart YYYY, including all documentation supporting any Initial Notification or Notification of Compliance Status submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv).
  - Records of performance tests and performance evaluations as required in 40 CFR 63.10(b)(2)(viii).
  - Records of all maintenance on the air pollution control equipment as required in 40 CFR 63.10(b)(2)(iii).
  - Records of the date, time, and duration of each startup period, recording the periods when the affected source was subject to the standard applicable to startup.
  - Records as follows.
    - Record the number of deviations. For each deviation, record the date, time, cause, and duration of the deviation.
    - For each deviation, record and retain a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit and a description of the method used to estimate the emissions.
    - Record actions taken to minimize emissions in accordance with 40 CFR 63.6105(c), and any corrective actions taken to return the affected unit to its normal or usual manner of operation.
  - The records required in Table 5 of 40 CFR 63 Subpart YYYY must be kept to show continuous compliance with each applicable operating limitation.
  - Any records required to be maintained by 40 CFR 63 Subpart YYYY that are submitted electronically via the EPA's CEDRI may be maintained in electronic format. This ability to maintain electronic copies does not affect the requirement for facilities to make records, data, and reports available upon request to a delegated air agency or the EPA as part of an on-site compliance evaluation.
- All applicable records must be maintained in such a manner that they can be readily accessed and are suitable for inspection according to 40 CFR 63.10(b)(1).
- As specified in 40 CFR 63.10(b)(1), each record must keep for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.
- Records of the most recent 2 years must be retained on site or records must be accessible on site. Records of the remaining 3 years may be retained off site.

Reporting

- *Compliance report.* A semiannual compliance report must be submitted according to Table 6 of 40 CFR 63 Subpart YYYY. The semiannual compliance report must contain the information described in paragraphs (a)(1) through (5) of 40 CFR 63.6150. The semiannual compliance report, including the excess emissions and monitoring system performance reports of 40 CFR 63.10(e)(3), must be submitted by the dates specified below, unless the Administrator has approved a different schedule. Once the reporting template has been available on the Compliance and Emissions Data Reporting Interface (CEDRI) website for 180 days, all subsequent reports must be submitted to the EPA following the procedure specified in f 40 CFR 63.6150(g).
- Dates of submittal for the semiannual compliance report are as follows:
  - The first semiannual compliance report must cover the period beginning on the compliance date specified in 40 CFR 63.6095 and ending on June 30 or December 31, whichever date is

the first date following the end of the first calendar half after the compliance date specified in 40 CFR 63.6095.

- The first semiannual compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified in 40 CFR 63.6095.
- Each subsequent semiannual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.
- Each subsequent semiannual compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.
- For each stationary combustion turbine that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established the date for submitting annual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), the first and subsequent compliance reports may be submitted according to the dates the permitting authority has established instead of according to the dates in paragraphs ii(A) through (4) above.

- Dates of submittal for the annual compliance report are as follows:
  - The first annual report must cover the period beginning on the compliance date specified in 40 CFR 63.6095 and ending on December 31.
  - The first annual report must be postmarked or delivered no later than January 31.
  - Each subsequent annual report must cover the annual reporting period from January 1 through December 31.
  - Each subsequent annual report must be postmarked or delivered no later than January 31.
  - For each stationary combustion turbine that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established the date for submitting annual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), the first and subsequent compliance reports may submitted according to the dates the permitting authority has established instead of according to the dates in paragraphs iii(A) through (4) above.
- *Performance test report.* Within 60 days after the date of completing each performance test required by 40 CFR 63 Subpart YYYY, the results of the performance test must be submitted (as specified in 40 CFR 63.6145(f)) following the procedures specified in 40 CFR 63.6150(f)(1) through (3).
- If reports are required to be submitted following the procedure specified in 40 CFR 63.6150(g), the reports must be submitted to the EPA via CEDRI, which can be accessed through the EPA's CDX (*https://cdx.epa.gov/*).
- If reports are required to be submitted electronically through CEDRI in the EPA's CDX, a claim of EPA system outage may be asserted for failure to timely comply with the reporting requirement. To assert a claim of EPA system outage, the requirements outlined in paragraphs (h)(1) through (7) of 40 CFR 63.6150 must be met.
- If reports are required to be submitted electronically through CEDRI in the EPA's CDX, a claim of force majeure may be asserted for failure to timely comply with the reporting requirement. To assert a claim of force majeure, the requirements outlined in paragraphs (i)(1) through (5) of 40 CFR 63.6150 must be met.

4. 15A NCAC 02D .1408: STATIONARY COMBUSTION TURBINES

These turbines each have a heat input of 199.5 million Btu per hour and fire only natural gas. This rule applies geographically pursuant to rule 02D .1402, to stationary combustion turbines with a heat input rate greater than 100 million Btu per hour but less than or equal to 250 million Btu per hour. The facility is located in Davidson Township in Iredell County. According to 15A NCAC 02D .1402(d), rule 15A NCAC 02D .1408 only applies to facilities with potential emissions of NOx greater than or equal to 100 tons per year or 560 pounds per calendar day beginning May 1 through September 30 of any year in Davidson Township. This rule will only apply until the legacy sources are permanently

retired with the Part II application at which time potential emissions of NOx will be less than the above thresholds at 57.31 tons per year.

Emission Limitations

Emissions of nitrogen oxides from these sources shall not exceed 75 ppm by volume corrected to 15 percent oxygen.

Monitoring/Recordkeeping

Compliance with the above limit shall be determined by using one of the following:

a. Conducting an annual stack test on or before November 15th of each year (beginning in calendar year 2024) in accordance with 15A NCAC 02D .1415. Details of the emissions testing and reporting requirements can be found in Section 3 - General Condition JJ. Testing shall be completed, and the results submitted by the end of the year in which the testing occurs unless an alternate date is approved by the DAQ.
b. Demonstrate compliance with 15A NCAC 02D .1408 by determining nitrogen oxide emissions in ppm using a continuous emissions monitoring system (CEMS) in accordance with 15A NCAC 02D .1404(d)(2). The CEMS shall be installed, operated, and maintained according to 40 CFR Part 60, Appendix B, Performance Specification 2, and Appendix F or 40 CFR Part 75, Subpart H. If diluent monitoring is required, 40 CFR Part 60, Appendix B, Performance Specification 3, shall be used. If flow monitoring is required, 40 CFR Part 60, Appendix B, Performance Specification 6, shall be used.
    i. Missing data shall be determined using the procedures in 02D .1404(e)(1) or (2).
    ii. Quality assurance and quality control requirements in 02D .1404(f)(1) or (2) shall be followed.
    iii. Averaging time for CEMS data shall be determined by averaging hourly CEMS values over a 24-hour block period beginning at midnight and shall be recorded for each day beginning May 1 through September 30. To compute the 24-hour block average, the average hourly values shall be added and the sum shall be divided by 24. A minimum of four data points containing one data point in each of the 15-minute quadrants of the hour shall be required to determine a valid hour value unless the CEMS is installed to meet the provisions of 40 CFR Part 75. If the CEMS is installed to meet the requirements of 40 CFR Part 75, the minimum number of data points shall be determined by 40 CFR Part 75.
    iv. Heat input shall be determined in accordance with 02D .1404(h).

The Permittee shall maintain, and when requested by the Director, submit any information required to demonstrate compliance with 15A NCAC 02D .1408 as required by 15A NCAC 02D .1404.

Reporting

The Permittee shall submit a semi-annal summary report of monitoring and recordkeeping activities. The report shall contain either:

a. the results of the approved stack test compared to the limits, or
b. the CEMS data showing the 24-hour daily block values for periods of excess nitrogen oxide emissions.

B. Two natural gas-fired four-stroke lean-burn emergency generators (ID Nos. EGEN-01 and EGEN-02)

1. 15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

Emissions of sulfur dioxide from these sources shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Monitoring/Recordkeeping/Reporting

No monitoring/recordkeeping/reporting is required for sulfur dioxide emissions from the firing of natural gas in these sources.

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

Visible emissions from these sources shall not be more than 20 percent opacity (except during startup, shutdowns, and malfunctions) when averaged over a six-minute period except that six-minute periods averaging not more than 87 percent opacity may occur not more than once in any hour nor more than four times in any 24-hour period.

Monitoring/Recordkeeping/Reporting

No monitoring/recordkeeping/reporting is required for visible emissions from the firing of natural gas in these sources.

3. 15A NCAC 2D .0524: NEW SOURCE PERFORMANCE STANDARDS

New Source Performance Standards (NSPS) as promulgated in 40 CFR Part 60 Subpart JJJJ "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines," including Subpart A "General Provisions."

These sources are subject to this subpart in accordance with 60.4230(a)(4)(iv), for owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP).

General Provisions

The Permittee shall comply with the General Provisions of 40 CFR 60 Subpart A as presented in Table 3 of 40 CFR 60 Subpart JJJJ.

Emission Standards

The Permittee shall comply with the following emission standards:

Engine type	Maximum engine power	Manufacture date *(after)*	Emission standards g/HP-hr (ppm)		
			NO_x	CO	VOC
Emergency	HP≥130	All	2.0 (160)	4.0 (540)	1.0 (86)

Monitoring

The engine shall be equipped with a non-resettable hour meter if manufactured after July 1, 2011.

Compliance Requirements

The Permittee shall comply with the emission standards above by:

- purchasing an engine certified according to the procedures in 40 CFR 60 Subpart JJJJ for its respective model year.
- operate and maintain the certified stationary spark ignition (SI) internal combustion engine (ICE) and control device according to the manufacturer's emission-related written instructions, The Permittee shall also meet the requirements as specified in 40 CFR part 1068, subparts A through D, as they apply to the Permittee.

The Permittee shall operate and maintain the stationary SI ICE that achieve the above emission standards over the entire life of the engine.

If applicable, air-to-fuel ratio (AFR) controllers shall be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller shall be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.

In order for the engine to be considered an emergency stationary ICE under 40 CFR 60 Subpart JJJJ, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described below, is prohibited.

- There is no time limit on the use of emergency stationary ICE in emergency situations.

- The Permittee may operate the emergency stationary ICE for any combination of the purposes specified in the subparagraph below for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by the subparagraph below counts as part of the 100 hours per calendar year allowed by this paragraph.
    - Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.
- Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph ii above. Except as provided in the subparagraph below, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
    - The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
        - The engine is dispatched by the local balancing authority or local transmission and distribution system operator;
        - The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
        - The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
        - The power is provided only to the facility itself or to support the local transmission and distribution system.
        - The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

Recordkeeping

The Permittee shall keep the following records:

- All notifications submitted to comply with 40 CFR 60 and all documentation supporting any notification.
- Maintenance conducted on the engine.
- If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.
- If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to 40 CFR 60.4243(a)(2), documentation that the engine meets the emission standards.
- If the emergency engine is manufactured after July 1, 2011, the hours of operation of the engine that is recorded through the non-resettable hour meter. The Permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.

Reporting

- The Permittee shall submit a copy of each performance test as conducted in 40 CFR 60.4244 within 60 days after the test has been completed.

- The Permittee shall submit a semiannual summary report of monitoring and recordkeeping activities.

4. 15A NCAC 02D .1111 MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY
For these generators (*new emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions*) the Permittee shall comply with all applicable provisions, including the monitoring, recordkeeping, and reporting contained in Environmental Management Commission Standard 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (MACT) as promulgated in 40 CFR 63 Subpart ZZZZ "National Emission Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines" and Subpart A "General Provisions."

Emergency Engine Compliance Requirements

a. The Permittee shall only operate these sources as emergency stationary reciprocating internal combustion engines (RICE), which is defined as follows: Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the criteria in i through ii below. All emergency stationary RICE must comply with the requirements specified in Section 4.b below in order to be considered emergency stationary RICE. If an engine does not comply with the requirements specified in Section 4.b below, then it is not considered to be an emergency stationary RICE.
   i. The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.
   ii. The stationary RICE is operated under limited circumstances for situations not included in a.i above, as specified in Section 4.b below.

b. In order for the engine to be considered an emergency stationary RICE as defined in Section 4.a above, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in b.i through b.iii below, is prohibited.
   i. There is no time limit on the use of emergency stationary RICE in emergency situations.
   ii. The Permittee may operate the emergency stationary RICE for any combination of the purposes specified in b.ii.(A) below for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by b.iii below counts as part of the 100 hours per calendar year allowed by this paragraph b.ii.
      (A) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.
   iii. Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in b.ii above. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

Stationary RICE subject to limited requirements

c. Sources that meet the requirements of Section 4.a and b above do not have to meet the requirements of 40 CFR 63 Subpart ZZZZ and Subpart A except for the initial notification requirements in Section 4.d below.

Notification Requirements

d. The Permittee shall submit an initial notification for each source in accordance with 40 CFR 63.6590(b), no later than 120 calendar days after construction of each source and include the information in 40 CFR 63.9(b)(2)(i) through (iv) and a statement that the stationary RICE has no additional requirements and explain the basis of the exclusion.

Recordkeeping

e. To ensure compliance with Section 4.a and b above, the Permittee shall maintain the following records. The Permittee shall record:
   i. the hours for each engine spent in emergency operation, including what classified the operation as emergency;
   ii. the hours for each engine spent for non-emergency operation; and
   iii. the dates of operation of each engine.
   The records shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request.

Reporting

f. No reporting is required.

Multiple Emission Source Requirements for New Sources (Sections C, D, and E below)

The following are the applicable multiple emission source requirements for the new sources (also applies to the existing sources):

C. Facility-Wide Regulations

State-enforceable Only

1. 15A NCAC 02D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS
   The Permittee shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary.

State-enforceable Only

2. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS
   See Section 8 below.

State-enforceable Only

3. 15A NCAC 02Q .0711: EMISSION RATES REQUIRING A PERMIT
   See Section 8 below.

D. Two natural gas-fired Solar Titan 130 combustion turbines with dry low NOx (ID Nos. ES-M/L17 and ES-M/L18)

Two natural gas-fired four-stroke lean-burn emergency generators (ID Nos. EGEN-01 and EGEN-02)

1. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS
   for 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION
   In order to avoid applicability of 15A NCAC 02D .0530(g), emissions discharged into the atmosphere from these sources shall be less than 40 tons of nitrogen oxides (NOx) and less than 10 tons of particulate matter with aerodynamic diameter less than 2.5 micrometers (PM2.5) per consecutive 12-month period.

   Monitoring and Recordkeeping

   The Permittee shall demonstrate compliance with the NOx and PM2.5 emission limitations by calculating the rolling 12-month emissions from these sources for each of these pollutants on a

monthly basis (by the 30th day following the end of each calendar month) as follows. All emissions and emission factors shall be calculated in a manner consistent with application 4900225.22A.

The Permittee shall keep monthly records in a logbook (written or electronic format) of the NOx and PM2.5 emission calculations.

Reporting
The Permittee shall submit semiannual summary reports of monitoring and recordkeeping activities given above postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December, and July 30 of each calendar year for the preceding six-month period between January and June. The report shall contain the monthly NOx, CO, and PM2.5 emissions for the previous 17 months. The emissions must be calculated for each of the 12-month periods over the previous 17 months.

2. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION
This condition is to ensure that emissions from these sources will be kept below the PSD significance levels **during the commissioning period** when both the new sources and some legacy sources may be in operation. The PSD evaluation in Section 6.B above demonstrates that this condition can be met as follows.

Emission Limitations
During the commissioning period, these sources shall discharge into the atmosphere less than 40 tons of nitrogen oxides (NOx), less than 100 tons of carbon monoxide (CO), less than 40 tons of volatile organic compounds (VOC), less than 40 tons of sulfur dioxide (SO_2), less than 25 tons of particulate matter (PM), less than 15 tons of particulate matter with aerodynamic diameter less than 10 micrometers (PM_{10}), and less than 10 tons of particulate matter with aerodynamic diameter less than 2.5 micrometers ($PM_{2.5}$) per consecutive 12-month period.

Monitoring
The Permittee shall demonstrate compliance with the NOx, CO, VOC, SO_2, PM, PM_{10}, and $PM_{2.5}$ emission limitations above by calculating the rolling 12-month (if applicable) emissions from these sources for each of these pollutants on a monthly basis (by the 30th day following the end of each calendar month) from first-fire to permanent retirement of all legacy reciprocating engine sources as follows. All emissions and emission factors shall be calculated in a manner consistent with application 4900225.22A.

After first-fire of any of the new sources (ID Nos. ES-M/L17, ES-M/L18, EGEN-01 or EGEN-02), the following legacy sources shall not be operated: ES-M/L3, ES-M/L6, or ES-M/L12.

Recordkeeping
The Permittee shall keep monthly records in a logbook (written or electronic format) of the NOx, CO, VOC, SO_2, PM, PM_{10}, and $PM_{2.5}$ emission calculations.

After first-fire of any of the new sources (ID Nos. ES-M/L17, ES-M/L18, EGEN-01 or EGEN-02), the Permittee shall maintain records (written or electronic form) of any operation of sources ES-M/L3, ES-M/L6, or ES-M/L12 during the commissioning period and make the records available to an authorized representative upon request. These records shall clearly indicate the date and time of any operation of sources ES-M/L3, ES-M/L6, or ES-M/L12 or indicate that these sources were not operated until permanent retirement of these sources.

Reporting
The Permittee shall submit a semiannual summary report of monitoring and recordkeeping activities given above. The report shall contain the monthly NOx, CO, VOC, SO_2, PM, PM_{10}, and $PM_{2.5}$

emissions for the previous 17 months. The emissions must be calculated for each of the 12-month periods over the previous 17 months.

3. 15A NCAC 02D .0501(c): COMPLIANCE WITH EMISSION CONTROL STANDARDS
This condition is to ensure that the total facility-wide pounds per hour of nitrogen oxide emissions will not increase above the existing facility rate during the commissioning period when both the new sources and some legacy sources may be in operation.

A supplemental application was received on June 19, 2023, to demonstrate that the short-term permit NOx limits will not be exceeded during the commissioning period.

The following are the current NOx permit limits:

Permit Section	Source ID	NOx Limit
2.1 A.3 (02D .0501)	ES-M/L1 through ES-M/L8	25.8 pounds per hour each.
	ES-M/L9 through ES-M/L11	59.4 pounds per hour (October 1 through April 30) each.
	ES-M/L12 and ES-M/L13	91.0 pounds per hour (October 1 through April 30) each.
	ES-M/L14 and ES-M/L15	166.1 pounds per hour (October 1 through April 30) each.
2.1 B.3 (02D .0501)	ES-M/L16	11.7 pounds per hour.
2.1 C.3 (02D .0501)	ES-AUX1 through ES-AUX3	10.0 pounds per hour.
2.1 D.3 (02D .0501)	ES-A/C5	10.9 pounds per hour.
2.1 E.3 (02D .0501)	ES-A/C6	9.9 pounds per hour.
2.2 B.1 (02D .1409)	ES-M/L9 through ES-M/L15	Total sum of 328 tons for the respective ozone season (May 1 through September 30).
	ES-M/L9 ES-M/L10 ES-M/L11 ES-M/L12 ES-M/L13 ES-M/L14 ES-M/L15	during ozone season (May 1 through September 30): 16.9 pounds per hour 16.9 pounds per hour 16.9 pounds per hour 24.4 pounds per hour 24.4 pounds per hour 39.4 pounds per hour 39.4 pounds per hour

During the commissioning period, Transco will not operate the following legacy NG-fired reciprocating compression equipment at any time during the commissioning period:

- ES M/L3
- ES M/L6
- ES M/L12

The total facility-wide pounds per hour of nitrogen oxide emissions will not increase above the existing facility-wide rate during the commissioning period when the increase of emissions from the new equipment is offset by the reduction in emissions from these sources.

The current permitted limits on NOx emissions for ES-M/L3, ES-M/L6, and ES-M/L12 are 25.8, 25.8, and 91.0 pounds per hour, respectively. The limit on ES-M/L12 applies from October 1 through April 30, and the limit on ES-M/L3 and ES-M/L6 applies year-round.

For the ozone season, May 1 through September 30, the permit specifies an hourly NOx emission rate of 24.4 lb for ES-M/L12, which is to be used to demonstrate that the aggregate emissions from ES-M/L9 through 15 is below 328 tons during the ozone season as shown under 02D .1409 in Section 2.2 B.1 of the permit.

The hourly NOx emission rate for the two new combustion turbines is shown in the application for normal operation, startup/shutdown, and subzero temperatures to be 6.07, 17.30, and 28.61 lb each, respectively. For the purposes of this evaluation, it is appropriate to use the startup/shutdown emission rate during commissioning. The hourly NOx emissions from the two new emergency generators are 6.47 lb each.

May 1 through September 30 Limits (ozone season)
NOx Emission Rate Reduction for the existing ES-M/L3, ES-M/L6, and ES-M/L12 = 25.8 + 25.8 + 24.4 = **76.0 lb/hr**.

NOx Emission Rate Increase from the proposed new units ES-M/L17, ES-M/L18, EGEN-01, EGEN-02 = 17.30 + 17.30 + 6.47 + 6.47 = **47.54 lb/hr** < 76.0 lb/hr allowable emission rate.

This shows that NOx emissions from the new equipment during the commissioning period will not exceed the aggregate allowable NOx emission rate for ES-M/L3, ES-M/L6, and ES-M/L12, thereby ensuring continuity of the NOx emission controls that are in place under 02D .0501(c).

With respect to the ozone season 328 ton NOx limit for the aggregate of ES-M/L9 – ES-M/L15 under 02D .1409, the commissioning period is expected to require no more than 2 months, after which time the new combustion turbines (ES-M/L17 and ES-M/L18) will operate with a NOx emission rate of 6.07 lb/hr each under normal operating conditions. This is significantly less than the aggregate allowable 178.3 lb/hr for the engines subject to this limit, all of which will be retired at the conclusion of the commissioning period. Given the net reduction in the hourly NOx emissions shown above and following retirement of the remaining existing units at the conclusion of the commissioning period, it follows that the 328 ton limit (which is derived based on 178.3 lb/hr uninterrupted for this time period) will be preserved with the implementation of this project, including NOx emissions from the new equipment during commissioning.

October 1 through April 30 Limits (non-ozone season)
NOx Emission Rate Reduction for the existing ES-M/L3, ES-M/L6, and ES-M/L12 = 25.8 + 25.8 + 91.0 = **142.6 lb/hr**.

NOx Emission Rate Increase from the proposed new units ES-M/L17, ES-M/L18, EGEN-01, EGEN-02 = 17.3 + 17.3 + 6.47 + 6.47 = **47.54 lb/hr** < 142.6 lb/hr

This shows that the retirement of ES-M/L3, ES-M/L6, and ES-M/L12 prior to the commencement of the commissioning period will more than offset the potential hourly NOx emission rate for the new equipment for any time of the year. It should be noted that the probability for both new emergency generators to run concurrently during the same hour that both combustion turbines are undergoing startup or shutdown is low. Therefore, it is reasonable to expect actual hourly NOx emissions from the new equipment during commissioning will be less than what is used here for this evaluation.

Emission Limitations
During the commissioning period, these sources shall discharge into the atmosphere less than:
a. 142.6 pounds per hour of nitrogen oxides (NOx) from the new sources (ID Nos. ES-M/L17, ES-M/L18, EGEN-01, EGEN-02) during the non-ozone season (October 1 through April 30), and
b. 76.0 pounds per hour of nitrogen oxides (NOx) from the new sources (ID Nos. ES-M/L17, ES-M/L18, EGEN-01, EGEN-02) during the ozone season (May 1 through September 30).

Notification Requirement
The Permittee shall notify the Regional Office in writing prior to the beginning of the commissioning period that the following legacy sources will no longer operate: ES-M/L3, ES-M/L6, or ES-M/L12.

4. 15A NCAC 02Q .0504: OPTION FOR OBTAINING CONSTRUCTION AND OPERATION PERMIT

   Permitting
   Pursuant to 15A NCAC 02Q .0501(b)(2) or (c)(2), for completion of the two-step significant modification process initiated by Application No. (4900225.22A), the Permittee shall file an amended application following the procedures of Section 15A NCAC 02Q .0500 within one year from first-fire of any of these sources (ID Nos. ES-M/L17, ES-M/L18, EGEN-01 and EGEN-02).

   Reporting
   The Permittee shall notify the Regional Office in writing of the date of beginning operation of any of these source(s) (ID Nos. ES-M/L17, ES-M/L18, EGEN-01, and EGEN-02), postmarked no later than 30 days after such date.

E. Fifteen two-stroke natural gas lean-fired internal combustion engines (ID Nos. ES-M/L1 through ES-M/L15)

One natural gas-fired dry low NOx combustion turbine (ID No. ES-M/L16)

Three four-stroke natural gas rich-fired internal emergency combustion engines (ID Nos. ES-AUX1 through ES-AUX3)

One four-stroke natural gas rich-fired internal emergency combustion engine (ID No. ES-A/C5)

One four-stroke natural gas rich-fired internal emergency combustion engine (ID No. ES-A/C6)

Two natural gas-fired Solar Titan 130 combustion turbines with dry low NOx (ID Nos. ES-M/L17 and ES-M/L18)

1. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS
   New Source Performance Standards (NSPS) as promulgated in 40 CFR Part 60 Subpart OOOOa, "Standards of Performance for Crude Oil and Natural Gas Facilities For Which Construction, Modification, or Reconstruction Commenced After September 18, 2015."

   Applicability
   This subpart establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO_2) emissions from affected facilities in the crude oil and natural gas production source category that commence construction, modification, or reconstruction after September 18, 2015.

   Amendments to the current NSPS under 40 CFR 60 Subpart OOOO and the NSPS under 40 CFR Part 60 Subpart OOOOa were promulgated on June 3, 2016. The final rule is effective August 2, 2016. Since the proposed project will be implemented after September 18, 2015, only NSPS Subpart OOOOa applies (Note, Subpart OOOO applies to affected facilities that commence construction, modification, or reconstruction after August 23, 2011, and on or before September 18, 2015).

   Affected facilities under NSPS Subpart OOOOa include the following applicable provisions of one or more of the onshore affected facilities listed in paragraphs (a) through (j) of 60.5365a that is located within the Crude Oil and Natural Gas Production source category, as defined in §60.5430a, for which construction, modification, or reconstruction is commenced after September 18, 2015:

   - Hydraulically fractured natural gas wells
   - Centrifugal compressors with wet seals and reciprocating compressors
   - Pneumatic controllers at natural gas processing plants and other locations within the crude oil and natural gas source category
   - Storage vessels with potential VOC emissions greater than 6 tpy

- A group of equipment within a process unit for the extraction of natural gas liquids from field gas, fractionation of liquids into natural gas products, or other operations associated with the processing of natural gas products
- Pneumatic pumps at onshore natural gas processing plants or well sites
- Fugitive equipment components at onshore natural gas processing plants, well sites, and compressor stations
- Sweetening units at onshore natural gas processing plants

According to the application, Transco states that of the above Subpart OOOOa affected facilities, the proposed project will not include any affected facilities with requirements related to wells sites, natural gas processing, centrifugal compressors with wet seals, reciprocating compressors, or storage vessels with VOC emissions greater than 6 tpy. Transco anticipates the centrifugal compressors associated with the combustion turbines will be equipped with dry gas seals and therefore the requirements for centrifugal compressors do not apply to this project.

Transco anticipates that pneumatic supply gas controllers or pumps procured for the project will operate on supplied air to comply with NSPS Subpart OOOOa requirements.

For fugitive equipment components at compressor stations, the affected source includes all fugitive equipment components located at the compressor station. Per 40 CFR 60.5365a(j): "…For purposes of 40 CFR- 60.5397a, a "modification" to a compressor station occurs when: (1) An additional compressor is installed at a compressor station; or (2) One or more compressors at a compressor station is replaced by one or more compressors of greater total horsepower than the compressor(s) being replaced. When one or more compressors is replaced by one or more compressors of an equal or smaller total horsepower than the compressor(s) being replaced, installation of the replacement compressor(s) does not trigger a modification of the compressor station for purposes of 40 CFR 60.5397a." The proposed installation of the new turbine-driven compressor units at Compressor Station 150 will result in a "modification" of the compressor station. Therefore, the collection of fugitive equipment components at Compressor Station 150 will be an "affected facility" under NSPS Subpart OOOOa. Transco will comply with the leak survey and repair requirements referenced in the regulation as applicable.

Based on the above, only paragraphs (d)(1) and (j) of 40 CFR 60.5365a apply to the proposed project as follows:

- 40 CFR 60.5365a(d)(1) Each pneumatic controller affected facility not located at a natural gas processing plant, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh.

  The Transco facility is not a natural gas processing plant as defined in *40 CFR 60*.5430a since it is not engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both.

- 40 CFR 60.5365a(j) The collection of fugitive emissions components at a compressor station, as defined in 40 CFR 5430a, is an affected facility. For purposes of 40 CFR 60.5397a, a "modification" to a compressor station occurs when:
  (1) An additional compressor is installed at a compressor station; or
  (2) One or more compressors at a compressor station is replaced by one or more compressors of greater total horsepower than the compressor(s) being replaced. When one or more compressors is replaced by one or more compressors of an equal or smaller total horsepower than the compressor(s) being replaced, installation of the replacement compressor(s) does not trigger a modification of the compressor station for purposes of 40 CFR 60.5397a.

  The Transco facility is a compressor station which means any permanent combination of one or more compressors that move natural gas at increased pressure through gathering pipelines.

8. Facility-wide Toxics Demonstration

State-enforceable only
15A NCAC 02D .1100 CONTROL OF TOXIC AIR POLLUTANTS
As a result of the modifications to add the new sources and retire many of the existing sources as shown in Section 1 above (Purpose of Application), a facility-wide toxics modeling demonstration was triggered. The Permittee submitted a facility-wide toxic air pollutant dispersion modeling analyses received September 8, 2022, for the period after commissioning and a facility-wide toxic air pollutant dispersion modeling analyses received June 19, 2023, for the commissioning period as discussed below. The facility had not previously been triggered for toxics since all sources were combustion sources eligible for the exemption in 15A NCAC 02Q .0702. The modeled emission rates from the new combustion turbines, ES-M/L17 and ES-M/L18, conservatively includes the worst-case combination of normal operation, start-up, shutdown, and subzero operation.

In accordance with 15A NCAC 02Q .0709(a), the owner or operator of a source who is applying for a permit or permit modification to emit toxic air pollutants shall:

i. demonstrate to the satisfaction of the Director through dispersion modeling that the emissions of toxic air pollutants from the facility will not cause any acceptable ambient level listed in 15A NCAC 02D .1104 to be exceeded beyond the premises (adjacent property boundary); or
ii. demonstrate to the satisfaction of the Commission or its delegate that the ambient concentration beyond the premises (adjacent property boundary) for the subject toxic air pollutant shall not adversely affect human health (e.g., a risk assessment specific to the facility) though the concentration is higher than the acceptable ambient level in 15A NCAC 02D .1104.

As required by NCAC 02Q .0706(b), the owner or operator of the facility shall submit a permit application to comply with 15A NCAC 02D .1100 if the modification results in:

i. a net increase in emissions or ambient concentration of any toxic air pollutant that the facility was emitting before the modification; or
ii. emissions of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in 15A NCAC 02Q .0711.

As required by NCAC 02Q .0706(c), the permit application shall include an evaluation for all toxic air pollutants covered under 15A NCAC 02D .1104 for which there is:

i. a net increase in emissions of any toxic air pollutant that the facility was emitting before the modification; and
ii. emission of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in 15A NCAC 02Q .0711.

All sources at the facility, excluding sources exempt from evaluation in 15A NCAC 02Q .0702, emitting these toxic air pollutants shall be included in the evaluation.

Project Commissioning Period
There will be a period of approximately 1-2 months when some of the existing legacy NG-fired reciprocating compression equipment could operate while the newly-installed NG-fired turbine compression replacement equipment is commissioned. The commissioning process involves intermittent runtime testing of the new replacement turbines for proper functionality while some of the existing legacy compression equipment operates to ensure natural gas flow across the station to be transported along the Transco interstate pipeline system before the new turbines are placed into operational service. Due to Federal Energy Regulatory Commission (FERC) regulatory requirements, there cannot be simultaneous operation between the legacy reciprocating compression equipment (must be permanently retired) and the new turbine compression equipment once the new turbines commence full in-service operation following commissioning. However, for conservatism and to ensure compliance with the ambient toxic standards, a supplemental toxics modeling analysis was prepared to evaluate potential toxic emissions during the commissioning period when a combination of existing (legacy) and new equipment may operate at the same time. The toxics demonstration during the commissioning period is covered in Section 8.A below and the toxics demonstration for the period after commissioning is covered in Section 8.B below.

Table 4 below shows all permitted sources along with those sources that were evaluated in the modeling as potentially operating during the commissioning period and for the analysis after the commissioning period.

Table 4

Permitted Sources	Sources Operating During Commissioning (New and Some Legacy)	Sources Operating After Commissioning (New Sources Only)
M/L1	M/L1	Retired
M/L2	M/L2	Retired
M/L3	No operation allowed	Retired
M/L4	M/L4	Retired
M/L5	M/L5	Retired
M/L6	No operation allowed	Retired
M/L7	M/L7	Retired
M/L8	M/L8	Retired
M/L9	M/L9	Retired
M/L10	M/L10	Retired
M/L11	M/L 11	Retired
M/L12	No operation allowed	Retired
M/L13	M/L13	Retired
M/L14	M/L14	Retired
M/L15	M/L15	Retired
M/L16	M/L16*	M/L16*
AUX1	AUX1	Retired
AUX2	AUX2	Retired
AUX3	AUX3	Retired
A/C5	A/C5	Retired
A/C6	A/C6	Retired
M/L17	M/L17	M/L17
M/L18	M/L18	M/L18
EGEN-01	EGEN-01	EGEN-01
EGEN-02	EGEN-02	EGEN-02
FUGS	FUGS	FUGS
SHB	SHB	SHB
DHB	DHB	DHB
I-PIGGING	I-PIGGING	I-PIGGING
M/L16CB	M/L16CB	M/L16CB
M/L17CB	M/L17CB	M/L17CB
M/L18CB	M/L18CB	M/L18CB
TTLO	TTLO	TTLO
TANK-01	TANK-01	TANK-01

* Even though this source is being retired, it was not included in the modeling for the scenario after commissioning as discussed in Sections 8.A and 8.B below.

A. Toxics Demonstration During the Commissioning Period

This is the period of time when both new sources and legacy sources can operate, excluding ES-M/L3, ES-M/L6, and ES-M/L12.

The Permittee performed a facility-wide air toxics analysis, for all permitted sources that could potentially be operating during the commissioning period as shown in Table 2 above, including the MACT sources. Air toxics emissions for the sources in this permit subject to a Part 63 MACT are exempt from air permitting, pursuant to 02Q .0702(a)(27)(B) and the Permittee is not required to model exempt MACT sources. Nevertheless, the Permittee has volunteered to include emissions for all such exempt sources in the modeling analysis.

Transco will not operate the following legacy NG-fired reciprocating compression equipment at any time during the commissioning period:

- ES M/L3
- ES M/L6
- ES M/L12

Therefore, the emission rate for each of these units was set to zero in the model.

Note that ES-M/L16 which is the existing combustion turbine, is exempt from the analysis for the period after commissioning per 15A NCAC 2Q .0702(18) since it was permitted prior to July 10, 2010, and therefore was not modeled. However, a risk assessment is made below for this source since it affects the modeling to some degree. Emissions from the ES-M/L16 compressor blowdowns are included.

The first step in the toxics analysis is to identify which toxic air pollutants will be emitted and their emission rates. The next step is to perform a toxic pollutant emission rate (TPER) analysis using total facility-wide potential emissions from the proposed modification to determine if the TPERs in rule 02Q .0711 are exceeded for each toxic air pollutant (TAP) being emitted. Table 5 below summarizes the facility-wide emission rate of each TAP for comparison to the TPER rates per 15A NCAC 02Q .0711(a) for the required averaging periods.

Table 5 - TPER Evaluation During Commissioning

Toxic Air Pollutant	Existing Equipment (lb/hr)	New Equipment (lb/hr)	Total Combined (lb/hr)	TPER (lb/hr)	Existing Equipment (lb/day)	New Equipment (lb/day)	Total Combined (lb/day)	TPER (lb/day)	Existing Equipment (lb/yr)	New Equipment (lb/yr)	Total Combined (lb/yr)	TPER (lb/yr)	Modeling Required?
1,1,2,2-Tetrachloroethane	1.94E-02	9.67E-04	2.04E-02	-	0.47	1.32E-03	0.47	-	170	0.48	170	430	NO
1,3-Butadiene	2.44E-01	8.64E-03	2.53E-01	-	5.86	1.51E-02	5.87	-	2137	5.5	2143	11	NO
Acetaldehyde	2.27	0.41	2.7	6.8	54.5	0.86	55.4	-	19910	313	20223	-	NO
Acrolein	2.27	0.16	2.4	0.02	54.6	0.26	54.8	-	19913	96	20009	-	**YES**
Benzene	0.58	0.20	0.78	-	13.9	0.19	14.1	-	5068	70	5138	8.1	**YES**
Benzo(e)pyrene	6.74E-06	1.00E-05	1.68E-05	-	1.62E-04	1.37E-05	1.76E-04	-	0.06	5.02E-03	0.06	2.2	NO
Carbon Tetrachloride	1.77E-02	8.87E-04	1.86E-02	-	0.425	1.22E-03	0.426	-	155	0.44	155	460	NO
Chlorobenzene	1.29E-02	7.35E-04	1.37E-02	-	0.31	1.01E-03	0.31	46	113	0.37	114	-	NO
Chloroform	1.37E-02	6.89E-04	1.44E-02	-	0.33	9.44E-04	0.33	-	120	0.34	121	290	NO
Ethylene Dibromide	2.14E-02	1.07E-03	2.25E-02	-	0.51	1.47E-03	0.52	-	187	0.54	188	27	NO
Formaldehyde	16.22	2.34	18.56	0.04	389.3	13.7	403.0	-	142096	5006	147102	-	**YES**
Methylene Chloride	4.28E-02	4.83E-04	4.33E-02	0.39	1.03	6.62E-04	1.03	-	375	0.24	376	1600	NO
n-Hexane	0.13	2.20	2.33	-	3.1	0.077	3.2	23	1123	28	1152	-	NO
Phenol	1.21E-02	5.80E-04	1.27E-02	0.24	0.29	7.95E-04	0.29	-	106	0.29	107	-	NO
Styrene	1.59E-02	5.70E-04	1.65E-02	2.7	0.38	7.81E-04	0.38	-	140	0.29	140	-	NO
Toluene	0.30	0.74	1.04	14.4	7.2	1.9	9.1	98	2610	694	3304	-	NO
Vinyl Chloride	7.20E-03	3.60E-04	7.56E-03	-	0.17	4.93E-04	0.17	-	63	0.18	63	26	NO
Xylene	0.09	0.39	0.47	16.4	2.1	0.94	3.0	57	757	342	1098	-	NO

As shown in Table 5 above, the TPER evaluation indicated emissions of toxics, based on being triggered by the new equipment, for acrolein, benzene, and formaldehyde exceed their respective TPERs requiring permit limits; therefore, a facility-wide air toxics analysis was performed for these TAPs as discussed in the Air Toxics AAL Analysis below.

To be conservative and show that even for toxics that exceeded the TPERs (1,3-Butadiene, Ethylene Dibromide, and Vinyl Chloride) based on the total combined (new and existing equipment) emission rates in Table 5, the following demonstrates that the atmosphere will not see an increase for those toxics during the 1-2 months commissioning period. Table 6 below shows that the toxics reduction from the existing sources (ES M/L3, ES M/L6 and ES M/L12) that Transco will not operate (as discussed above), at any time during the commissioning period (until permanently retired) will at least offset the emissions increase from the new equipment.

Table 6 - Offset in Toxics

		1,3-Butadiene (lb/yr)	Ethylene Dibromide (lb/yr)	Vinyl Chloride (lb/yr)
*Total increase from new sources		5.5	0.54	0.18
**Decrease from	M/L3	-4.61	-0.413	-0.139
	M/L6	-4.61	-0.413	-0.139
	M/L12	-6.97	-0.624	-0.210
Net offset		-16.19	-1.45	-0.488

* From Table 5

** From the Potential Emissions Summary table in the June 19, 2023, Supplemental Air Modeling Report.

From Table 6, it can be seen that the increase in emissions from the new equipment are all more than offset by not operating ES M/L3, ES M/L6 and ES M/L12.

Air Toxics AAL Analysis

A facility-wide air dispersion modeling analysis was completed for acrolein, benzene, and formaldehyde using potential emissions to determine the resulting modeled ambient concentrations for comparison to the Acceptable Ambient Levels (AALs) in 15A NCAC 02D .1104. The emission rates were modeled at 8,760 hours per year. Table 4 below shows the maximum modeled concentrations for the most recent five-year period (2014-2018) of meteorological data. All modeled maximum concentration results are less than the AAL. Since emissions occurring simultaneously from both existing and new sources will be intermittent and temporary, this analysis, which represents unrestricted and simultaneous emissions from existing and new equipment, is a conservative prediction of maximum concentrations. This demonstration shows that the concurrent operation of new and existing equipment during the commissioning period will not pose excess risk to human health and the environment.

Table 6
Maximum Modeled Toxics Impacts During the Commissioning Period

Pollutant	Averaging Period	Maximum Impact ($\mu g/m^3$)	AAL ($\mu g/m^3$)	Maximum Modeled Impacts % of AAL
Acrolein	1-hour	26.5	80	33%
Benzene	Annual	0.11	0.12	92%
Formaldehyde	1-hour	105	150	70%

Risk Assessment for ES-M/L16

As stated above, ES-M/L16 is exempt from the analysis for the period after commissioning and therefore was not included in the modeling analysis. However, a risk assessment is made for this source since it affects the modeling to some degree. As shown below, for the four toxics modeled, emissions for each

toxic are a very small percent of the total facility emissions. Given the wide margin to the AALs above, the modification would not present an unacceptable risk to human health.

Source	Acrolein, lb/hr	Benzene, lb/hr	Formaldehyde, lb/hr
Total facility-wide	2.4	0.78	18.56
ES-M/L16	0.000691	0.00129	0.0766
Percent of Total Facility	0.028	0.165	0.412

The toxics dispersion modeling analysis was reviewed and approved by Justin McKee, AQAB, (see memo to Ed Martin dated June 26, 2023), and the analysis adequately demonstrates compliance with Acceptable Ambient Levels (AALs) outlined in 15A NCAC 02D.1104, on a source-by-source basis during the commissioning period.

No toxics monitoring is required after the commissioning period since the potential emissions are significantly below the respective AALs as shown in Table 6 above.

Monitoring During the Commissioning Period
After first-fire of any of the new sources (ID Nos. ES-M/L17, ES-M/L18, EGEN-01 or EGEN-02), the following legacy sources shall not be operated during the commissioning period: ES-M/L3, ES-M/L6, or ES-M/L12. Recordkeeping is required to indicate the date and time of any operation of these sources.

The permit toxic limits for all sources modeled for the period during commissioning, except for the sources exempt from air permitting as Part 63 MACT sources, are shown below in Table 7 and in permit condition 2.2 C.2.a.

Table 7
Permit Toxic Emission Limits During Commissioning

Emission Source	**Toxic Air Pollutant**	**Emission Limit**
		lb/yr
I-SHB Suction Header Blowdown	Benzene	9.898E-02
I-DHB Discharge Header Blowdown	Benzene	8.550E-02
I-M/L16CB M/L16 Compressor Blowdown	Benzene	9.286 E-02
I-M/L17CB M/L17 Compressor Blowdown	Benzene	1.139E-02
I-M/L18CB M/L18 Compressor Blowdown	Benzene	1.139E-02
I-TTLO Tanker Truck Loadout	Benzene	2.383E-06
I-FUGS Piping connectors and equipment leaks	Benzene	1.603E-01
I-TANK-01 Natural gas condensate liquid storage tank	Benzene	7.367E-03
I-PIGGING Pipeline pigging blowdowns	Benzene	1.454E+01

B. Toxics Demonstration After the Commissioning Period

This is the period after all legacy sources have been retired.

The Permittee performed a facility-wide air toxics analysis, for all permitted sources that will be operating after the commissioning period as shown in Table 2 above, including the MACT sources.

Note that ES-M/L16 which is the existing combustion turbine, is exempt from the analysis for the period after commissioning per 15A NCAC 2Q .0702(18) since it was permitted prior to July 10, 2010 and therefore was not modeled. However, a risk assessment is made below for this source since it affects the modeling to some degree. Emissions from the ES-M/L16 compressor blowdowns are included.

The first step in the toxics analysis is to identify which toxic air pollutants will be emitted and their emission rates. The next step is to perform a toxic pollutant emission rate (TPER) analysis using total facility-wide potential emissions from the proposed modification to determine if the TPERs in rule 02Q .0711 are exceeded for each toxic air pollutant (TAP) being emitted. Table 6 below summarizes the facility-wide emission rate of each TAP for comparison to the TPER rates for the required averaging periods.

Table 8 - TPER Evaluation After the Commissioning Period

Toxic Air Pollutant	**Facility-Wide Emission Rate**	**TPER**	**Facility-Wide Emission Rate**	**TPER**	**Facility-Wide Emission Rate**	**TPER**	**Modeling Required?**
	(lb/hr)	**(lb/hr)**	**(lb/day)**	**(lb/day)**	**(lb/yr)**	**(lb/yr)**	
1,1,2,2-Tetrachloroethane	0.00097	-	0.0013	-	0.48	430	No
1,3-Butadiene	0.0086	-	0.015	-	5.50	11	No
Acetaldehyde	0.41	6.8	0.86	-	312.84	-	No
Acrolein	0.16	0.02	0.26	-	96.01	-	**Yes**
Benzene	0.20	-	0.19	-	69.73	8.1	**Yes**
Benzo(e)pyrene	0.000010	-	0.000014	-	0.0050	2.2	No
Carbon Tetrachloride	0.00089	-	0.0012	-	0.44	460	No
Chlorobenzene	0.00073	-	0.0010	46	0.37	-	No
Chloroform	0.00069	-	0.00094	-	0.34	290	No
Ethylene Dibromide	0.0011	-	0.0015	-	0.54	27	No
Formaldehyde	2.34	0.04	13.71	-	5,005.78	-	**Yes**
Methylene Chloride	0.00048	0.39	0.00066	-	0.24	1600	No
n-Hexane	2.20	-	0.077	23	28.22	-	No
Phenol	0.00058	0.24	0.00079	-	0.29	-	No
Styrene	0.00057	2.7	0.00078	-	0.29	-	No
Tetrachloroethane	0.000060	-	0.000082	-	0.03	430	No
Toluene	0.74	14.4	1.90	98	693.99	-	No
Vinyl Chloride	0.00036	-	0.00049	-	0.18	26	No
Xylene	0.39	16.4	0.94	57	341.50	-	No

As shown in Table 8 above, the TPER evaluation indicated emissions of acrolein, benzene, and formaldehyde exceed their respective TPERs requiring permit limits; therefore, a facility-wide air toxics analysis was performed for these TAPs.

Air Toxics AAL Analysis

A facility-wide air dispersion modeling analysis was completed using potential emissions to determine the resulting modeled ambient concentrations for comparison to the AALs in 15A NCAC 02D .1104. The

emission rates were modeled at 8,760 hours per year. Table 7 below shows the maximum modeled concentrations for the most recent five-year period (2014-2018) of meteorological data. All modeled maximum concentration results are less than the AAL.

Table 9
Maximum Modeled Toxics Impacts After the Commissioning Period

Pollutant	Averaging Period	Maximum Impact (µg/m^3)	AAL (µg/m^3)	Maximum Modeled Impacts % of AAL
Acrolein	1-hour	2.46	80	3%
Benzene	Annual	0.00423	0.12	4%
Formaldehyde	1-hour	25.1	150	17%

Risk Assessment for ES-M/L16

As stated above, ES-M/L16 is exempt from the analysis for the period after commissioning and therefore was not included in the modeling analysis. Therefore, a risk assessment is made for this source since it affects the modeling to some degree. As shown below, for the four toxics modeled, emissions for each toxic are a very small percent of the total facility emissions. Given the wide margin to the AALs above, the modification would not present an unacceptable risk to human health.

Source	Acrolein, lb/hr	Benzene, lb/hr	Formaldehyde, lb/hr
Total facility-wide	0.16	0.20	2.34
ES-M/L16	0.000691	0.00129	0.0766
Percent of Total Facility	0.43	0.645	3.27

The toxics dispersion modeling analysis was reviewed and approved by Nancy Jones, AQAB, (see memo to Ed Martin dated October 18, 2022), and the modeling adequately demonstrates compliance, on a source-by-source basis, for all toxics modeled after the commissioning period. These TAP emission rate limits are being placed in the permit.

No toxics monitoring is required after the commissioning period since the potential emissions are significantly below the respective AALs as shown in Table 9 above.

The permit toxic limits for the period after commissioning for all sources modeled, except for the sources exempt from air permitting as Part 63 MACT sources, are shown below in Table 8 and in permit condition 2.2 C.3.a.

Table 10
Permit Toxic Emission Limits After the Commissioning Period

Emission Source	Toxic Air Pollutant	Emission Limit
		lb/yr
I-SHB Suction Header Blowdown	Benzene	9.898E-02
I-DHB Discharge Header Blowdown	Benzene	8.550E-02
I-M/L16CB M/L16 Compressor Blowdown	Benzene	9.286 E-02
I-M/L17CB M/L17 Compressor Blowdown	Benzene	1.139E-02
I-M/L18CB M/L18 Compressor Blowdown	Benzene	1.139E-02
I-TTLO Tanker Truck Loadout	Benzene	2.383E-06
I-FUGS Piping connectors and equipment leaks	Benzene	1.603E-01
I-TANK-01 Natural gas condensate liquid storage tank	Benzene	7.367E-03
I-PIGGING Pipeline pigging blowdowns	Benzene	1.454E+01

9. Other Requirements

PE Seal
A PE seal is not required since there are no air pollution capture or control systems being added in accordance with 02Q .0112.

Zoning
A consistency determination dated was received on August 10, 2022, from David Cole, Planner with the Town of Mooresville, stating they received a copy of the air permit application and the proposed operation is consistent with applicable zoning ordinances.

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

Increment Tracking
Iredell County has triggered increment tracking under PSD for PM_{10}, NO_x, and SO_2. This modification will result in a decrease of 11.29 pounds per hour of PM_{10}, a decrease of 672.09 pounds per hour of NO_x, and an increase of 1.19 pounds per hour of SO_2.

These increment rates are determined using emission rates from page 2 of 25 in Appendix C of the application as follows:

Regulated NSR Pollutant	Tons per Year			Pounds per Hour
	Existing Site-wide Emissions	New Site-wide Emissions	Net Emissions Change	
NOx	3,031.78	88.04	- 2,943.74	- 672.09
SO_2	2.82	8.03	+5.21	+ 1.19
PM10	65.06	15.62	- 49.44	- 11.29
PM2.5	65.06	15.62	- 49.44	- 11.29

10. Comments on Draft Permit

The draft permit was sent to the Stationary Source Compliance Branch and Mooresville Regional Office on June 27, 2023.

SSCB Comments (email to Ed Martin from dated June 30, 2023)
SSCB had no comments.

MRO Comments (email to Ed Martin from Denise Hayes dated July 7, 2023)
MRO had no comments.

The draft permit was sent to the Applicant on July 14, 2023.

Transco Comments (email to Ed Martin from Kevin Scott/Michael Callegari dated July 20, 2023)
The following comments were received:

1. In several conditions in Section 2.2 of the permit, for clarity Transco requested rewording from "After the date of beginning operation of any of the new sources ..." to "After first-fire of any of the new sources…"

   Response
   DAQ concurs with this change.

2. In Section 2.2.C.2.a of the permit, for clarity Transco requested rewording from "Pursuant to 15A NCAC 02D .1100 and in accordance with…. when both new sources and some legacy sources may operate." to "...when both new sources and legacy sources can operate, excluding ES-M/L3, ES-M/L6, and ES-M/L12.

   Response
   DAQ concurs with this change.

3. In Section 2.2.C.5.b-f of the permit, PSD Avoidance limits equal to the Significant Emission Rates and appliable during the commissioning period are listed with recordkeeping and reporting. Emissions must be calculated for each of the 12 month periods over the previous 17 months. The SER avoidance limits appear to be listed for the entire facility, however, they should apply only for the new sources. This is concerning since the reporting is on a 12 month basis for the previous 17 months. The facility will likely exceed these limits if legacy units are to be included in the calculations.

   We believe that the intent is for the PSD Avoidance limits to apply only to the new units, however this is not clear. Please make an explicit statement that the PSD Avoidance limits apply to the new sources only.

   Response
   DAQ concurs, the intent is that those limits apply to the new sources only. It was placed in the wrong section and therefore was moved to Section 2.2 D.2 for the new sources.

4. In Section 2.2.C.6.a-e of the permit, Seasonal NOx Limits for the new sources (combined) are set equivalent to the existing NOx limits for M/L3, M/L6 and M/L12 (combined). Compliance with the limits is inherent to the new equipment/sources. The limits, recordkeeping, and reporting requirements are not necessary, considering that the maximum potential emission rate of NOx from the new sources, combined, is lower than the limits offset by the retirement of M/L3, M/L6, and M/L12 combined.

   Suggest replacing this requirement with a notification that M/L3, M/L6 and M/L12 will no longer operate, due prior to first-fire of the new equipment.

Response
DAQ concurs that the monitoring, recordkeeping, and reporting can be replaced with a notification requirement, which was added. Moved this condition to Section 2.2 D.3 for new sources only since the facility-wide change in NOx emissions during commissioning is actually more directly related to the offset realized by not operating the three engines.

11. Recommendations

Issuance is recommended.