



Company Name:	Duke Energy Carolinas, LLC – Anderson County	Permit Writer:	David D. Nasol
Agency Air Number:	Combined Cycle Station	Date:	DRAFT
Permit Number:	0200-0310 PSD-50000026 v1.0		

DATE APPLICATION RECEIVED: March 11, 2026

PROJECT DESCRIPTION

This project is for a new electric utility facility in Anderson County. This project will include the installation of a new combined-cycle power block consisting of two advanced-class General Electric (GE) HA.03 combustion turbines (CTs), two heat recovery steam generators (HRSG), and one steam turbine (ST) along with an air-cooled condenser (ACC) system to minimize water use. The combined cycle combustion turbines (CCCTs) will primarily fire natural gas and utilize No. 2 fuel oil [ultra-low sulfur diesel (ULSD)] as a backup fuel source. The maximum nominal heat input on natural gas for each CCCT is expected to be 4,989 MMBtu/hr (includes the CT and duct firing in the HRSG) and the maximum nominal heat input on ULSD is expected to be 4,257 MMBtu/hr.

Each CT will be equipped with dry low-NO_x combustors (DLN), selective catalytic reduction (SCR) technology, and an oxidation catalyst for emissions control and continuous emissions monitoring systems (CEMS) for measurement of NO_x, CO, O₂, and CO₂. The HRSG are equipped with supplemental duct firing (589.8 million Btu/hr natural gas-fired). The combustion turbines will also be equipped with monitored bypass stacks to allow the units to be operated in simple-cycle mode. The turbines will be “hydrogen capable” should this fuel source be commercially available at a point in the future; however, the application is not requesting authorization to combust hydrogen at this time. The ACC system will consist of fin-fan air-cooled heat exchangers (there will be no emissions from the cooling system).

The proposed project also includes:

- one (1) 123.6 MMBtu/hr natural gas-fired auxiliary boiler to provide steam to start up the power blocks in combined-cycle mode,
- one (1) 2,943 horsepower (hp) emergency diesel-fired generator,
- one (1) 385.7 hp emergency diesel-fired fire water pump engine,
- two (2) 10.2 MMBtu/hr natural gas-fired dew point heaters,
- two (2) ULSD storage tanks, and
- an electric-driven compressor station that includes a natural gas-fired emergency generator and 24 small natural gas-fired heaters.

FACILITY DESCRIPTION

SIC CODE: 4911 – Electric Services

NAICS CODE: 221112 – Fossil Fuel Electric Power Generation

This facility is an electrical utility and compressor station.

OPERATING PERMIT INCORPORATION

The owner or operator shall submit a timely and complete Part 70 permit application within twelve (12) months of startup in accordance with SC Regulation 61-62.70.5(a).

EMISSIONS

Emissions were calculated using emission factors from U.S. EPA’s publications (such as AP-42), Electric Power Research Institute data, site-specific and vendor-supplied information, regulatory limits, and U.S. EPA’s Mandatory Greenhouse Gas Reporting Regulation.



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PROJECT EMISSIONS						
Pollutant	Uncontrolled		Controlled		PTE	
	lb/hr	TPY	lb/hr	TPY	lb/hr*	TPY
Particulate Matter (PM) (Filterable)	**	**	***	***	64.32	276.59
Particulate Matter <10 Microns (PM ₁₀)	**	**	***	***	90.86	390.68
Particulate Matter <2.5 Microns (PM _{2.5})	**	**	***	***	90.86	390.68
Sulfur Dioxide (SO ₂)	**	**	***	***	13.95	59.99
Nitrogen Oxides (NO _x)	**	**	146.47	629.84	146.47	629.84
Carbon Monoxide (CO)	**	**	143.66	629.22	143.66	629.22
Volatile Organic Compounds (VOC)	**	**	31.15	133.96	31.15	133.96
Lead (Pb)	**	**	***	***	0.00	0.02
Toluene (Highest Single HAP)	**	**	1.33	5.70	1.33	5.70
Total Hazardous Air Pollutants (Total HAP)	**	**	4.08	17.55	4.08	17.55
Sulfuric Acid (H ₂ SO ₄)	**	**	***	***	1.27	4.57
Greenhouse Gas (CO ₂ e)	**	**	***	***	1,398,768	6,014,704

*lb/hr emission rates calculated from TPY emission rates

**uncontrolled rates not calculated

***no add-on control technology

SOURCE TEST REQUIREMENTS

Initial and subsequent source tests on CT-1 and CT-2 are required by 40 CFR Subpart KKKKa.

An initial 3-run source test for filterable PM, PM₁₀, and PM_{2.5} emissions is required to show compliance with the filterable PM, PM₁₀, and PM_{2.5} BACT limits while burning natural gas and while burning fuel oil.

An initial 3-run source test on CT-1 and CT-2 for VOC will be required to demonstrate compliance with the VOC BACT while burning natural gas and fuel oil during combined-cycle operation.

An initial source test for sulfuric acid mist (H₂SO₄) is required to verify emissions from the combustion turbines while burning natural gas and while burning fuel oil during combined-cycle operation.

REGULATIONS

Not Applicable - Section II(E) (Synthetic Minor)

No synthetic minor limits were requested.

Applicable - Standard No. 1 (Emissions from Fuel Burning Operations)

ID	PM Allowable (lb/hr)	SO ₂ Allowable (lb/hr)	Uncontrolled Emissions		Controlled Emissions	
			PM (lb/hr)	SO ₂ (lb/hr)	PM (lb/hr)	SO ₂ (lb/hr)
CT-1, CT-2 duct burners (each)	353.87	1356.49	3.48	0.806	No controls	No controls



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ID	PM Allowable (lb/hr)	SO ₂ Allowable (lb/hr)	Uncontrolled Emissions		Controlled Emissions	
			PM (lb/hr)	SO ₂ (lb/hr)	PM (lb/hr)	SO ₂ (lb/hr)
AUX-1	74.16	284.28	2.30E-01	7.27E-02	No controls	No controls
DPH-1, DPH-2 (each)	6.12	23.46	1.90E-02	6.00E-03	No controls	No controls
CS Heaters-1 (total)	7.20E-03	2.76E-02	2.24E-05	7.06E-06	No controls	No controls
CS Heaters-2 (total)	3.60E-02	1.38E-01	1.12E-04	3.53E-05	No controls	No controls

These units will be constructed after February 11, 1971 and are subject to the 20% opacity limit. There are no opacity monitoring requirements since the units only burn natural gas or no. 2 fuel oil as fuel per Section VI(A)(1)(a) and (b).

Per Figure 1 Section II(B) for <1300 million Btu/hr, the PM is limited to 0.6 lb per million Btu heat input. There are no PM monitoring requirements based on this Standard since uncontrolled PM emissions are less than allowable emissions.

The application utilized the PM limit of 0.8 lb of PM per million Btu heat input from Section II(B) for all fuel burning operations; however, this limit is only applicable for fuel burning operations of 10 million Btu/hr and smaller constructed prior to February 11, 1971. Since this equipment will be constructed after this date, they are subject to the 0.6 lb of PM per million Btu heat input for sources smaller than 1,300 million Btu per hour as specified in Figure 1 of Section II(B). PM allowable in the table above were calculated using the 0.6 lb/million Btu limit.

Per Section IV, SO₂ from these sources are limited to 2.3 lb/million Btu. These sources are permitted to burn only natural gas and no. 2 fuel oil as fuel. There are no SO₂ monitoring requirements based on this Standard since uncontrolled emissions are below allowable emissions.

The application states that CS-ENG is subject to this Standard; however, the engine does not meet the definition of a fuel burning operation since it does not provide indirect heating. Therefore, CS-ENG is not subject to this Standard.

Not Applicable - Standard No. 3 (state only) (Waste Combustion and Reduction)

This Standard applies to combustion sources that burn waste for any purpose. The combustion sources at the facility will burn virgin fuel only; therefore, this standard does not apply.

Applicable - Standard No. 4 (Emissions from Process Industries)

All sources at the facility not subject to the Standard No. 1 opacity limit are subject to the 20% opacity limit in Section IX of this Standard. The application states that compliance will be met by burning low-sulfur fuels and using good combustion practices; however, the facility will also be required to conduct semiannual visual inspections on diesel sources subject to this Standard demonstrate compliance with the opacity limit. Opacity is not expected from either the natural gas sources or the circuit breakers; therefore, periodic monitoring, recordkeeping, and reporting is not required for these sources.



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Section VIII imposes a PM limit based on a sources process weight rate. The combustion sources do not have a process weight rate since liquids and gases used solely as fuels are excluded from process weight per the Process Weight definition in SC Regulation 61.62.1. Additionally, there is no process weight rate for the circuit breakers. Therefore, the PM limit of Section VIII is not applicable.

Not Applicable - Standard No. 5 (Volatile Organic Compounds)

The equipment from this project will be installed after the effective dates for existing processes and the facility does not contain any of the processes described in Section II; therefore, this Standard does not apply.

Not Applicable - Standard No. 5.2 (Control of Oxides of Nitrogen (NO_x))

The NO_x emitting equipment has undergone BACT review for NO_x. In accordance with Section I(B)(4), any source that has undergone a BACT analysis for NO_x is exempt from this Standard.

Applicable - Standard No. 7 (Prevention of Significant Deterioration)

The facility is a fossil fuel-fired steam electric plant with a heat input greater than 250 MMBtu/hr, one of the listed source categories, and has the potential to emit more than 100 tons/year of various NSR pollutants. As such, this facility is a major stationary source under the PSD program. The PSD applicability analysis is provided in the table below.

PSD Applicability Analysis					
Pollutant	Project PTE (tons/yr)	Baseline Actual Emissions (tons/yr)	Net Change (tons/yr)	Significant Emission Rate (tons/yr)	Major Modification?
PM Filterable	276.58	0	276.58	25	Yes
PM ₁₀	390.64	0	390.64	15	Yes
PM _{2.5}	390.64	0	390.64	10	Yes
SO ₂	59.99	0	59.99	40	Yes
NO _x	629.84	0	629.84	40	Yes
CO	629.22	0	629.22	100	Yes
VOC	133.96	0	133.96	40	Yes
Sulfuric acid mis (H ₂ SO ₄)	4.57	0	4.57	7	No
GHG (CO _{2e})	6,014,704	0	6,014,704	75,000	Yes
Lead	0.02	0	0.02	0.6	No

The following limits are being established with this PSD construction permit:



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PSD Limits					
Permit ID	Permit Issue Date	Equipment ID	Pollutant	Emission Limit	Explanation
PSD-50000026 v1.0	This permit	CT-1, CT-2	CO	2 ppmvd @ 15% O ₂ based on a 24-hour rolling average when burning natural gas in combined cycle operation 1.7 ppmvd @ 15% O ₂ based on a 24-hr rolling average when burning fuel oil in combined cycle operation 9 ppmvd @ 15% O ₂ based on a 24-hr rolling average when burning natural gas in simple-cycle operation	Compliance will be met by burning only natural gas and fuel oil, maintaining good combustion practices, and through the use of catalytic oxidation during combined cycle operation. CO CEMs will be used to determine compliance with the CO limits and ensure the catalytic oxidation system is working properly during combined cycle operation. Inlet catalytic oxidation temperature will be monitored to ensure the catalyst is operated at the appropriate temperature.
PSD-50000026 v1.0	This permit	CT-1, CT-2	CO	Startup/shutdown emissions limited to 401 TPY Fuel switch: ≤2 hours (120 minutes) per fuel switch and ≤4 hours (240 minutes) per 24-hour period	Limiting startup/shutdown emissions and fuel switch hours and is BACT control
PSD-50000026 v1.0	This permit	AUX-1	CO	---	Limiting operation to a 10% capacity factor, burning only natural gas, and maintaining good combustion practices is BACT control



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PSD-50000026 v1.0	This permit	DPH-1, DPH-2, CS Heaters-1, CS Heaters-2	CO	---	Burning only natural gas and maintaining good combustion practices is BACT control
PSD-50000026 v1.0	This permit	EDG-1, DFP-1	CO	2.6 g/hp-hr	Installation of NSPS IIII certified engines, burning only ultra-low sulfur diesel, maintaining good combustion practices, and limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	CS-ENG	CO	4.0 g/hp-hr	Installation of NSPS JJJJ certified engine, burning only natural gas, maintaining good combustion practices, and limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	Compressor Station	CO	---	Burning only natural gas, maintaining good combustion practices, and limiting flaring event to once per year is BACT control
PSD-50000026 v1.0	This permit	CT-1, CT-2	NO _x	2.5 ppmvd @ 15% O ₂ based on a 24-hr rolling average when burning natural gas in combined cycle operation 6.0 ppmvd @ 15% O ₂ based on a 24-hr rolling average when burning fuel oil in combined cycle operation 15 ppmvd @ 15% O ₂ based on a 24-hr rolling average when burning	BACT control during combined cycle operation is SCR, DLN, LB, and good combustion practices. Water injection will be used when burning fuel oil. NO _x CEMS will be used to demonstrate compliance with the limits. BACT control during simple cycle operation is to maintain good combustion practices and burning only natural gas. NO _x CEMS will be used to demonstrate compliance with the limit.



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				natural gas in simple cycle operation	
PSD-50000026 v1.0	This permit	CT-1, CT-2	NO _x	Startup/shutdown emissions limited to 98.9 TPY Fuel switch: ≤2 hours (120 minutes) per fuel switch and ≤4 hours (240 minutes) per 24-hour period	Limiting startup/shutdown emissions and fuel switch hours BACT control
PSD-50000026 v1.0	This permit	AUX-1	NO _x	---	Limiting operation to a 10% capacity factor, burning only natural gas, and maintaining good combustion practices is BACT control
PSD-50000026 v1.0	This permit	DPH-1, DPH-2, CS Heaters-1, CS Heaters-2	NO _x	---	Burning only natural gas and maintaining good combustion practices is BACT control
PSD-50000026 v1.0	This permit	EDG-1	NO _x	4.8 g/hp-hr	Installation of NSPS IIII certified engines, burning only ultra-low sulfur diesel, maintaining good combustion practices, and limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	DFP-1	NO _x	3.0 g/hp-hr	Installation of NSPS IIII certified engines, burning only ultra-low sulfur diesel, maintaining good combustion practices, and limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	CS-ENG	NO _x	2.0 g/hp-hr	Installation of NSPS JJJJ certified engine, burning only natural gas, maintaining good combustion practices, and



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					limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	Compressor Station	NO _x	---	Burning only natural gas, maintaining good combustion practices, and limiting flaring event to once per year is BACT control
PSD-50000026 v1.0	This permit	CT-1, CT-2	VOC	2.2 ppmvd @ 15% O ₂ (as CH ₄) based on a 24-hr rolling average when burning natural gas in combined cycle operation 3.2 ppmvd @ 15% O ₂ (as CH ₄) based on a 24-hr rolling average when burning fuel oil in combined cycle operation 1.5 ppmvd @ 15% O ₂ (as CH ₄) based on a 24-hr rolling average when burning natural gas in simple cycle operation	Compliance will be met by burning only natural gas and fuel oil, maintaining good combustion practices, and through the use of catalytic oxidation during combined cycle operation. An initial 3-run VOC source test will be performed to demonstrate compliance with the VOC limits during combined cycle operation and ensure the catalytic oxidation system is working properly during combined cycle operation. Inlet catalytic oxidation temperature will be monitored to ensure the catalyst is operated at the appropriate temperature.
PSD-50000026 v1.0	This permit	CT-1, CT-2	VOC	Startup/shutdown emissions limited to 12.8 TPY Fuel switch: ≤2 hours (120 minutes) per fuel switch and ≤4 hours (240 minutes) per fuel switch	Limiting startup/shutdown emissions and fuel switch hours is BACT control



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				minutes) per 24-hour period	
PSD-50000026 v1.0	This permit	AUX-1	VOC	---	Limiting operation to a 10% capacity factor, burning only natural gas, and maintaining good combustion practices is BACT control
PSD-50000026 v1.0	This permit	DPH-1, DPH-2, CS Heaters-1, CS Heaters-2	VOC	---	Burning only natural gas and maintaining good combustion practices is BACT control
PSD-50000026 v1.0	This permit	EDG-1	VOC	0.26 g/hp-hr	Installation of NSPS IIII certified engine, burning only ultra-low sulfur diesel, maintaining good combustion practices, and limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	DFP-1	VOC	1.1 g/hp-hr	Installation of NSPS IIII certified engine, burning only ultra-low sulfur diesel, maintaining good combustion practices, and limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	CS-ENG	VOC	1.0 g/hp-hr	Installation of NSPS JJJJ certified engine, burning only natural gas, maintaining good combustion practices, and limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	Compressor Station	VOC	---	Burning only natural gas, maintaining good combustion practices, and limiting flaring event to once per year is BACT control for flaring Monthly leak detection and repair using AVO is BACT for piping leaks
PSD-50000026 v1.0	This permit	TK-1, TK-2	VOC	1.56 tons VOC per 12-month rolling period	Utilizing submerged fill pip, fixed roof, white exterior paint, and good operating practices is BACT control



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PSD-50000026 v1.0	This permit	CT-1, CT-2	Filterable PM, PM ₁₀ , PM _{2.5}	Filterable PM when burning natural gas: 5.9E-03 lb/million Btu PM ₁₀ /PM _{2.5} when burning natural gas: 8.0E-03 lb/million Btu Filterable PM when burning fuel oil: 0.015 lb/million Btu PM ₁₀ /PM _{2.5} when burning fuel oil: 0.028 lb/million Btu	An initial 3-run source test will be used to demonstrate compliance with the limit. Burning only natural gas and fuel oil and good combustion practices is BACT control
PSD-50000026 v1.0	This permit	AUX-1	Filterable PM, PM ₁₀ , PM _{2.5}	---	Limiting operation to a 10% capacity factor, burning only natural gas, and maintaining good combustion practices is BACT control
PSD-50000026 v1.0	This permit	DPH-1, DPH-2, CS Heaters-1, CS Heaters-2	Filterable PM, PM ₁₀ , PM _{2.5}	---	Burning only natural gas and maintaining good combustion practices is BACT control
PSD-50000026 v1.0	This permit	EDG-1	Filterable PM, PM ₁₀ , PM _{2.5}	Filterable PM: 0.15 g/hp-hr PM ₁₀ /PM _{2.5} : 0.17 g/hp-hr	Installation of NSPS IIII certified engine, burning only ultra-low sulfur diesel, maintaining good combustion practices, and limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	DFP-1	Filterable PM, PM ₁₀ , PM _{2.5}	Filterable PM: 0.15 g/hp-hr PM ₁₀ /PM _{2.5} : 0.18 g/hp-hr	Installation of NSPS IIII certified engine, burning only ultra-low sulfur diesel, maintaining good combustion practices, and limiting operating hours



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					for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	CS-ENG	Filterable PM, PM ₁₀ , PM _{2.5}	---	Installation of NSPS JJJJ certified engine, burning only natural gas, maintaining good combustion practices, and limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	CT-1, CT-2	SO ₂	Natural gas: 0.00137 lb/ million Btu Fuel oil: 0.00152 lb/million Btu	Burning only natural gas and fuel oil and good combustion practices is BACT control
PSD-50000026 v1.0	This permit	AUX-1	SO ₂	---	Limiting operation to a 10% capacity factor, burning only natural gas, and maintaining good combustion practices is BACT control
PSD-50000026 v1.0	This permit	DPH-1, DPH-2, CS Heaters-1, CS Heaters-2	SO ₂	---	Burning only natural gas and good combustion practices is BACT control
PSD-50000026 v1.0	This permit	EDG-1	SO ₂	15 ppm sulfur in fuel	Installation of NSPS IIII certified engine, burning only ultra-low sulfur diesel, maintaining good combustion practices, and limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	DFP-1	SO ₂	15 ppm sulfur in fuel	Installation of NSPS IIII certified engine, burning only ultra-low sulfur diesel, maintaining good combustion practices, and limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	CS-ENG	SO ₂	---	Installation of NSPS JJJJ certified engine, burning only natural gas, maintaining good combustion practices, and



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					limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	Compressor Station	SO ₂	---	Burning only natural gas, maintaining good combustion practices, and limiting flaring event to once per year is BACT control
PSD-50000026 v1.0	This permit	CT-1, CT-2	CO ₂ e	Limits for CO ₂ calculated using emission rates below based on a 30-day rolling average, excluding periods of startup, shutdown, burner tuning sessions, manufacturer-required FSNL tests, and fuel switches: Natural gas in combined cycle operation: >90% Load: 521,156 lb/hr 70-90% Load: 442,262 lb/hr 50-70% Load: 347,797 lb/hr 30-50% Load: 256,438 lb/hr Any Load with Duct Burner: 588,815 lb/hr	Burning only natural gas and fuel oil, good combustion practices, work practices, and design and compliance with any applicable New Source Performance Standards for limiting CO ₂ emissions as codified at 40 CFR Part 60, including without limitation, as applicable, under Subpart TTTT and/or Subpart TTTTa is BACT control



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				Fuel oil in combined cycle operation: Combined-cycle, No. 2 fuel oil: >90% Load: 733,125 lb/hr 70-90% Load: 581,592 lb/hr 50-70% Load: 455,209 lb/hr Natural gas in simple cycle operation: >90% Load: 514,814 lb/hr 70-90% Load: 437,549 lb/hr 50-70% Load: 366,261 lb/hr 30-50% Load: 313,689 lb/hr 30-day rolling average And Any applicable New Source Performance Standards for limiting CO ₂ emissions as codified at 40 CFR Part 60, including without limitation, as applicable,	



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				under Subpart TTTT and/or Subpart TTTTa	
PSD-50000026 v1.0	This permit	CT-1, CT-2	CO ₂ e	Startup/shutdown emissions limited to 32,592 TPY Fuel switch: ≤2 hours (120 minutes) per fuel switch and ≤4 hours (240 minutes) per 24-hour period	Limiting startup/shutdown emissions and fuel switch hours is BACT control
PSD-50000026 v1.0	This permit	AUX-1	CO ₂ e	---	Limiting operation to a 10% capacity factor, burning only natural gas, and maintaining good combustion practices is BACT control
PSD-50000026 v1.0	This permit	DPH-1, DPH-2, CS Heaters-1, CS Heaters-2	CO ₂ e	---	burning only natural gas and maintaining good combustion practices is BACT control
PSD-50000026 v1.0	This permit	EDG-1, DFP-1	CO ₂ e	163 lb/million Btu	Installation of NSPS IIII certified engine, burning only ultra-low sulfur diesel, maintaining good combustion practices, and limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	CS-ENG	CO ₂ e	120 lb/million Btu	Installation of NSPS JJJJ certified engine, burning only natural gas, maintaining good combustion practices, and limiting operating hours for testing/maintenance is BACT control
PSD-50000026 v1.0	This permit	Circuit Breakers	CO ₂ e	≤0.5% leak rate	Installation of circuit breakers certified to meet the ANSI C37.013 (generation breakers) and ANSI C37.04 (transmission breakers) standards for high-voltage circuit breakers (or



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					equivalent standards as update) and installation and operation of density alarms on each circuit breaker is BACT control
PSD-50000026 v1.0	This permit	Compressor Station	CO ₂ e	---	Burning only natural gas, maintaining good combustion practices, and limiting flaring event to once per year is BACT control for flaring Monthly leak detection and repair using AVO is BACT for piping leaks

Applicable - 61-62.6 (Control of Fugitive Particulate Matter)

This regulation applies to fugitive particulate matter at all facilities. There are no special requirements to reduce fugitive PM from the equipment of this project.

40 CFR 60 and 61-62.60 (New Source Performance Standards (NSPS))

Not Applicable – Subpart D (Fossil-Fuel-Fired Steam Generators)

This Subpart applies to certain fossil fuel-fired steam generating units with a heat input rating more than 250 MMBtu/hr that commenced construction or modification after August 17, 1971. This rule does not apply to turbines subject to NSPS Subpart KKKK or KKKKa. Because the turbines (CT-1 and CT-2) are subject to Subpart KKKKa, they are not subject to NSPS Subpart D. Although the auxiliary boiler (AUX-1) is considered a fossil fuel-fired steam generating unit, it will not have a heat input rating of more than 250 MMBtu/hr and thus not subject to this rule.

Applicable – Subpart Db (Industrial-Commercial-Institutional Steam Generating Units)

This Subpart applies to steam generating units that have a heat input greater than 100 MMBtu/hr for which construction, modification, or reconstruction commenced after June 19, 1984. The auxiliary boiler (AUX-1) is subject to the requirements of Subpart Db. The auxiliary boiler is exempt from the SO₂ and PM emissions standards because it will fire only natural gas. The boiler will operate under a 10% annual capacity factor and therefore exempt from the NO_x emission standards and the continuous NO_x CEMS requirement. DEC will conduct a maximum heat input capacity demonstration as required by §60.46b(g).

Duct firing in the HRSGs will be regulated under NSPS Subpart KKKKa; therefore, the HRSGs are exempt from Subpart Db pursuant to 40 CFR §60.4305(b).

Applicable – Subpart Dc (Small Industrial-Commercial-Institutional Steam Generating Units)



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This Subpart applies to steam generating units that have a heat input from 10 to 100 MMBtu/hr for which construction, modification, or reconstruction commenced after June 9, 1989. Additionally, 40 CFR §60.40c(e) states that Subpart Dc applies to dew point heaters for combustion turbines. The dew point heaters (DPH-1 and DPH-2) have heat inputs of 10.2 MMBtu/hr and thus will be subject to this Subpart. The dew point heaters will fire only natural gas; therefore, only notifications of construction and startup and maintenance fuel combustion records will be required. The compressor station heaters (CS Heaters-1 and CS Heaters-2) are not subject due to their size – 0.003 MMBtu/hr and 0.072 MMBtu/hr.

Not Applicable – Subpart Kc (Volatile Organic Liquid Storage Vessels)

This Subpart applies to storage vessels with a capacity greater than or equal to 20,000 gallons (75.7 cubic meters) that are used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification commenced after October 4, 2023. The two diesel tanks (TK-1 and TK-2) are above the capacity threshold. However, per 40 CFR §60.110c(b)(8) the rule does not apply to vessels used only to store VOL with a maximum true vapor pressure less than 0.25 pounds per square inch, absolute (psia). The vapor pressure of ULSD is below this level (according to U.S. EPA's TANKS equations, the annual average vapor pressure is 0.0088 psia). Therefore, the diesel tanks are not subject to this Subpart.

Applicable – Subpart IIII (Stationary Compression Ignition Internal Combustion Engines)

The emergency diesel-fired generator engine (EDG-1) and the emergency diesel-fired fire water pump engine (DFP-1) are subject to this Subpart. These engines shall be certified to comply with the emission limits in Subpart IIII. Non-emergency operations are limited to a maximum operation of 100 hours per year for testing and maintenance.

Applicable – Subpart JJJJ (Stationary Spark Ignition Internal Combustion Engines)

The natural gas-fired emergency engine at the compressor station (CS-ENG) is subject to this Subpart. The engine shall be certified to comply with the emission limits in Subpart JJJJ. Non-emergency operations are limited to a maximum operation of 100 hours per year for testing and maintenance.

Not Applicable – Subpart KKKK (Stationary Combustion Turbines)

This Subpart regulates stationary combustion turbines with a heat input at peak load equal to or greater than 10 MMBtu/hr that commenced construction, modification, or reconstruction after February 18, 2005. Per 60.4305(c), the two stationary combustion turbines (CT-1 and CT-2) are not subject to this Subpart since they are subject to Subpart KKKKa.

Applicable – Subpart KKKKa (Stationary Combustion Turbines)

This Subpart regulates stationary combustion turbine that commenced construction, modification, or reconstruction after December 13, 2024, and that has a base load rating equal to or greater than 10.7 gigajoules per hour (GJ/h) (10 million British thermal units per hour (MMBtu/h)). The two stationary combustion turbines (CT-1 and CT-2) are subject to the NO_x and SO₂ limits of this Subpart.

The new turbines will burn natural gas and ULSD and the HRSG duct burners will be fired with natural gas to comply with the SO₂ limit in 40 CFR §60.4330a(a)(2) of 0.060 lb SO₂/MMBtu heat input. The new turbines will have a base load rated heat input greater than 850 MMBtu/hr, a design efficiency of greater than 38%, and are expected to have a capacity factor greater than 45%. The applicable input-based NO_x limits are 5 ppm at 15% oxygen (O₂) when firing



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natural gas and operating at high load, 42 ppm at 15% O₂ when firing ULSD at high load, and 96 ppm at 15% O₂ when operating at part load. The applicable input-based NO_x limit during bypass is 25 ppm at 15% O₂. The part load standard is applicable during any hour the turbine operates below 70% of the base load rating. During each operating hour when the heat input to the turbine is less than 50% natural gas at any point during the operating hour, the ULSD standard applies. During each operating hour when the heat input to the turbine is greater than 50% natural gas, the applicable NO_x standard is determined by pro-rating the natural gas and ULSD standards. Note that compliance with these input-based standards is determined on a 4-operating-hour rolling average basis. DEC may choose to comply with the output-based standards, where compliance is determined on a 30-operating-day average basis. A NO_x CEMS will be used to monitor compliance with the applicable limit. Excess emissions are defined as any unit operating period in which the 4-hour or 30-day (as applicable) average NO_x emissions rate exceeds the applicable emissions limit.

Not Applicable – Subpart OOOOb (Crude Oil and Natural Gas Facilities)

This subpart applies to onshore affected facilities that were constructed after December 6, 2022. Per 40 CFR §60.5365(b), facilities located inside and including the Local Distribution Company (LDC) custody transfer station are not subject to this subpart. An LDC is defined as “a utility that owns/operates its own natural gas pipeline network for the purpose of delivering gas to customers behind its system.” Since Duke Energy owns Piedmont Natural Gas and is considered a Local Distribution Company (LDC), the compressors and associated fugitive emissions from the compressor station are not subject to NSPS Subpart OOOOb.

Not Applicable – Subpart TTTT (Greenhouse Gas Emissions for Electric Generating Units)

U.S. EPA promulgated standards of performance for GHG emissions from new, modified, and reconstructed electric utility generating units on October 23, 2015. GHG standards included in this subpart apply to any steam generating unit, integrated gasification combined-cycle facility, or stationary combustion turbine which commenced construction after January 8, 2014, or commenced modification or reconstruction after June 18, 2014, but on or before May 23, 2023. The stationary combustion turbines will commence construction after May 23, 2023, and are therefore not subject to NSPS Subpart TTTT.

Applicable – Subpart TTTTa (Greenhouse Gas Emissions for Modified Coal-Fired Steam Electric Generating Units and New Construction and Reconstruction Stationary Combustion Turbine Electric Generating Units)

NSPS Subpart TTTTa includes emissions standards and compliance schedules for stationary combustion turbines that commence construction or reconstruction after May 23, 2023 that have a base load rating greater than 250 MMBtu/hr. In accordance with 40 CFR §60.5509a(a), the proposed new turbines would be subject to NSPS TTTTa because they will each have a base load greater than 250 MMBtu/hr, serve a generator or generators capable of selling greater than 25 megawatts (MW) of electricity to a utility power distribution system, will commence construction after May 23, 2023, and do not meet any exemption criteria under 40 CFR 60.5509a(b).

Under 40 CFR §60.5580a, NSPS TTTTa provides definitions for three types of combustion turbines as either “base load,” “intermediate load,” or “low load” units. Base load combustion turbines supply more than 40 percent of their potential electric output as net-electric sales on both a 12-operating month and a 3-year rolling average basis. Intermediate load combustion turbines supply more than 20 percent but less than or equal to 40 percent of their potential electric output as net-electric sales on both a 12-operating month and a 3-year rolling average basis. Low-load combustion turbines supply 20 percent or less of their potential electric output as net-electric sales on both a



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12-operating month and a 3-year rolling average basis. “Net electric sales” means “the gross electric sales to the utility power distribution system minus purchased power.”

Based on their size and expected utilization, the Project’s combustion turbines will initially be characterized as base load units. As base load units, the combustion turbines would be subject to a Phase I CO₂ emissions standard under 40 CFR §60.5520a(a) and Table 1 to Subpart TTTTa based on gross energy output or net energy output. For base load combustion turbines, the 12-operating month average CO₂ emissions standard that applies before January 2032 is 800 lb CO₂/MWh of gross energy output or 820 lb CO₂/MWh of net energy output. The 12-operating month average CO₂ emissions standard that applies to base load combustion turbines after December 2031 is 100 lb CO₂/MWh of gross energy output or 97 lb CO₂/MWh of net energy output. These post-2031 emissions limitations (Phase 2) are based on carbon capture and sequestration as the best system of emission reduction (BSER). Emissions are determined in accordance with the procedures in 40 CFR §60.5525a. Compliance with the limits is determined in accordance with the procedures in 40 CFR §60.5525a. The monitoring, recordkeeping, and reporting requirements are specified under 40 CFR §60.5535a, §60.5560a, and §60.5555a, respectively.

On June 17, 2025, U.S. EPA published a proposed rule that would repeal all emissions standards and compliance schedules for the control of GHG emissions from stationary combustion turbines or, in the alternative, revise specific portions of NSPS Subpart TTTTa based on revised BSER determinations. Specifically, U.S. EPA’s alternative proposal would repeal the Phase 2 carbon capture and sequestration-based requirements for new base load stationary combustion turbines. Although the Phase 1 standards based on highly-efficient combined-cycle generation with best operating and maintenance practices would remain in place under this alternative proposal, EPA has solicited comment on this issue and may, if appropriate, engage in further rulemaking at a future date if the alternative proposal is finalized. Following promulgation of the final rule, DEC will amend this permit application or submit an additional permit application, as necessary, to address the final standards.

40 CFR 61 and 61-62.61 (National Emission Standards for Hazardous Air Pollutants (NESHAP))

Not Applicable - This facility does not emit the pollutants in a way that is subject to this standard (asbestos, benzene, beryllium, coke oven emissions, arsenic, mercury, radio nuclide, radon, or vinyl chloride).

40 CFR 63 and 61-62.63 (National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories)

Not Applicable – Subpart HHH (Natural Gas Transmission and Storage Facilities)

This subpart applies to owners and operators of natural gas transmission and storage facilities that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user (if there is no local distribution company), and that are major sources of HAPs emissions. The Facility will not be a major source of HAPs and the rule does not apply.

Not Applicable – Subpart YYYY (Stationary Combustion Turbines)

The NESHAP for Stationary Combustion Turbines (40 CFR Part 63, Subpart YYYY) regulates any existing, new, or reconstructed stationary combustion turbine located at a major source of HAP emissions. A new turbine is one constructed after January 14, 2003. The NESHAP limits emissions of formaldehyde from combustion turbines. The Facility will not be a major source of HAP emissions; therefore, this rule does not apply.

Applicable – Subpart ZZZZ (Stationary Reciprocating Internal Combustion Engines)



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The NESHAP for RICE (40 CFR Part 63, Subpart ZZZZ), applies to new and existing RICE located at major and area sources. The emergency diesel fuel-fired generator (EDG-1), the emergency natural gas-fired generator (CS-ENG), and the diesel fuel-fired fire water pump engine (DFP-1) being installed as part of the proposed Project are each subject to Subpart ZZZZ. However, pursuant to 40 CFR §63.6590(c), by meeting the requirements of NSPS Subparts IIII and JJJJ, the engines meet the requirements of NESHAP Subpart ZZZZ.

Not Applicable – Subpart DDDDD (Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters)

Subpart DDDDD establishes emissions limits for HAPs from industrial, commercial, and industrial boilers and process heaters located at major source of HAPs. The Facility includes a new natural gas fired auxiliary boiler and several natural gas-fired heaters; however, the rule does not apply because the Facility is an area source of HAPs.

Not Applicable – Subpart JJJJJ (Industrial, Commercial, and Institutional Boilers Area Sources)

Subpart JJJJJ establishes emissions limits for HAPs from industrial, commercial, and industrial boilers located at area sources of HAPs. The rule does not apply to gas-fired boilers and does not apply to process heaters (e.g., dew point heaters and Compressor Station heaters); therefore, the Facility is not subject.

Not Applicable - 61-62.68 (Chemical Accident Prevention Provisions)

Ammonia of a concentration greater than 20% is a regulated substance under this regulation. The SCRs will use aqueous ammonia with a concentration less than 20%. The facility has indicated that no other regulated substances are planned to be stored at the facility in quantities above threshold values. Therefore, the facility is not subject to this regulation.

Not Applicable - 40 CFR 64 (Compliance Assurance Monitoring)

The facility must address the requirements of this regulation in their initial Title V operating permit application.

Applicable - 40 CFR 72, 73, 74, 75, 76 (Permits Regulation)

The combined cycle combustion turbines are affected units as defined in this regulation. The designated representative will submit an Acid Rain permit application for the turbines at least 24 months before operation commences.

Applicable - 61-62.96 (NO_x Budget Program)

The NO_x Budget Program regulation applies to units commencing operation on or after January 1999 that serve a generator with a nameplate capacity greater than 25 MWe and produces electricity for sale. The rule was established to mitigate the interstate transport of ozone and to limit summertime NO_x emissions in order to combat seasonal ozone formation. The new combustion turbines will be subject to the State's NO_x Budget Program. The facility will comply with the monitoring, recordkeeping and reporting requirements of the rule and will adopt these provisions for the new combustion turbines.

Applicable - 40 CFR 97 (Federal NO_x Budget Trading Program, CAIR NO_x and SO₂ Trading Programs, CSAPR NO_x and SO₂ Trading Programs, and Texas SO₂ Trading Program)

The combined cycle combustion turbines are CSAPR NO_x Annual units subject to the requirements of this regulation.



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AMBIENT AIR STANDARDS REVIEW

Applicable - Standard No. 2 (Ambient Air Quality Standards)

See modeling summary dated DRAFT

Not Applicable - Standard No. 8 (state only) (Toxic Air Pollutants)

The Project combustion sources only burn virgin fuel. A de minimis evaluation was performed for TAPs associated with the ULSD storage tanks and fugitive emissions from leaks and all TAPs are below the de minimis and therefore exempt from air quality analysis under Standard No. 8.

PERIODIC MONITORING					
ID	Applicable Requirement	Measured Parameter	Required Monitoring Frequency	Reporting Frequency	Monitoring Justification Basis/
CT-1, CT-2, EDG-1, DFP-1, TK-1, TK-2	Standard No. 4, Section IX - Opacity (B.11)	Visual Inspections	Semiannual	Semiannual	Opacity is not expected, and qualitative visual inspections shall suffice for monitoring
CT-1, CT-2, AUX-1, DPH-1, DPH-2, CS Heaters-1, CS Heaters-2, CS-ENG, Compressor Station	Standard No. 7 – BACT for PM filterable, PM ₁₀ , PM _{2.5} , SO ₂ (B.5)	Natural gas fuel sulfur content	Periodic fuel monitoring and/or fuel supplier certification as delivered	Semiannually	The PM filterable, PM ₁₀ , PM _{2.5} , and SO ₂ rely on limiting the sulfur content as fuel for their BACT.
CT-1, CT-2, EDG-1, DFP-1	Standard No. 7 – BACT for PM filterable, PM ₁₀ , PM _{2.5} , SO ₂ (B.7)	Fuel oil sulfur content	Fuel supplier certification as delivered	Semiannually	The PM filterable, PM ₁₀ , PM _{2.5} , and SO ₂ rely on limiting the sulfur content as fuel for their BACT.



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ID	Applicable Requirement	Measured Parameter	Required Monitoring Frequency	Reporting Frequency	Monitoring Basis/ Justification
CT-1, CT-2	Standard No. 7 - BACT (B.8)	Hours of fuel oil usage	Monthly	Semiannually	Fuel oil usage is limited to 500 full load equivalent hours annually as BACT. Full load equivalent hours can be calculated by dividing actual heat input (MMBtu) by the maximum rated capacity at peak load (MMBtu/hr).
CT-1, CT-2	Standard No. 7 - BACT (B.9)	Hours of simple cycle operation (bypass)	Monthly	Semiannually	Simple cycle operation (bypass) hours are limited to 500 full load equivalent hours per year as BACT. Full load equivalent hours can be calculated by dividing actual heat input (MMBtu) by the maximum rated capacity at peak load (MMBtu/hr).
CT-1, CT-2	Standard No. 7 (BACT limit for CO) (B.12)	CO CEMs, oxidation catalyst inlet temperature	Oxidation catalyst inlet temperature – 15 minutes	Maintain temperature readings on-site	CO CEMs (B.13), use of oxidation catalyst during combined cycle operation (B.14), and monitoring oxidation catalyst inlet temperature (B.15) will be used to demonstrate compliance with CO BACT limits
CT-1, CT-2	Standard No. 7 (BACT for Startups and Shutdowns) (B.17)	Number of cold start, warm start, hot start, and shutdown events	Per event / continuous	Semiannually	Limiting emissions from startup and shutdown events is BACT



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PERIODIC MONITORING

ID	Applicable Requirement	Measured Parameter	Required Monitoring Frequency	Reporting Frequency	Monitoring Justification Basis/
CT-1, CT-2	Standard No. 7 (BACT for burner tuning sessions, water injection system adjustments, and manufacturer-required FSNL tests) (B.18)	burner tuning sessions, water injection system adjustments, and FSNL tests	Per event / continuous	7-day advanced notice for planned tuning or tests. Notification within 1 day after emergent tuning or tests	Performing these tests and adjustments in accordance with manufacturer's specifications or determined best practices is BACT.
CT-1, CT-2	Standard No. 7 (BACT for CO, NO _x , VOC during fuel switches) (B.19)	Fuel switch	Per event / continuous	Semiannually	Limiting the duration of fuel switches to less than or equal to two hours (120 minutes per fuel switch and less than or equal to four hours (240 minutes) per 24-hour period is BACT for fuel switches
AUX-1	Standard No. 7 (BACT for CO, NO _x , VOC, filterable PM, PM ₁₀ , PM _{2.5} , SO ₂ , CO _{2e}) (B.20)	Heat input	Monthly	Semiannual	Limiting the capacity factor to less than or equal to 10% and monitoring heat input via fuel usage is BACT
EDG-1, CS-ENG, DFP-1	Standard No. 7 (BACT for CO, NO _x , VOC, filterable PM, PM ₁₀ , PM _{2.5} , SO ₂) (B.22)	Non-emergency hours of operation	Monthly	Semiannual	Limiting non-emergency hours of operation for maintenance and testing to less than or equal to 100 hours per year is BACT



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PERIODIC MONITORING					
ID	Applicable Requirement	Measured Parameter	Required Monitoring Frequency	Reporting Frequency	Monitoring Basis/ Justification
Compressor Station	Standard No. 7 (BACT for CO, NO _x , VOC, filterable PM, PM ₁₀ , PM _{2.5} , SO ₂ , CO _{2e}) (B.25)	Flaring events	Per event / continuous	Semiannual	Limiting flaring events to less than or equal to one event per year and good combustion practices is BACT
CT-1, CT-2	Standard No. 7 (BACT for NO _x) (B.26)	NO _x CEMs	---	---	Usage of SCR, DLN, low-NO _x burners (on the duct burners during duct burner operation), water injection (when burning fuel oil) and CEMs monitoring per 40 CFR 60 Subpart KKKKa is BACT. KKKKa is a post-11/1990 Federal Regulation. Monitoring inherently adequate
CT-1, CT-2	Standard No. 7 (BACT limit for VOC) (B.30)	VOC source test, catalytic oxidation inlet temperature	Initial source tests and continuous	Semiannual	The initial VOC source tests and catalytic oxidation inlet temperature monitoring is BACT
Compressor Station	Standard No. 7 (BACT for VOC and CO _{2e} from piping leaks) (B.34)	AVO inspections	Monthly	Semiannual	AVO inspections and repairs is BACT
TK-1, TK-2		Submerged tank fill	Annual inspections	On site	Submerged filling, good operating practices,



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PERIODIC MONITORING					
ID	Applicable Requirement	Measured Parameter	Required Monitoring Frequency	Reporting Frequency	Monitoring Basis/ Justification
	Standard No. 7 (BACT for VOC) (B.35)	Diesel fuel throughput	Monthly	Semiannual	inspections & corrective actions, and limiting VOC emissions to less than or equal to 1.56 TPY by limiting diesel fuel throughput to 30,062,954 per tank per year is BACT
CT-1, CT-2	Standard No. 7 (BACT for filterable PM, PM ₁₀ , PM _{2.5}) (B.46)	Filterable PM, PM ₁₀ , PM _{2.5} source test	One time source test	One time	An initial 3-run source test will demonstrate compliance with BACT limits
CT-1, CT-2	S.C. Regulation 61-62.1, Section II(J)(2) (B.40)	Sulfuric acid mist source test	One time source test	One time	An initial source test will be used to verify sulfuric acid mist emissions
CT-1, CT-2	Standard No. 7 (BACT limits for CO ₂) (B.41)	Heat input	Daily	Semiannual	Heat input records will be maintained to demonstrate compliance with CO ₂ BACT limits
Circuit Breakers	Standard No. 7 (BACT limit for CO ₂) (B.44)	Low pressure events	Per event	Semiannual	Alarms will be used to alert the facility of low-pressure events. Corrective actions will ensure the lose rate of less than 0.5% per year
AUX-1	40 CFR 60 Subpart Db – SO ₂ limit (B.46) NO ₂ limit (B.47)	---	---	---	Post-11/1990 Federal Regulation. Monitoring inherently adequate
DPH-1, DPH-2	40 CFR 60 Subpart Dc (B.52)	---	---	---	Post-11/1990 Federal Regulation. Monitoring inherently adequate



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PERIODIC MONITORING					
ID	Applicable Requirement	Measured Parameter	Required Monitoring Frequency	Reporting Frequency	Monitoring Basis/ Justification
EDG-1, DFP-1	40 CFR 60 Subpart IIII NMHC + NO _x , CO, PM limits (B.54 & B.55)	---	---	---	Post-11/1990 Federal Regulation. Monitoring inherently adequate
CS-ENG	40 CFR 60 Subpart JJJJ NO _x , CO, VOC limits (B.62)	---	---	---	Post-11/1990 Federal Regulation. Monitoring inherently adequate
CT-1, CT- 2	40 CFR 60 Subpart KKKKa NO _x , SO ₂ limit (B.67, B.68, B.69)	---	---	---	Post-11/1990 Federal Regulation. Monitoring inherently adequate
CT-1, CT- 2	40 CFR 60 Subpart TTTTa CO ₂ limit (B.81)	---	---	---	Post-11/1990 Federal Regulation. Monitoring inherently adequate

PUBLIC NOTICE

This construction permit(s) will undergo a 30-day public notice period, in accordance with SC Regulation 61-62.1, Section II(N) and SC Regulation 61-62.5, Standard 7(Q).

SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.