DATE APPLICATION RECEIVED: June 5, 2015

FACILITY DESCRIPTION
The Dominion Carolina Gas Transmission LLC Bethune Compressor Station is located near the town of Bethune in Kershaw County. The primary purpose of the facility is to increase pressure in natural gas transmission pipelines passing through the facility. The facility operates four natural gas-fired combustion turbine compressor sets. The process has two Emission Units – 01 and 02. Emission Unit 01 has three combustion turbine compressor sets – B-1 through B-3. Each unit has a maximum heat input rating of 13.02 million British thermal units per hour (BTU/hr). Emission Unit 02 has one turbine compressor set, B-4, with a maximum heat input rating of 16.35 million BTU/hr. The Standard Industrial Classification (SIC) code is 4922 – Natural Gas Transmission, and the North American Industry Classification System (NAICS) code is 486210 – Pipeline Transportation of Natural Gas.

PROJECT DESCRIPTION
The facility has requested an initial Title V Operating permit.

CHANGES SINCE LAST OP ISSUANCE
The facility was issued a State operating permit on January 2, 2013 following the startup of three turbines (B-1, B-2, and B-3) that were permitted in construction permit CA. Construction permit CB was issued on November 15, 2013 for the installation of a 16.35 MMBtu/hr natural gas-fired combustion turbine compressor set, ID B-4, with one pneumatic auxiliary oil pump and starter (exempt source: EX-PD). The facility submitted a notification of startup for permit CB on July 1, 2014. The potential emissions from B-4 triggered the requirement for a Title V operating permit.

SOURCE TEST REQUIREMENTS
In order to demonstrate the compliance requirements of 40 CFR 60 Subpart KKKK for turbine B-4, Standards of Performance for Stationary Gas Turbines, the facility shall perform an initial performance test for SO_2 and subsequent tests shall be performed annually (condition C.8). One method of conducting performance tests is by periodically determining the sulfur content of the fuel, as described in 40 CFR 60.4415(a). The facility has filed a gas tariff to establish that the sulfur content is 20 grains of sulfur or less per 100 standard cubic feet, as required in 40 CFR 60.4365 (a). This meets the requirement of the initial performance test.

The facility must also perform annual source testing to demonstrate compliance with the NO_x emission limit of Subpart KKKK for B-4. (condition C.9). The initial NO_x emission test was conducted on October 1, 2014. The test demonstrated compliance with the limits in S.C. Regulation 61-62.5, Standard 5.2 (Control of Oxides of Nitrogen (NO_x)) as well as Subpart KKKK.

SPECIAL CONDITIONS, MONITORING, LIMITS

Applicability of 40 CFR 60 for ID B-4
For the purposes of 40 CFR 60, Subpart KKKK, Standards of Performance for Stationary Combustion Turbines, turbine compressor set B-4 at Emission Unit 02 is considered a modified or reconstructed turbine less than 50 million BTU/hr. For NSPS Subpart KKKK, Table 1 to the subpart has different NO_x emission standards based on the combustion turbine type. The turbine was installed in June 2014, yet ID B-4 is a vintage turbine that was originally constructed in the 1960s and was refurbished prior to being located at Bethune Compressor Station in June 2014. Though some justification exists that the refurbishment of the turbine does not meet the definition of "reconstruction" under NSPS (e.g., 50% reconstruction costs), the facility voluntarily assumed the unit was "reconstructed" as part of the construction permitting process. Unit B-4 is subject to the NO_x emission standard of 150 ppm at 15% O_2 as described in Table 1 of Subpart KKKK. The turbine is not considered a new turbine firing natural gas only.

EMISSIONS

Greenhouse Gas Emissions:
The facility provided emissions of greenhouse gases for the permit application. The potential emissions of greenhouse gases reported as CO_2e are less than 100,000 TPY. The emissions were greater than 250 tons per year on a mass basis. On June 23, 2014, the United States Supreme Court issued a decision that the EPA was not authorized to specify greenhouse gases as a pollutant that would establish applicability to the requirements of the Title V Operating Permit program or the Prevention of Significant Deterioration. The Court did establish that the EPA had the authority to regulate greenhouse gases. Until the EPA makes further revisions to regulations regarding greenhouse gas emissions, the Department will not require facilities to quantify these emissions for regulatory purposes.

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FACILITY WIDE EMISSIONS		
Pollutant	**Uncontrolled Emissions**	**Controlled/Limited Emissions**
	TPY	**TPY**
$PM/PM_{10}/PM_{2.5}$	1.61	N/A
SO_2	0.15	N/A
NO_x	94.9	N/A
CO	121.2	N/A
VOC	5.0	N/A
Total HAPs	0.28	N/A

OPERATING PERMIT STATUS

The facility was issued a State Operating permit on January 2, 2013. The facility submitted a notification of startup for construction permit CB on July 1, 2014, and submitted a Title V operating permit application on June 5, 2015. The application was received within the 12-month period required for initial startup for facilities subject to the Title V operating program.

REGULATORY APPLICABILITY REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Section II.E - Synthetic Minor	This section is not applicable to the facility. The facility does not have federally enforceable conditions to limit its potential to emit.
Standard No. 1	This standard is not applicable to the facility. The turbines in use at the facility do not meet the definition of fuel burning sources since they are not used primarily for indirect heating.
Standard No. 3 (state only)	This standard does not apply to the facility. The facility does not burn waste other than virgin fuel.
Standard No. 4	This standard applies to the facility. The opacity limit of 20% for sources commencing construction after December 31, 1985 applies to the facility. The facility does not emit a significant amount of particulate matter from the turbines; therefore the PM limits are not applicable.
Standard No. 5	This standard does not apply to the facility. The facility does not emit significant amounts of VOC. It does not conduct any of the processes regulated by this standard, and the facility was not in existence or under construction on the effective date of the standard.
Standard No. 5.2	This standard is applicable to equipment ID B-4 at Emission Unit 02. Combustion turbine B-4 emits NO_x generated from fuel combustion, has not undergone a BACT analysis for NO_x, and is considered a new source that was constructed after June 25, 2004. In Section II – Definitions, the definition of constructed means the on-site fabrication, erection, or installation of the NO_x emitting source. Even though turbine B-4 was originally manufactured in the 1960s, by definition, it is considered a new source per Standard 5.2, since it was purchased from a supplier of refurbished turbines. Per Section III, Table 1 of the Standard, the applicable NO_x control limitation for turbines less than 50 megawatts (MW) is 25 parts per million by volume (ppmvd), on a dry basis, corrected to 15 % O_2 (ppmvdc). Research (*Standard 5.2 Development File*) from the facility suggests that the 25 ppmvd limitation is not technically and economically

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Regulation	Comments/Periodic Monitoring Requirements
	feasible for small (<3.5 MW) combustion turbines. As a result, the facility requested an alternate control limitation of 150 ppmvdc (based on 40 CFR 60, Subpart KKKK) by submitting a demonstration that the alternate limitation meets the definition of a Case-by-Case NO_x control as defined in Section II of the Standard. The results of the analysis concluded that EM_x^{TM}, water/steam injection, and lean pre-mix combustion were all technically infeasible; and the SCR options were economically infeasible for combustion turbine B-4. During the construction permitting process for permit CB, the Department reviewed the facility's Case-by-Case NO_x Analysis and approved the control limitation of 150 ppmvdc. The facility shall perform tune-ups every two years per Section VI of the Regulation. Combustion turbines B-1 through B-3 were evaluated for applicability to the requirements of Standard 5.2. These turbines were constructed in the early 1960s at a permitted facility - Camden Compressor Station (1380-0045). When the Camden Compressor Station was closed down, the turbines were relocated to the Bethune Compressor Station, which is another permitted facility within the state under common ownership. In accordance with Section I – Applicability, part (a)(3), turbines B-1 through B-3 are existing sources that are not subject to this standard. If the burners are replaced, the turbines will not become subject to the standard, since, per the definition of burner assembly in Section II, a self-contained chamber such as is found on a combustion turbine is not a burner assembly for the purposes of Standard 5.2.
Standard No. 7	This standard does not apply to the facility. The facility is not one of the 28 categories subject to the 100 ton per year applicability threshold for New Source Review (NSR) regulated pollutants at stationary sources. The facility does not emit NSR pollutants above the 250 ton per year applicability threshold for stationary sources not included in the 28 categories; therefore, it is not considered a major stationary source in accordance with this standard.
61-62.6	This standard applies to the facility. Fugitive particulate matter at the facility shall be minimized so that it does not create an undesirable level of air pollution.
40 CFR 60 and 61-62.60	The facility is subject to certain subparts of these regulations. The facility has an emergency generator, ID EX-EG1, that is subject to the requirements of 40 CFR 60 and 61-62.60, Subparts A and JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines), since the generator commenced construction after June 12, 2006 and the engine was manufactured on or after July 1, 2007. To demonstrate compliance, it will be limited to 100 hours per year for maintenance and readiness testing and equipped with a device to record actual hours of use. The emergency generator is not subject to 40 CFR 60 and 61-62.60, Subpart IIII: Standards Of Performance For Stationary Compression Ignition Internal Combustion Engines since the engine does not meet the definition of compression ignition as defined in 40 CFR 60.4219, Definitions, of this Subpart. The turbine compressor set at Emission Unit 02, ID B-4, is subject to Subpart A – General Provisions, and Subpart KKKK - Standards Of Performance For Stationary Combustion Turbines. The combustion turbine has a heat input greater than 10 MMBtu/hr, and during the construction permitting process, the facility voluntarily assumed that construction, modification, or reconstruction after February 18, 2005.

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Regulation	Comments/Periodic Monitoring Requirements
	Turbines B1, B2, and B3 at Emission Unit 01 are not subject to 40 CFR 60 Subpart KKKK: Standards Of Performance For Stationary Combustion Turbines because they were all constructed prior to the applicability date (February 2005) of the regulation. The sources were evaluated for applicability to NSPS Subparts D, Db, and Dc, which cover steam-generating units. None of the equipment is a steam generating unit. Subparts D, Db, and Dc are not applicable. The sources were evaluated for applicability to NSPS Subparts K, Ka, and Kb, which cover volatile organic liquids (VOL) storage vessels of certain sizes and certain construction, reconstruction, and modification dates. None of the storage vessels meet the storage capacity thresholds for applicability to these subparts. The sources were evaluated for applicability to NSPS Subpart GG (Stationary Gas Turbines). This subpart applies to stationary gas turbines with a heat input at peak load of greater than or equal to 10 million BTU/hr, and that were constructed, modified, or reconstructed after October 3, 1977. Turbines B-1 through B-3 were constructed prior to October 3, 1977; therefore, they are not subject to the requirements of this subpart. Turbine B-4 is subject to the requirements of NSPS Subpart KKKK. Per Subpart KKKK, 60.4305(b), Stationary combustion turbines regulated under this subpart are exempt from the requirements of subpart GG of this part. The facility was evaluated for applicability to NSPS Subpart OOOO (Crude Oil and Natural Gas Production, Transmission, and Distribution). The requirements of this subpart apply to facilities listed in paragraphs (a) through (g) of 60.5365 that were constructed, modified, or reconstructed after August 23, 2011. The turbines are not affected facilities. Paragraph (e) refers to storage vessels located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment, and has the potential for VOC emissions equal to or greater than 6 tons per year by certain dates for particular classes of the vessels. Since the potential to emit at the storage vessels is less than 6 tons per year, this subpart does not apply to the facility. On May 12, 2016, new standards were established at Subpart OOOOa: Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources. This subpart sets standards for greenhouse gases and volatile organic compounds. This standard does not apply to any existing sources at the facility; however, for sources that may be installed after the effective date of this permit, a condition has been inserted (C.11) to indicate that applicable sources must be in compliance as indicated in the standard.
40 CFR 61 and 61-62.61	This regulation does not apply to the facility. The facility does not operate any of the affected sources that are subject to this regulation. The facility does not produce or process any of the affected pollutants that are subject to this regulation.
40 CFR 63 and 61-62.63	The facility is subject to certain subparts of these regulations. The facility is not a major source for Hazardous Air Pollutants (HAPs), since the HAP emissions are less than 10 tons per year for a single HAP and 25 tons per year for total HAPs. The facility has an emergency generator, ID EX-EG1 that is subject to S.C. Regulation 61-62.63 and 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants, Subparts A and ZZZZ: Stationary Reciprocating Internal Combustion Engines, since construction commenced after June 12, 2006. As stated in 40 CFR 63.6590(c), new stationary RICE meet the requirements of this standard by meeting the requirements of 40 CFR 60 and 61-62.60, Subparts A and JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines).

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Regulation	Comments/Periodic Monitoring Requirements
	The facility was evaluated for applicability to Subpart HH – Natural Gas Production Facilities. This subpart applies to major or area sources of HAPs. Since the facility is not a natural gas production facility, and it does not operate dehydration units, this subpart does not apply. The facility was evaluated for applicability to Subpart HHH – Natural Gas Transmission and Storage Facilities. This subpart applies to major source 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. The affected source is each new and existing glycol dehydration unit. Since the facility is not a major source, and since it does not have glycol dehydration units, the requirements of this subpart do not apply. The facility was evaluated for applicability to Subpart EEEE – Organic Liquids Distribution (non-gasoline). This subpart applies to facilities that own or operate an OLD (organic liquid distribution) operation that is located at, or is part of, a major source of HAP emissions. Since the facility is not a major source for HAP, the facility would not be subject to the requirements of this subpart. In addition, per Subpart EEEE, 63.2334(c)(2), natural gas transmission and storage facilities, as defined in Subpart HHH, are not subject to the requirements of part EEEE; therefore, if the facility were to potentially become a major source for HAP, the requirements of Subpart HHH would apply instead of those of Subpart EEEE. The facility was evaluated for applicability to the requirements of Subpart YYYY – Stationary Combustion Turbines. This subpart applies to owners or operators of stationary combustion turbines located at a major source of HAP emissions. Since the facility is not a major source for HAP, the requirements of this subpart do not apply.
61-62.68	This regulation does not apply to the facility. The facility does not use or store chemicals above the threshold quantities.
40 CFR 64	This regulation does not apply to the facility. The potential emissions of carbon monoxide (CO) exceed the Title V threshold limits of 100 tons per year; however, the facility does not use a control device for CO emissions.

AMBIENT AIR STANDARDS REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Standard No. 2	This standard is applicable to the facility. The facility has demonstrated compliance through modeling; see modeling summary dated October 31, 2013.
Standard No. 7.c	This standard is applicable to the facility. The facility has demonstrated compliance through modeling; see modeling summary dated October 31, 2013.
Standard No. 8 (state only)	This standard is applicable to the facility. The facility has demonstrated compliance through modeling; see modeling summary dated October 31, 2013.

PUBLIC NOTICE
This Title V Permit will undergo a 30-day public notice period and a 45-day EPA comment period in accordance with SC Regulation

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61-62.1, Section II.N. This permit was placed in the Chronicle Independent on June 17, 2016. The comment period was open from June 17, 2016 to July 16, 2016 and was placed on the BAQ website during that time period.

ADDITIONAL PUBLIC PARTICIPATION

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.

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