

Fact Sheet



For Final Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-01300017-2020**
Application Received: **December 20, 2019**
Plant Identification Number: **013-00017**
Permittee: **Columbia Gas Transmission, LLC**
Facility Name: **White Oak Compressor Station**
Mailing Address: **1700 MacCorkle Avenue, SE**
Charleston, WV 25314

Physical Location:	Brohard, Calhoun County, West Virginia
UTM Coordinates:	Easting: 487.7 km Northing: 4,321.4 km Zone: 17
Directions:	From the town of Brohard, head southeast on Brohard Rd. toward Dutchman Run and turn right to stay on Brohard Rd. Continue on Co. Route 5/3. In approximately 1 mile, turn left on to Co. Route 21/3. The Station will be on the right in approximately 1.6 miles.

Facility Description

This facility is a natural gas transmission compressor station. Pipeline transmission of natural gas requires that the gas be compressed. The White Oak Compressor Station will receive natural gas via pipeline from an upstream compressor station, compress it using natural gas fired turbines and transmit it via pipeline to a downstream station. The two (2) Solar Titan 130E turbines each have an output of 20,912 hp at 32 °F. The facility will also consist of one (1) 1,175 hp Waukesha natural gas fired emergency generator, one (1) process heater rated at 1.41 million British Thermal Units per hour (MMBTU/hr), and forty (40) catalytic heaters, each rated at 0.072 MMBTU/hr. Additionally, there will be one (1) 2,000 gallon condensate storage tank.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2019 Actual Emissions
Carbon Monoxide (CO)	212.31	21.51
Nitrogen Oxides (NO _x)	89.34	8.83
Particulate Matter (PM _{2.5})	10.31	2.75
Particulate Matter (PM ₁₀)	10.31	2.75
Total Particulate Matter (TSP)	10.31	2.75
Sulfur Dioxide (SO ₂)	1.11	0.13
Volatile Organic Compounds (VOC)	18.07	2.96

PM₁₀ is a component of TSP.

Hazardous Air Pollutants	Potential Emissions	2019 Actual Emissions
Formaldehyde	1.25	0.14
Total HAPs	2.21	0.20

Some of the above HAPs may be counted as PM or VOCs.

Title V Program Applicability Basis

This facility has the potential to emit 212.31 tons per year of CO. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, Columbia Gas Transmission, LLC is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers
	45CSR6	Open burning prohibited.
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, Permission to Commence Construction, and Procedures for Evaluation.
	45CSR16	Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60

	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	45CSR34	Emission Standard for Hazardous Air Pollutants
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI ICE)
	40 C.F.R. 60 Subpart KKKK	Standards of Performance for Stationary Combustion Turbines
	40 C.F.R. Part 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)
	40 C.F.R. Part 82, Subpart F	Ozone depleting substances
State Only:	45CSR4	No objectionable odors.
	45CSR17	Prevention and Control of Fugitive PM

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (<i>if any</i>)
R13-3315	November 14, 2016	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

Determinations and Justifications

Section 3.0: Facility Wide Requirements

The following boilerplate Title V permit condition had a citation for an R13-3315 condition added:

Title V Permit Condition	Summary of Permit Condition	R13-3315 Condition
3.4.1.	Monitoring records	4.1.1.

Section 4.0: Turbines [emission point IDs: T01, T02]

These turbines are subject to the following:

- NSR Permit Requirements
- 45CSR16
- 40CFR60 Subpart KKKK: Per §60.4305, Subpart KKKK applies to combustion turbines with a peak heat input of 10 MMBTU/hr or greater. Since the turbines (T01, T02) are rated at 175.56, they are subject to the rule. Applicable requirements were added for the turbines (T01, T02) in section 4 of this permit.

§60.4320(a) requires the turbines to meet the NO_x requirement in Table 1 of the rule. Since the turbines are new, natural gas fired turbines between 50 and 850 MMBTU/hr, Table 1 requires them to meet a NO_x limit of 25 ppm at 15% O₂ or 150 ng/J of useful output. To demonstrate compliance with the limit, §60.4400(a) requires both an initial (within 180 days of startup or 60 days of achieving full load operation) and annual (not to exceed 14 months from previous test) performance test.

However, §60.4340 allows the permittee to be exempted from the annual testing if continuous emission monitors or continuous parameter monitoring systems are installed that meet the requirements of the section. Additionally, if the NO_x testing results show emissions less than 75% of the limit, testing frequency can be reduced to once every 2 years (with no more than 26 months after the previous test).

The rule also limits SO₂ emissions from the turbines. §60.4330(a)(2) allows the facility to meet this limit by burning fuel with total potential SO₂ emissions of less than 0.060 lb SO₂/MMBTU. Additionally, §60.4365(a) exempts the permittee from monitoring fuel sulfur content if a source burns only natural gas that is covered by a purchase or transportation contract that limits sulfur to no more than 20 grains of sulfur per 100 scf. The White Oak Compressor Station qualifies for this exemption.

The following permit conditions apply to these turbines:

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3315 Condition
4.1.1.	Operate and maintain the turbines in accordance with the manufacturer’s recommendations and specifications and in a manner consistent with good operating practices and shall only burn pipeline-quality natural gas.	N/A	5.1.1.
4.1.2.	Annual emission limits: NO _x , CO, VOC, SO ₂ , PM ₁₀ , CH ₂ O	N/A	5.1.2.
4.1.3.	Hourly emission limits for T01 and T02: NO _x , CO, VOC, PM ₁₀ , and SO ₂	N/A	5.1.3.
4.1.4.	Natural gas consumption limits	N/A	5.1.4.
4.1.5.	NO _x emission limits	45CSR16; 40CFR§60.4320(a) and Table 1 to 40CFR60 Subpart KKKK	5.1.5.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3315 Condition
4.1.6.	SO ₂ emission limits	45CSR16; 40CFR§60.4330(a)(2) and §60.4365(a)	5.1.6.
4.1.7.	Operate in a manner consistent with good air pollution control practices	45CSR16; 40CFR§60.4333(a)	5.1.7.
4.3.1.	Initial and subsequent performance testing: NO _x emission limits	45CSR16; 40CFR§60.8(a), §60.4340(a), and §60.4400	5.2.1.
4.3.2.	Initial and periodic performance testing: CO emission limits	N/A	5.2.2.
4.4.1.	Records of natural gas consumed and hours of operation	N/A	5.3.1.
4.4.2.	Maintain fuel quality characteristics in a purchase contract, tariff sheet or transportation contract, specifying maximum total sulfur content	45CSR16; 40CFR§60.4365(a)	5.3.2.
4.4.3.	Monthly emissions calculations	N/A	5.3.3.
4.5.1.	Notification of initial startup of turbines	45CSR16; 40CFR§60.7(a)(3)	5.4.1.
4.5.2.	Reporting of testing in 4.3.1. and 4.3.2.	45CSR16; 40CFR§60.4375(b)	5.4.2.

Section 5.0: Emergency Generator [emission point ID: G1]

The emergency generator is subject to the following:

- NSR Permit Requirements
- 45CSR16
- 45CSR34
- **40CFR60 Subpart JJJJ-** Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI ICE)

40CFR60 Subpart JJJJ establishes emission standards for SI ICE. The 1,175 hp Waukesha emergency generator (G1) was manufactured after the January 1, 2009 applicability date for emergency engines. G1 is not a certified engine and is subject to the following emission limits: NO_x - 2.0 g/hp-hr (5.18 lb/hr); CO - 4.0 g/hp-hr (10.36 lb/hr); and VOC - 1.0 g/hp-hr (2.59 lb/hr). Applicable requirements for Waukesha emergency generator (G1) were added in section 5 of this permit.

- **40 CFR 63 Subpart ZZZZ-** National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)

The White Oak Compressor Station is classified as an area source of HAPs and the engine (Emission Unit ID-G1) will be required to comply with the requirements of Subpart JJJJ to Part 60. According to 40 CFR §63.6590(c) and (c)(1), a new spark ignition RICE located at an area source must meet the requirements of

Subpart ZZZZ by meeting the requirements of 40 CFR 60 Subpart JJJJ and no further requirements of Subpart ZZZZ to Part 63 apply to this engine.

The following permit conditions apply to the emergency generator:

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3315 Condition
5.1.1.	Maximum yearly operating limitation	N/A	6.1.1.
5.1.2.	NSR NO _x , CO, and VOC emission limits ¹	N/A	6.1.2.
5.1.3.	40CFR60, Subpart JJJJ NO _x , CO, and VOC emission limits	45CSR16; 40CFR§60.4233(e); Table 1 to 40CFR60, Subpart JJJJ	6.2.1.
5.1.4.	Operate and maintain to achieve emission standards for life of engine	45CSR16; 40CFR§60.4234	6.2.2.
5.1.5.	Install non-resettable hour meter	45CSR16; 40CFR§60.4237(a)	6.3.1.
5.1.6.	Compliance demonstration: maintenance plan for non-certified engine and periodic testing	45CSR16; 40CFR§§60.4243(b)(2) and (b)(2)(ii)	6.4.1.
5.1.7.	Hours of operation limits for emergency and non-emergency use	45CSR16; 40CFR§60.4243(d)	6.4.2.
5.1.8.	Alternative fuel: propane	45CSR16; 40CFR§60.4243(e)	6.4.3.
5.1.9.	40CFR63, Subpart ZZZZ compliance by complying with 40CFR60, Subpart JJJJ	45CSR34; 40CFR§63.6590(c)	N/A
5.3.1.	Performance Testing	45CSR16; 40CFR§60.4244	6.5.1.
5.4.1.	Records of Notification, Maintenance, Engine Documentation, Hours of Operation	45CSR16; 40CFR§§60.4245(a) and (b)	6.6.1.a. and b.
5.5.1.	Initial notification and performance testing reporting`	45CSR16; 40CFR§§60.4245(c) and (d)	6.6.1.c. and d.
5.5.2.	Reporting of Operation/Contractual Operation	45CSR16; 40CFR§60.4245(e)	N/A

¹Compliance with this condition ensures compliance with condition 5.1.3.

Section 6.0: Heaters [emission unit IDs: HTR1, HTR2]

These heaters are subject to the following:

- NSR Permit Requirements
- 45CSR2: 45CSR2 “establishes emission limitations for smoke and particulate matter which are discharged from fuel burning units.” A fuel burning unit is defined under 45CSR2 as any “furnace,

boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer.” The process heaters are defined as fuel burning units and are subject to 45CSR2. The heaters are <10MMBTU/hr and are only subject to the opacity limit in 45CSR§2-3.1 per 45CSR§2-11.1.

The following permit conditions apply to these heaters.

Title V Permit Condition	Summary of Permit Condition	Regulatory Citation	R13-3315 Condition
6.1.1.	Maximum design heat input	N/A	7.1.1.
6.1.2.	10% opacity limit	45CSR§2-3.1.	7.1.2.
6.2.1.	Method 9 observations	N/A	7.2.1.
6.3.1.	Test methods for visible emissions	45CSR§2-3.2.	7.3.1.
6.4.1.	Records of monitoring data	N/A	7.4.1.

40CFR60, Subpart OOOOa Requirements

During the comment period, the natural gas transmission and storage segment was removed from the affected source category for 40 CFR 60 Subpart OOOOa. The final rule was published in the Federal Register on September 14, 2020. The changes to Subpart OOOOa became effective on September 14, 2020 and transmission stations are no longer subject to the requirements of this subpart. As a result, the Subpart OOOOa LDAR requirements previously in Section 7 of the Title V permit were removed from the final Title V permit for the White Oak Compressor Station.

40CFR64: Compliance Assurance Monitoring

Initial Title V Permit Applications must only include a CAM plan for large Pollutant Specific Emission Units (PSEUs). Since emissions at this facility are below major source thresholds for each PSEU, a CAM plan was not required with this application. CAM will, however, be re-evaluated at this permit’s renewal.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

40CFR60, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. The heaters are less than 10 MMBtu/hr, therefore, according to 40CFR§60.40c(a), this rule does not apply.
40CFR63, Subpart JJJJJ	NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources. According to 40CFR§63.11195(e) natural gas fired boilers are not subject to this subpart.
40CFR60, Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced After August 23, 2011, and on or before September 18, 2015. The equipment at this facility was installed in 2017, which is after the applicability date specified in 40CFR§60.5365, therefore this rule does not apply.

Request for Variances or Alternatives

None

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: July 30, 2020
Ending Date: August 31, 2020

Point of Contact

All written comments should be addressed to the following individual and office:

Beena Modi
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 41283
Beena.j.modi@wv.gov

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Response to Comments (Statement of Basis)

No comments were received during the draft/proposed comment period. However, the following changes have been made to the final Title V permit:

- Reporting condition 5.5.2 was added to include the applicable requirements from 40 CFR§60.4245(e) for emergency generator G1.
- Columbia Gas' White Oak Compressor Station is a natural gas transmission station and Subpart OOOOa LDAR requirements were included in the draft/proposed permit. During the comment period, the natural gas transmission and storage segment was removed from the 40 CFR 60 Subpart OOOOa affected source category. The final rule was published in the Federal Register on September 14, 2020. The changes to Subpart OOOOa became effective on September 14, 2020 and transmission stations are no longer subject to the requirements of this subpart. As a result, the Subpart OOOOa LDAR requirements previously in Section 7 were removed from the final Title V permit for the White Oak Compressor Station.