

Fact Sheet



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

Permit Number: **R30-10300010-2012**
Application Received: **November 2, 2011**
Plant Identification Number: **03-54-103-00010**
Permittee: **Columbia Gas Transmission, LLC**
Facility Name: **Smithfield Compressor Station**
Mailing Address: **1700 MacCorkle Avenue, S.E., Charleston, WV 25314**

Physical Location: Smithfield, Wetzel County, West Virginia
UTM Coordinates: 539.68 km Easting • 4,370.03 km Northing • Zone 17
Directions: Traveling north of U.S. Route 19 from Clarksburg to the intersection with State Route 20, turn left onto Route 20. Proceed west on Route 20 for approximately 1.8 miles past the town of Folsom to the station, which is on the left side of the road and visible.

Facility Description

Columbia Gas Transmission, LLC, Smithfield Compressor Station is a natural gas transmission facility covered by a Standard Industrial Classification (SIC) of 4922 and a North American Industrial Classification System (NAICS) of 48621. The station has the potential to operate seven (7) days per week, twenty-four (24) hours per day. The station consists of one (1) 3.4 MMBtu/hr heating system boiler, two (2) indirect-fired line heaters, two (2) 1500 HP natural gas fired reciprocating engines, one (1) 6,736 HP compressor turbine, one (1) 250 HP natural gas fired reciprocating engine with generator for emergency use only, and numerous storage tanks of various sizes.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2011 Actual Emissions
Carbon Monoxide (CO)	71.64	6.59
Nitrogen Oxides (NO _x)	537.06	53.57
Particulate Matter (PM ₁₀)	0.50	0.01
Total Particulate Matter (TSP)	0.50	0.01
Sulfur Dioxide (SO ₂)	1.55	0.02
Volatile Organic Compounds (VOC)	16.58	2.36
<i>PM₁₀ is a component of TSP.</i>		
Hazardous Air Pollutants	Potential Emissions	2011 Actual Emissions
Total HAPs	8.16	1.02
<i>Some of the above HAPs may be counted as PM or VOCs.</i>		
HAPs are not speciated because no applicability was triggered. The triggers are 10 TPY for a single HAP and 25 TPY of Total HAPs. The HAP with the highest PTE is formaldehyde at 6.78 TPY. Benzene has a PTE of 0.06 TPY.		

Title V Program Applicability Basis

This facility has the potential to emit 537.06 tons of Nitrogen Oxides (NO_x) per year. 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 | 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, Temporary Permits, General Permits, and Procedures for Evaluation |

	45CSR16	Standards of Performance for New Stationary Sources Pursuant to 40 C.F.R. 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
	45CSR40	Control of Ozone Season Nitrogen Oxides Emissions
	40 C.F.R. Part 61 Subpart M	Asbestos inspection and removal
	40 C.F.R. Part 60 Subpart GG	Standards of Performance for Stationary Gas Turbines
	40 C.F.R. Part 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
	40 C.F.R. Part 82 Subpart F	Ozone depleting substances
State Only:	45CSR4	No objectionable odors.
	45CSR17	To Prevent And Control Particulate Matter Air Pollution From Materials Handling, Preparation, Storage And Other Sources Of Fugitive Particulate Matter

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 (NSPS), 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>)
R13-2064E	06/27/2006	
CO-R1-C-2007-4A(2005)	03/01/2007	

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 B," which may be downloaded from DAQ's website.

Determinations and Justifications

Columbia Gas Transmission, LLC, Smithfield Compressor Station was previously registered under General Permit R30-NGGP-2007 for Natural Gas Compressor Facilities. The Division of Air Quality did not renew the general permit for natural gas compressor facilities, therefore this facility’s renewal will be issued as a source-specific permit. The source-specific permit includes various requirements which are potentially applicable to natural gas compressor stations. The applicable requirements column in the Section 1.0 Emission Units Table of the permit indicates which of the requirements in Sections 2.0 through 24.0 are applicable to each emissions unit.

Since the previous Title V renewal, the engines at the Smithfield Compressor Station have become subject to 40 C.F.R. Part 63 Subpart ZZZZ.

40 C.F.R. Part 63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

The Columbia Gas Transmission, LLC, Smithfield Compressor Station has two (2) 1500 HP reciprocating engines and a 250 HP reciprocating engine with generator subject to the area source provisions under 40 C.F.R. Part 63 Subpart ZZZZ. The reciprocating engines are existing sources constructed prior to June 12, 2006. The facility shall comply with all applicable requirements of 40 C.F.R. Part 63 Subpart ZZZZ by October 19, 2013 per 40 C.F.R. § 63.6595 (a).

Although non-major area source MACT provisions under 40 C.F.R. Part 63 Subpart ZZZZ are excluded from state delegation in 45CSR34, these requirements are applicable requirements under 45CSR§30-2.6.d, which includes any requirement subject to §112 of the CAA.

The 1500 HP engines (09801 and 09802) are existing non-emergency spark-ignition (SI) four-stroke lean burn (4SLB) Ingersoll-Rand 412 KVGB Reciprocating Engines/Integral Compressors greater than 500 HP that combust pipeline quality natural gas. The 250 HP engine (098G2) is an existing emergency spark-ignition (SI) Waukesha VSG11GSI Reciprocating Engine/generator less than or equal to 500 HP that combusts pipeline quality natural gas. Engines (09801 and 09802) are subject to the emission limitations for a non-emergency, non-black start 4SLB stationary RICE as specified in Table 2d, Item 8 (limit concentration of CO in the stationary RICE exhaust to 47 ppmvd at 15 percent O₂; or reduce CO emissions by 93 percent or more) and the operating limitations as specified in Table 2b. Engine (098G2) is subject to the requirements for an emergency stationary SI RICE as specified in Table 2d, Item 5 (every 500 hours of operation or annually, whichever comes first, change oil/filter and inspect hoses and belts; inspect spark plugs every 1000 hours of operation or annually, whichever comes first).

Following, are the applicable RICE MACT requirements according to the “Summary of Requirements” table provided by EPA.

Emission Unit ID	Emission Limitations	Operating Limitations	Performance Testing	Monitoring Requirements	Initial Compliance	Continuous Compliance	Notification Requirements	Record-keeping Requirements	Reporting Requirements
09801 09802	§ 63.6603 Table 2d, Item 8	§ 63.6603 Table 2b	§ 63.6612 § 63.6615 § 63.6620 Table 3 Table 4 Table 5	§§ 63.6625 (a), (b), (h)	§ 63.6630 Table 5	§ 63.6605 § 63.6635 § 63.6640	§ 63.6645	§§ 63.6655 (a), (b), (d)	§§ 63.6650 (a) – (f)
098G2	§ 63.6603 Table 2d, Item 5	None	None	§§ 63.6625 (e), (f), (h), (j)	None	§ 63.6605 § 63.6640	None	§§ 63.6655 (a), (b), (d), (e), (f)	Footnote 2 of Table 2d

Emission Unit ID	General Provisions (40 C.F.R. Part 63)
09801 09802	Yes
098G2	Yes, except per 40 C.F.R. § 63.6645 (a) (5), the following do not apply: 40 C.F.R. §§ 63.7 (b) and (c), 63.8 (e), (f) (4) and (f) (6), and 63.9 (b)-(e), (g) and (h).

40 C.F.R. Part 60 Subpart GG - Standards of Performance for Stationary Gas Turbines

40 C.F.R. Part 60 Subpart GG applies to a facility that has a stationary gas turbine with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the lower heating value of the fuel fired, which commenced construction, modification, or reconstruction after October 3, 1977.

The Columbia Gas Transmission, LLC, Smithfield Compressor Station has one (1) 6,736 HP turbine engine with a centrifugal compressor that is subject to provisions under 40 C.F.R. Part 60 Subpart GG.

40 C.F.R. Part 60 Subpart GG limits nitrogen oxides [40 C.F.R. § 60.332] and sulfur dioxide [40 C.F.R. § 60.333] emissions. There are monitoring requirements [40 C.F.R. § 60.334] to demonstrate compliance with the nitrogen oxides and sulfur dioxide emission limits. Performance testing [40 C.F.R. § 60.335] is required to demonstrate compliance for the nitrogen oxides and sulfur dioxide emission limits.

Columbia Gas Transmission, LLC has not made any significant modifications to the Smithfield Compressor Station that would trigger a PSD permit; therefore, the requirements of the GHG tailoring rule do not apply.

Non-Applicability Determinations

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

45CSR§4-7.1	45CSR4 shall not apply to the following sources of objectionable odor until such time as feasible control methods are developed: Internal combustion engines. [State-Enforceable Only]
45CSR10	To Prevent and Control Air Pollution from the Emission of Sulfur Dioxide - Emissions from Indirect Heat Exchangers. WVDEP has determined that 45CSR10 does not apply to gas fired engines. Also, 45CSR10 is not applicable to the facility boiler and heaters because they are less than 10 MMBtu/hr.
45CSR21	To Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds: All storage tanks at Smithfield Compressor Station are below 40,000 gallons in capacity which exempts the facility from 45CSR§21-28. Smithfield Compressor Station is not engaged in the extraction or fractionation of natural gas which exempts the facility from 45CSR§21-29.
45CSR27	To Prevent and Control the Emissions of Toxic Air Pollutants: Natural gas is included as a petroleum product and contains less than 5% benzene by weight. 45CSR§27-2.4 exempts equipment “used in the production and distribution of petroleum products providing that such equipment does not produce or contact materials containing more than 5% benzene by weight.”
40 C.F.R. Part 60 Subpart Dc	A standard of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Since Smithfield Compressor Station’s boiler and line heaters are less than 10 MMBtu/hr, 40 C.F.R. Part 60 Subpart Dc does not apply.
40 C.F.R. Part 60 Subparts K, Ka	Standards of Performance for Storage Vessels for Petroleum Liquids. All tanks at the Smithfield Compressor Station are below 40,000 gallons in capacity.
40 C.F.R. Part 60 Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels. All tanks at Smithfield Compressor Station are below 75 m ³ in capacity.

40 C.F.R. Part 60 Subpart KKK	Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plant. Smithfield Compressor Station is not engaged in the extraction or fractionation of natural gas liquids from field gas, the fractionation of mixed natural gas liquids to natural gas products, or both.
40 C.F.R. Part 60 Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. The Smithfield Compressor Station does not have any compression ignition internal combustion engines.
40 C.F.R. Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. The Smithfield Compressor Station's reciprocating engine were manufactured before the July 12, 2006 applicability date for 40 C.F.R. Part 60 Subpart JJJJ.
40 C.F.R. Part 60 Subpart KKKK	Standards of Performance for Stationary Combustion Turbines does not apply to the Smithfield Compressor Station since the combustion turbine was installed before the February 18, 2005 applicability date for 40 C.F.R. Part 60 Subpart KKKK.
40 C.F.R. Part 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution. This station has not commenced construction, modification, or reconstruction after August 23, 2011. Therefore, it is not subject to this subpart.
40 C.F.R. Part 63 Subpart HH	National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities. The Smithfield Compressor Station is not subject to Subpart HH since the station is not an oil and gas production facility.
40 C.F.R. Part 63 Subpart HHH	National Emission Standards for Hazardous Air Pollutants from Natural Gas Transmission and Storage Facilities. The Smithfield Compressor Station is not subject to Subpart HHH since the station does not have a glycol dehydration facility as well as the station is not a major source of HAPs.
40 C.F.R. Part 63 Subpart YYYY	National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines does not apply to the stationary combustion turbine at the Smithfield Compressor Station since the facility is not a major source of HAP emissions.
40 C.F.R. Part 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters does not apply to the Smithfield Compressor Station since the station is not a major source of HAPs.
40 C.F.R. Part 63 Subpart JJJJJJ	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources. The facility is not subject to 40 C.F.R. Part 63 Subpart JJJJJJ since the boiler is fueled by natural gas.
40 C.F.R. Part 64	This is the second permit renewal for this facility. The facility was found not to be subject to Compliance Assurance Monitoring (CAM) at the time of the first renewal since the facility did not have any pollutant specific emissions units (PSEU) that satisfied all of the applicability criteria requirements of 40 C.F.R § 64.2 (a). There have been no changes to any PSEUs at the facility since the first renewal that have resulted in a source satisfying the applicability requirements of 40 C.F.R. § 64.2 (a) and becoming subject to CAM.

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: September 12, 2012
Ending Date: October 12, 2012

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

Wayne Green
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

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.

Point of Contact

Wayne Green
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1258 • Fax: 304/926-0478

Response to Comments (Statement of Basis)

The following comments were received on October 11, 2012 from Columbia Gas Transmission for the Smithfield Compressor Station, Title V Permit R30-10300010-2012. Following are DAQ's response for each comment.

Comment Item 1:

Page 3 of 63 Section 1.0 Emission Units, Units 09801 and 09802 - § 63.6620 should itemize Table 4 to Items 1 and 3 (Item 2 is not applicable).

Response Item 1:

DAQ concurs with the suggested changes.

Comment Item 2:

Page 4 of 63 Section 1.0 Emission Units, Units 098G2 - § 63.6640 should list the applicable parts (a), (b), (e), (f) in addition to Table 6 Item 9.

Response Item 2:

DAQ concurs with the suggested change.

Comment Item 3:

Page 4 of 63, Section 22.4 – 22.4.1 should cite Section 5.1.1 of R13-2064E instead of 5.4.1.

Response Item 3:

The requested change was not made.

The following comment is from US EPA Region 3 regarding Columbia Gas Transmission for the Smithfield Compressor Station.

Section 1 of the permit lists the applicable requirements for each emissions unit. The Turbine Engine/Compressor (E05) incorporates by reference conditions from R13-2064E, including 5.1.2, 5.1.3, and 5.4.1, which are TPY limits for NO_x (39 tpy) and CO (99 TPY), and a fuel throughput limit in scf/yr that is used to demonstrate compliance with the TPY limit. It's unclear whether these limits were intended to be calendar year limits or 12-month rolling totals. Since they are just below significance thresholds it looks like they were limits taken to avoid NSR. In order to be federally enforceable, these limits need to be on a 12-month rolling total, and it should be stated clearly in the permit.

DAQ Response:

US EPA Region 3's comment is addressed in Section 6.4.1 on page 28 of 62 of the Title V permit.