



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-3368
Plant ID No.: 011-00220
Applicant: Columbia Gas Transmission, LLC (Columbia)
Facility Name: Saunders Creek RS Station
Location: Milton, Cabell County
NAICS Code: 486210
SIC Code: 4922
Application Type: Construction
Received Date: May 15, 2017
Engineer Assigned: Jerry Williams, P.E.
Fee Amount: \$2,000.00
Date Received: May 17, 2017
Complete Date: June 21, 2017
Due Date: September 10, 2017
Applicant Ad Date: June 7, 2017
Newspaper: *The Herald Dispatch*
UTM's: Easting: 400.053 km Northing: 4,251.542 km Zone: 17
Description: Natural gas regulating station consisting of two (2) main gas heaters, one (1) generator, and pigging operations.

DESCRIPTION OF PROCESS

The following process description was taken from Permit Application R13-3368:

Columbia plans to install two (2) 32.12 MMBTU/hr main gas heaters, one (1) 30 hp Generac RG022 generator and a PIG launcher. Columbia plans to utilize the equipment on site to help boost gas flow between transmission lines. The two (2) main gas heaters will be utilized to help bring pipeline gas entering the facility to the right temperature and pressure to be transferred to outgoing pipeline leaving the station. The generator onsite will be used in the event of power outage or if equipment is down to help keep the process running. astly, at least once annually the PIG launcher will be blown down to clean out the pipelines to help ensure the process is running effectively.

Promoting a healthy environment.

SITE INSPECTION

The closest residence to the proposed facility is approximately 800 feet. Due to the nature of the facility, the writer does not foresee issues with the location of the proposed facility.

Latitude: 38.40848
Longitude: -82.14458



ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this application consist of the emissions from two (2) heaters (E01, E02), one (1) emergency generator (E03), and PIG launcher blowdown venting. The following table indicates which methodology was used in the emissions determination:

Emission Unit ID#	Emission Point ID#	Process Equipment	Calculation Methodology
H-1	E01	32.12 MMBTU/hr Main Gas Heater	EPA AP-42 Emission Factors
H-2	E02	32.12 MMBTU/hr Main Gas Heater	EPA AP-42 Emission Factors
G-1	E03	30 hp Emergency Generator	EPA AP-42 Emission Factors/ Manufacturer's Data
PL-1	Blowdowns	PIG Launcher Blowdown Venting	Engineering Estimate

The total PTE after this proposed construction (including fugitives) is shown in the following table:

Pollutant	Annual Facility Wide Emissions (tons/year)
Nitrogen Oxides	34.35
Carbon Monoxide	23.50
Volatile Organic Compounds	1.54
Particulate Matter-10/2.5	2.10
Sulfur Dioxide	0.20
Total HAPs	0.52
n-Hexane	0.50
Greenhouse Gas (CO ₂ e)	32,948

Maximum detailed controlled point source emissions were calculated by Columbia and checked for accuracy by the writer and are summarized in the table on the next page.

Columbia Gas Transmission, L.L.C. – Saunders Creek RS Station (R13-3368)

Emission Point ID#	Source	NO _x		CO		VOC		PM-10/2.5		SO ₂		Total HAPs		CO _{2e}
		lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	ton/year
E01	Main Gas Heater	3.90	17.08	2.65	11.59	0.17	0.76	0.24	1.05	0.02	0.10	0.06	0.26	16462
E02	Main Gas Heater	3.90	17.08	2.65	11.59	0.17	0.76	0.24	1.05	0.02	0.10	0.06	0.26	16462
E03	Emergency Generator	0.77	0.19	1.30	0.32	0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.01	<0.01	10
BD	PIG Launcher Blowdown Venting	0	0	0	0	32.70	0.02	0	0	0	0	0	0	15
Facility Wide Potential to Emit		8.57	34.35	6.60	23.50	33.05	1.54	0.48	2.10	0.06	0.20	0.13	0.52	32948

REGULATORY APPLICABILITY

The following rules apply to this modification:

45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers)

The purpose of 45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers) is to establish emission limitations for smoke and particulate matter which are discharged from fuel burning units.

Columbia would be subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average.

45CSR2 classifies the Main Gas Heaters (E01, E02) as ‘type b’ units. The allowable PM emission rate for these units would be the product of 0.09 and the total design heat input of the heaters.

Total Design Heat Input (MMBTU/hr)	45CSR2 Multiplier	Allowable PM Emission Rate (lb/hr)	Proposed PM_{total} Emission Rate (lb/hr)
32.12	0.09	2.89	0.24

As shown in the table above, Columbia would meet this rule.

45CSR10 (To Prevent and Control Air Pollution from the Emissions of Sulfur Oxides)

The purpose of this rule is to establish standards for emissions of sulfur oxides from fuel burning units, manufacturing operations and gas streams.

45CSR10 classifies the Main Gas Heaters (E01, E02) as ‘type b’ units. The allowable SO₂ emission rate for these units would be the product of 3.1 and the total design heat input of the heaters.

Total Design Heat Input (MMBTU/hr)	45CSR10 Multiplier	Allowable SO₂ Emission Rate (lb/hr)	Proposed SO₂ Emission Rate (lb/hr)
32.12	3.1	99.57	0.02

As shown in the table above, Columbia would meet this rule.

Furthermore, 45CSR10A exempts fuel burning units that combust natural gas from testing and monitoring requirements.

45CSR13 (Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation)

45CSR13 applies to this source because Columbia's proposed modification exceeds the regulatory emission threshold for criteria pollutants of 6 lb/hr and 10 ton/year, and they are also subject to a substantive requirement of an emission control rule promulgated by the Secretary (40CFR60 Subparts Dc and JJJ).

Columbia paid the appropriate application fee and published the required legal advertisement for this modification application.

45CSR16 (Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60)

45CSR16 applies to this facility by reference of 40CFR60, Subparts Dc and JJJ.

45CSR30 (Air Quality Management Fee Program)

Columbia is a nonmajor source subject to 45CSR30. The Saunders Creek RS Station is subject to 40CFR60 Subpart Dc. Columbia will be granted a deferral or exemption by the Director from such filing deadline pursuant to a request from the permittee.

Columbia is required to pay the appropriate annual fees and keep their Certified Emissions Statement renewed annually.

40CFR60 Subpart Dc (Standards of Performance for Small Industrial/Commercial/Institutional Steam Generating Units)

40CFR60 Subpart Dc applies to steam generating units. The main gas heaters (E01, E02) are subject to the recordkeeping requirements found in 40CFR60.48(g)(1). Columbia is required to maintain records of the amount of fuel combusted during each operating day.

40CFR60 Subpart JJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI ICE))

40CFR60 Subpart JJJ establishes emission standards for applicable SI ICE.

The 30 hp natural gas fired generator (E03) is USEPA certified stationary spark ignition engine according to 40CFR60 Subpart JJJ. Therefore, Columbia will not be required to conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or three (3) years, whichever comes first, to demonstrate compliance.

40CFR63 Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines)

Subpart ZZZZ establishes national emission limitations and operating limitations for HAPs emitted from stationary RICE located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations. The emergency generators (22E, 23E) at the Saunders Creek RS Station are subject to the area source requirements for non-emergency compression ignition engines.

The applicability requirements for new stationary RICEs located at an area source of HAPs, is the requirement to meet the standards of 40CFR60 Subpart JJJJ. These requirements were outlined above. The proposed engines meet these standards.

The following rules do not apply to this modification:

40CFR60 Subpart OOOOa (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced after September 18, 2015)

EPA published its New Source Performance Standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. EPA published amendments to the Subpart on September 23, 2013 and June 3, 2016. 40CFR60 Subpart OOOOa establishes emission standards and compliance schedules for the control of the pollutant greenhouse gases (GHG). The greenhouse gas standard in this subpart is in the form of a limitation on emissions of methane from affected facilities in the crude oil and natural gas source category that commence construction, modification or reconstruction after September 18, 2015. This subpart also establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO₂) emissions from affected facilities that commence construction, modification or reconstruction after September 18, 2015. The effective date of this rule is August 2, 2016. There are no affected facilities at the Saunders Creek RS Station, therefore, this rule does not apply.

45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants)

45CSR19 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment)

The Saunders Creek RS Station is located in Cabell County, which is an attainment county for all pollutants. Therefore, the Saunders Creek RS Station is not subject to 45CSR19.

As shown in the following table, Columbia is not a major source subject to 45CSR14 or 45CSR19 review. According to 45CSR14 Section 2.43.e, fugitive emissions are not included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, the fugitive emissions are not included in the PTE below.

Pollutant	PSD (45CSR14) Threshold (tpy)	NANSR (45CSR19) Threshold (tpy)	Saunders Creek PTE (tpy)	45CSR14 or 45CSR19 Review Required?
Carbon Monoxide	250	NA	23.50	No
Nitrogen Oxides	250	NA	34.35	No
Sulfur Dioxide	250	NA	0.20	No
Particulate Matter 2.5	250	NA	2.10	No
Ozone (VOC)	250	NA	1.54	No

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

There will be small amounts of various non-criteria regulated pollutants emitted from the combustion of natural gas. However, due to the concentrations emitted, detailed toxicological information is not included in this evaluation.

AIR QUALITY IMPACT ANALYSIS

Modeling was not required of this source due to the fact that the facility is not subject to 45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants) as seen in the table listed in the Regulatory Discussion Section.

SOURCE AGGREGATION

“Building, structure, facility, or installation” is defined as all the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous and adjacent properties, and are under the control of the same person.

The Source Determination Rule for the oil and gas industry was published in the Federal Register on June 3, 2016 and became effective on August 2, 2016. EPA defined the term “adjacent” and stated that equipment and activities in the oil and gas sector that are under common control will be considered part of the same source if they are located on the same site or on sites that share equipment and are within ¼ mile of each other.

The Saunders Creek RS Station will operate under the SIC code of 4922 (Natural Gas Transmission). There are no other facilities operated by Columbia that share the same two-digit major SIC code of 49 and are located on “contiguous or adjacent” property. Therefore, the emissions from this facility shall not be aggregated with other facilities for the purposes of making Title V and PSD determinations.

MONITORING OF OPERATIONS

Columbia will be required to perform the following monitoring and recordkeeping:

1. Monitor and record quantity of natural gas consumed for all combustion sources.
2. Monitor and record quantity of blowdown venting.
3. Maintain records of the amount of natural gas consumed and hours of operation for each heater.
4. Maintain records of testing conducted in accordance with the permit. Said records shall be maintained on-site or in a readily accessible off-site location
5. Maintain the corresponding records specified by the on-going monitoring requirements of and testing requirements of the permit.
6. Maintain records of the visible emission opacity tests conducted per the permit.
7. The records shall be maintained on site or in a readily available off-site location maintained by Columbia for a period of five (5) years.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that Columbia meets all the requirements of applicable regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Saunders Creek RS Station should be granted a 45CSR13 construction for their facility.

Jerry Williams, P.E.
Engineer

Date