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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3164
Plant ID No.:	083-00019
Applicant:	Columbia Gas Transmission LLC (Columbia)
Facility Name:	Files Creek Compressor Station
Location:	Beverly, Randolph County
SIC Code:	4922
NAICS Code:	486210
Application Type:	Construction (Grandfathered Source)
Received Date:	December 2, 2013
Engineer Assigned:	Jerry Williams, P.E.
Fee Amount:	$4,500
Date Received:	December 2, 2013
Complete Date:	January 31, 2014
Due Date:	May 1, 2014
Applicant Ad Date:	November 30, 2013
Newspaper:	*The Inter-Mountain*
UTM's:	Easting: 601.044 km Northing: 4,297.544 km Zone: 17
Description:	Installation of two (2) turbines, one (1) process heater, one (1) emergency generator, 40 catalytic space heaters, removal of six (6) engines, and placing four (4) engines on standby.

DESCRIPTION OF PROCESS

The following process description was taken from Permit Application R13-3164:

The station receives natural gas via pipeline from an upstream compressor station, compresses it using reciprocating internal combustion engines (RICE), and then transmits the natural gas via pipeline to a downstream station. Pipeline transmission of natural gas requires that the gas be compressed. The Files Creek Compressor Station has exclusively used RICEs to drive centrifugal gas compressors. This project will replace six (6) RICE driven compressors with two (2) Solar turbine driven compressors.

The power output from a natural gas fired turbine is directly related to the fuel input rate and to the ratio of combustion air to fuel. As ambient temperatures decrease, a turbine's maximum power output will increase due to the increased density of the inlet air. The Solar dry low NO_x (DLN) combustion system (known as SoLoNOx) limits formation of NO_x, CO, and VOC by pre-mixing air and fuel prior to combustion. When operating at ambient temperatures $\geq$ to 0 ^oF and at loads $\geq$ 50%, this DLN system is able to limit the exhaust gas concentration of these pollutants (corrected to 15% O_2) to 15 ppm NO_x, 25 ppm CO, and 25 ppm unburned hydrocarbons (UHC, containing at least 80% non-VOC methane and ethane; therefore, 5 ppm VOC). At ambient temperatures of 0 to -20 ^oF, additional pilot fuel is required by the turbine to maintain flame stability, which increases estimated emission concentrations to 42 ppm NO_x, 100 ppm CO, and 50 ppm UHC (10 ppm VOC). At ambient temperatures <-20 ^oF, additional pilot fuel is required by the turbine to maintain flame stability, which increases estimated emission concentrations (based on expected emissions at < 0 ^oF) to 120 ppm NO_x, 150 ppm CO, and 50 ppm UHC (10 ppm VOC). At turbine loads < 50%, additional pilot fuel and air flow are required to maintain flame stability and turbine responsiveness. These changes increase estimated emission concentrations to 70 ppm NO_x, 80,000 ppm CO, and 800 ppm UHC (160 ppm VOC). Should loads drop below 50%, Columbia will make every effort to either bring the load back above 50% or shut a turbine down (e.g., shut down other units and move that volume to the turbine, or shift the turbine volume to other units and shut down the turbine).

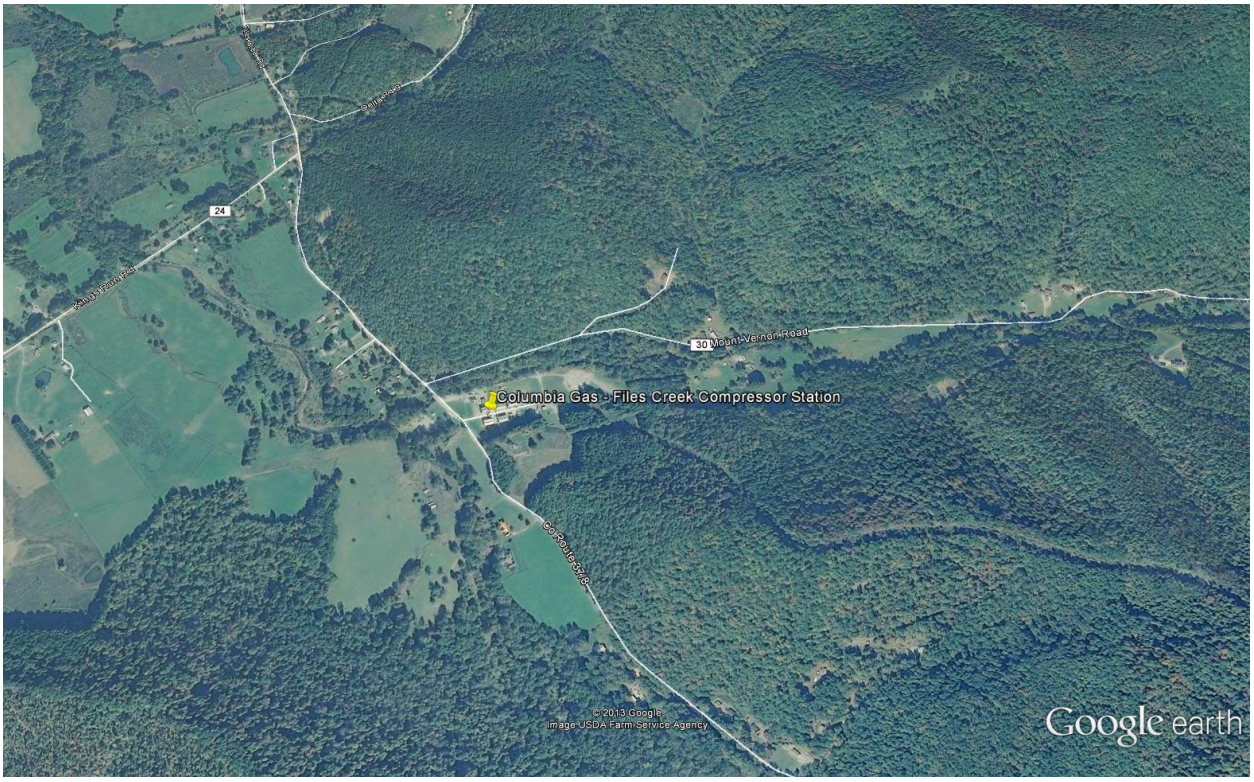
In addition, there are changes in NO_x, CO, and VOC emissions during the initial fuel light-off, turbine loading, and flame stabilization steps associated with turbine startup. There are also changes in emissions during the normal turbine shutdown sequence. For a Solar Taurus 70 turbine, the startup sequence takes less than 10 minutes to complete prior to engaging the DLN system. The shutdown sequence for a Taurus turbine requires approximately 10 minutes.

This application also includes the installation of one (1) 880 HP natural gas fired emergency generator, one (1) 1.09 MMBTU/hr process heater and 40 catalytic heaters used for comfort heating.

SITE INSPECTION

A site inspection was conducted by Mike Kolb of the DAQ Enforcement Section on February 20, 2013. The facility was operating in compliance at that time.

Latitude: 38.337239
Longitude: -82.044403



ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this application consist of the combustion emissions from four (4) existing RICEs (E07 – E10), three (3) (two (2) existing, one (1) new) emergency generators (G1, G2, G4), 40 new catalytic space heaters (SH1), one (1) new line heater (H2), two (2) new turbines (T01, T02), and fugitive emissions (blowdowns and equipment leaks).

Fugitive emissions for the facility are based on calculation methodologies presented in EPA Protocol for Equipment Leak Emission Estimates. The following table indicates which methodology was used in the emissions determination:

Emission Unit ID#	**Process Equipment**	**Calculation Methodology**
E07-E10	2,000 hp 2SLB Cooper-Bessemer GMWA-8 RICE	Performance Test Data, Manufacturer's Data, EPA AP-42 Emission Factors
G1, G2	306 HP 4SRB Ingersoll Rand PVG-6 Emergency Generators	EPA AP-42 Emission Factors
G4	880 HP Waukesha 4SLB VGF36GL Emergency Generator	Vendor Data, EPA AP-42 Emission Factors
SH1	40 - 0.072 MMBTU/hr Catalytic Space Heaters	EPA AP-42 Emission Factors
H2	1.09 MMBTU/hr Line Heater	EPA AP-42 Emission Factors
T01, T02	10,915 HP (nominal) Solar Taurus 70 Turbines	Vendor Data, EPA AP-42 Emission Factors
H1	0.965 MMBTU/hr Space Heaters #1-9	EPA AP-42 Emission Factors
FUG	Fugitives (blowdowns and equipment leaks)	EPA AP-42 Emission Factors

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. In regards to greenhouse gases (GHG), the Carbon Dioxide Equivalent (CO_2e) emissions were based on EPA emission factors.

Columbia Gas Transmission, LLC – Files Creek Compressor Station (R13-3164)

Emission	Source	NO_x		CO		VOC		PM 10/2.5		SO_2		Formaldehyde		Total HAPs		CO_2e	
Unit ID#		lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year
E07	2,000 HP Cooper RICE	122.10	221.63	4.11	9.81	2.22	8.83	0.89	3.55	1.06	0.05	1.02	4.06	1.47	5.85	2162	8617
E08	2,000 HP Cooper RICE	122.10	221.63	4.11	9.81	2.22	8.83	0.89	3.55	1.06	0.05	1.02	4.06	1.47	5.85	2162	8617
E09	2,000 HP Cooper RICE	122.10	221.63	4.11	9.81	2.22	8.83	0.89	3.55	1.06	0.05	1.02	4.06	1.47	5.85	2162	8617
E10	2,000 HP Cooper RICE	122.10	221.63	4.11	9.81	2.22	8.83	0.89	3.55	1.06	0.05	1.02	4.06	1.47	5.85	2162	8617
G1	306 HP Emerg. Gen.	7.89	1.79	13.27	3.02	0.11	0.02	0.07	0.02	0.20	<0.01	0.07	0.02	0.12	0.03	417	95
G2	306 HP Emerg. Gen.	7.89	1.79	13.27	3.02	0.11	0.02	0.07	0.02	0.20	<0.01	0.07	0.02	0.12	0.03	417	95
G4	880 HP Emerg. Gen	3.88	0.97	2.52	0.63	0.83	0.21	0.07	0.02	0.39	<0.01	0.36	0.09	0.49	0.12	902	200
SH1	40 Catalytic Heaters	0.28	1.24	0.24	1.04	0.02	0.07	0.02	0.09	0.16	0.01	<0.01	<0.01	<0.01	0.02	337	1477
H2	Line Heater	0.11	0.47	0.09	0.39	<0.01	0.03	0.01	0.04	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	128	559
T01	Turbine	4.87	23.25	4.94	81.83	0.57	3.19	1.62	6.88	5.13	0.27	0.06	0.27	0.09	0.39	10512	44772
T02	Turbine	4.87	23.25	4.94	81.83	0.57	3.19	1.62	6.88	5.13	0.27	0.06	0.27	0.09	0.39	10512	44772
H1	Space Heaters #1-9	0.09	0.41	0.08	0.35	0.01	0.02	0.01	0.03	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	113	495
FUG	Blowdowns, Leaks	-	-	-	-	NA	4.57	-	-	-	-	-	-	NA	0.02	NA	8215
Total	**Total Facility PTE**	**518.28**	**939.69**	**55.79**	**211.36**	**11.10**	**46.55**	**7.05**	**28.19**	**15.57**	**0.77**	**4.71**	**16.92**	**6.80**	**24.43**	**31986**	**135145**

The maximum hourly emission rate for the turbines (T01, T02) are based on operating at 0 ^{o}F. The annual emission rate is based on the combination of operating modes for NO_x, CO, and VOC.

The maximum hourly emission rates for the RICEs (E07-E10) are based on maximum horsepower under optimum conditions.

The maximum hourly emission rates for the emergency generators (G1, G2) are based on maximum horsepower under optimum conditions.

The following table indicates the existing potential to emit (PTE), emissions reduction for equipment removed, emissions increase for the new equipment, and the net change in PTE in tons/year (tpy):

Pollutant	**Current Facility PTE (tpy)**	**Emissions Reduction from Equipment Removal (tpy)**	**Emissions Increase from New Equipment (tpy)**	**Net Change in PTE (tpy)**	**New Facility PTE (tpy)**
Carbon Monoxide	173.11	127.48	165.73	38.25	211.36
Nitrogen Oxides	2,012.14	1121.63	49.18	-1,072.45	939.69
Particulate Matter-10	26.57	12.29	13.91	1.62	28.19
Sulfur Dioxide	0.40	0.18	0.56	0.38	0.77
Volatile Organic Compounds	66.90	30.53	10.18	-20.35	46.55
Greenhouse Gas (CO_2e)	71,508	29,789	93,426	63,637	135,145
Formaldehyde	30.32	14.04	0.63	-13.41	16.92
Total HAPs	43.72	20.23	0.94	-19.29	24.43

REGULATORY APPLICABILITY

The following rules apply to this permitting action:

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

The purpose of 45CSR2 is to establish emission limitations for smoke and particulate matter which are discharged from fuel burning units. 45CSR2 states that any fuel burning unit that has a heat input under ten (10) million B.T.U.'s per hour is exempt from sections 4 (weight emission standard), 5 (control of fugitive particulate matter), 6 (registration), 8 (testing, monitoring, recordkeeping, reporting) and 9 (startups, shutdowns, malfunctions). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

The individual heat input of the proposed space heaters and line heater are below 10 MMBTU/hr. Therefore, these units are exempt from the aforementioned sections of 45CSR2.

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

45CSR4 (To Prevent and Control the Discharge of Air Pollutants into the Open Air which Causes or Contributes to an Objectionable Odor or Odors)

45CSR4 states that an objectionable odor is an odor that is deemed objectionable when in the opinion of a duly authorized representative of the Air Pollution Control Commission (Division of Air Quality), based upon their investigations and complaints, such odor is objectionable. No odors have been deemed objectionable.

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

The purpose of 45CSR10 is to establish emission limitations for sulfur dioxide which are discharged from fuel burning units. 45CSR10 states that any fuel burning unit that has a heat input under ten (10) million B.T.U.'s per hour is exempt from sections 3 (weight emission standard), 6 (registration), 7 (permits), and 8 (testing, monitoring, recordkeeping, reporting). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

The individual heat input of the proposed proposed space heaters and line heater are below 10 MMBTU/hr. Therefore, these units are exempt from the aforementioned sections of 45CSR10.

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 due to the fact that Columbia 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 (40 CFR 60 Subparts JJJJ, KKKK, 40 CFR 63 Subparts YYYY, ZZZZ, DDDDD).

In addition, because Columbia utilized the netting process to remain below major source thresholds for 45CSR14 (NO_x, CO, $PM_{2.5}$), Columbia is subject to Notice Level C (45CSR13 Section 8.5) and will be required to publish a commercial display ad (45CSR13 Section 8.4.a) and post a visible sign at their facility (45CSR13 Section 8.5.a).

Columbia paid the appropriate application fee and published the required legal advertisement for a construction permit application.

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

45CSR16 applies to this source by reference of 40CFR60, Subparts JJJJ and KKKK. These requirements are discussed under those rules below.

45CSR30 (Requirements for Operating Permits)

Columbia is subject to 45CSR30. The Files Creek Compressor Station has the potential to emit more than major regulatory threshold for NO_x, CO, CO_2e and HAPs. Due to this facility's potential to emit over 100 tons per year of criteria pollutant and 10 tons per year of a hazardous air pollutant, Columbia is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Columbia is required to pay the appropriate annual fees and submit an annual Certified Emissions Statement.

40CFR60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)

Columbia's 880 HP emergency generator (G4) is subject to 40CFR60 Subpart JJJJ, which sets forth emission limits, fuel requirements, installation requirements, and monitoring requirements based on the year of installation of the subject internal combustion engine. 40CFR60 Subpart JJJJ is applicable to owners and operators of new emergency engines manufactured after January 1, 2009. The emission limits for the subject engine (G3) are the following: NOx – 2.0 g/hp-hr (3.88 lb/hr); CO – 4.0 g/hp-hr (7.76 lb/hr); and VOC – 1.0 g/hp-hr (1.94 lb/hr). Based on the manufacturer's specifications for these engines, the emission standards will be met.

The proposed 880 HP emergency generator (G4) is not certified by the manufacturer to meet the emission standards listed in 40CFR60 Subpart JJJJ. Therefore, Columbia will 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.

40CFR60 Subpart KKKK (Standards of Performance for Stationary Combustion Turbines)

This subpart establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour that commenced construction, modification or reconstruction after February 18, 2005. Columbia will be required to operate and maintain the stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

The emission limits associated with this rule include a NO_x limit of 25 ppm at 15% O_2, or 1.2 lb/MWh, and a SO_2 limit of 0.90 lb/MWh, or 0.060 lb/MMBTU. According to the specification sheet submitted by Columbia, these limits will be met.

Under 40 CFR 60.4365, Columbia is exempt from monitoring fuel sulfur content because they will burn natural gas that is covered by a purchase or transportation agreement with maximum sulfur content of 20 grains per 100 scf. Annual performance testing must be conducted within 14 calendar months following the previous performance test. Test frequency can be reduced to biennial if measured NO_x emissions are < 75% of limit.

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 Files Creek Compressor Station is subject to the major source requirements for non-emergency spark ignition engines.

The proposed 880 HP emergency generator (G4) is considered a 'new' emergency RICE under this rule. As a new emergency RICE with a site rating greater than 500 HP at a major source of HAPs, the proposed engine (G4) only has to meet the initial notification requirements of 40 CFR 63.6645(f).

The emergency generators (G1, G2) at the facility are also subject to 40 CFR 63 Subpart ZZZZ requirements. These requirements are outlined in detail in the Title V Fact Sheet and Permit (R30-08300019-2012).

40CFR63 Subpart YYYY (National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines)

Per 40 CFR 63.6095(d), there is a stay of standards for lean premix gas-fired stationary combustion turbines until USEPA takes final action to require compliance with this subpart. The only requirement for the turbines (T01, T02) is to comply with the initial notification requirements of 40 CFR 63.6145.

40CFR63 Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters)

The proposed 1.09 MMBTU/hr line heater (H2) is a new affected source (gas 1 subcategory) and is less than 5 MMBTU/hr. Therefore, it is not subject to 40 CFR 63 Subpart DDDDD emission limitations, but is subject to tune-ups every five (5) years.

The following rules do not apply to this permitting action:

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

This rule applies to steam generating units with a heat input capacity of 100 MMBTU/hr or less, but greater than or equal to 10 MMBTU/hr for which construction commenced after June 9, 1989. Columbia does not have an applicable unit, therefore, Columbia would not be subject to this rule.

40CFR60 Subpart KKK (Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants)

40CFR60 Subpart KKK applies to onshore natural gas processing plants that commenced construction after January 20, 1984, and on or before August 23, 2011. The Files Creek Compressor Station is not a natural gas processing facility, therefore, Columbia is not subject to this rule.

40CFR60 Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution)

EPA published in the Federal Register new source performance standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. 40CFR60 Subpart OOOO establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO_2) emissions from affected facilities that commence construction, modification or reconstruction after August 23, 2011. The following affected sources which commence construction, modification or reconstruction after August 23, 2011 are subject to the applicable provisions of this subpart:
Each gas well affected facility, which is a single natural gas well.

There are no gas wells at this facility. Therefore, all requirements regarding gas well affected facilities under 40 CFR 60 Subpart OOOO would not apply.

a. Each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals that is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. For the purposes of this subpart, your centrifugal compressor is considered to have commenced construction on the date the compressor is installed (excluding relocation) at the facility. A centrifugal compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

Files Creek Compressor Station is a transmission station and is not located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. Therefore, all requirements regarding centrifugal compressors under 40 CFR 60 Subpart OOOO would not apply.

b. Each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. For the purposes of this subpart, your reciprocating compressor is considered to have commenced construction on the date the compressor is installed (excluding relocation) at the facility. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

Files Creek Compressor Station is a transmission station and is not located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. Therefore, all requirements regarding reciprocating compressors under 40 CFR 60 Subpart OOOO would not apply.

c. Pneumatic Controllers

- Each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh which commenced construction after August 23, 2011, and is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not located at a natural gas processing plant.

- Each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller which commenced construction after August 23, 2011, and is located at a natural gas processing plant.

Files Creek Compressor Station is a transmission station and is not located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. Therefore, all requirements regarding pneumatic controllers under 40 CFR 60 Subpart OOOO would not apply.

d. Each storage vessel affected facility, which is a single storage vessel, located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment.

40CFR60 Subpart OOOO defines a storage vessel as a unit that is constructed primarily of non-earthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provides structural support and is designed to contain an accumulation of liquids or other materials. The following are not considered storage vessels:

- Vessels that are skid-mounted or permanently attached to something that is mobile (such as trucks, railcars, barges or ships), and are intended to be located at a site for less than 180 consecutive days. If the source does not keep or are not able to produce records, as required by §60.5420(c)(5)(iv), showing that the vessel has been located at a site for less than 180

consecutive days, the vessel described herein is considered to be a storage vessel since the original vessel was first located at the site.

- Process vessels such as surge control vessels, bottoms receivers or knockout vessels.

- Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere.

This rule requires that the permittee determine the VOC emission rate for each storage vessel affected facility utilizing a generally accepted model or calculation methodology within 30 days of startup, and minimize emissions to the extent practicable during the 30 day period using good engineering practices. For each storage vessel affected facility that emits more than 6 tpy of VOC, the permittee must reduce VOC emissions by 95% or greater within 60 days of startup. The compliance date for applicable storage vessels is October 15, 2013.

There are no applicable storage vessels located at the Files Creek Compressor Station that were installed after August 23, 2011. Therefore, all requirements regarding storage vessels under 40 CFR 60 Subpart OOOO would not apply.

e. The group of all equipment, except compressors, within a process unit is an affected facility.

- Addition or replacement of equipment for the purpose of process improvement that is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

- Equipment associated with a compressor station, dehydration unit, sweetening unit, underground storage vessel, field gas gathering system, or liquefied natural gas unit is covered by §§60.5400, 60.5401, 60.5402, 60.5421 and 60.5422 of this subpart if it is located at an onshore natural gas processing plant. Equipment not located at the onshore natural gas processing plant site is exempt from the provisions of §§60.5400, 60.5401, 60.5402, 60.5421 and 60.5422 of this subpart.

- The equipment within a process unit of an affected facility located at onshore natural gas processing plants and described in paragraph (f) of this section are exempt from this subpart if they are subject to and controlled according to subparts VVa, GGG or GGGa of this part.

The Files Creek Compressor Station is not a natural gas processing plant. Therefore, Leak Detection and Repair (LDAR) requirements for onshore natural gas processing plants would not apply.

f. Sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells.

- Each sweetening unit that processes natural gas is an affected facility; and
- Each sweetening unit that processes natural gas followed by a sulfur recovery unit is an affected facility.
- Facilities that have a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H_2S) in the acid gas (expressed as sulfur) are required to comply with recordkeeping and reporting requirements specified in §60.5423(c) but are not required to comply with §§60.5405 through 60.5407 and paragraphs 60.5410(g) and 60.5415(g) of this subpart.
- Sweetening facilities producing acid gas that is completely reinjected into oil-or-gas-bearing geologic strata or that is otherwise not released to the atmosphere are not subject to §§60.5405 through 60.5407, 60.5410(g), 60.5415(g), and 60.5423 of this subpart.

There are no sweetening units at the Files Creek Compressor Station. Therefore, all requirements regarding sweetening units under 40 CFR 60 Subpart OOOO would 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 Files Creek Compressor Station is located in Randolph County, which is an attainment county for all criteria pollutants, therefore the Files Creek Compressor Station is not applicable to 45CSR19.

The Files Creek Compressor Station is an existing Major Stationary Source with respect to PSD because they have actual emissions of nitrogen oxides in excess of 250 tons per year. The Files Creek Compressor Station is not one of the listed 28 major stationary sources whose emissions threshold is 100 tpy as defined in 40CFR52.21(b)(1)(i) and 45CSR14 Section 2.43. In order for a project to become subject to PSD review, the major stationary source must have a significant emissions increase from the project **and** a significant net emissions increase as calculated over the 5 year contemporaneous period. The first step is to determine if the proposed project results in a significant emissions increase utilizing the calculation procedures in 45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources for the Prevention of Significant Deterioration of Air Quality) Section 3.4. The procedure for calculating whether a significant emissions increase will occur depends on the type of emissions units being modified. The procedure for calculating whether a significant net emissions increase will occur at the major stationary source, which is the second step in the process, is contained in 45CSR14 Section 2.46. Regardless of any such preconstruction projections, a major

modification results if the project causes a significant emissions increase and a significant net emissions increase.

In determining whether a significant emissions increase occurs, 45CSR14 provides two (2) ways to make that determination. These calculations are based on whether or not it is an existing emissions unit or a new emissions unit.

45CSR14 Section 2.27 defines an 'emissions unit' as any part of a stationary source that emits or would have the potential to emit any regulated NSR pollutant and includes an electric utility steam generating unit as defined in subsection 2.25. For the purposes of this rule, there are two types of emissions units as described in subdivisions 2.27.a and 2.27.b.

> 2.27.a. A new emissions unit is any emissions unit that is (or will be) newly constructed and that has existed for less than 2 years from the date such emissions unit first operated.
>
> 2.27.b. An existing emissions unit is any emissions unit that does not meet the requirements in subdivision 2.27.a. A replacement unit, as defined in subsection 2.68, is an existing emissions unit.

Because the turbines, line heater, emergency generator and catalytic heaters proposed at the Files Creek Compressor Station would be new emissions units, they would fall under 2.27.a.

Therefore, since emissions units at Files Creek Compressor Station would be considered new units, 45CSR14 Section 3.4.d states that an Actual-to-Potential test would be utilized. A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the potential to emit (as defined in subsection 2.58) and the baseline actual emissions (as defined in subdivisions 2.8.a and 2.8.b), for each existing emissions unit, equals or exceeds the significant amount of that pollutant (as defined in subsection 2.74).

The first step is to determine whether or not the proposed project results in a significant emissions increase utilizing the Actual-to-Potential test. The result of that test will be compared to PSD Significant Emission Rates (SER) to determine PSD applicability. If the resultant emissions are below the PSD SER then the project is not subject to PSD review. If the project's emissions are greater that the PSD SER then all contemporaneous increases and decreases must be examined to determine if the project is subject to PSD Review. The potential to emit from the emissions units associated with this project were based on the proposed engines.

The following table indicates what Files Creek Compressor Station's potential emissions increase would be with the installation of the turbines, line heater, emergency generator and catalytic heaters:

Pollutant	**Emissions increase associated with this modification (tpy)**	**PSD SER (tpy)**
NO_x	49.18	40
CO	165.73	100
SO_2	0.56	40
$PM_{2.5}$	13.91	10
VOC	10.18	100
CO_2e	93,426	100,000

The NO_x, CO, and $PM_{2.5}$ emissions increase associated with the new equipment exceeds the PSD SER. Therefore, it is necessary to calculate the net emissions increase over a 5 year contemporaneous period.

Baseline emissions from the six (6) Cooper-Bessemer engines (E01-E06) being retired are shown in the following table. There are no other contemporaneous changes being made other than the retirement of these engines. The baseline (past actual) emissions are based on June 2010 through May 2012 operating records.

Emission Source	**NO_x (tpy)**	**CO (tpy)**	**$PM_{2.5}$ (tpy)**
E01	117.12	13.31	1.02
E02	109.04	12.39	0.95
E03	114.86	13.05	1.00
E04	122.58	13.93	1.07
E05	114.17	12.98	0.99
E06	77.96	8.86	0.68
Total	**655.73**	**74.53**	**5.71**

The following table indicates the net change in emissions by comparing the new equipment emissions (T01, T02, G4, SH1, H2) and the decrease in emissions associated with the retired engines (E01-E06).

	NO_x (tpy)	**CO (tpy)**	**$PM_{2.5}$ (tpy)**
Total Project Emissions	49.18	165.73	13.91
Proposed Reductions from Baseline Emissions	-655.73	-74.53	-5.71
Net Change in Emissions	-606.55	91.20	8.20
PSD Significance Level	**40**	**100**	**10**

Final Conclusion

Because there was not an emissions increase above the PSD SER **and** a significant net emissions increase as calculated over any consecutive 24 month period during the 5 year contemporaneous period, PSD review is not required.

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) or 45CSR19 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment) as seen in the table listed in the Regulatory Discussion section under 45CSR14/45CSR19.

SOURCE AGGREGATION DETERMINATION

"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.

1. The Files Creek Compressor Station will operate under SIC code 4922 (Pipeline Transportation of Natural Gas). There are other compressor stations operated by Columbia that share the same two (2) digit SIC code of 49. Therefore, they do share the same two-digit major SIC code of 49.

2. There are no facilities in question that are determined to be under common control with Columbia's File Creek Compressor Station.

3. There are no Columbia properties that are on contiguous or adjacent properties with the Files Creek Compressor Station.

The Files Creek Compressor Station and other Columbia compressor stations share the same industrial grouping. However, there are no facilities under common control with the Files Creek Compressor Station, and they are not located on contiguous or adjacent properties. Therefore, the emissions from the Files Creek Compressor Station should not be aggregated in determining major source or PSD status.

MONITORING OF OPERATIONS

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

- Monitor and record quantity of natural gas consumed and hours of operation for all combustion sources.
- Continuously monitor the turbines to document any operating periods during which the SoLoNOx system is not in service (startup, shutdown, low-load, or system malfunction)
- Maintain records of turbine startup, shutdown, malfunction per 40 CFR 60 Subpart KKKK and 40 CFR 60.7.
- Maintain turbine operating hours and scenarios.
- Maintain monthly turbine emissions.
- Maintain records of all applicable monitoring, recordkeeping, reporting and testing conducted in accordance with the permit (40 CFR 60 Subparts JJJJ, KKKK and 40 CFR 63 Subparts YYYY, ZZZZ, and DDDDD).
- Maintain records of the visible emission opacity tests conducted per the permit.
- 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 Files Creek Compressor Station should be granted a 45CSR13 construction permit for their facility.

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Jerry Williams, P.E.
Engineer

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Date