

Fact Sheet



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

This Fact Sheet serves to address the changes specific to this Significant Modification, and shall be considered a supplement to the Fact Sheet corresponding with the Title V operating permit issued on October 31, 2012.

Permit Number: **R30-09700009-2012**
Application Received: **January 28, 2016**
Plant Identification Number: **03-54-097-00009**
Permittee: **Columbia Gas Transmission, LLC**
Facility Name: **Cleveland Compressor Station**
Mailing Address: **1700 MacCorkle Avenue, SE, Charleston, WV 25314**

Permit Action Number: *SM02* Revised: *July 26, 2016*

Physical Location:	Kanawha Head, Upshur County, West Virginia
UTM Coordinates:	555.4 km Easting • 4,289.1 km Northing • Zone 17
Directions:	Travel approximately 9.4 miles south on WV State Rt. 20 from the town of Rock Cave to station.

Facility Description

The Cleveland Station is a natural gas transmission facility covered by Standard Industrial Classification (SIC) 4922. The station has the potential to operate seven (7) days per week, twenty-four (24) hours per day. The station currently consists of six (6) 1,100-hp and four (4) 2,000-hp reciprocating engines, one (1) 3,165-hp turbine engine, two (2) 10,381-hp turbine engines, one (1) reciprocating engine/emergency generator, a wastewater injection evaporation system (WE1 to E09 & E10) and numerous storage tanks of various sizes. For comfort heating purposes the facility also operates a number of small space heaters (de minimus).

This significant modification incorporates the requirements of the recently issued permit R13-2394B which is to install two (2) new natural gas-fired turbines, one (1) fuel gas heater and twenty (20) catalytic heaters. In accordance with R13-2394B Columbia will make the following changes to the station:

- Add two (2) new Solar Mars 100 combustion turbines;

- Add one (1) new 1.0 MMBtu/hr indirect-fired heater;
- Add 20 new catalytic space heaters (18 @ 0.072 MMBtu/hr each and 2 @ 0.005 MMBtu/hr each);
- Correct the number and capacities of heaters installed in 2015; and
- Correct the capacity of line heater #1 installed in 2015.

Emissions Summary

The changes in potential emissions are as follows:

Regulated Pollutants	Change In Potential Emissions (tpy)	Potential Emissions After Modification (tpy)
Carbon Monoxide (CO)	+97.03 (increase)	195.63
Nitrogen Oxides (NO _x)	+63.74 (increase)	993.04
Particulate Matter (PM ₁₀)	+7.38 (increase)	26.58
Total Particulate Matter (TSP)	+7.38 (increase)	26.58
Sulfur Dioxide (SO ₂)	+0.80 (increase)	1.55
Volatile Organic Compounds (VOC)	+22.04 (increase)	78.84
Formaldehyde	+0.78 (increase)	17.68
Total HAPs	+1.16 (increase)	25.46

Title V Program Applicability Basis

With the proposed changes associated with this modification, this facility has the potential to emit 993.04 tons/yr of NO_x, 195.63 tons/yr of CO, 17.68 tons/yr of Formaldehyde and 25.46 tons/yr of aggregated HAPs. Due to this facility's potential to emit over 100 tons per year of criteria pollutants, over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs, 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.

The modification to this facility has been found to be subject to the following applicable rules:

Federal and State:

45CSR2	To Prevent And Control Particulate Air Pollution From Combustion Of Fuel In Indirect Heat Exchangers
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
45CSR16	Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60
45CSR34	Emission Standards For Hazardous Air Pollutants

45CSR30	Operating permit requirement.
40 CFR Part 60 Subpart KKKK	Standards of Performance for Stationary Combustion Turbines
40 CFR Part 63 Subpart YYYY	National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines
40 CFR Part 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters
<u>State Only:</u>	N/A

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>)
R13-2394B	May 5, 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

Below are the revisions made to R30-09700009-2012 and a regulatory discussion in association with this modification:

1) **Table of Contents**

- Item “11.0” - a typographical error which duplicated the word “Ignition” was corrected by deleting the duplicate word.
- Item “12.0” - the word “Ignition” was added to the description for 40 CFR 60 Subpart IIII.
- APPENDIX A - Permit R13-2394A was updated to R13-2394B

2) **Section 1.0 Table “Emission Units and Listing of Applicable Requirements”** – the table has been updated as follows:

- RICE Compressors “06001” through “06006”, Turbine Compressor “06011”, and RICE Emergency Generator “060G4” have been retired and therefore removed from the table. Line Heater “HTR4” was never installed and therefore removed from Permit R13-2394B and also from the Title V Section 1.0 table.

- Two (2) new combustion turbines/compressors “06014” and “06015,” were added to the table.
 - Fuel Gas Heater “HTR6” was added to the table.
 - Twenty (20) new catalytic space heaters collectively as “HTR7” were added to the table.
 - The design capacity of “HTR3” was corrected to reflect the “as built” installation.
 - The amount of catalytic heaters and the design capacities for “HTR5” were corrected to reflect the “as built” installation.
 - Applicable requirements (i.e., condition numbers) from Permit R13-2394B were updated to reflect the changes made to R13-2394A.
 - Some requirements from 40 CFR 63 Subpart DDDDD were removed from “HTR3” since they were removed in the latest version of Subpart DDDDD.
- 3) **Section 21.0. and Appendix A** – “Permit R13-2394B” was added to section 21.0 and Appendix A has been updated to include the recently issued permit R13-2394B.
- 4) **Section 22.0.** – The conditional requirement for tank TK01 that would require the tank to comply with 40 CFR 60 Subpart OOOO and submit a Title V permit modification if the potential VOC emissions are determined to be equal to or greater than 6 tpy in accordance permit R13-2394B has not been removed from this section of the permit. Since the tank has not yet been installed, the condition in R13-2394A was carried into R13-2394B. The condition number in R13-2394B was changed to 4.2.3.
- 5) **Section 23.2. (non-applicable requirements and permit shield)** – The following changes were made to this section:
- The language in 23.2.b. for Subpart GG has been revised to reflect the removal of turbine “06011” and the new compressor turbines “06014” and “06015” subject to the requirements of 40 CFR 60 Subpart KKKK.
 - The language for 45CSR10 (23.2.j.) has been revised for clarification and to include the line heater “HTR6.” “HTR4” was removed since it has never been installed.

Regulatory Discussion

- 6) **45CSR2 (Rule 2)** – (*To Prevent And Control Particulate Air Pollution From Combustion Of Fuel In Indirect Heat Exchangers*) Line heater HTR6 is defined as a “fuel burning unit” and is subject to Rule 2. In accordance with 45CSR§2-11.1., since the heater has a heat input under 10 mmBtu/hr it is exempt from sections 4, 5, 6, 8 and 9 of this rule. The Rule 2 requirements that apply to the heater (i.e., 45CSR§§2-3.1. & 3.2.) are contained in Section 4 of the Title V permit.
- 7) **40 CFR Part 60 Subpart KKKK** – (*Standards of Performance for Stationary Combustion Turbines*) applies to combustion turbines constructed, modified, or reconstructed after February 18, 2005 with a peak heat input equal to or greater than 10 MMBtu/hr. The proposed Solar Mars turbines “06014” and “06015” are rated at 126.33 MMBtu/hr (HHV @32°F). Therefore, the proposed turbines are affected sources under this subpart.

§60.4320 requires the turbines to meet the NO_x requirement in Table 1 of the rule. Since the Mars 100 turbines are new, natural gas fired turbines between 50 and 850 MMBTU/hr, Table 1 requires each

turbine 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 0.06 lb SO₂/MMBTU heat input. 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 per 100 scf. Columbia qualifies for this exemption.

- 8) **40 CFR Part 63 Subpart YYYY** – (*National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines*). The proposed turbines “06014” and “06015” are classified as affected sources under the NESHAP for stationary combustion turbines promulgated under Subpart YYYY of 40 CFR Part 63. These proposed turbines are classified as new lean premix gas-fired turbines. Pursuant to 40 CFR §63.6095(d), U.S. EPA stayed the standards for new or reconstructed stationary turbines that are either a lean premix gas-fired or diffusion flame gas-fired stationary combustion turbine. The only requirement that the applicant must comply with under this subpart is the Initial Notification requirements until U.S. EPA takes final action to require compliance with the standards under the subpart. The Initial Notification requirements have been satisfied through the R13-2394B permit application (See 40 CFR §63.5(d)(1)).

- 9) **40 CFR Part 63 Subpart DDDDD** – (*National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*) The proposed heater “HTR6” is classified as a process heater under this subpart and therefore is an affected source subject to the requirements therein. The heater is designed to burn natural gas (Gas 1 Unit) and has a heat input rating of 1.00 MMBtu/hr. Since the heater only burns natural gas and has a design capacity of less than 5 MMBtu/hr heat input, it is only subject to the work practice requirements of this subpart. The applicant will be required to conduct tune-ups to the heater once every five years. These requirements and the corresponding reporting are incorporated in Section 4.0 of R13-2394B.

Non-Applicability Determinations

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

- 1) 45CSR10 (Rule 10) – In accordance with 45CSR§10-10.1., since the line heater “HTR6” has a heat input under 10 mmBtu/hr it is exempt from sections 3, 6, 7 and 8 of this rule. The facility is not defined as a manufacturing process and therefore Section 4 of this rule is not applicable to the heater or turbines. The facility does not combust refinery or process gas streams and therefore Section 5 of this rule is not applicable.

- 2) 40 CFR Part 60 Subpart Dc - The line heater is rated for 1.00 MMBtu/hr. The definition of affected source in Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) is a unit between 10 MMBtu/hr and 100 MMBtu/hr. Thus, the proposed line heater is not an affected source and not subject to the standards under Subpart Dc.

- 3) 40 CFR Part 60 Subpart GG – Pursuant to 40 CFR §60.4305(b), stationary combustion turbines regulated under 40 CFR 60 Subpart KKKK, (i.e., turbines “06014” and “06015”) are exempt from the requirements of Subpart GG.
- 4) 40 CFR Part 60 Subpart OOOO - Turbines are driving compressors at a transmission station for a natural gas pipeline system. Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution) establishes standards for certain process equipment at oil and natural gas production sites. Affected sources include compressors located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. The Cleveland Compressor Station is downstream of the custody transfer point of Columbia’s transmission system. Therefore, the proposed compressors are not affected sources and not subject to the performance standards of Subpart OOOO.
- 5) 40 CFR 64 – Proposed emission sources being added to the facility do not have add-on controls; therefore, in accordance with 40 C.F.R § 64.2(a), CAM is not applicable to this facility.
- 6) There are no Greenhouse Gas Clean Air Act requirements for this facility because the facility has not made any changes that triggered a PSD permit modification.
- 7) The 20 proposed natural gas-fired catalytic heaters are for indoor heating and are deemed insignificant pursuant to 45CSR§30-3.2.d.2.

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: June 10, 2016
Ending Date: July 11, 2016

Point of Contact

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

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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)

Not applicable.