

Fact Sheet



For Final Significant Modification 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 January 10, 2017.

Permit Number: **R30-10300006-2017**
Application Received: **August 28, 2017**
Plant Identification Number: **10300006**
Permittee: **Dominion Energy Transmission, Inc.**
Facility Name: **Hastings Compressor Station**
Mailing Address: **925 White Oaks Blvd.**
Bridgeport, WV 26330

Permit Action Number: SM02

Revised: September 18, 2018

Physical Location:	Pine Grove, Wetzel County, West Virginia
UTM Coordinates:	528.09 km Easting • 4377.66 km Northing • Zone 17
Directions:	From Clarksburg take Route 20 North approximately 37 miles to Hastings Station on left side of the road.

Facility Description

Hastings Compressor Station is a natural gas facility covered by Standard Industrial Classification (SIC) Code 4922. The station has the potential to operate seven (7) days per week, twenty-four (24) hours per day. This facility (compressor station) includes three adjacent facilities covered by this Title V permit. The facilities and equipment they currently consist of are as follows:

- 1) Hastings Station (underlying permit R13-3249A) – production facility:
 - two (2) 500 HP Cooper GMXE-6 engines,
 - one (1) 7.5 mmscf/day glycol dehydration unit with flare,
 - one (1) 0.55 MMBtu/hr reboiler,
 - one (1) natural gas fired auxiliary generator rated at 128HP for emergency use,
 - one (1) 542 bhp Ajax DPC-2803 LE reciprocating compressor engine (EN04),

- one (1) 347 bhp Ajax DPC-2803 LE reciprocating compressor engine (EN05).
- 2) Mockingbird Hill Station (underlying permit - R13-2555C) – transmission facility:
 - two (2) 87 HP Capstone Microturbines and one (1) 80 HP Capstone microturbine,
 - one (1) 8175 HP Solar Taurus 60 Turbine,
 - one (1) 1.25 MMBtu/hr boiler
- 3) Lewis Wetzel Station (underlying permit - R13-2870A) – transmission facility:
 - one (1) 3,550 HP Caterpillar Model G3612TA Compressor Engine,
 - one (1) 530 HP Cummins Model KTA19G Auxiliary Generator,
 - one (1) 4.5 MMBtu/hr natural gas fired boiler

This significant modification includes changes covered by recently issued permit R14-0033 related to the Mockingbird Hill Station expansion which includes installation of:

- two (2) Titan 130 Combustion Turbines/Compressors 21,765 hp each (CT-01 and CT-02),
- one (1) 755 hp natural gas-fired Auxiliary Emergency Generator (EG-01),
- one (1) 8.72 MMBtu/hr natural gas-fired Boiler (WH-1),
- two (2) storage vessels: one (1) 1,000-gal Accumulator Tank (TK4) and one (1) 550-gal Hydrocarbon (Used Oil) Waste Tank (TK5),
- various operational natural gas releases associated with station components and piping fugitive emissions related to equipment at the expansion site.

Emissions Summary

The following emission changes are associated with this modification:

Regulated Pollutants	PTE change, TPY
NO _x	56.78
CO	59.69
VOC	13.39
PM ₁₀	30.28
TSP	30.28
SO ₂	5.05
Total HAPs	4.51

Title V Program Applicability Basis

With the proposed changes associated with this modification, this facility maintains the potential to emit over 100 TPY of CO and NO_x. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, Dominion Energy Transmission, Inc. 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 modification has been found to be subject to the following applicable rules:

Federal and State:

45CSR2	Particulate/Indirect Heat Exchangers
45CSR14	PSD
45CSR16	Standards of Performance for New Stationary Sources Pursuant to 40CFR60
45CSR30	Operating permit requirement
45CSR34	Emission Standards for HAPs
40 C.F.R. Part 60, Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
40 C.F.R. Part 60, Subpart KKKK	Standards of Performance for Stationary Combustion Turbines
40 C.F.R. Part 60, Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015
40 C.F.R. Part 63, Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines

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

The following is the only permit related to this modification:

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (<i>if any</i>)
R14-0033	June 13, 2018	

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

1. Company name was revised to "Dominion Energy Transmission, Inc." throughout the permit.
2. Emission Units Table 1.1 - revised to include new equipment added to the Mockingbird Hill Station under R14-0033: boiler WH-1, two combustion turbines CT-01 and CT-02, emergency generator EG-01, two tanks TK4 and TK5 (these tanks were re-named from the "TK-1" and "TK-2" in the R14-0033 respectively since there were already tanks named "TK-1" and "TK-2" at the Mockingbird Hill Station), and also Tank unloading operations LR-1.

3. Section 7.0, 40 C.F.R. Part 60 Subpart JJJJ – new emergency engine EG-01 is subject to the requirements of this subpart per 40 CFR §60.4230(a)(4)(iv).

Engine	Design Capacity	Ignition	Use/Type	Year installed	Source of HAPs
EG-01	755 bhp	Spark (SI)	Emergency, 4SLB	2018 (new)	Area source

Per 40 C.F.R. 60 Subpart JJJJ §60.4233(e), the new engine is subject to emission standards in Table 1 to the subpart (requirement 7.1.13.a). Since the engine capacity is > 500 HP and it has not been certified by an engine manufacturer, the permittee is required to follow, the compliance option under 40 C.F.R. §60.4243(b)(2)(ii): the permittee is required to have a maintenance plan and keep records of the engine maintenance (requirement 7.1.13.d and conduct an initial performance test within 180 days after start-up and every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance (requirement 7.3.7).

4. 40 C.F.R. Part 63, Subpart ZZZZ – since engine EG-01 is new and it is located at an area source of HAPs, per 40 C.F.R. 63 Subpart ZZZZ 63.6590(c)(1) it will meet requirements of this subpart by meeting requirements of 40 C.F.R. 60 Subpart JJJJ (see item 2 above).
5. Section 7.0, 40 C.F.R. 60 Subpart KKKK – new combustion turbines CT-01 and CT-02 are subject to the requirements of this subpart since their peak heat input is above 10 MMBtu/hr (173.49 MMBtu/hr at 0°F each). 40 C.F.R. 60 Subpart KKKK emission limits for NO_x and SO₂ are included in the permit requirements 7.1.10.a.i and iii. Also, maximum sulfur content of the natural gas is limited to 20 grains per 100 standard cubic feet of gas (40 C.F.R. §60.4365(a), requirement 7.1.10.a.iii). The following note was added to the requirement 7.1.10.a.iii for CT-01 and CT-02: "By satisfying this requirement the permittee is exempt from the total sulfur monitoring requirement of 40 C.F.R. §60.4360" (like the note included with the condition 7.1.8 for an existing turbine TUR02).
6. Section 7.0, 40 C.F.R. Part 60, Subpart OOOOa – tank TK4 would be subject to the requirements of this subpart if it had PTE for VOC at or above 6 TPY (its VOC emissions are estimated at 0.35 TPY). Per requirement 7.2.10 PTE for VOC needs to be determined via VOC emissions calculations during the first 30 days of the tank service (40 C.F.R. 60 Subpart OOOOa, §60.5365a(e)). If the PTE for VOC is calculated at or above 6 TPY, the tank will be subject to the requirements of 40 C.F.R. §60.5410a(h).
7. Requirement 7.1.13.b – this condition is based on the underlying requirement 5.1.1.b of the permit R14-0033. The language was revised (a phrase "through the sale of electricity" was added) based on the underlying 40 C.F.R. 60 Subpart JJJJ condition §60.4243(d)(3). Also, the 40 C.F.R. 60 Subpart JJJJ §60.4243(d)(3) condition was added to the citation of this requirement.
8. Requirement 7.2.3 – this condition is based on the underlying requirement 4.2.3 of the permit R14-0033. Per company's request, the language was revised to correct typos and for clarification purposes.
9. Requirement 7.2.5 – this condition is based on the underlying requirement 4.2.5 of the permit R14-0033. The 4.2.5 condition has a reference to the R14-0033 requirement 4.1.2.e, but per the R14-0033 permit writer it is a typo, and the correct reference is supposed to be to the requirement 4.1.2.c (which corresponds to permit condition 7.1.11.c). Therefore, reference to the condition 7.1.11.c was included in this requirement.
10. Section 7.0, 45CSR2 and 45CSR10 – the new boiler WH-1 is subject to the requirements of 45CSR2 and 45CSR10, but since its capacity is below 10 MMBtu/hr (8.72 MMBtu/hr), it is exempt from the requirements of 45CSR2 Sections 4, 5, 6, 8 and 9 (per 45CSR§2–11.1), and from the requirements of 45CSR10 Sections 3 and 6 through 8 (per 45CSR§10-10.1). Therefore, it is only subject to 10% opacity limit of 45CSR§2–3.1 (requirement 7.1.14.d).
11. Section 10.0, 40 C.F.R. Part 60, Subpart OOOOa – applicable requirements for equipment leaks for the collection of fugitive emissions at Mockingbird Hill Station per 40 C.F.R. §60.5365a(j). Under this subpart, a collection of fugitive emissions components at the expansion site is considered an affected source, as well

as a collection of fugitive emissions components at the Mockingbird Hill Compressor Station; for this subpart, a modification is considered either an additional compressor installation (CT-01 and CT-02) or a replacement of one or more compressors resulting in a net increase of horsepower. Development of a monitoring plan and conducting an initial monitoring survey is required within 60 days after start-up of the new compressors, and on a quarterly basis thereafter. Detected leaks must be repaired as soon as possible, but no later than 30 days.

Non-Applicability Determinations

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

1. 40 C.F.R. Part 60, Subpart OOOOa – requirements for centrifugal compressors are only applicable to centrifugal compressors using wet seals, and not applicable to centrifugal compressors CT-01 and CT-02 using dry seals.
2. 40 C.F.R. Part 60, Subpart Kb – not applicable to tanks TK4 and TK5 per 40 C.F.R. §60.110b(a) because their capacities are below the subpart applicability threshold of 75 m³ (19,812 US gal).
3. 40 C.F.R. Part 63, Subpart YYYY – the Mockingbird Hill Station with the site expansion is considered a minor source of HAPs (PTE for HAPs is 6.06 TPY, less than 10 TPY for a single HAP or 25 TPY for total HAPs), therefore this subpart is not applicable to the turbines CT-01 and CT-02.
4. 40 C.F.R. Part 63, Subpart DDDDD - the Mockingbird Hill Station is considered an area source of HAPs for this subpart; therefore, it is not applicable to the new boiler WH-1.
5. 40 C.F.R. Part 63, Subpart JJJJJ, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources – this subpart is not applicable to the new boiler WH-1 per 40 C.F.R. §63.11195(e) since it is a gas-fired boiler.
6. Compliance Assurance Monitoring (CAM):
 - Engine EG-01 has emission limits specified in requirement 7.1.13 (based on Table 1 to Subpart JJJJ of Part 60), and it doesn't have a control device, therefore it is not subject to CAM;
 - Boiler WH-1 has emission limits specified in requirement 7.1.14, but it doesn't have a control device, therefore it is not subject to CAM;
 - Combustion turbines CT-01 and CT-02 have emission limits in requirement 7.1.10.a (including 27.04 TPY of NO_x, 27.8 TPY of CO, 3.57 TPY of VOC) and control devices (lean-premix combustion controls SoLoNO_x and an oxidation catalyst Ox Cat) to control CO, VOC and NO_x emissions. **The oxidation catalyst** provides 50% reduction in VOC emissions and 80% reduction in CO emissions, therefore pre-controlled VOC emissions are estimated at 7.14 TPY (below 100 TPY threshold) and total uncontrolled CO emissions are estimated at 62.3 TPY (including 43.0 TPY of pre-controlled emissions and 19.3 TPY of uncontrolled emissions resulting from 100 estimated start-up and shut-down events as shown in the table below; it puts total pre-controlled CO emissions below 100 TPY threshold).

Operating Scenario	Annual CO Emission (TPY) of each CT-01 and CT-02	
	Uncontrolled	Controlled
Normal SoLoNOx Mode	41.6	8.3
< 0°F	1.4	0.3
Startup	8.9	8.9
Shutdown	10.4	10.4
Total	62.3	27.8

The lean-premix combustion controls SoLoNOx provide reduction of NOx emissions of each turbine, but since NOx emission limits are based on the requirements of 40 C.F.R. 60 Subpart KKKK, CAM is not applicable per 40 C.F.R. §64.2(b)(1)(i).

This determination was also included with condition 3.7.2.f (Permit Shield).

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: August 1, 2018
Ending Date: August 31, 2018

Point of Contact

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

Natalya V. Chertkovsky-Veselova
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1220 • Fax: 304/926-0478
natalya.v.chertkovsky@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)

Not applicable.