



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-2555B
Plant ID No.: 103-00006
Applicant: Dominion Transmission, Inc. (Dominion)
Facility Name: Hastings Station
Location: Wetzel County
NAICS Code: 48621
Application Type: Modification
Received Date: June 6, 2012
Engineer Assigned: Joe Kessler
Fee Amount: \$2000
Date Received: June 11, 2012
Complete Date: July 5, 2012
Due Date: October 3, 2012
Applicant Ad Date: June 13, 2012
Newspaper: *Wetzel Chronicle*
UTM's: Easting: 528.64 km Northing: 4,377.66 km Zone: 17
Description: Installation of a Generac Model QT080 80 kilowatt (kW), 128 horsepower (hp), 4-stroke lean-burn natural gas-fired emergency generator.

The Plant Identification Number given above includes, based on a “one-source” definition, three adjacent or contiguous facilities: the Hastings, Mockingbird Hill, and Lewis Wetzel Natural Gas Compressor Stations. The non-grandfathered equipment located at the Hastings and Mockingbird facilities are currently permitted under R13-2555A. The new Lewis Wetzel compressor station is permitted under R13-2870.

DESCRIPTION OF PROCESS/MODIFICATIONS

Hastings Station is an existing compressor facility that services a natural gas pipeline. The purpose of the facility is to recompress natural gas flowing through a pipeline for transportation. The compressor engines at the facility receive natural gas from a valve on a pipeline and compress it to enable further transportation in the pipeline. Dominion is now proposing to the modify Hastings Station by installing a Generac Model QT080 80 kW, 128 hp, 4-stroke lean-burn natural

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gas-fired engine. The purpose of the emergency generator is to provide local power when power from the grid is interrupted and is proposed to be limited to 500 hours of use per year. The engine family (CGNXB06.82NL) is certified by USEPA as in compliance with the standards under 40 CFR 60, Subpart JJJJ.

SITE INSPECTION

Due to the nature of the modification, the writer did not conduct a site inspection. According to information in the DAQ database, the last full on-site inspection occurred on March 3, 2010 by Ms. Becky Johnson of the Compliance/Enforcement Section. The facility was given a status code of “30 - In Compliance” as a result of the inspection.

AIR EMISSIONS AND CALCULATION METHODOLOGIES

Potential emissions from the proposed new Generac Model QT080 80 kW, 128 hp, 4-stroke lean-burn natural gas-fired emergency generator were based on emission factors provided by the engine manufacturer and as given in AP-42, Section 3.2 (7/00). Hourly emissions were based on the maximum design heat input of the engine of 1.11 mmBtu/hr where applicable. Annual emissions were based on 500 hours of operation per year. The following table details the potential-to-emit (PTE) of the emergency generator:

Table 1: Emergency Generator PTE

Pollutant	Emission Factor	Source	Hourly (lb/hr)	Annual (ton/yr)
CO	72.91 g/hp-hr	Vendor Specification Sheet	20.57	5.14
NO _x	4.04 g/hp-hr	Vendor Specification Sheet	1.14	0.29
PM _{2.5} ⁽¹⁾	9.99 x 10 ⁻³ lb/mmBtu	AP-42, Table 3.2-2	0.01	< 0.01
PM ₁₀ ⁽¹⁾	9.99 x 10 ⁻³ lb/mmBtu	AP-42, Table 3.2-2	0.01	< 0.01
PM ⁽¹⁾	9.99 x 10 ⁻³ lb/mmBtu	AP-42, Table 3.2-2	0.01	< 0.01
SO ₂	5.88 x 10 ⁻⁴ lb/mmBtu	AP-42, Table 3.2-2	< 0.01	< 0.01
VOC	1.39 g/hp-hr	Vendor Specification Sheet	0.39	0.10
CH ₄	1.25 lb/mmBtu	AP-42, Table 3.2-3	1.39	0.35
CO ₂	110.00 lb/mmBtu	AP-42, Table 3.2-3	122.10	30.53
CO ₂ e ⁽²⁾	n/a	n/a	n/a	37.88

(1) Filterable + Condensable.

(2) Based on multiplying the mass amount of emissions for each of the six greenhouse gases by the gas's associated global warming potential published at Table A-1 to Subpart A of 40 CFR Part 98 - Global Warming Potentials. Used to determine major source status of facilities under 45CSR14.

REGULATORY APPLICABILITY

This section will address the potential regulatory applicability/non-applicability of substantive state and federal air quality rules relevant to the proposed emergency generator.

45CSR2 and 45CSR10 (non-applicability)

Pursuant to the definition of “fuel burning unit” under 45CSR2 and 45CSR10 (“producing heat or power by indirect heat transfer”), the sections of those rules applicable to “fuel burning units” do not apply to the emergency generator.

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

The proposed installation of the emergency generator at the existing Hastings Compressor Station has the potential, without the enforceable hours of operation limitation, to emit a regulated pollutant (NO_x) in excess of six (6) lbs/hour and ten (10) TPY that would, pursuant to §45-13-2.17, define the installation as a “modification” under 45CSR13. Pursuant to §45-13-5.1, “[n]o person shall cause, suffer, allow or permit the modification . . . and operation of any stationary source to be commenced without . . . obtaining a permit to construct.” Therefore, Dominion was required to obtain a permit under 45CSR13 for the installation of the emergency generator.

As required under §45-13-8.3 (“Notice Level A”), Dominion placed a Class I legal advertisement in a “newspaper of general circulation in the area where the source is . . . located.” The ad ran on June 13, 2012 in the *Wetzel Chronicle* and the affidavit of publication for this legal advertisement was submitted on June 22, 2012.

45CSR14 Major Modification Non-Applicability

Hastings Station, according to the PTE given in the (R30-10300006-2011) Title V Fact Sheet is an existing major source. However, the PTE associated with the new emergency generator (see Table 1 above) for all pollutants is less than the “significant” thresholds (§45-14-2.74) that would define the installation as a “major modification” either under 45CSR14. Therefore, review pursuant to these rules is not required.

45CSR30: Requirements for Operating Permits

45CSR30 provides for the establishment of a comprehensive air quality permitting system consistent with the requirements of Title V of the Clean Air Act. The Hastings Compressor Station, defined under Title V as a “major source,” was last issued a Title V permit on July 11, 2011. Proposed changes evaluated herein must also be incorporated into the facility's Title V operating permit. Commencement of the operations authorized by this permit shall be determined by the appropriate timing limitations associated with Title V permit revisions per 45CSR30.

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40 CFR 60 Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

Dominion's proposed emergency generator is defined under 40 CFR 60, Subpart JJJJ as a stationary spark-ignition internal combustion engine (SI ICE) and is, pursuant to §60.4230(a)(4), defined as an "affected facility" under the rule. Pursuant to §60.4233(e): "Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in Table 1 to this subpart for their stationary SI ICE." Therefore, as the proposed Dominion emergency generator is greater than 100 HP (but less than 130 HP), it must meet the emission standards under Table 1 for "Emergency Generators:" NO_x + HC - 10.0 g/HP-hr and CO - 387.0 g/HP-hr.

Dominion has proposed to meet the emission standards under Table 1 pursuant to §60.4243(b)(1) - installing a certified engine (information was included in the permit application showing the proposed engine is certified). They will still have meet the monitoring and compliance demonstration requirements under §60.4237(a)(1) and §60.4243(a)(1), respectively, and the record-keeping and reporting requirements under §60.4245.

40 CFR 63 Subpart ZZZZ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

The proposed emergency generator appears to be subject to the area source requirements of 40 CFR 63, Subpart ZZZZ. However, the DAQ has not been delegated authority from USEPA to enforce the area source requirements of this rule. However, it is important to note, for the proposed engine in question, compliance with 40 CFR 60, Subpart JJJJ would ensure compliance with 40 CFR 63 Subpart ZZZZ.

TOXICITY ANALYSIS OF NON-CRITERIA REGULATED POLLUTANTS

This section provides an analysis for those regulated pollutants that may be emitted from the proposed selenium treatment plant and that are not classified as "criteria pollutants." Criteria pollutants are defined as Carbon Monoxide (CO), Lead (Pb), Oxides of Nitrogen (NO_x), Ozone, Particulate Matter (PM), Particulate Matter less than 10 microns (PM₁₀), Particulate Matter less than 2.5 microns (PM_{2.5}), and Sulfur Dioxide (SO₂). These pollutants have National Ambient Air Quality Standards (NAAQS) set for each that are designed to protect the public health and welfare. Other pollutants of concern, although designated as non-criteria and without national concentration standards, are regulated through various federal and programs designed to limit their emissions and public exposure. These programs include federal source-specific Hazardous Air Pollutants (HAPs) limits promulgated under 40 CFR 61 (NESHAPS) and 40 CFR 63 (MACT). Any potential applicability to these programs were discussed above under REGULATORY APPLICABILITY.

The majority of non-criteria regulated pollutants fall under the definition of HAPs which, with

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some revision since, were 188 compounds identified under Section 112(b) of the Clean Air Act (CAA) as pollutants or groups of pollutants that EPA knows or suspects may cause cancer or other serious human health effects. Due to the annual hour of operation limit on the emergency generator, the proposed unit has the potential to emit only trace amounts of HAPs.

AIR QUALITY IMPACT ANALYSIS

The proposed construction does not meet the definition of a “major stationary source” pursuant to 45CSR14 and, therefore, an air quality impact (computer modeling) analysis was not required. Additionally, based on the nature of the proposed modification, modeling was not required under 45CSR13, Section 7.

MONITORING, COMPLIANCE DEMONSTRATIONS, RECORD-KEEPING, AND REPORTING REQUIREMENTS

The following substantive monitoring, compliance demonstration, and record-keeping requirements shall be required:

- For the purposes of demonstrating compliance with the maximum usage limits set forth in 4.1.6(a), Dominion shall be required to maintain monthly and rolling twelve month records of the hours of operation of the emergency generator;
- Dominion shall be required to comply with all applicable monitoring, compliance demonstration, record-keeping, and reporting requirements as given under 40 CFR 60, Subpart JJJJ.

PERFORMANCE TESTING OF OPERATIONS

The following substantive performance testing requirements shall be required:

- Dominion shall, when required by the Director, conduct or have conducted test(s) to determine compliance with the emission limitations established in the draft permit and/or applicable regulations.
- Consol shall be required to comply with all applicable performance testing requirements as given under 40 CFR 60, Subpart JJJJ.

CHANGES TO PERMIT R13-2555A

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Substantive changes to Permit Number R13-2555A are limited to the following:

- Inclusion of new emergency generator information in Table 1.0: Emission Units;
- Addition of requirements relating to new emergency generator under 4.1.6.; and
- Addition of emergency generator usage monitoring and record-keeping under 4.2.1.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that compliance with all applicable regulations will be achieved. Therefore, I recommend to the Director the issuance of a Permit Number R13-2555B to Dominion Transmission, Inc. for the installation of an emergency generator at the Hastings Station located near Hastings, Calhoun County, WV.

Joe Kessler, PE
Engineer

Date