



west virginia department of environmental protection

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**GENERAL PERMIT REGISTRATION APPLICATION
ENGINEERING EVALUATION / FACT SHEET**

BACKGROUND INFORMATION

Registration No.: G60-C070
Plant ID No.: 051-00113
Applicant: CertainTeed Gypsum WV, Inc.
Facility Name: Moundsville Facility
Location: Moundsville, Marshall County
SIC Code: 3275
Application Type: Construction
Received Date: January 16, 2015
Engineer Assigned: Steven R. Pursley, PE
Fee Amount: \$1,500
Date Received: January 20, 2015
Complete Date: March 3, 2015
Due Date: April 17, 2015
Applicant Ad Date: February 3, 2015
Newspaper: *The Intelligencer*
UTM's: Easting: 516 km Northing: 4,408 km Zone: 17
Latitude/Longitude: 39.7195/-80.8228
Description: CertainTeed is proposing to register four (4) diesel-fired emergency generators with the G60-C General Permit.

TYPE OF PROCESS/MODIFICATION

CertainTeed operates a wallboard manufacturing facility near Moundsville. With this application, CertainTeed is proposing to install 3 Cummins engines to provide emergency septic system power and one John Deere engine to power the fire water pump. To provide this capability, Constellium is proposing to install one (1) diesel-fired Cummins Model DFEG 755 brake-horsepower (bhp) reciprocating internal combustion engine (RICE) paired with a 350 kW generator. Specifics of each engine are detailed below:

Engine	Make	Model	Installation	Type	Displacement (L/cyl)	Rating (hp)
Lift Station 1	Cummins	2004-2006	March 2008	LB4S	2.2	37
Lift Station 2	Cummins	2006	March 2008	LB4S	1.6	27
Lift Station 3	Cummins	2006	March 2008	LB4S	1.6	27
Fire Pump	John Deere	2005	March 2008	LB4S	8.1	252

SITE INSPECTION

Due to the nature of the source and proposed construction, a site inspection was deemed not necessary for this permitting action. However, using internet mapping software, it is noted that this facility lies just across State Route 2 from the Ohio River in a primarily rural area. To get to the facility take I 77 north to exit 179 and turn right on State Route 2 and go approximately 59 miles. The facility is on the right.

AIR EMISSIONS AND CALCULATION METHODOLOGIES

The maximum potential-to-emit (PTE) from Constellium's proposed emergency generator is summarized in the table below. All emissions except for HAPs and SO₂ were based on information from the manufacturer. HAP and SO₂ emissions were based on AP-42 Chapter 3.3. Where necessary an average brake-specific fuel consumption of 7,000 Btu/hp-hr was used to convert from lb/mmbtu to lb/hp-hr. G60-C limits the facility to 500 hours per year of operation.

Lift Station Emergency Generator Emission Factors

Pollutant	Emission Factor	Source
CO	0.0029 lb/hp-hr	Vendor
NO _x	0.0044 lb/hp-hr	Vendor
PM/PM ₁₀ /PM _{2.5}	0.0013 lb/hp-hr	Vendor
SO ₂	0.0021 lb/hp-hr	AP-42, Table 3.3-1
VOCs	0.0001 lb/hp-hr	Vendor
Total HAPs	0.0065 lb/mmbtu ⁽¹⁾	AP-42, Table 3.3-2

(1) Sum of all HAPs in Table 3.3-2

Fire Pump Engine Emission Factors

Pollutant	Emission Factor	Source
CO	0.0019 lb/hp-hr	Vendor
NO _x	0.0164 lb/hp-hr	Vendor
PM/PM ₁₀ /PM _{2.5}	0.0004 lb/hp-hr	Vendor
SO ₂	0.0021 lb/hp-hr	AP-42, Table 3.3-1
VOCs	0.0006 lb/hp-hr	Vendor
Total HAPs	0.0065 lb/mmbtu ⁽¹⁾	AP-42, Table 3.3-2

(1) Sum of all HAPs in Table 3.3-2

Based on the above, emissions of criteria pollutants from the engines should be as follows:

Engine	NO _x		CO		SO ₂		PM/PM ₁₀ /PM _{2.5}		VOCs	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Lift Station 1	0.17	0.04	0.11	0.03	0.08	0.02	0.05	0.01	0.01	0.01
Lift Station 2	0.12	0.03	0.08	0.02	0.06	0.01	0.04	0.01	0.01	0.01
Lift Station 3	0.12	0.03	0.08	0.02	0.06	0.01	0.04	0.01	0.01	0.01
Fire Pump	4.13	1.03	0.48	0.12	0.53	0.13	0.10	0.02	0.15	0.04
Total	4.54	1.13	0.75	0.19	0.14	0.18	0.23	0.05	0.17	0.04

Additionally, based on the above emission factors, total HAP emissions from all four generators combined should be less than 8 pounds per year.

The applicant has indicated that fuel will be stored in 4 separate tanks TOTALING 510 gallons. Emissions from tanks this small would be trivial (likely less than 1 pound per year of VOCs).

REGULATORY APPLICABILITY

The proposed emergency generators are subject to substantive requirements in the following state and federal air quality rules and regulations: 45CSR13, 40 CFR 60 Subpart III, and 40 CFR 63, Subpart ZZZZ. Each applicable rule (and ones that have reasoned non-applicability), and CertainTeed's compliance therewith, will be discussed in detail below.

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 emergency generators are subject to a “substantive requirement” of an emission control rule (See 40 CFR 60, Subpart IIII under the Regulatory Discussion below). Therefore, under §45-13-2.24 (b), the generators would be defined as a “stationary source.” Pursuant to §45-13-5.1, “[n]o person shall cause, suffer, allow or permit the construction . . . and operation of any stationary source to be commenced without . . . obtaining a permit to construct.” As a result of this statutory language, CertainTeed is required to obtain a permit or register with an appropriate general permit under 45CSR13 for the construction and operation of the emergency generators.

As required under §45-13-8.3 (“Notice Level A”), CertainTeed placed a Class I legal advertisement in a “newspaper of general circulation in the area where the source is . . . located.” The ad ran on February 3, 2015 in *The Intelligencer* and the affidavit of publication for this legal advertisement was submitted on March 3, 2015.

45CSR30: Requirements for Operating Permits

The facility is an existing Title V major source with an issued Title V permit (R30-05100113-2010). CertainTeed must update their Title V permit in accordance with 45CSR30.

40 CFR 60, Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Subpart IIII of 40 CFR 60 is the NSPS for stationary compression ignition internal combustion engines (diesel fired engines). Section §60.4200 states that “provisions of [Subpart IIII] are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE).” Specifically, §60.4200(a)(2) states that Subpart IIII applies to “[o]wners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are:

- (i) Manufactured after April 1, 2006, and are not fire pump engines, or
- (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

CertainTeed has proposed the construction of four (4) new CI ICE emergency generators that are subject to Subpart IIII. Based on the standards for owner/operators of emergency generator CI ICE under §60.4205, the following table details the emission standards for the engine:

Subpart III Standards

Duty	Size (hp)	Displacement (L/cyl)	Emission Standards (g/hp-hr)		
			NMHC + NO _x	CO	PM
Emergency	37	<10	7.1	4.1	0.6
Emergency	27	<10	7.1	4.1	0.6
Emergency	27	<10	7.1	4.1	0.6
Fire Pump	252	<10	7.8	2.6	0.4

Compliance with these standards (for all four engines) are met primarily by, pursuant to §60.4211(b)(1), "purchasing an engine certified to the emission standards." CertainTeed has indicated in their permit application that all of these engines are certified Subpart III engines.

40 CFR 63, Subpart ZZZZ: National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

According to CertainTeeds existing Title V permit, the facility is an area source of HAPs and, the emergency generators are subject to the area source provisions of that MACT. However, since they are new, emergency engines rated at less than 500 hp and located at an area source of HAPs, the only requirements are to comply with 40CFR60 Subpart III.

GENERAL PERMIT G60-C ELIGIBILITY

Section 2.3.1 of the G60-C General Permit Registration defines the eligibility requirements of for emergency generators. It states that:

All emergency generators installed for the purpose of allowing key systems to continue to operate without interruption during times of utility power outages, including emergency generators installed at Title V(major) facilities and other facilities having additional point sources of emissions, are eligible for Class II General Permit registration except for:

- a. Any emergency generator which is a major source as defined in 45CSR14, 45CSR19 or 45CSR30;
- b. Any emergency generator subject to the requirements of 45CSR14, 45CSR15, 45CSR19, 45CSR25, 45CSR27, 45CSR30, 45CSR34;
- c. Any emergency generator whose estimated hours of operation exceeds 500 hours per year;
- d. Any emergency generator located in or which may significantly impact an area which has been determined to be a nonattainment area. Unless otherwise approved by the Secretary.
- e. Any emergency generator which will require an individual air quality permit review

process and/or individual permit provisions to address the emission of a regulated pollutant or to incorporate regulatory requirements other than those established by General Permit G60-C.

An evaluation of each of these eligibility requirements is given in the following:

- The emergency generators evaluated herein meet the requirements of the first paragraph and are not defined as a major source under 45CSR14, 45CSR19, or 45CSR30.
- The emergency generators are not subject to the rules listed under 2.3.1(b) - with the exception of 45CSR34 - the state rule that incorporates by reference the Federal Hazardous Air Pollutant (HAP) regulations under 40 CFR 61, 63, and 65. The engines are subject to the non-substantive (no emissions standards) provisions of 40 CFR 63, Subpart ZZZZ. However, as these provisions are considered non-substantive (no emission standards), this 45CSR34 applicability is not deemed sufficient to exclude the engines from registration under the G60-C.
- The emergency generators will not exceed 500 hours of operation per year.
- The Moundsville Facility is located in an area designated as in attainment for all pollutants except SO₂. As can be seen above, SO₂ emissions from all four engines combined are only 0.18 tons per year.
- An individual air quality permit is deemed not necessary for this engine.

Additionally, siting requirements are given under 3.1.1: "No person shall construct, locate or relocate any affected facility or emission unit within three hundred (300) feet of any occupied dwelling, business, public building, school, church, community, institutional building or public park. An owner of an occupied dwelling or business may elect to waive the three hundred (300) feet siting criteria." An examination of the facility on Google Earth indicates that this requirement shall be met.

RECOMMENDATION TO DIRECTOR

CertainTeed's request to operate four (4) emergency generators at the Moundsville Facility located near Moundsville, Marshall County, WV meets the requirements of General Permit G60-C and all applicable rules and, therefore, CertainTeed should be granted a General Permit Registration to operate the said generators.



Steven R. Pursley, P.E.
Engineer

4-16-15
Date