



west virginia department of environmental protection

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

BACKGROUND INFORMATION

Registration No.: G60-C075 *After-the-Fact*
Plant ID No.: 025-00109
Applicant: Greenbrier Valley Medical Center
Facility Name: Ronceverte
Location: Ronceverte, Greenbrier County
SIC Code: 8062; NAICS Code: 622210
Application Type: Construction
Received Date: April 02, 2015
Engineer Assigned: Thornton E. Martin Jr.
Fee Amount: \$1,500.00
Date Received: April 06, 2015
Complete Date: May 06, 2015
Applicant Ad Date: April 01, 2015
Newspaper: *The West Virginia Daily News*
UTM's: Easting: 446.649 km Northing: 4180.825 km Zone: 17
Description: This is an *After-the-Fact* application for the construction and operation of (2) emergency generators. for the purpose of providing back-up electrical power for critical operating functions for their facility located at the Greenbrier Valley Medical Center in Ronceverte, West Virginia. The emergency generators will be operated no more than 500 hours per year and the facility will limit testing/maintenance use to 52 hours per engine per calendar year.

PROCESS DESCRIPTION

Greenbrier Valley Medical Center installed a diesel-fired Kohler standby/emergency generator (EG-1) in 1992 for the purpose of producing emergency electrical power at the Greenbrier Valley Medical Center located in Ronceverte, West Virginia. The Kohler emergency electrical generator is driven by a Detroit Diesel, Model 8V-92TA, 2-cycle, 8 cylinder, turbocharged and aftercooled engine providing 643 HP or 480kW @ 1800 RPM and uses approximately 33.4 gallons of diesel per hour (gph).

Greenbrier Valley Medical Center installed a diesel-fired Cummins standby/emergency generator (EG-2) in 2004 for the purpose of producing emergency electrical power at the Greenbrier Valley Medical Center located in Ronceverte, West Virginia. The Cummins emergency electrical generator is driven by a Cummins, Model NTA855-G2, 4-cycle, 6 cylinder, turbocharged and aftercooled engine providing 465 HP or 347 KW @ 1800 RPM and uses approximately 23.5 gallons of diesel per hour.

Table 1: Equipment and Control Device Listing

Emission Unit ID	Emission Unit Description	Detail Make/Model Fuel/Throughput	Year Installed/ Modified	Design Capacity	Type ³ and Date of Change	Control Device
EG-1	Emergency Generator #1	Detroit Diesel, 8V-92TA, 2FO / 33.4 gph	1992	480 kW 643 bhp	After-the-Fact	Turbocharger and Low T Aftercooled
EG-2	Emergency Generator #2	Cummins, NTA855-G2 2FO / 23.5 gph	2004	347 kW 465 bhp	After-the-Fact	Turbocharger and Low T Aftercooled
T01	Existing	Approx. < 16,700 gpy Generator EG-1	Not Available	50 gal.	After-the-Fact	None
T02	Existing	Approx. < 11,750 gpy Generator EG-2	Not Available	40 gal.	After-the-Fact	None
T03	Existing	Approx. < 28,450 gpy	Not Available	5,000 gal.	After-the-Fact	None

SITE INSPECTION

This is an after-the-fact application for two (2) emergency generators installed for the purpose of allowing key systems to continue to operate without interruption during times of utility power outages. A site inspection was deemed unnecessary by the writer at this time, however, the facilities will be placed on the emergency generator list of sources from this permitting action.

Directions: Take I-77 S toward Beckley, merge onto I-64 E via EXIT 40 on the left toward Lewisburg. Take the US-219 exit, EXIT 169, toward Lewisburg/Ronceverte. Turn right onto N Jefferson St/US-219 S. Stay straight to go onto Seneca Trl. Stay straight to go onto County Hwy-37/County Hwy-37/3/Maplewood Ave. 202 MAPLEWOOD AVE is on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Engine emissions estimates for criteria pollutants CO, NO_x, SO₂ and VOC for generators #1 and #2 (EG-1 and EG-2) were derived from the manufacturers supplied test data. PM emission factor is from AP-42. Emission estimates for hazardous and toxic pollutants were determined using emission factors from AP-42, Section 3.4, Table 3.4-3. Estimated diesel heat input = gal/hr X 140,000 Btu/gal. Emission estimates were calculated by the applicants' consultant and checked for accuracy and completeness by the writer.

Greenbrier Valley Medical Center's proposed emergency generator installation and operation (*after-the-fact*) will result in the following estimated potential to discharge controlled emissions:

Table 2: Emergency Generator Emission Summary - Criteria Pollutants

Source ID No.	Potential Emissions (lbs/hr)					Potential Emissions (tons/yr)				
	NO _x	CO	VOC	SO ₂	PM ₁₀	NO _x	CO	VOC	SO ₂	PM ₁₀
EG-1	14.11	7.61	0.16	2.40	1.42	3.53	1.90	0.04	0.60	0.35
EG-2	9.10	1.23	0.07	0.65	0.31	2.27	0.31	0.02	0.16	0.08
TOTAL	23.21	8.84	0.23	3.05	1.73	5.8	2.21	0.06	0.76	0.43

Table 3: Emergency Generator Emission Summary - Hazardous/Toxic Pollutants

Source	Potential Emissions (lbs/hr)						Potential Emissions (tons/yr)					
	Benzene	Ethyl-benzene	Toluene	Xylenes	n-Hexane	Formaldehyde	Benzene	Ethyl-benzene	Toluene	Xylenes	n-Hexane	Formaldehyde
EG-1	0.0036	0	0.0013	0.0009	0	0.0003	0.0009	0	0.0003	0.0009	0	0.0003
EG-2	0.0025	0	0.0009	0.0006	0	0.0003	0.0006	0	0.0002	0.0002	0	0.0003
TOT	0.006	0.000	0.002	0.002	0.000	0.001	0.002	0.000	0.001	0.001	0.000	0.001

GENERAL PERMIT ELIGIBILITY

The proposed construction and operation of this facility meets the eligibility (Section 1.3), and limitations and standards (Section 5.1) as specified in General Permit G60-C. Greenbrier Valley Medical Center is not subject to 40CFR60 Subpart IIII, due to the year of manufacture of the engines (1992 and 2004) being prior to April 1, 2006.

In consideration of requirements for compliance under the reciprocating internal combustion engines (RICE) National Emissions Standards for Hazardous Air Pollutants, 40 CFR Part 63 Subpart ZZZZ: the RICE NESHAP Summary of Requirements for existing emergency engines greater than 500 hp and less than or equal to 500 hp located at an area source of HAP, constructed before June 12, 2006, the requirements are as follows:

- a. Change oil and filter every 500 hours of operation or annually, whichever comes first;

- b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and
- c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

The proposed construction and operation of this facility meets the limitations and standards (Section 6.1) as specified in the General Permit G60-C. Petroleum liquid storage tank volume shall not exceed 39,889 gallons capacity and maximum true vapor pressure shall not exceed 2.17 psia for petroleum liquid storage tanks greater than 19,812 gallon capacity. The tank volume provided for the three tanks proposed within this application are 50, 40 and 5,000 gallons.

RECOMMENDATION TO DIRECTOR

Greenbrier Valley Medical Center's request to construct and operate two emergency generators at their Ronceverte, Greenbrier County, WV facilities meet the requirements of General Permit G60-C and all applicable rules and therefore should be granted a General Permit Registration to construct and operate the said facility.


Thornton E. Martin Jr.
Permit Engineer

May 06, 2015

Date