



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone 304/926-0475

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

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

BACKGROUND INFORMATION

Registration No.: G60-C010A
Plant ID No.: 055-00119
Applicant: Virginia Department of Transportation (VDOT)
Facility Name: East River Tunnel
Location: Bluefield, Mercer County
SIC Code: 9621
NAICS Code: 926120
Application Type: Modification
Received Date: March 28, 2016
Engineer Assigned: Thornton E. Martin Jr.
Fee Amount: \$1500
Date Received: March 31, 2016
Complete Date: April 25, 2016
Applicant Ad Date: March 25, 2016
Newspaper: *Bluefield Daily Telegraph*
UTM's: Easting: 488.783 km Northing: 4126.195 km Zone: 17
Description: The Virginia Department of Transportation proposes to construct a new standby emergency generator at the East River Mountain Tunnel located at I-77 mile marker 1 in Bluefield, WV. The new generator will supplement the two existing generators at the facility to meet NFPA 502 requirements.

BACKGROUND

The Virginia Department of Transportation had two old failing generators for the East River Tunnel. Permit application (G60-B010) requested authorization for the installation and operation of two new 1,000 kW emergency generators to be operated no more than 500 hours per year for the purpose of maintaining tunnel operation during periods of power failure. A 5,000-gallon underground storage tank (T-1) holding fuel oil #2 is utilized for the two generators.

MODIFICATION

A new stationary emergency generator, rated at 800 kW, will serve as a standby generator to facilitate the VDOT - East River Mountain Tunnel operations during any power outage. The new generator will supplement the two existing emergency generators at the facility to meet NFPA 502 requirements. The

new generator is mounted atop a double walled 973-gallon fuel tank (T-2).

SITE INSPECTION

On June 2, 2009, Todd Shrewsbury from DAQ's Enforcement Section and the permit writer (G60-B010) conducted a site inspection of the East River Tunnel emergency generator location. From the site inspection it was concluded that all siting requirements were met. Based on the scope of this modification (G60-C010A), the writer deemed that a site visit was not required.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Maximum controlled emissions from Virginia Department of Transportation's diesel fired emergency generators are summarized in Tables 1 and 2. G60-C limits the facility to 500 hours per year of operation.

Table 1: 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	10.9	2.9	0.307	0.172	0.196	2.73	0.726	0.0768	0.0431	0.0489
EG-2	10.9	2.9	0.307	0.172	0.196	2.73	0.726	0.0768	0.0431	0.0489
EG-3	8.74	2.32	0.246	0.138	0.157	2.19	0.580	0.0615	0.0345	0.0391
TOTAL	30.54	8.12	0.86	0.482	0.549	7.65	2.032	0.2151	0.1207	0.1369

Table 2: Emergency Generator Emission Summary - Hazardous/Toxic Pollutants

Source ID No.	Potential Emissions (lbs/hr)				Potential Emissions (tons/yr)			
	Benzene	Toluene	Xylenes	Formaldehyde	Benzene	Toluene	Xylenes	Formaldehyde
EG-1	0.00265	0.000959	0.000659	0.000269	0.000662	0.000240	0.000165	0.0000673
EG-2	0.00265	0.000959	0.000659	0.000269	0.000662	0.000240	0.000165	0.0000673
EG-3	0.00212	0.000767	0.000527	0.000215	0.000530	0.000192	0.000132	0.0000539
TOTAL	0.007	0.003	0.002	0.001	0.002	0.001	0.000	0.000

GENERAL PERMIT ELIGIBILITY

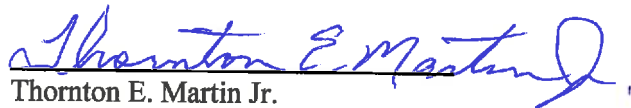
The proposed construction and operation of this facility meets the eligibility (Section 1.3), and limitations and emissions controls (Section 2.1) as specified in General Permit G60-C. VDOT is subject to 40CFR60 Subpart III, due to the year of manufacture date of the engines (EG-1, EG-2 - 2008; EG-3 - 2012).

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 new Emergency engines greater than 500 hp and less than or equal to 500 hp located at an area source of HAP, constructed on or after June 12, 2006, the engines are subject to 40 CFR 60, subpart III, as applicable.

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 two tanks (T-1 and T-2) within this application are 5,000 and 973 gallons, respectively.

RECOMMENDATION TO DIRECTOR

The Virginia Department of Transportation's request to construct and operate an emergency generator at the Bluefield, Mercer County, WV site meets 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

April 25, 2016

Date