



west virginia department of environmental protection

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

BACKGROUND INFORMATION

Registration No.: G60-C087
Plant ID No.: 037-00104
Applicant: U.S. Customs and Border Protection
Facility Name: CBP Advanced Training Center
Location: Harpers Ferry, Jefferson County
SIC Code: 9221; NAICS Code: 922120
Application Type: Construction
Received Date: February 16, 2016
Engineer Assigned: William T. Rothwell II, P.E.
Fee Amount: \$1,500.00
Date Received: February 18, 2016
Complete Date: March 16, 2016
Applicant Ad Date: March 7, 2016
Newspaper: *The Journal Publishing Company*
UTM's: Easting: 259.772 km Northing: 4355.118 km Zone: 17
Description: Permit application for the construction and operation of ten (10) emergency generators for the purpose of providing back-up electrical power for critical operating functions at the CBP Advanced Training Center located at the U.S. Customs and Border Protection Center in Harpers Ferry, 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

A total of ten emergency generators have been installed and operated at the Advanced Training Center since 2005. Diesel fueled emergency generators of various size were added over the course of the facilities development to provide backup emergency power for critical facility operations. The last emergency generator was installed in 2016. The following Table outlines the facility/generator configuration:

Table 1: Equipment and Control Device Listing

Emission Unit ID	Emission Unit Description	Detail Make/Model Fuel/Throughput	Year Installed/ Modified	Design Capacity	Year Manufactured	Control Device
GEN-01	Emergency Generator #1	Detroit Diesel, 6063HK35, 2FO / 4.01 ft ³ /hr	11/14/2006	415 kW 635 bhp	2004	None
GEN-02	Emergency Generator #2	John Deere, 6068TF250 2FO / 1.0 ft ³ /hr	1/11/2005	110 kW 190 bhp	2004	None
GEN-03	Emergency Generator #3	John Deere, 6068TF250 2FO / 1.0 ft ³ /hr	6/13/2005	110 kW 190 bhp	2004	None
GEN-04	Emergency Generator #4	Detroit Diesel, 10V1600G80S, 2FO / 4.43 ft ³ /hr	11/14/2006	500 kW 765 bhp	2004	None
GEN-05	Emergency Generator #5	John Deere, 4045TF150 2FO / 0.724 ft ³ /hr	1/11/2005	62 kW 99 bhp	2004	None
GEN-06	Emergency Generator #6	John Deere, 6090HF484 2FO / 0.724 ft ³ /hr	7/15/2010	255 kW 345 bhp	2009	None
GEN-07	Emergency Generator #7	MTU Onsite Energy, 12V2000G85TB 2FO / 7.72 ft ³ /hr	7/20/2011	750 kW 1,193 bhp	2010	None
GEN-08	Emergency Generator #8	MTU Onsite Energy, 12V2000G85TB 2FO / 7.72 ft ³ /hr	7/20/2011	750 kW 1,193 bhp	2010	None
GEN-09	Emergency Generator #9	John Deere, 6068TF285 2FO / 1.56 ft ³ /hr	11/15/2012	155 kW 237 bhp	2012	None
GEN-10	Emergency Generator #10	MTU Onsite Energy, 6R1600G70S 2FO / 2.34 ft ³ /hr	2016	230 kW 418 bhp	2014	None

GEN-01 - GEN-10 are equipped with integrated sub-base fuel tanks. The largest tank is 1,530 gallons.

SITE INSPECTION

This is an application for ten (10) 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: U.S. Route 340 South, W of Harpers Ferry, WV. Turn left onto Koonce Road. Facility entrance is on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Engine emissions estimates for criteria pollutants CO, NO_x, SO₂, and VOC for all generators were derived from Manufacturer's Data and 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. Emission estimates were calculated by the applicant and checked for accuracy and

completeness by the writer.

U.S. Customs and Border Protection's emergency generator installation and operations 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
GEN-01	8.26	3.49	0.45	5.14	0.44	2.06	0.87	0.11	1.28	0.11
GEN-02	5.89	1.27	0.47	0.39	0.42	1.47	0.32	0.12	0.10	0.10
GEN-03	5.89	1.27	0.47	0.39	0.42	1.47	0.32	0.12	0.10	0.10
GEN-04	9.95	4.21	0.54	6.19	0.54	2.49	1.05	0.13	1.55	0.13
GEN-05	3.07	0.66	0.24	0.20	0.22	2.49	1.05	0.13	1.55	0.13
GEN-06	10.70	2.30	0.85	0.71	0.76	2.67	0.58	0.21	0.18	0.19
GEN-07	8.05	2.13	2.54	9.65	0.24	2.01	0.53	0.64	2.41	0.06
GEN-08	8.05	2.13	2.54	9.65	0.24	2.01	0.53	0.64	2.41	0.06
GEN-09	7.35	1.58	0.59	0.49	0.52	1.84	0.40	0.15	0.12	0.13
GEN-10	2.48	0.41	0.78	0.86	0.04	0.62	0.10	0.20	0.21	0.01
TOTAL	69.69	19.45	9.47	33.67	3.84	19.13	5.75	2.45	9.91	1.02

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

Source ID No.	Potential Emissions (lbs/hr)						Potential Emissions (tons/yr)					
	Benzene	Ethylbenzene	Toluene	Xylenes	n-Hexane	Formaldehyde	Benzene	Ethylbenzene	Toluene	Xylenes	n-Hexane	Formaldehyde
GEN-01	0.49		0.18	0.12		0.05	0.12		0.04	0.03		0.01
GEN-02	0.18		0.08	0.05		0.22	0.04		0.02	0.01		0.06
GEN-03	0.18		0.08	0.05		0.22	0.04		0.02	0.01		0.06
GEN-04	0.59		0.21	0.15		0.06	0.15		0.05	0.04		0.02
GEN-05	0.09		0.04	0.03		0.12	0.02		0.01	0.01		0.03
GEN-06	0.32		0.14	0.1		0.41	0.08		0.04	0.02		0.41
GEN-07	0.93		0.34	0.23		0.09	0.23		0.08	0.06		0.02
GEN-08	0.93		0.34	0.23		0.09	0.23		0.08	0.06		0.02
GEN-09	0.22		0.1	0.07		0.28	0.06		0.02	0.02		0.07
GEN-10	0.39		0.17	0.12		0.49	0.1		0.04	0.03		0.12
TOT	4.32	0	1.68	1.15	0	2.03	1.07	0	0.4	0.29	0	0.82

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. Five of the engines were manufactured prior to 2006 (Units GEN-01, GEN-02, GEN-03, GEN-04, and GEN-05); thus, these engines would normally be governed under the U.S. EPA's National Emission Standards for Hazardous Pollutants ("NESHAP") as per 40CFR63 Subpart ZZZZ. However, U.S. Customs and Border Protection qualifies for Subpart ZZZZ's institutional exemption, therefore, the provisions do not apply to these affected sources. The remaining five engines (Units GEN-06 thru GEN-10) were manufactured after 2006 and are all EPA certified; thus, these engines will operate under EPA's New Source Performance Standard ("NSPS") 40CFR60 Subpart III.

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 volumes provided for the ten sub-base integrated tanks listed within this application are each less than 19,812 gallons.

RECOMMENDATION TO DIRECTOR

U.S. Customs and Border Protection's request to construct and operate ten emergency generators at their Harpers Ferry, Jefferson County, WV facility 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 emergency generators.



William T. Rothwell II, P.E.
Engineer

06/13/2014

Date