The generators are used for emergency operations, testing/maintenance and will be enrolled in the PJM Emergency Load Response Program (ELRP). The ELRP exists to prevent brownouts and blackouts. Numerous states now allow emergency engines to participate during such times (as opposed to waiting for a blackout), whereas subsets of emergency generators are activated for short periods of time in the effort to prevent a blackout. The emergency generators at the facility will not be synchronized with the grid. The generators will simply be turned on when PJM declares an emergency under the PJM Program.

Both engines were manufactured in 2011and operate under the EPA New Source Performance Standars (NSPS) as per 40 CFR 60 Subpart IIII.. The larger engine is Tier 2 certified (Certificate Number: CEX-STATCI-11-05) and the smaller engine is Tier 3 certified. The NSPS allows for 100 hours per year for testing/maintenance/emergency demand response (DR). The ELRP meets the definition of emergency DR as per 40 CFR 60.4211(f)(2)(ii). Although under the NSPS, true emergency use is unlimited, the total use of the engines including true emergencies are limited to 500 hours per year as per the WV DEP General Permit.

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	Cummins/QST30-G5-NR2 2FO / 72.2 gph	6/21/2012	1111 kW 1490 bhp	After-the-Fact	Turbocharger and Low T Aftercooled
EG-2	Emergency Generator #2	Cummins/QSL9-G3-NR3 2FO / 17.8 gph	6/21/2012	355 kW 476 bhp	After-the-Fact	Turbocharger and Low T Aftercooled
T01	Located at New Facility	Approx. << 36,100 gpy Generator EG-1	6/21/2012	2,500 gal.	After-the-Fact	None
T02	Located at Old Facility	Approx. << 8,900 gpy Generator EG-2	6/21/2012	1,500 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: From US 87 (West Virginia Turnpike), take MacCorkle Avenue Exit (Rt. 61W) to 56th Street, turn right onto 56th Street to No. 300.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Engine emissions for generators #1 and #2 (EG-1 and EG-2) were derived from the manufacturers supplied test data. Emission estimates for criteria pollutants, hazardous and toxic pollutants were determined using emission factors from AP-42, 5th Edition, 1996. Estimated diesel heat input = gal/hr X 135,000 Btu/gal. Emission estimates were calculated by the applicants' consultant and checked for accuracy and completeness by the writer.

Highland Hospital Association proposed facility 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)				
	NOx	CO	VOC	SO_2	PM_{10}	NOx	CO	VOC	SO_2	PM_{10}
EG-1	15.67	8.57	1.05	0.02	0.49	3.92	2.14	0.26	0.005	0.12
EG-2	3.13	2.74	1.18	0.98	0.16	0.78	0.68	0.29	0.24	0.04
TOTAL	18.8	11.31	2.23	1	0.65	4.7	2.82	0.55	0.245	0.16

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	Formal-dehyde	Benzene	Ethyl-benzene	Toluene	Xylenes	n-Hexane	Formal-dehyde
EG-1	0.0076	0	0.0027	0.0019	0	0.0008	0.0019	0	0.0007	0.0005	0	0.0002
EG-2	0.0022	0	0.0010	0.0007	0	0.003	0.0006	0	0.0003	0.0002	0	0.0007
TOT	0.010	0.000	0.004	0.003	0.000	0.004	0.003	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 emissions controls (Section 2.1) as specified in General Permit G60-C. Highland Hospital Association is subject to 40CFR60 Subpart IIII, due to the year of manufacture of the engines (2011).

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 IIII, 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 proposed within this application are 2,500 and 1,500 gallons.

RECOMMENDATION TO DIRECTOR

Highland Hospital Association's request to construct and operate two emergency generators at their Charleston, Kanawha 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

April 10, 2015
Date