



west virginia department of environmental protection

Division of Air Quality
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ENGINEERING EVALUATION/FACT SHEET

B ACKGROUND INFORMATION

| | |
|--------------------|---|
| Application No.: | R13-3202 |
| Plant ID No.: | 037-00101 |
| Applicant: | Charles Town Utility Board |
| Facility Name: | Charles Town Wastewater Treatment Plant |
| Location: | Charles Town |
| NAICS Code: | 221320 |
| Application Type: | Construction (After-the-Fact) |
| Received Date: | August 7, 2014 |
| Engineer Assigned: | Edward S. Andrews, P.E. |
| Fee Amount: | \$3,500.00 |
| Fee Deposit Date: | August 11, 2014 |
| Complete Date: | September 5, 2014 |
| Due Date: | December 4, 2014 |
| Applicant Ad Date: | August 13, 2014 |
| Newspaper: | Spirit of Jefferson Advocate |
| UTM's: | Easting: 771.2.7 km Northing: 4,352.5 km Zone: 17 |
| Description: | The application is for the installation of an emergency generator that was installed in 2002. |

Process Description

A Cummins Engine Model NTA855-G5, turbocharged and aftercooled, diesel fueled, is used to generate 400 kW of electric on emergency bases to support critical equipment at the Charles Town wastewater treatment plant. The engine for this generator set was manufactured in 2001 with the unit being installed at the treatment plant in 2002.

SITE INSPECTION

On September 17, 2014, Mr. Joseph Kreger, a compliance inspector assigned to the Eastern Panhandle Regional Office, conducted a site visit of the Charles Town Wastewater

Treatment Plant and verified the proposed generator set was manufactured in 2001. No other issues were noted during this site visit by Mr. Kreger.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions from the engine for the generator set are indicated in the following table.

| Table #1 – Emissions from Engine | | |
|---|---------------------|--------|
| Pollutant\Sources | Potential Emissions | |
| | lb/hr | tpy |
| Oxides of Nitrogen (NO _x) | 14.52 | 3.63 |
| Carbon Monoxide (CO) | 3.33 | 0.83 |
| Volatile Organic Compounds (VOCs) | 0.43 | 0.11 |
| Sulfur Dioxide (SO ₂) | 0.01 | 0.003 |
| Particulate Matter (PM)/ PM less than 10 microns (PM ₁₀)/ PM less than 2.5 microns (PM _{2.5}) | 0.42 | 0.11 |
| Carbon Dioxide Equivalence (CO ₂ e) | 641.3 | 160.33 |
| Total Hazardous Air Pollutants (HAPs) | 5.2E-3 | 0.001 |

The emissions are based on gross engine output of 605 brake horsepower with annual operating schedule of 500 hours per year.

REGULATORY APPLICABILITY

The Charles Town Wastewater Treatment Plant as configured at the time of submittal of this application is classified as a minor source under Rule 13 and is classified as an area source for Hazardous Air Pollutants (HAPs). The proposed generator set is classified as a construction of a minor stationary source and subject to the review process in 45 CSR13. As such, the applicant prepared and submitted a complete application, paid the required filing fees under 45 CSR 22, and published a legal ad in accordance with 45CSR 13.

NESHAP

The station is classified as an area source of HAPs. The following will discuss the key applicable parts of the engine for the generator set with its corresponding subpart.

Subpart ZZZZ

The internal combustion engine for the emergency generator set is classified as an affected source under the NESHAP for Stationary Reciprocating Internal Combustion Engines (Subpart ZZZZ). The proposed engine will have a power output rating of 605 bhp and be operated as a limited use engine. An emergency demand response is determined and declared by the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3 or other authorized entity as determined by the Reliability Coordinator.

Charles Town Utility Board has elected to enter into agreement to operate this engine as part of PJM Emergency Load Response Program, which meets the definition of Emergency Demand Response per the subpart. An emergency demand response is determined and declared by the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3 or other authorized entity as determined by the Reliability Coordinator, which would be PJM. Thus, the engine is subject to this subpart and the following are the applicable requirements for a limited use engine with an obligation to operate for more than 15 hours per year for emergency demand response:

- Operate and maintain the engine pre manufacturer's instructions or develop and implement a maintenance plan.
- Limit non-emergency operation to 100 hours per calendar year, which included emergency demand response.
- Be fueled only with ultra-low sulfur diesel starting in 2015.
- Oil & oil filter changes every 500 hours of operation or at least annually
- Inspect & replace if necessary air filter, belts, and hoses every 1,000 hours of operation or at least annually.
- Must be equipped with a non-resettable hour meter.
- Report the demand response hours starting in 2015.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

The new emission units will not emit any pollutants that are not already being emitted by another emission source at the facility. Therefore, no information about the toxicity of the hazardous air pollutants (HAPs) is presented in this evaluation.

AIR QUALITY IMPACT ANALYSIS

Based on the annual emission rates, the proposed construction is not classified as a major source as defined by 45CSR14, so air quality modeling was not required.

Engineering Evaluation of R13-3202
Charles Town Utility Board
Charles Town Wastewater Treatment Plant
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MONITORING OF OPERATIONS

The RICE MACT sets specific monitoring and record keeping requirements for this limited use engine, which are mainly focused on documenting the purpose of operating the engine and performing regular routine maintenance. No additional monitoring is deemed necessary.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that the Charles Town Wastewater Treatment Plant should meet applicable requirements of state rules and federal regulations. It is recommended that Charles Town Utility Board be granted a 45CSR13 construction permit for their limited use generator set at the wastewater treatment plant.



Edward S. Andrews, P.E.
Engineer

November 21, 2014

Revised Date

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