

**ALLEGHENY COUNTY HEALTH DEPARTMENT
AIR QUALITY PROGRAM**

October 27, 2014

SUBJECT: Verizon Business Network Services, Inc. – PTTWPA
3170 Sassafra Way
Pittsburgh, PA 15201
Allegheny County

Minor Source Operating Permit No. 0799

TO: Sandra L. Etzel
Chief Engineer

FROM: JoAnn Truchan, P.E.
Air Quality Engineer

FACILITY DESCRIPTION:

Verizon Business is a seller of telecommunications services. The company operates and maintains several sites within Allegheny County. Each site operates as an individual facility.

This facility is a minor source of particulate matter (PM), particulate matter <10 µm in diameter (PM₁₀), particulate matter <2.5 µm in diameter (PM_{2.5}), nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOCs) as defined in §2101.20 of Article XXI.

OPERATING PERMIT DESCRIPTION

This is an operating permit renewal for Verizon Business, located at 3170 Sassafra Way in Pittsburgh. The original operating permit was issued on March 8, 2010. The renewal permit will incorporate conditions from 40 CFR Part 63, Subpart ZZZZ – *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, which was promulgated after the issuance of the most recent operating permit. The source classification for this facility has been changed from synthetic minor to minor due to a change in how the Department defines a minor source for an emergency generator.

PERMIT APPLICATION COMPONENTS:

1. Operating Permit #0799, issued March 7, 2010
2. Operating Permit application #0799, dated August 27, 2014

EMISSION SOURCES:

| I.D. | Source Description | Control Device(s) | Maximum Capacity | Fuel / Material | Stack I.D. |
|-------------|--|--|-------------------------|-------------------------------------|-------------------|
| B001 | Emergency Generator PTTWPA Caterpillar/3516B | turbocharger, aftercooler, electronic fuel injection | 2,000 kW | Ultra Low- Sulfur Diesel Fuel | S001 |
| D001 | Diesel Fuel Storage Tank | none | 3,000 gal | Diesel Fuel | -- |

STACKS:

| Stack I.D. | Stack Height | Stack Diameter | Exhaust Rate | Exhaust Temp. | Exhaust Moisture | Material |
|------------|--------------|----------------|--------------|---------------|------------------|------------|
| S001 | 15 ft. | 1.083 ft. | 16,616 acfm | 978 °F | -- | steel; n/a |

METHOD OF DEMONSTRATING COMPLIANCE:

Compliance with the emission standards set in this permit will be demonstrated by maintaining records of generator operation and fuel use as well as supplier certification of sulfur content. See Permit No. 0799 for the specific conditions for determining compliance with the applicable requirements. Compliance with the short-term (lb/hr) limits must be maintained at all times, including startup and shutdown unless explicitly stated otherwise in the permit. Any emissions due to startup and/or shutdown are included in facility's total annual emissions.

EMISSION CALCULATIONS

Emergency Generator

Generator Rating: 2,000 kW
 Fuel Use: 144.0 gal/hr
 No. of Generators: 1 (one)
 Fuel Oil Sulfur Limit: 0.0015%
 Operation: 500 hrs/yr

Emissions are based on data supplied by the manufacturer (see permit application #0799). Because particulate matter and sulfur oxide emissions based on manufacturer information are less than the limit in Article XXI, §2104.02(a)(1)(B) and §2104.03(a)(2)(A), the Article XXI limits have been streamlined into the manufacturer's limits. All PM is assumed to be PM₁₀, and all PM₁₀ is assumed to be PM_{2.5}.

$$\begin{aligned} \text{Article XXI: } & 0.28 \text{ lb}_{\text{PM}}/\text{MMBtu} \times 144.0 \text{ gal/hr} \times 140,000 \text{ Btu/gal} = 5.64 \text{ lb}_{\text{PM}}/\text{hr} \\ & 1.0 \text{ lb}_{\text{SO}_x}/\text{MMBtu} \times 144.0 \text{ gal/hr} \times 140,000 \text{ Btu/gal} = 20.16 \text{ lb}_{\text{SO}_x}/\text{hr} \end{aligned}$$

The following equation was used for sulfur emissions:

$$\text{SO}_2 \text{ g/hr} = 0.01998 \times \text{fuel rate (g/hr)} \times \text{S\%}$$

$$0.01998 \times 144.0 \text{ gal/hr} \times 3.79 \text{ L/gal} \times 838.9 \text{ g/L} \times 0.0015 \div 453.6 \text{ g/lb} = \mathbf{0.030 \text{ lb/hr SO}_x}$$

From the manufacturer specifications, the maximum brake horsepower is 2,682 bhp.

Emergency Generator PTTWPA Emission Limits

| Pollutant | Manufacturer Emissions (g/hp·hr) | Short-Term Emissions (lb/hr) | Long-Term Emissions (tons/year) |
|----------------------------|----------------------------------|------------------------------|---------------------------------|
| Particulate Matter | 0.111 | 0.656 | 0.164 |
| PM ₁₀ | 0.111 | 0.656 | 0.164 |
| PM _{2.5} | 0.111 | 0.656 | 0.164 |
| Nitrogen Oxides | 5.54 | 32.757 | 8.189 |
| Sulfur Oxides | -- | 0.030 | 0.008 |
| Carbon Monoxide | 0.56 | 3.311 | 0.828 |
| Volatile Organic Compounds | 0.1 | 0.591 | 0.148 |

Diesel Fuel Storage Tank

Emissions estimated using TANKS 4.0.9.d show that VOC emissions from the diesel fuel storage tank are negligible (<0.002 tpy).

REGULATORY APPLICABILITY:

1. Article XXI Requirements for Issuance:

See Permit Application No. 0799, Section 5: Applicable Requirements. The requirements of Article XXI, Parts B and C for the issuance of minor modification installation permits have been met for this facility. Article XXI, Part D, Part E & Part H will have the necessary sections addressed individually.

2. Testing Requirements:

Testing is not required. However, the Department reserves the right to require additional testing if necessary in the future to assure compliance with the terms and conditions of Operating Permit No. 0799.

3. New Source Performance Standards (NSPS):

This facility is not subject to 40 CFR Part 60, Subpart III – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. The generator was installed in 2000, before the applicability date of the NSPS.

4. NESHAP and MACT Standards:

The facility is subject to 40 CFR Part 63, Subpart ZZZZ – *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*. For emergency generators, only the following sections apply:

- §63.6603(a), Table 2.d.4 – inspection and routine maintenance on filters, air cleaner, belts, and hoses.
- §63.6605(b) – proper operation and maintenance.
- §63.6625(e)(3) – requirement to operate and maintain according to manufacturer specifications.
- §63.6625(f) – requirement to install a non-resettable hour meter.
- §63.6640(f)(2) – allowance to operate up to 100 hrs/yr for maintenance checks and readiness testing.
- §63.6640(f)(4) – allowance to operate up to 50 hrs/yr for non-emergency situations.
- §63.6655(f) – recordkeeping of hours of operation.

5. Emissions Inventory:

This facility is not required to provide annual Emission Inventory reports per §2108.01.e of Article XXI because this facility does not have the potential to emit a total of:

- a. Twenty-five (25) or more tons of any pollutant regulated under Article XXI;
- b. Ten (10) or more tons of any single hazardous air pollutant; or
- c. Twenty-five (25) or more tons combined of hazardous air pollutants.

6. Risk Management Plan; CAA Section 112(r):

The facility is not required to have a risk management plan at this time because none of the regulated chemicals exceed the thresholds in the regulation.

EMISSIONS SUMMARY:

| POLLUTANT | ANNUAL EMISSION LIMIT (tons/year)* |
|---|---|
| Particulate Matter (PM) | 0.164 |
| Particulate Matter <10 µm (PM ₁₀) | 0.164 |
| Particulate Matter <2.5 µm (PM _{2.5}) | 0.164 |
| Nitrogen Oxides (NO _x) | 8.189 |
| Sulfur Oxides (SO _x) | 0.008 |
| Carbon Monoxide (CO) | 0.828 |
| Volatile Organic Compounds (VOCs) | 0.148 |

* A year is defined as any consecutive 12-month period.

RECOMMENDATION:

All applicable Federal, State, and County regulations have been addressed in the permit application and the facility was found to be in compliance. The operating permit for the Verizon Business facility at 3170 Sassafra Way should be approved with the emission limitations and terms & conditions in Operating Permit No. 0799.