

**ALLEGHENY COUNTY HEALTH DEPARTMENT
AIR QUALITY PROGRAM**

October 27, 2014

SUBJECT: Verizon Business Network Services, Inc. – POFDPA
3090 Sassafra Way
Pittsburgh, PA 15201
Allegheny County

Minor Source Operating Permit No. 0798

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 3090 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 #0798, issued March 7, 2010
2. Operating Permit application #0798, dated August 27, 2014

EMISSION SOURCES:

I.D.	Source Description	Control Device(s)	Maximum Capacity	Fuel / Material	Stack I.D.
P001	Emergency Generator POFDPA Caterpillar/3512	turbocharger, aftercooler, electronic fuel injection	1,250 kW	Ultra Low- Sulfur Diesel Fuel	S001
D001	Diesel Fuel Storage Tank	none	5,000 gal	Diesel Fuel	--

STACKS:

Stack I.D.	Stack Height	Stack Diameter	Exhaust Rate	Exhaust Temp.	Exhaust Moisture	Material
S001	14 ft.	1.083 ft.	10,800 acfm	1,000 °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. 0798 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: 1,250 kW
 Fuel Use: 93.5 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 #0798). 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}.

$$\begin{aligned} \text{Article XXI: } & 0.28 \text{ lb}_{\text{PM}}/\text{MMBtu} \times 93.5 \text{ gal/hr} \times 140,000 \text{ Btu/gal} = 3.67 \text{ lb}_{\text{PM}}/\text{hr} \\ & 1.0 \text{ lb}_{\text{SO}_x}/\text{MMBtu} \times 93.5 \text{ gal/hr} \times 140,000 \text{ Btu/gal} = 13.09 \text{ lb}_{\text{SO}_x}/\text{hr} \end{aligned}$$

The following equation was used for sulfur emissions:

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

$$0.01998 \times 93.5 \text{ gal/hr} \times 3.79 \text{ L/gal} \times 838.9 \text{ g/L} \times 0.0015 \div 453.6 \text{ g/lb} = \mathbf{0.020 \text{ lb/hr SO}_x}$$

From the manufacturer specifications, the maximum brake horsepower is 1,676 bhp.

Emergency Generator POFDPA Emission Limits

Pollutant	Manufacturer Emissions (g/hp·hr)	Short-Term Emissions (lb/hr)	Long-Term Emissions (tons/year)
Particulate Matter	0.193	0.713	0.178
PM ₁₀	0.193	0.713	0.178
PM _{2.5}	0.193	0.713	0.178
Nitrogen Oxides	9.93	36.69	9.173
Sulfur Oxides	--	0.020	0.005
Carbon Monoxide	1.29	4.765	1.192
Volatile Organic Compounds	0.1	0.369	0.092

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. 0798, 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. 0798.

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)	0.178
Particulate Matter <10 µm (PM ₁₀)	0.178
Particulate Matter <2.5 µm (PM _{2.5})	0.178
Nitrogen Oxides (NO _x)	9.172
Sulfur Oxides (SO _x)	0.005
Carbon Monoxide (CO)	1.192
Volatile Organic Compounds (VOCs)	0.092

* 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 3090 SassafRAS Way should be approved with the emission limitations and terms & conditions in Operating Permit No. 0798.