# TECHNICAL SUPPORT MEMORANDUM FOR PROPOSED SYNTHETIC MINOR PERMITTING ACTION

**Permit No. 7320-SM**

TO: File

THROUGH: Stephen S. Ours, P.E.
Chief, Permitting Branch

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Date: 2023.05.18 10:20:48 -04'00'

FROM: Olivia Achuko
Environmental Engineer
5/18/23

**SUBJECT:** **Verizon Washington DC, Inc.**
**Synthetic Minor Permit No. 7320-SM for Operations at the Metro Communication Center, 1200 H Street NW, Washington DC**

DATE: May 18, 2023

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This Technical Support Memorandum has been prepared to document the basis for a facility-wide synthetic minor operating permit for the following:

**Applicant and Permittee:**
Verizon Washington DC, Inc.
400 International Parkway
Richardson TX 75081

**Facility Location:**
Verizon Washington DC, Inc.
Metro Communication Center
1200 H Street NW
Washington DC 20005

**Application Signatory per 20 DCMR 200.13:**
Mr. David P. Leland, Regional Environmental Manager

## FACILITY DESCRIPTION AND BACKGROUND INFORMATION:

Verizon Washington DC, Inc., Metro Communication Center, is located at 1200 H Street NW, Washington DC 20005. The facility's primary emission units consist of three (3) existing Detroit

Diesel 1,500 kWe emergency generator sets (EG1 - EG3), each powered by a 2,200 hp diesel-fired engine and one (1) new 1,500 kWe diesel emergency generator set powered by a 2328 hp engine located at the Verizon Washington DC, Inc. Metro Central Office, 1200 H Street NW, Washington DC. The three (3) existing units were all previously permitted under Source Category permit coverage approvals 7115-SC-0131 through 7115-SC-0133, issued June 1, 2021. With the application submitted for this synthetic minor permit, the applicant proposed to install and operate another 1,500 kWe emergency generator set powered by a 2,328 hp diesel-fired engine (EG4). The proposed permitting action accompanying this Technical Support Memorandum addresses this application to construct in addition to the application to establish a facility-wide synthetic minor permit to operate.

The equipment subject to this permitting action is listed in the table below:

| Emission Unit ID | Chapter 2 Permit/ Approval No.[¥] | Emission Unit Description | Equipment Serial Number |
|---|---|---|---|
| EG1 | 7115-SC-0131 | One Detroit Diesel Model 1500DSEB emergency generator set with 1,500 kWe output powered by a 2,200 hp Detroit Diesel diesel-fired engine (Model Year 2001, Installed 2005) | 5262001427 (L13293) |
| EG2 | 7115-SC-0132 | One Detroit Diesel Model 1500DSEB emergency generator set with 1,500 kWe output powered by a 2,200 hp Detroit Diesel diesel-fired engine (Model Year 2001, Installed 2005) | 5262001425 (L13279) |
| EG3 | 7115-SC-0133 | One Detroit Diesel Model 1500DSEB emergency generator set with 1,500 kWe output powered by a 2,200 hp Detroit Diesel diesel-fired engine (Model Year 2001, Installed 2005) | 5262001426 (L13281) |
| EG4 | None | One MTU America Model 12V4000DS1500 emergency generator set with 1,500 kWe output powered by a 2,328 hp MTU Model MTU 12V4000G74S diesel-fired engine (Model Year 2021) | N/A (to be installed) |

[¥] The permit numbers and approval numbers listed here are for the Chapter 2 permits and approvals under which these units were previously permitted and are for reference only. The requirements of these permits have been incorporated into this synthetic minor operating permit and these separate Chapter 2 permit numbers and approval numbers will no longer be maintained.

## DISCUSSION OF PROPOSED SYNTHETIC MINOR LIMITATIONS

The facility has three (3) existing 1,500 kWe emergency generator sets (EG1, EG2 and EG3) currently operating under the source category permit 7115-SC-R1 (approval numbers 7115-SC-0131-R1, 7115-SC-0132-R1 and 7115-SC-0133-R1). Additionally, the application package for this synthetic minor permit includes a request for approval to construct and operate a new 1,500 kWe emergency generator set powered by a 2,328 hp diesel-fired engine.

This combined application package for a permit to construct and operate a new unit, as well as for a facility-wide synthetic minor permit to operate all equipment at the facility was received on January 12, 2021 by the Air Quality Division (AQD) of the Department of Energy and Environment (the Department). Without taking operational limits more stringent than the default 500 hours per year limits applied to emergency engines in the District, the installation of the proposed new generator set would bring the total oxides of nitrogen (NOx) potential emissions from the facility to above the major source threshold of 25 tons per year. Therefore, the applicant has requested establishment of an enforceable limit on operations of all four generator sets at the site of 200 hours per generator per 12-month rolling period to keep the NOx emission below the threshold. As demonstrated in the emissions summary below, these limits will ensure that emissions are maintained below the District's major source threshold of 25 tons per year of $NO_x$, which is the only pollutant that would have exceeded the major source threshold without such a limit.

As such, with the establishment of these operational limits in Conditions III(a)(2)(A) and III(b)(2)(A) of the permit, along with associated monitoring and record keeping requirements, and a requirement to report exceedances of these operational limits found in Condition I(c)(3)(B), the operational limits are enforceable as a practical matter, and pursuant to 20 DCMR 200.6, this facility qualifies for synthetic minor status.

## EMISSIONS SUMMARY:

The following is an estimate of overall potential emissions from the facility:

| FACILITY-WIDE EMISSIONS SUMMARY [TONS PER YEAR] | | |
|---|---|---|
| **Pollutants** | **Potential Emissions without 20 DCMR 200.6 Limits†** | **Potential Emissions with 20 DCMR 200.6 Limits‡** |
| Sulfur Dioxide ($SO_2$) | 0.03 | 0.01 |
| Oxides of Nitrogen ($NO_x$) | 27.59€ | 11.04€ |
| Particulate Matter (PM) | 4.23 | 1.69 |
| Volatile Organic Compounds (VOCs) | 1.75€ | 0.67€ |
| Carbon Monoxide (CO) | 3.14 | 1.26 |

† Assumes 500 hours per year of operation for all generator sets.
‡ Assumes 200 hours per year of operation all generator sets per 20 DCMR 200.6 limits.

€ NOx emissions are slightly overestimated and VOC emissions are slightly underestimated as the manufacturer's emissions factors for EG4 combine NOx emissions with hydrocarbon emissions; for that unit only, both are reflected in the NOx estimate and not in the VOC estimate.

With this permitting action, EG4 is being permitted for the first time. Its separate estimated potential to emit (a subset of the facility-wide potential emissions listed above), is found in the following table:

| EG4 EMISSIONS SUMMARY [TONS PER YEAR] | | |
|---|---|---|
| **Pollutants** | **Potential Emissions without 20 DCMR 200.6 Limits†** | **Potential Emissions with 20 DCMR 200.6 Limits‡** |
| SO2 | 0.007 | 0.003 |
| NOx + Non-Methane Hydrocarbons (NMHC) | 6.85 | 2.74 |
| Particulate Matter (PM) | 3.82 | 1.53 |
| Carbon Monoxide (CO) | 0.67 | 0.27 |

† Assumes 500 hours per year of operation for EG4.
‡ Assumes 200 hours per year of operation of EG4 per 20 DCMR 200.6 limits.

**REGULATORY REVIEW:**

This facility has been found to be subject to the requirements of the following regulations (except as specified in notes below):

Federal and District Enforceable:
20 DCMR Chapter 1 - General Rules
20 DCMR Chapter 2 - General and Non-Attainment Area Permits
20 DCMR 500 - Records and Reports
20 DCMR 502 - Sampling, Tests, and Measurements
20 DCMR 600 - Fuel-Burning Particulate Emission
20 DCMR 604 - Open Burning
20 DCMR 605 - Control of Fugitive Dust
20 DCMR 606 - Visible Emissions
20 DCMR 774 - Architectural and Industrial Maintenance Coatings
20 DCMR 800 - Control of Asbestos
20 DCMR 801 - Sulfur Contents of Fuel Oils
40 CFR 51.212, 52.12, 52.30, 60.11, and 61.12 - Credible Evidence
40 CFR 60, Subpart IIII- Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CIICE)
40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (NESHAP for RICE)

District Enforceable Only:
20 DCMR 402 – Chemical Accident Prevention *(Note: AQD did not make a positive determination that this regulation was applicable to the facility, but included it as a standard requirement in the permit.)*
20 DCMR 900 - Engine idling
20 DCMR 901 - Vehicular exhaust emissions
20 DCMR 902 - Lead Content of Gasoline
20 DCMR 903 - Odorous or other nuisance air pollutants
20 DCMR 1406 - Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

20 DCMR Chapter 2 – General and Non-Attainment Area Permits:
All stationary engines are subject to Chapter 2 permitting requirements, regardless of size. As such, all of the significant units at the facility are subject to Chapter 2 permitting requirements. Three of the generator engines were previously issued for the facility and the fourth one is being permitted as part of this synthetic minor permit. All associated Chapter 2 requirements are being transferred to this synthetic minor permit.

As discussed above, the applicant has requested 200 hour per year operational limitations for EG1 through EG4 pursuant to 20 DCMR 200.6.

Neither 20 DCMR 204 (Non-attainment New Source Review) nor 20 DCMR 209 (Minor New Source Review) are applicable.

Other than the four generator sets, no other significant equipment, or miscellaneous/insignificant equipment emitting NOx, has been identified at the facility

20 DCMR Chapter 3 – Operating Permits and Acid Rain Programs:
This facility has not previously been permitted under Title V. As noted above, the applicant is requesting a federally enforceable limit on the hours of operation of the four generator sets at the facility pursuant to 20 DCMR 200.6 to ensure that 20 DCMR Chapter 3 does not become applicable.

20 DCMR Chapter 5 – Source Monitoring and Testing:
Throughout the permit, appropriate monitoring, testing, and record keeping requirements have been established to ensure that all emission and operational limits in the permit are enforceable as a practical matter. These requirements are established under the authority of Chapter 5. Of particular note, the permit requires monitoring of the operating hours of the generator sets to document compliance the 200 hour per 12-month rolling period operational limit for each of the four generators that is used to ensure that 20 DCMR Chapter 3 remains inapplicable.

20 DCMR Chapter 6 – Particulates
Several sections of Chapter 6 are applicable to this facility. Section 600 is not applicable to the emergency generators as they do not meet the definition of "fuel burning equipment" (20 DCMR

199). Sections 604 (Open Burning) and 605 (Control of Fugitive Dust) are standard requirements included in all synthetic permits. Section 606 covers visible emissions requirements. Specifically, 20 DCMR 606.1 is applicable to the generators. It was also noted in the permit that, as a result of a call for a state implementation plan revision ("SIP Call") from the U.S. Environmental Protection Agency ("EPA"), it is likely that 20 DCMR 606 will be revised in the near future. The permit indicates that, when the rule is changed, the new rule will supersede the requirements currently listed in the permit. Should such a rule change become effective before the final permit is issued in this case, the applicable sections of the permit will be updated before being finalized.

20 DCMR 801: Sulfur Content of Fuel Oils:
This regulation limits fuel oil sulfur content to 1% by weight in all circumstances. There are more stringent requirements for commercial fuel oil, but the only portion of 20 DCMR 801 applicable to the emergency engines is the 1% sulfur content limit. This requirement is streamlined with the more stringent requirements found in 40 CFR 63.6604(b) for the non-NSPS engines and 40 CFR 60.4207(b) for the NSPS engine.

40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines:
The new 1,500 kWe MTU diesel emergency generator set is subject to 40 CFR 60, Subpart IIII. 40 CFR 60, Subpart IIII applies to stationary compression ignition internal combustion engines (CI-ICE) that: 1) are model year of 2007 or later, 2) commenced construction after July 11, 2005 and were manufactured after April 1, 2006, or 3) were modified or reconstructed after July 11, 2005.

The Department was informed that this unit is powered by a model year 2021 engine, therefore it is subject to 40 CFR 60, Subpart IIII. The requirements of this regulation applicable to this unit are incorporated throughout Condition III(b) of the permit.

40 CFR 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (NESHAP for RICE):
Subpart ZZZZ of 40 CFR 63 regulates/monitors HAPs such as acetaldehyde, acrolein, benzene, toluene, xylene, cadmium, chromium, lead, etc., through surrogate compounds such as formaldehyde, CO and/or VOC.

A facility that emits or has the PTE 10 tons/year of any single HAP or 25 tons/year of any combination of HAPs is considered a major source of HAPs. Any source that is not a major source is an area source of HAPs. Because this facility does not have the PTE more than 10 tons/year of a single HAP or an aggregate of more than 25 tons of total HAPs, it is not a major source; it is an area source.

Subpart ZZZZ is applicable to new or reconstructed compression ignition (CI) engines at this facility, where "new" is defined as those engines that are manufactured or reconstructed after June 12, 2006. The three existing Detroit Diesel 1,500 kWe emergency generator sets were

installed in 2005 and are therefore considered "existing" rather than "new" with respect to this regulation. As such, they are fully subject to this regulation and all related requirements are incorporated into Condition III(a) of the permit.

The new 1,500 kWe MTU generator engine is also subject to Subpart ZZZZ, but because it is "new" (construction commenced after June 12, 2006), per 40 CFR 63.6590(c)(1), the only requirement placed on it by Subpart ZZZZ is to comply with NSPS Subpart IIII. As such, the requirements of Subpart ZZZZ are not cited in the permit for this unit, but rather NSPS Subpart IIII is cited.

## PROCEDURE FOR SUBMITTING COMMENTS OR REQUESTING PUBLIC HEARING:

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The District shall grant such a request if it is deemed appropriate. The venue, date, and time for any public hearing will be announced in the D.C. Register and on the Department's website.

## COMMENT PERIOD:

Beginning Date: May 26, 2023
Ending Date: June 26, 2023

All written comments should be addressed to the following individual and office:

Stephen S. Ours, P.E.
Chief, Permitting Branch
Department of Energy and Environment
Air Quality Division
1200 First Street, NE, 5th Floor
Washington DC 20002
stephen.ours@dc.gov

## POINT OF CONTACT FOR INQUIRIES:

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