

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and Environment

CHAPTER 2 TECHNICAL MEMORANDUM

TO: File

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

FROM: Thomas Olmstead *SSO for TO*
Environmental Engineer

SUBJECT: Permit No. 7302 for Howard University to Operate a Non-Emergency Generator at the College of Medicine, 520 W St. NW, Washington, DC 20059

DATE: April 27, 2021

BACKGROUND INFORMATION

A permit application from Howard University to operate one non-emergency generator set, at 520 W St NW, was received by the Air Quality Division (AQD) on March 31, 2021. This generator, designated "College of Medicine, Generator #2" has previously been permitted as an emergency generator set and covered by source category permit coverage approval No. 7048-SC-0043-R1 and supports the College of Medicine's 4th floor animal laboratory facilities.

Howard University has not requested that any of the materials submitted with this application be held confidential. The fee associated with the application was paid on or about April 23, 2021.

ESTIMATED EMISSIONS

The following table shows estimated maximum potential emissions from the generator set.

Pollutant	Potential Emissions (tons per year)
Total Particulate Matter (PM Total)	0.11
Oxides of Sulfur (SO _x)	0.01
Oxides of Nitrogen (NO _x)	2.22
Volatile Organic Compounds (VOC)	0.54
Carbon Monoxide (CO)	0.25

REGULATORY REVIEW

20 DCMR Chapter 2, Section 200: General Permit Requirements:

A non-emergency generator is a source of air pollutants that is not exempted in 20 DCMR 200. Thus a Chapter 2 permit is required.

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20 DCMR 205 – Permit Requirements for New Source Performance Standards (NSPS):

The requirements of this section adopt the federal NSPS codified in 40 CFR 60 as in effect on September 30, 1997. See the below discussions of specific New Source Performance Standards.

Chapter 2, Section 209: Permit Requirements For Minor New Source Review:

Effective January 1, 2014, the requirements of this section are applicable to any source required to obtain a Chapter 2 permit to construct a new stationary source, modify an existing stationary source, or install or modify an air pollution control device on a stationary source that results in an increase of potential to emit (PTE) rate equal to or greater than five tons per year (5 TPY) from an individual unit of VOC, NO_x, SO₂, PM₁₀, PM_{2.5}, or an aggregate of all HAPs.

Potential emissions of all of these pollutant categories are below the 5 TPY limit from the unit. Therefore, 20 DCMR 209 is not applicable.

20 DCMR Chapter 3: Operating Permits and Acid Rain Programs

This unit will be located at Howard University, which is a major source of NO_x. Howard University is already subject to Chapter 3 (Title V). They are operating under expired Permit No. 006 and a settlement agreement requiring compliance with the expired permit until a new Title V permit can be issued. Condition I(g) of the permit specifies, pursuant to DCMR 301.1(a)(3), that the Permittee must submit a permit application (or application revision, as appropriate) to incorporate the requirements of this permit into the facility's Title V permit. Additionally, Condition V(f) requires that the Permittee report on compliance with this permit as part of their semi-annual and annual compliance reports and certifications. Additionally, the record keeping requirements in the permit have been extended to five years from three years required elsewhere as Chapter 3 requires this longer retention schedule.

20 DCMR Chapter 5, Section 500: Source Monitoring and Testing Requirements:

Several monitoring and record keeping requirements have been added to the permit pursuant to this regulation. Monthly hours of operation must be maintained so that operations of the unit can be tracked and any related complaints can be traced to the unit. This requirement was added to the permit pursuant to 20 DCMR 500.1

Additionally, emission testing and diesel fuel testing have been included in the permit pursuant to 20 DCMR 502 in Conditions IV(b) and (c). Howard University must obtain necessary information from their fuel supplier. This requirement has been established in Condition V(c) of the permit.

20 DCMR Chapter 6, Section 606: Visible Emissions

The visible emissions limitations of 20 DCMR 606.1 are applicable to the generator. Visible emissions shall not be emitted into the outdoor atmosphere from the operation of the generator; provided, that discharges not exceeding forty percent (40%) opacity (unaveraged) shall be permitted for two minutes in any sixty (60) minute period and for an aggregate of twelve (12)

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minutes in any twenty-four hour (24 hr.) period during start-up, or malfunction of equipment. This requirement is contained in Condition II(b). Monitoring for compliance is required pursuant to Condition IV(d).

It should be noted that 20 DCMR 606 is subject to a call for a State Implementation Plan (SIP) revision from EPA, commonly referred to as the “Startup, Shutdown, and Malfunction SIP call”. The Department is evaluating potential revisions to the regulation that would potentially change and supersede the visible emissions requirements of this regulation. This is reflected in a note in Condition II(b).

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 engine is the 1% sulfur content limit. This requirement is streamlined with the more stringent requirements found in 40 CFR 60.4207(b).

20 DCMR 805 – Reasonably Available Control Technology for Major Stationary Sources of the Oxides of Nitrogen:

NO_x RACT is applicable to this facility pursuant to 20 DCMR 805.1(a) because it is a major source of NO_x. The engine is a non-emergency engine and does not meet the exemption in 20 DCMR 805.1(c)(2). Pursuant to 20 DCMR 805.7, any person owning, leasing, operating or controlling any major stationary source or part of a major stationary source subject to § 805, other than those particular types of emitting units addressed by § 805.4 through § 805.6, shall not cause, suffer, allow or permit emissions therefrom in excess of an emission rate achievable through the implementation of RACT as demonstrated in an emission control plan under § 805.3(e). The emission limits in Condition II(a) of the permit meet the requirements of RACT for this size of engine.

20 DCMR Chapter 9, Section 903: Odorous or Other Nuisance Air Pollutants

“An emission into the atmosphere of odorous or other air pollutants from any source in any quantity and of any characteristic, and duration which is, or is likely to be injurious to the public health or welfare, or which interferes with the reasonable enjoyment of life or property is prohibited [20 DCMR 903.1]” is applicable to this generator. This requirement is contained in Condition II(c) of the permit.

40 CFR 60, Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

This federal regulation is applicable to this generator. This unit is a generator set with a non-emergency engine. The emissions standards of this regulation are found in Condition II(a). The sulfur content of the diesel fuel requirement has been placed in Condition III(a). Maintenance and operation requirements are found in Condition III(c).

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40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Engines

This subpart does not apply to this engine because this engine is a compression ignition (diesel) engine.

40 CFR 60, Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Ignition Internal Combustion Engines

Because this unit is a stationary reciprocating internal combustion engine (RICE) at an area source of hazardous air pollutants (HAPs), this regulation is applicable to the unit. However, pursuant to 40 CFR 63.6590(c)(1), the only requirement of this subpart is to comply with 40 CFR 60, Subpart IIII, discussed above. As such, Subpart ZZZZ is not referenced in the permit document.

RECOMMENDATIONS

The application to operate the diesel fired non-emergency generator equipment and the attached operating permit comply with all applicable federal and District air pollution control laws and regulations.

Public comments for the permit action will be solicited from May 7, 2021 through June 7, 2021. AQD will resolve any comments received before taking any final action on the permit application. If no adverse comments are received, I recommend that permit No. 7302 be issued in accordance with 20 DCMR 200.1 and 200.2 promptly upon the completion of the public review period.

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