

**GOVERNMENT OF THE DISTRICT OF COLUMBIA**  
Department of Energy and Environment

**CHAPTER 2 TECHNICAL SUPPORT MEMORANDUM**

TO: File

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

FROM: Olivia Achuko *OA*  
Environmental Engineer

SUBJECT: **Howard University Service Center  
Permit No. 7231 to Construct and Operate One 8.27 MMBTU per  
Hour Natural Gas-Fired Boiler**

DATE: October 9, 2018

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**BACKGROUND INFORMATION**

A permit application to construct and operate one 8.27 MMBtu per hour natural gas-fired boiler at the Howard University Service Center, located at 2244 10<sup>th</sup> Street NW, Washington DC, was received by the Air Quality Division (AQD) of the Department of Energy and Environment (DOEE) on September 10, 2018. The potential to emit table in the application was derived using AP-42 emission factors instead of the manufacturer's emission factors. AQD requested that the PTE be recalculated using the manufacturer's guaranteed emission factors since the unit is very new. The revised table was received on September 19, 2018 and the application was then deemed complete.

There are three (3) existing boilers at the Howard University Service Center that will be demolished and removed to enable the construction of the new boiler.

Howard University has not requested that any of the materials submitted with this application be held confidential.

**REGULATORY REVIEW**

20 DCMR Chapter 2, Section 200: General Permit Requirements

The boiler is 8.27 MMBTU/hr rated heat input natural gas-fired boiler. Because the rated heat input is greater than 5 MMBTU/hr, a Chapter 2 permit is required before construction and operation pursuant to 20 DCMR 200.

20 DCMR 204 – Permit Requirements for Major Stationary Sources Located in Non-attainment Areas (Non-attainment New Source Review (NNSR))

This project consists of the construction of one 8.27 MMBTU/hr natural gas fired boiler.

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The potential to emit of all regulated air pollutants are below the relevant NNSR (and PSD) thresholds. Specifically, this boiler has the potential to emit 2.64 tons per year of NO<sub>x</sub>, well below the 25 tons per year “significant” threshold.

### **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.

Specifically Subpart Dc of 40 CFR Part 60 sets forth the standards of performance for small industrial-Commercial-Institutional steam generating units (ICI boilers) with maximum design heat input capacity less than 100 MMBtu/hr. and greater than or equal to 10 MMBtu/hr. This Subpart includes steam generating units for which construction, modification, or reconstruction commenced after June 9, 1989.

The natural gas-fired boiler that is the subject of this permitting action has a maximum heat input of 8.27 MMBtu/hr and is therefore not subject to this subpart.

### **20 DCMR 209 – Permit Requirements for Non-Major Stationary Sources (Minor New Source Review)**

Minor New Source Review, which became effective January 1, 2014, is applicable to any source subject to 20 DCMR 200, if such source uses a stationary unit or air pollution control device that, individually, would have the potential to emit equal to or greater than 5 tons per year (tpy) per unit of any criteria pollutant (excluding CO, ozone, and lead) or aggregate of hazardous air pollutants (HAPs). This boiler does not individually have a potential to emit of 5 tons per year of NO<sub>x</sub> or any other pollutant listed in Section 209.1(b). Therefore the boiler does not trigger a minor source review evaluation pursuant to this regulation.

### **20 DCMR Chapter 3: Operating Permits and Acid Rain Programs**

A source that has the potential to emit more than 25 tons per year of Oxides of Nitrogen (NO<sub>x</sub>) is considered a Major Source and is required to obtain a Title V permit. The Howard University facility is a major source, therefore is subject to Chapter 3 and will need an operating permit in accordance with 20 DCMR 300.1. The source will be required to submit a Title V application within 12 months of the permit or another, more prompt time agreed upon with the Department of Energy and Environment. Additionally, Conditions V(g) and (h) have been included to ensure that emissions reporting for this unit is included in the annual Title V report.

Howard University currently has a Title V permit that has long expired and should be renewed as soon as possible, however, a complete application has not yet been submitted.

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

Appropriate monitoring and testing requirements have been included in Condition IV of the permits with associated record keeping and reporting requirements in Condition V of the permit to ensure that compliance with the conditions of the permit can be evaluated.

### **20 DCMR Chapter 6, Section 600: Fuel Burning Particulate Emission**

Total suspended particulate emission from each of the boilers shall not exceed 0.11 pounds per million BTU. This requirement is contained in Condition II(d) of the permit.

### **20 DCMR Chapter 6, Section 606: Visible Emissions**

The visible emissions limitations of 20 DCMR 606.1 are applicable to all units. Visible emissions shall not be emitted into the outdoor atmosphere from the operation of the these units; 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) minutes in any twenty-four hour (24 hr.) period during start-up, or malfunction of equipment. This requirement is contained in Condition II(b) of the permits. Specific testing requirements related to this regulation are also included in the boiler permits.

Note that language has been included in the permit notifying the facility that there is an outstanding call for a State Implementation Plan (SIP) revision from EPA that may result in revisions to the applicable regulation. As such, if the regulation is changed, the new regulatory requirements will superseded those expressed in the permit specifically.

### **20 DCMR Chapter 8, Section 805: Reasonably Available Control Technology for Major Stationary Sources of the Oxides of Nitrogen (NOx RACT)**

NOx RACT is applicable to this facility pursuant to 20 DCMR 805.1(a) because it is a major source of NOx. NOx RACT is specifically applicable to these units as they are a part of a major stationary source, and are therefore covered by 20 DCMR 805.1(a)(4). No specific RACT level is defined in the regulation for this type of equipment, but AQD has previously considered annual combustion tuning pursuant to 20 DCMR 805.8 to meet the requirements of this regulation for similar units. These requirements are found in Condition II(e) of the permit. Related record keeping requirements are found in Condition V(f).

### **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 all sources. This requirement is contained in Condition II(d) of the permit.

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### 40 CFR 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

This regulation is not applicable because the unit is below the size applicability threshold of 10 MMBTU/hr heat input.

### 40 CFR 63, Subpart JJJJJ: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers at Area Sources

NESHAP subpart JJJJJ for area source ICI Boilers is not applicable because the boiler is permitted to burn only natural gas.

## **RECOMMENDATIONS**

The proposed project and attached permit complies with all applicable federal and District air pollution control laws and regulations.

The permit actions for the boiler will be published in the DC Register and on DOEE's website on October 19, 2018. Public comments for the permit action will be solicited from October 19, 2018 through November 19, 2018. AQD will resolve any comments received before taking final action on the application. If no comments are received, I recommend that permit No. 7231 be issued in accordance with 20 DCMR 200.1 and 200.2 promptly following the end of the public comment period.