

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and Environment

CHAPTER 2 TECHNICAL SUPPORT MEMORANDUM

TO: File

FROM: Stephen S. Ours
Chief, Permitting Branch

**SUBJECT: District of Columbia Department of General Services
DC General Health Campus and Jail
Permit Nos. 7386 and 7387 to Construct and Operate Two Temporary
Natural Gas-Fired Boilers (CU-TEMP-4 and CU-TEMP-3)**

DATE: August 15, 2024

BACKGROUND INFORMATION

On July 2, 2024, the Air Quality Division (AQD) of the Department of Energy and Environment (DOEE) received applications from the District of Columbia Department of General Services (DGS) to construct and operate two natural gas-fired boilers at the DC General Health Campus and Jail, located at 1900 Massachusetts Avenue SE, Washington DC. These two rental boilers are intended to be temporary boilers, but the duration that they will be on the site is unknown, as they are to eventually be replaced by permanent boilers whose design and construction schedule has not yet been completed. These proposed boilers are to replace non-compliant temporary boilers that were installed at the site on an emergency basis. The boilers that are the subject of these applications are described in the table below.

Boiler Name	Model	Heat Input Rating (MMBTU/hr)	Serial Number	Permit Number
CU-TEMP-4	Cleaver Brooks CB-700-700-150	29.30	0L094776	7386
CU-TEMP-3	Cleaver Brooks CBI-200-800	32.85	0L090684	7387

These boilers are guaranteed by the vendor to meet the District’s Reasonably Available Control Technology for Oxides of Nitrogen (NO_x RACT) [20 DCMR 805]. Specifically, they are equipped with low NO_x burners and flue gas recirculation (FGR) and are guaranteed to meet a 30 ppm NO_x emission rate, which converts to 0.036 lb/MMBTU. This compares favorably to the 20 DCMR 805.5(e)(3)(C) standard for this type and size of boiler of 0.05 lb/MMBTU.

DGS has not requested that any of the materials submitted with these applications be held confidential.

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REGULATORY REVIEW

20 DCMR Chapter 2, Section 200: General Permit Requirements

The two boilers will be rated at 32.85 (CU-TEMP-3) and 29.30 (CU-TEMP-4) MMBTU/hr heat input, respectively. These units have heat input ratings greater than 5 MMBTU/hr, and therefore require pre-construction permits pursuant to 20 DCMR 200.1 to install the units and must maintain permits to operate pursuant to 20 DCMR 200.2.

The applicant has not requested any special operational limitations pursuant to 20 DCMR 200.6 or 200.7.

20 DCMR Chapter 2, Section 204: Permit Requirements for Major Sources Located in Non-Attainment Areas (New Source Review)

20 DCMR 204 does not apply, as the two boilers, combined, do not have the potential to emit (PTE) greater than 25 tons per year of NO_x, nor do they exceed any other major source threshold. The combined PTE of NO_x is estimated to be 9.8 tons per year (TPY).

20 DCMR Chapter 2, Section 209: Permit Requirements For Non-Major Stationary Sources (Minor New Source Review)

20 DCMR 209 applies to any source required to obtain a permit under § 200 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 a collateral emission increase, where the increase in potential emissions is equal to or greater than 5 TPY for VOCs, NO_x, SO₂, PM₁₀, PM_{2.5}, or the aggregate of any hazardous air pollutants (HAPs) listed in § 112(b) of the Clean Air Act.

CU-TEMP-3 has the potential to emit 5.18 TPY of NO_x, and therefore triggers this requirement. However, in the permit application, DGS has cited the District's determination in 2020 for Howard University permits 7248 through 7252 that low NO_x burners with FGR and good operating practices meet the requirements of 20 DCMR 209 as they are equivalent to "Best Available Control Technology" (BACT) as found in EPA's RACT/BACT/LAER Clearinghouse at that time. Under 20 DCMR 209.3(d), this prior determination for a similar source is sufficient to determine that these technologies, applied in this case, also meet the requirements of 20 DCMR 209.

20 DCMR Chapter 3: Operating Permits and Acid Rain Programs

The facility is a major source of NO_x and is therefore subject to Chapter 3 permitting requirements. The Title V permit for the facility (No. 022-R2) has expired and the facility is not subject to an application shield due to submission of a late, incomplete permit application. However, the facility is being held responsible for compliance with this expired permit and has most recently, on June 10, 2024, submitted a revised Title V permit application for the facility.

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Condition I(g) of the permit requires that DGS submit an application to incorporate the requirements of these Chapter 2 permits into the Title V operating permit, or revise any pending Title V application, within 12 months of issuance of this set of permits. Compliance with this set of permits must be certified with the Title V certifications pursuant to Condition V(n). Also, in part due to this regulation, records retention is set at five years, rather than the lesser durations found in other regulations.

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 permits to ensure that compliance can be fully evaluated.

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

Total suspended particulate (TSP) emissions from each of the boilers shall not exceed 0.08 pounds per MMBTU per 20 DCMR 600.1. This requirement is contained in Condition II(c) of the permits. Periodic testing for compliance is required pursuant to Condition IV(b).

It should be noted that this regulation refers to “particulate matter” rather than TSP, however, at the time that the regulation was promulgated, this term was understood to refer to TSP. Since that time, the more general term “particulate matter” is no longer specific enough to clarify what is meant. As a result, the permit document refers to TSP rather than using the specific term used in the regulation.

20 DCMR Chapter 6, Section 606: Visible Emissions

Both boilers are subject to the visible emissions limitations of 20 DCMR 606. Visible emissions shall not be emitted into the outdoor atmosphere from either boiler except that discharges shall be permitted for two (2) minutes during any startup, cleaning, adjustment of combustion or operational controls, or regeneration of emission control equipment, provided that such discharge shall not exceed twenty-seven percent (20%) opacity (unaveraged). This requirement is established in Condition II(b) of the permits. Monitoring and testing for compliance is contained in Conditions IV(b), (c), and (d).

Additionally, this regulation establishes certain operational, maintenance, and training requirements which have been incorporated into Conditions III(c), (d), and (e). Record keeping requirements are incorporated into Conditions V(j) and (k).

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

NO_x RACT is applicable to this facility pursuant to 20 DCMR 805.1(a) because it is a major source of NO_x. 20 DCMR 805.5(e), which came into effect on January 1, 2023, sets emission limits for NO_x on units with a capacity of 25,000,000 BTU per hour or greater. Specifically, the NO_x limit of 0.05 MMBTU/hr on a calendar day average basis for natural gas-fired equipment

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found in 20 DCMR 805.5(e)(3)(C) applies to these boilers and has been incorporated into Condition II(d) of the permit. Emissions testing to determine compliance is required pursuant to Condition IV(b).

20 DCMR 805.5(b) also states that any fuel burning equipment that is equal to or greater than 5 MMBTU/hr is subject to the tuning requirements as laid out in 805.9. Since both boilers remain above this threshold after the modifications, these conditions have been included in the permits as Conditions II(e) and V(e). DOEE is currently considering amending the schedule for performing this tuning in the regulation. As such, a footnote has been added to indicate that if the regulation is amended to modify this schedule, the timeline in the revised regulation will supersede the timeline in the permit.

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(f) of the permits. The affirmative defense provision of 20 DCMR 903.13(b) has also been incorporated into Condition II(f). The requirements to develop an odor control plan (OCP) do not apply to this facility at this time.

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

The units are subject to this regulation on the basis that both units are within the applicability range of 10 MMBTU/hr to 100 MMBTU/hr heat input. The second requirement is that the steam generating units are constructed, modified, or reconstructed after June 9, 1989, a requirement that is also met. As a result, the units are subject to the requirements of 40 CFR 60 Subpart Dc.

Because these units burn natural gas exclusively, neither the sulfur dioxide (SO₂) nor the particulate matter (PM) standards in this rule apply to the equipment. The only requirements are as follows:

- A requirement to track fuel usage pursuant to 40 CFR 60.48c(g)(2), which has been incorporated into Condition V(d);
- Initial notification requirements pursuant to 40 CFR 60.48c(a) and 40 CFR 60.7(a), which has been incorporated into Condition V(p); and
- A two-year record retention requirement pursuant to 40 CFR 60.48c(i). This last requirement has been cited in Condition V, but due to other records retention requirements in other regulations, this requirement has been streamlined with the other requirements into the longest records retention requirement of five years.

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40 CFR 63, Subpart JJJJJ: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers at Area Sources (NESHAP Subpart JJJJJ)
NESHAP subpart JJJJJ for area source ICI Boilers does not apply to these sources as they each meet the definition of a “gas-fired boiler” as defined in 40 CFR 63.11237, a category of boiler which is exempt from the regulation pursuant to 40 CFR 63.11195(e).

RECOMMENDATIONS

Based on AQD’s evaluation of the application package, the construction and operation of the equipment as proposed, and the draft permits as written, are consistent with all applicable federal and District air pollution control laws and regulations.

The permit action for the boilers will be published in the DC Register and on DOEE’s website on August 23, 2024. Public comments for the permit action will be solicited from August 23, 2024 through September 23, 2024. Additionally, during that time, any person may request a public hearing on this subject. A public hearing will not be held unless requested. If public comments are received, they will be reviewed and addressed before any final action is taken on the permit application package. If no adverse comments are received, I recommend that permit Nos. 7386 and 7387 be issued in accordance with 20 DCMR 200 promptly following the end of the public comment period.

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