GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and Environment

CHAPTER 2 TECHNICAL MEMORANDUM

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

Digitally signed by Stephen S. Ours
DN: cn=Stephen S. Ours, o=Department of Energy and Environment, ou=Chief, Air Quality Permitting Branch, email=stephen.ours@dc.gov, c=US
Date: 2022.09.02 11:52:03 -04'00'

FROM: John C. Nwoke
Environmental Engineer

John Nwoke
Digitally signed by John Nwoke
Date: 2022.09.02 11:18:43 -04'00'

SUBJECT: DC Water Bryant Street Pumping Station, 301 Bryant Street NW
Permit Nos. 7150-R1 and 7151-R1 to Operate Two Natural Gas-Fired Boilers

DATE: September 2, 2022

BACKGROUND INFORMATION

On March 1, 2022, the Air Quality Division (AQD) received a set of Chapter 2 permit renewal applications from the District of Columbia Water and Sewer Authority (DC Water) for the continued operation of the boilers at the Bryant Street NW Pumping Station.

It should be noted that an application to operate one 300 kWe diesel-fired emergency generator set at the site was submitted at the same time as the applications for the two boilers. This is considered part of the same project, but it was addressed in a separate permitting action. See source category permit coverage approval 7115-SC-0166-R1, issued April 7, 2022.

The publication of this draft permit action is planned for September 16, 2022, in the D. C. Register. Public comment for the permit action will be solicited through October 17, 2022.

DC Water has not requested that any aspects of the application be held confidential.

TECHNICAL INFORMATION

The two boilers are identified as Boiler B-01 and Boiler B-02. They are each rated at 8.328 MMBTU/hr heat input and fire only natural gas. They are Cleaver Brooks model CB-LE 700 fire-tube boilers. More detailed technical information is included with the permit applications.

REGULATORY REVIEW

Please refer to the Technical Support Memorandum for the initial permit for these units, dated January 10, 2017, for a detailed discussion of the issues and regulatory review. The below review will summarize the applicable regulations previously discussed in the previous Technical Support Memorandum as well as discuss new regulations such as the updated NOx RACT regulation and new VOC regulations.

Both federal and District of Columbia regulations and applicable requirements apply to this project. Applicability or non-applicability of key regulations is discussed below.

DISTRICT REGULATIONS

20 DCMR 200 – General Permit Requirements: The boilers are stationary and have the potential to emit air pollutants. Each of the boilers has a heat input rating greater than 5 MMBTU/hr. Therefore, each is subject to the requirement to obtain a Chapter 2 permit pursuant to this regulation.

20 DCMR 204 – Permit Requirements for Major Stationary Sources Located in Non-attainment Areas (Non-attainment New Source Review (NNSR)):
The facility is located in a non-attainment area for ozone with a 25 ton per year major source threshold for oxides of nitrogen (NO_x) and volatile organic compounds (VOCs), the two categories of ozone precursors. Additionally, the area is a maintenance area for fine particulate matter (PM2.5).

20 DCMR 204 requires that projects with emissions increases and net emissions increases that exceed NNSR thresholds do the following: (1) analyze alternatives, (2) incorporate emission controls meeting the lowest achievable emission (LAER), (3) obtain emission offsets, and (4) certify compliance of all sources located within the District that are owned or operated by applicant. The Bryant Street Pumping Station does not have potential emissions that exceed the NNSR thresholds (including the emergency generator that was addressed under separate cover) and hence the project, when installed, did not result in a "significant" emissions increase for NOx or VOCs. As a result, no net emissions increase calculations were necessary to determine NNSR applicability. Based on this analysis, 20 DCMR 204 is not applicable.

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.

Each of the natural gas-fired boilers at this facility has a maximum heat input of 8.328 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). The boilers do not individually have a potential to emit 5 tons per year of NO_x

or any other pollutant listed in Section 209.1(b). Therefore, the boilers do not trigger a minor source review evaluation pursuant to this regulation.

20 DCMR Chapter 3 – Operating Permits and Acid Rain Programs:
The potential to emit of the boilers and the emergency generator (permitted under separate cover) in aggregate does not exceed 25 tons per year of NO_x. In fact, the PTE for NO_x from each boiler is 3.58 tons per year and that from the emergency generator is 3.40 tons per year for a total of 10.55 tons per year (this figure is under the major source threshold of 25 tons per year), thus a Chapter 3 permit is not required.

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 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(c) of the permit. Unless stack testing is requested it will be assumed that operating using natural gas will ensure compliance with the requirement (as stated in Condition II(c)).

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 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. Quarterly visible emissions monitoring by a method similar to U.S. Environmental Protection Agency (EPA) Reference Method 22 is required pursuant to Condition IV(c). Annual formal EPA Reference Method 9 visible emissions testing is required pursuant to Condition IV(d).

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 supersede 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)
This facility is not a major source pursuant to 20 DCMR 805.1(a) hence the provision of this regulation is not applicable. Consequently, this requirement was excluded from 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(d) of the permit.

FEDERAL REGULATIONS

40 CFR 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
This regulation is not applicable because the units are below the size applicability threshold of 10 MMBTU/hr heat input. The requirement is not included in the permit as a result.

40 CFR 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers Area Sources:
This facility does not emit nor does it have a potential to emit 10 tons per year or more of a single hazardous air pollutant (HAP) or 25 tons per year or more of any combination of HAPs. Consequently, the facility is considered an area source of HAP emissions.

The boilers operate on natural gas exclusively and are therefore exempted from the provisions of this subpart pursuant to the exemption for gas-fired boilers at 40 CFR 63.111195(e).

CONCLUSIONS
The proposed operations and attached permits comply with all applicable federal and District air pollution control laws and regulations.

Public comments for the permit action will be solicited from September 16, 2022, through October 17, 2022. AQD will resolve any comments received before taking final action on the applications. If no comments are received, I recommend that permit Nos. 7150-R1 through 7151-R1 be issued in accordance with 20 DCMR 200.2 promptly following the end of the public comment period.

JCN