GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and Environment

CHAPTER 2 TECHNICAL SUPPORT MEMORANDUM

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

FROM: John Nwoke
Environmental Engineer

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

DATE: January 10, 2017

BACKGROUND

On May 27, 2016 the Air Quality Division (AQD), received three permit applications from the District of Columbia Water and Sewer Authority (DC Water) to operate one 300 kW diesel-fired emergency generator and two identical boilers, located at 301 Bryant Street NW, Washington, DC. This location serves as a pumping station. The emission units are existing and therefore need operating permits. The two existing boilers are identical Cleaver Brooks model CB-LE 700 units, each with a rated heat input capacity of 8.328 MMBtu/hr.

Publication of the permit action is planned for January 20, 2017 in the D.C. Register. Public comment for the permit action will be solicited through February 20, 2017.

ISSUES

DC Water submitted the application after realizing that a permit to operate had not previously been obtained for the boilers. The Bryant Street Pumping Station equipment does not have the potential to emit greater than the major source threshold of any pollutant. The boilers are located offsite from the Blue Plains Waste Treatment Plant which is not contiguous and adjacent to the location of the boilers. Consequently, the Bryant Street pumping station where the boilers are located is not subject to Title V operating permit as part of the larger Blue Plains facility or as a result of its own potential emissions. The PTE for NOx from each of the boiler is 3.58 tons per year (this figure is under the major source threshold of 25 tons per year) and therefore the appropriate permit would be a Chapter 2 permit.

REGULATORY REVIEW

Both District of Columbia regulations and Federal regulations 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 it 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 permitted project is located in an area that has been designated moderate and marginal non-attainment for the 1997 and 2008 8-hour ozone standards, respectively, and is currently a maintenance area for $PM_{2.5}$ standard. The District of Columbia is also located within the Northeast corridor of the Ozone Transport Region (OTR). Nitrogen oxides (NO_x) and volatile organic compounds (VOCs) emissions are potentially subject to NNSR due to their role as precursors to the photochemical formation of ozone. Although the U.S. Environmental Protection Agency (U.S. EPA) revoked the 1-hr ozone standard, and despite the current designation of moderate non-attainment of the 8-hour ozone standard, the District has retained the 25-tpy NNSR applicability thresholds for NO_x and VOCs that were applicable for severe nonattainment classification under the 1-hour ozone standard, a measure taken against backsliding.

The requirements of 20 DCMR 204 is 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 the applicant. The Bryant Pumping Station does not have emissions that exceed NNSR thresholds. Thus, no net emission increase calculations were necessary to determine NNSR applicability. Hence 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 heating boiler at the pumping station 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): Section 209 which became effective January 1, 2014, is potentially applicable to any source subject to 20 DCMR 200. If such source installs or modifies a stationary unit or air pollution control device and such installation or modification results in an increase of the potential to emit equal to or greater than 5 tons per year (tpy) of any criteria pollutant or aggregate of HAPs, the unit will be subject to the requirements of this section. The Bryant Street Pumping Station boilers do not, individually, have a potential to emit NO_x or any pollutant listed in Section 209.1(b) that is more than 5 tpy. Moreover these boilers were constructed earlier than

2013, well before the applicability date of 20 DCMR 209 (January 1, 2014). Therefore the equipment does not trigger a minor source review evaluation pursuant to this regulation.

20 DCMR Chapter 3 – Operating Permits and Acid Rain Programs: An evaluation of potential emissions from the facility was submitted and reviewed. The potential to emit each of the pollutants emitted by the boilers and the emergency generator set do not exceed any major source threshold. As noted earlier in the background discussion, the Bryant Street Pumping station, although operated and owned by DC Water, it is not contiguous or adjacent to the Blue Plains waste water treatment facility (which is a major source facility). Thus, the emissions units at the Bryant Street Pumping Station are not considered part of DC Water's Title V facility. Consequently, 20 DCMR Chapter 3 is not applicable to the equipment at the Bryant Street Pumping station.

20 DCMR Chapter 5 – Source Monitoring, Testing, Record Keeping and Reporting: Pursuant to the authority of this regulation, appropriate monitoring, testing, record keeping and reporting requirements were incorporated into the permit conditions to ensure that the permits are enforceable as a practical matter.

20 DCMR Chapter 6 – Particulates: Two sections of this chapter are notably applicable. The boilers are subject to a particulate matter emission standard pursuant to 20 DCMR 600.1. This requirement has been established in Condition II(c) of the permit. Unless stack testing is requested in accordance with Condition IV(a) and (b), it will be assumed that operation using natural gas will ensure compliance with requirement (as stated in Condition II(c)). Additionally, the boilers also are subject to the visible emission standards of 20 DCMR 606.1, which has been included in Condition II(b). 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).

20 DCMR 805 – Reasonably Achievable Control Technology for Major Stationary Sources of Oxides of Nitrogen: The facility is not a major source hence the provision of this regulation is not applicable. This requirement was not included in the permits as a result.

20 DCMR 903 – Odorous or Other Nuisance Air Pollutants: The boilers are subject to this odor standard, hence it is included in Condition II(d). No regular monitoring is required in the boiler permits as it is unlikely that these units would cause such violations.

FEDERAL REGULATIONS

40 CFR 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units: The boilers are not subject to Subpart Dc because of their

size (less than 10 MMBTU/hr of heat input) – Also see 20 DMR 205 which was discussed previously.

20 CFR 63, Subpart JJJJJJ - Chapter 6 – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources: 40 CFR 63 Subpart JJJJJJ is applicable to fuel-oil burning boilers. The Bryant Street Pumping station boilers burn only natural gas therefore are exempt from 40 CFR 63, Subpart JJJJJJ, pursuant to 40 CFR 63.111195, and are considered gas fired boilers as defined by the rule. No Subpart JJJJJJ requirements are part of the permits.

CONCLUSIONS

The public notice announcement will be submitted to the D.C. Register for publication in the January 20, 2017 edition. The draft permits are available for public comment through February 20, 2017. Subject to receiving no adverse public comments with regard to a segment of this project or all of it, I recommend, based on all the aforementioned regulatory review that the permits be issued to DC Water following completion of the public review period. If comments are received during the public review period, they will be addressed before issuance of any permits for the boilers.

JCN