



GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and Environment

CHAPTER 2 TECHNICAL MEMORANDUM

TO: File

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

FROM: Olivia Achuko 
Environmental Engineer

SUBJECT: **Providence Hospital Permit No. 7088 to Construct and Operate One Dual Fuel Boiler**

DATE: October 19, 2016

BACKGROUND INFORMATION

Providence Hospital (the “Permittee” or “applicant”) submitted a permit application for a permit to construct and operate one dual fuel boiler to be located at 1150 Varnum Street NE, Washington, DC 20017. Originally, the applicant submitted a request dated November 16, 2015 (cover letter dated November 17, 2015), which was assigned permit number 7064 for processing, but the applicant’s plans changed, so this permit application was replaced. A subsequent application dated February 26, 2016 (cover letter dated March 3, 2016) was received and assigned permit number 7088 for processing. This application requested authorization to construct a new dual fuel-fired 600 hp (24.80 MMBtu/hr) boiler to will replace an existing unit already permitted under the Title V operating permit. The application was subsequently updated several times. The final version of the application was submitted in hard copy on October 19, 2016 (with cover letter dated October 17, 2016).

The hospital currently has a Title V operating permit No. 008-R2 issued on July 1, 2015. The applicant will be required to submit an application within 12 months of issuance of the new permit to amend and update the Title V permit to remove the old boiler and include the new boiler.

The Permittee has not requested that any of the materials submitted with this application be confidential.

TECHNICAL INFORMATION

The unit will replace the permitted Boiler 1 (Emission Unit ID 17034). This emission unit is required to obtain Chapter 2 permit before installation and operation pursuant to our regulation. Boiler 1 is the only unit affected by this modification so all other information previously

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submitted for Providence Hospital remains accurate.

It should be noted that, while the boiler planned for installation is referred to as a 24.80 MMBTU/hr boiler, this is actually the heat input rating when running on natural gas. When using the No. 2 fuel oil burners, the maximum heat input rating is 23.80 MMBTU/hr. Emission calculations were performed for the different fuels based on these differing burner ratings.

REGULATORY REVIEW

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

The boiler is a 24.80 MMBtu/hr boiler with dual fuel-firing (natural gas and No. 2 fuel oil) capability. Since the boiler has a heat input greater than 5 MMBtu/hr, a Chapter 2 permit is required before construction and operation pursuant to Section 200.

20 DCMR Chapter 2, Section 209 – Minor New Source Review (MNSR):

Unrestricted, the unit would have the potential to emit more than 5 TPY of NO_x which would have made 20 DCMR 209, Minor New Source Review (MNSR) applicable. However, because the applicant intends to use the fuel oil capability only during gas interruptions and testing, they have requested a limit of 1,132 hours a year operation on No. 2 oil to stay below the 5 TPY of NO_x applicability threshold. This condition, along with related record keeping requirements have been included in the permit and will be transferred into the Title V permit in the future.

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

Potential emissions from this unit, even without the aforementioned limit on fuel oil usage, would not trigger the “significant” thresholds of this rule. Therefore, this rule is not applicable in this case.

20 DCMR Chapter 3 - Operating Permit Requirements:

Providence Hospital is currently a Title V source because of its potential to emit (PTE) more than 25 tons per year (TPY) of nitrogen oxides (NO_x). This unit is a replacement of one of the emission units currently in operation at the hospital. The addition of this unit does not affect the applicability of this regulation. Within twelve (12) months of issuance of this permit to operate, the Permittee is required to apply for modification to the existing Title V operating permit.

It should be noted that language has been added to the permit to ensure that compliance and emissions information for this boiler are included in the relevant Title V reports in the interim until the language of this permit can be incorporated into the Title V permit itself.

20 DCMR Chapter 5 - Source Monitoring and Testing:

The Permittee must maintain written records of the amount of emissions of the pollutants from the boiler in accordance with 20 DCMR 500.2. Throughout the permit, appropriate testing, monitoring, and record keeping requirements have been included to ensure that compliance with the emission and operational limits are maintained.

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20 DCMR Chapter 6 - Particulates:

The visible emission limitations of 20 DCMR 606 are applicable to this facility. Visible emissions shall not be emitted into the outdoor atmosphere from the boiler, except that discharges not exceeding forty percent (40%) opacity (unaveraged) shall be permitted for two (2) 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 the equipment.

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

This section is applicable since the facility (source) has potential to emit more than 25 tons per year of NO_x. An annual combustion adjustment is considered RACT and is the only requirement for the unit under this regulation.

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 and has been included in the permit.

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

The boiler has a heat input rating greater than than 10 MMBTU/hr and will be installed after June 9, 1989 therefore this regulation is applicable. The back-up fuel for the boiler is ultra-low sulfur No. 2 fuel oil containing no more than 0.0015% sulfur by weight. This is more stringent than the 0.5% sulfur by weight requirement of this regulation. The unit is not large enough to be covered by the particulate matter requirements of Subpart Dc.

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

This boiler is permitted to burn natural gas as primary fuel. No. 2 fuel oil is to be used only during gas supply interruption and periodic testing less than 48 hours per year, therefore this subpart is not applicable as the unit is considered a gas-fired boiler under the rule.

RECOMMENDATIONS

The public notice announcement was submitted to the D.C. Register for publication in the October 21, 2016 edition. The draft permits are available for public comment through November 21, 2016. Any comments received will be addressed before a final permit decision is made. If no comments are received, the permit should be issued promptly after the public comment period has ended.

SSO:NOA

