

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and Environment

CHAPTER 2 OPERATION PERMIT MEMORANDUM

TO: File

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

FROM: Abraham T. Hagos *Abraham T. Hagos 2/9/18*
Environmental Engineer

SUBJECT: **The Catholic University of America
Permit to Construct and Operate Eight (8) Identical 6.0 MMBTU per
Hour Dual Fuel Fired Boilers**

DATE: February 9, 2018

BACKGROUND INFORMATION

A set of permit applications to construct and operate eight (8) identical 6.0 MM Btu per hour dual fuel fired boilers at The Catholic University of America facility, located at 620 Michigan Avenue NE, was received by the Air Quality Division (AQD) of the Department of Energy and Environment (DOEE) on September 15, 2017.

The permit actions will be published in the DC Register and on DOEE's website on February 16, 2018. Public comments for the permit actions will be solicited through March 19, 2018.

The Catholic University of America 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 Catholic University of America is an air pollution source for criteria and other air pollutants. The applicant is requesting a permit to construct fuel burning equipment units greater than 5 MMBTU/hr heat input. Thus a Chapter 2 permit is required.

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

This project consists, not only of the construction of eight 6.0 MMBTU/hr dual fuel fired hot water boilers, but also four small natural gas-fired steam boilers (one rated at 1.281 MMBTU/hr and three rated at 0.406 MMBTU/hr each), and one 1,000 kWe emergency generator set powered by a 1,490 hp diesel-fired engine (previously approved under

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source category permit approval 7048-SC-0052. The dual fuel boilers have been limited to operating a maximum of 500 hours per year on No. 2 fuel oil per Condition III(b) of the permits. With this limitation (to be incorporated into the Title V permit), the potential to emit of the entire project was estimated in the application. The potential to emit of all regulated air pollutants are below the relevant NNSR (and PSD) thresholds. Notably, the NO_x potential to emit was estimated to be 15.76 tons per year. See page 3-4 of the application for a full potential emissions summary. Note that the 500 hours per year on No. 2 fuel oil has been adopted to avoid applicability of 20 DCMR 204, and therefore must be maintained in future permits.

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).

With the 500 hour per 12-month rolling period limit on No. 2 fuel oil use, 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 Catholic University of America facility is a major source subject to Chapter 3 and will need an operating permit in accordance with 20 DCMR 300.1 for the new sources upon completion of construction of the units. An application to incorporate the requirements of the Chapter 2 permits for the eight boilers must be submitted within 12 months of issuance of the final permit per Condition I(g) of the draft permits.

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. Because the facility is subject to 20 DCMR Chapter 3, emission reporting requirements similar to those in the facility's Title V permit (No. 010-R2) have been incorporated into Conditions V(h) and (i).

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.

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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. A note has been added to the permit that 20 DCMR 606 may be revised pursuant to a "SIP call" issued by EPA; if the regulation is revised, the new regulation's requirements will automatically supersede the current permit language.

20 DCMR Chapter 8, Section 801: Sulfur Content of Fuel Oil

The back-up fuel for the boilers shall be No. 2 fuel oil containing no more than 0.05% sulfur by weight per 20 DCMR 801.2(a) until July 1, 2018. After that, a limitation of 0.0015% sulfur by weight becomes applicable per 20 DCMR 801.3. However, the applicant indicated that the facility will be using fuel oil with a weight percent sulfur of 0.0015%. Therefore, a limit of 0.0015% sulfur by weight has been included in Condition III(b) of the permit.

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), and to these particular units pursuant to 20 DCMR 805.1(a)(4) specifically. AQD considers annual boiler adjustments pursuant to 20 DCMR 805.8 to meet the requirements of this regulation. As such, these requirements are found in Condition II(a) of the permits.

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.

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.

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

NESHAP subpart JJJJJ for area source ICI Boilers is potentially applicable because the boilers use both natural gas and No. 2 fuel oil. However, under the provisions of 40 CFR

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63.11195(b), and 40 CFR 63.11237, the boilers qualify as “gas-fired boilers” and are therefore not subject to the requirements of Subpart JJJJJ. Appropriate permit conditions have been placed in the permit, pursuant to 40 CFR 63.11195 to ensure that liquid oil is only utilized in the affected boilers in compliance with 40 CFR 63.11237.

RECOMMENDATIONS

The proposed project 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 February 16, 2018 through March 19, 2018. AQD will resolve any comments received before taking final action on the applications. If no comments are received, I recommend that permits (Nos. 7180 through 7187) be issued in accordance with 20 DCMR 200.1 and 200.2 promptly following the end of the public comment period.

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