

GOVERNMENT OF THE DISTRICT OF COLUMBIA  
Department of Energy and Environment

**CHAPTER 2 TECHNICAL SUPPORT MEMORANDUM**

TO: File

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

FROM: Abraham T. Hagos *ATH 7/6/17*  
Environmental Engineer

**SUBJECT: General Services Administration (GSA)  
Central Heating and Refrigeration Plant (CHRP)  
Permit No. 7161 to Modify and Operate Boiler No. 6**

DATE: July 6, 2017

---

**BACKGROUND INFORMATION**

A permit application to replace an existing set of antiquated burners in Boiler No. 6 with like-kind ZEECO-manufactured dual-fuel low NO<sub>x</sub> burners capable of burning both natural gas and No. 2 grade ultra-low sulfur fuel oil at the General Services Administration (GSA) Central Heating & Refrigeration Plant (CHRP) facility, located at 325 13<sup>th</sup> Street SW, was received by the Air Quality Division (AQD) on November 10, 2016 with additional supplemental information subsequently submitted and received on December 23, 2016 (note that the cover letter for this latter submittal was dated November 8, 2016, despite its later submittal time).

AQD intends to issue Chapter 2 operating permit No. 7161 to address this request. The permit action will be published in the DC Register on July 14, 2017. Public comments for the permit action will be solicited through August 14, 2017.

GSA 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 CHRP facility is an air pollution source for criteria and other air pollutants. The applicant is requesting a permit to operate fuel burning equipment greater than 5 MMBTU/hr heat input. Thus a Chapter 2 permit is required.

## **TECHNICAL SUPPORT MEMORANDUM**

**General Services Administration (GSA), Central Heating and Refrigeration Plant (CHRP)**

**Permit No. 7161 to Modify and Operate Boiler No. 6**

July 6, 2017

Page 2

### 20 DCMR Chapter 3, Section 301: Operating Permit Requirements:

The CHRP facility is a major source subject to Chapter 3 and continues to need an operating permit in accordance with 20 DCMR 300.1. The requirements of this permit will need to be moved into the facility's Chapter 3 operating permit. Condition I(h) of the permit gives GSA three months from the issuance of the Chapter 2 permit to revise the pending Chapter 3 permit renewal application to include its requirements.

### 20 DCMR Chapter 5: Source Monitoring and Testing Requirements:

GSA must maintain and operate a CEMS and COMS for oxides of nitrogen (NO<sub>x</sub>) and opacity in accordance with 20 DCMR 500.2 and submit the information to the District in accordance with 20 DCMR 501.1 and 502.10. These requirements have been established in Conditions IV(a) through (e) of the permit. Additionally records must be kept according to Condition V(k) as required by 20 DCMR 500.1 and 500.2.

GSA must sample and test the fuel oil at least once each calendar quarter or at the time of each fuel delivery (whichever is less frequent) or otherwise obtain necessary information from their fuel supplier. This requirement has been established in Condition IV(f) of the permit. Monitoring of this information is required in Condition V(h).

GSA must perform emission testing per 20 DCMR 502 to determine compliance with particulate matter and carbon monoxide limits placed in the permit pursuant to 20 DCMR 201 and 20 DCMR 600.1. This testing is required pursuant to Condition IV(g) of the permit.

GSA must monitor records of the amount of No. 2 fuel oil and natural gas used each month in Boiler No. 6. These data shall be maintained in a rolling twelve month sum format. This requirement has been established in Condition V(j) of the permit

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

The requirements of Section 600.1 were placed in Condition II(b) of the permit and testing requirements to determine compliance were placed in Condition IV(g).

### 20 DCMR Chapter 6, Section 606: Visible Emissions

The visible emissions limitations of 20 DCMR 606.2 are applicable to this fuel burning unit because the equipment was placed in initial operation before January 1, 1977. Visible emissions whose opacity is in excess of ten percent (10%) (unaveraged) at any time shall not be emitted into the outdoor atmosphere from the operation of the unit. The visible emissions standard applies at all times, except for limited time exceptions and limited exceptions during start-up and shutdown of equipment. This requirement is contained in Condition II(d) of the permit. Compliance monitoring is ensured through the operation of a COMS required by the permit. It should be noted that AQD acknowledges that these requirements are subject to an EPA call for a State Implementation Plan revision, commonly known as the Startup, Shutdown, and Malfunction (SSM) SIP Call. This regulation may be revised in the near future. Therefore, a specific note has been placed in the permit indicating that if a new regulation is put into effect,

## TECHNICAL SUPPORT MEMORANDUM

**General Services Administration (GSA), Central Heating and Refrigeration Plant (CHRP)**

**Permit No. 7161 to Modify and Operate Boiler No. 6**

July 6, 2017

Page 3

its requirements will supersede the requirements of the existing regulation and associated permit condition.

### 20 DCMR Chapter 8, Section 804: Nitrogen Oxide Emissions

This regulation applies to fossil fuel-fired steam generating units of more than 100 MMBTU/hr heat input and therefore applies to Boiler 6. Its requirements are found in Condition II(c) of the permit. Compliance will be determined via operation of NO<sub>x</sub> CEMS, the operation and maintenance of which are required throughout the permit.

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

Because the unit is a fossil-fuel-fired steam-generating unit with a heat input greater than 20 MMBTU/hr at a major source of NO<sub>x</sub>, this regulation is applicable. It requires operation of a CEMS for NO<sub>x</sub> as well as annual boiler tuning. Both of these requirements have been included in the permit. Detailed requirements for operation of the CEMS and related record keeping are also contained 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 permit.

### 20 DCMR Chapter 14, Section 1410: Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers

The requirements of 40 CFR 63, Subpart DDDDD are adopted by reference in this section. This subpart is applicable to this equipment and has been addressed in the permit. See the more complete discussion of this subpart below.

### 40 CFR Part 60, Subpart Db: Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units: Pursuant to 40 CFR 60.40 Subpart Db, combustion unit operating as

dual fuel boiler is subject to NSPS Subpart Db. NSPS Subpart Db applies to steam generating unit with a heat input capacity of greater than 100 MMBTU/hr and construction, modification, or reconstruction of which commenced after June 19, 1984. This action does not meet the definitions of construction, modification, or reconstruction used for NSPS purposes.

Additionally, AQD has searched our records and worked with GSA to search their records. AQD has determined that none of the previous changes to the equipment, such as the previous conversion from coal met these definitions either. As such, AQD has determined that this regulation is not applicable.

It should be noted that there is a reference to this regulation in the existing Chapter 3 (Title V) permit (No. 032, issued July 28, 2000). However, it is not applied properly (it cites requirements

## **TECHNICAL SUPPORT MEMORANDUM**

**General Services Administration (GSA), Central Heating and Refrigeration Plant (CHRP)**

**Permit No. 7161 to Modify and Operate Boiler No. 6**

July 6, 2017

Page 4

for “high heat release rate” equipment rather than “low heat release rate” equipment which would be applicable to this unit. No records can be found why a determination was made to include any reference to this regulation for this equipment, and based on our records, there is no reason for such a reference. As such, AQD intends to remove this requirement from the Title V permit when it is revised. It should also be noted, however, that the limits established based on this permit amendment request and the newer, lower-emitting burners, will actually be effectively more stringent than the previously incorrectly cited requirements.

### 40 CFR Part 63- National Emission Standards for Hazardous Air Pollutants (NESHAP)

Hazardous air pollution (HAP) major source is defined as having potential emissions in excess of 25 tons per year for total HAPs and/or potential emissions in excess of 10 tons per year for any individual HAP. GSA is a major source of HAP for potential emissions of 10 tons or more for an individual HAP, specifically, hexane (H<sub>6</sub>H<sub>14</sub>).

### 40 CFR 63, Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (also known as the Major Source Boiler MACT)

The Major Source Boiler MACT applies to industrial, commercial, and institutional boiler at major sources of HAPs. GSA is subject to the requirements of the Major Source Boiler MACT because GSA has the potential to emit 17.85 tons per year of a single HAP, hexane.

Under this regulation, Boiler No. 6 is considered a “unit designed to burn gas 1 subcategory” unit as defined in 40 CFR 63.7575. As it relates to Boiler No. 6, this means that the unit burns only natural gas except for up to 48 hours per calendar year for “periodic testing of liquid fuel, maintenance, or operator training” and for any period of time that the natural gas supply is interrupted or curtailed. However, because the current Title V permit does not allow operation of the unit on fuel oil for any reason other than natural gas interruption, and Chapter 2 permits cannot contravene Title V permits, this Chapter 2 permit does not allow the 48 hour exception noted above. It is likely that this exception will be added when the Title V permit is renewed as GSA has previously expressed interest in allowing for this type of operation.

The requirements of this NESHAP regulation have been included in the Chapter 2 permit. They generally consist of an annual boiler tune-up and a one-time energy assessment. GSA has previously reported that they completed the one-time energy assessment, but its requirements have been placed in the permit for completeness.

Additionally, the regulation requires submittal of an initial notification to the U.S. Environmental Protection Agency (EPA). This was submitted late, but AQD has a copy of such a submittal dated April 3, 2017 in the file for this permit. As such, the requirements to submit the initial notification have not been included in the permit. However, because AQD does not have records of the subsequently required Notification of Compliance Status, which would be overdue at this time, AQD has included requirements to submit this notification immediately upon issuance of the permit, if it has not already been submitted as required. See Condition V(o) of the permit.

**TECHNICAL SUPPORT MEMORANDUM**

**General Services Administration (GSA), Central Heating and Refrigeration Plant (CHRP)**

**Permit No. 7161 to Modify and Operate Boiler No. 6**

July 6, 2017

Page 5

The regulation also requires various other reporting and notifications found in Conditions V(m), (n), (p), (q), and (r).

**RECOMMENDATIONS**

The proposed project and attached permit comply with all applicable federal and District air pollution control laws and regulations.

Public comments for the permit action will be solicited from July 14, 2017 through August 14, 2017. AQD will resolve any comments received before making a final determination on issuance of a final permit. In the event no comments are received, I recommend that permit No. 7161 be issued promptly after the expiration of the public comment period in accordance with 20 DCMR 200.1 and 200.2.

