

GOVERNMENT OF THE DISTRICT OF COLUMBIA

District Department of the Environment

Air Quality Division



CHAPTER 2 TECHNICAL MEMORANDUM

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

FROM: John C. Nwoke 
Engineer

SUBJECT: **U.S. Department of Commerce
Permit Nos. 6848-6850
Permit to Operate Diesel Emergency Generators**

DATE: October 30, 2014

BACKGROUND INFORMATION

On November 13, 2013, permit applications were received from the U.S. Department of Commerce (DOC). The applications were for Chapter 2 permits to operate three identical existing diesel emergency generators rated at 2,000 kW. Processing of the applications was delayed due to additional information required.

DOC has not requested that any portions of the applications be held confidential.

The permit applications were processed on the basis of the re-submitted emissions calculations that limited the annual hours of operation of each emergency generator to 400 hours.

TECHNICAL INFORMATION

The DOC submitted applications for three identical existing diesel emergency generators.

Initially, the generators were evaluated for major source applicability based on 500 hours of operation per year. A potential-to-emit analysis based on the 500 hours of operation indicates that the plant-wide nitrogen oxide (NO_x) emissions is 25.58 tons per year, thus making the facility subject to the Title V Operating permit program. This level of emissions also means that the District's Non-attainment New Source Review (NNSR) program would be triggered, unless NO_x emissions were reduced below the major source threshold of 25 tons of NO_x per year.

To address the NNSR issue, in its correspondences, DOC requested that each of the generators be allowed to run up to 400 hours per year. DOC and the Department agreed that this was a level



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sufficient to allow them carry out their business function, while staying below the major source threshold.

On August 14, 2014, DOC submitted a proposal to AQD requesting operating limits for each of the emergency generators in their inventory. The facility understands that agreeing to those limits means acceptance of the terms and conditions of the Chapter 2 Permits (if approved), including but not limited to applying for a Title V operating permit.

REGULATORY REVIEW

Chapter 2, Section 200: General Permit Requirements

The provisions of this section are applicable to the emergency generators as the emergency generator engines are stationary sources of air pollution. Although permits were not originally obtained pursuant to 20 DCMR 200.1, this regulation was applicable when the units were installed in 2012. Permits are therefore required to operate the emergency generators pursuant to 20 DCMR 200.2. These permits are valid for five (5) years pursuant to 20 DCMR 200.4.

Chapter 2, Section 204: Permit Requirements for Sources Affecting Non-Attainment Areas

The review of the DOC's initial Chapter 2 permit application indicated that the facility would exceed the major source threshold for nitrogen oxides (NOx) of 25 tons per year, unless the facility limited the emergency generator's operating hours such that the NOx emission from all the generators in aggregate is below the major source threshold of 25 tons per year.

The DOC submitted a proposal to limit the operating hours of their emergency generators so as to stay below the major source threshold and not trigger NNSR. AQD reviewed and is proposing to accept the proposal subject to the permit conditions in the draft permits.

As a result of the approach taken above, the facility is not expected to trigger NNSR. However, it will be subject to 20 DCMR Chapter 3- Operating Permit Program, otherwise known as Title V Operating Permit Program, discussed below.

Chapter 2, Section 205: New Source Performance Standards

20 DCMR 205 adopts older New Source Performance Standards (NSPSs) that are not applicable to these units. However, AQD has performed reviews of more recent NSPSs for applicability. See the related discussion in "Other Regulations", below.

Chapter 2, Section 209: Minor New Source Review

The District of Columbia minor new source review regulation found at 20 DCMR 209 was effective January 1, 2014. The regulation is applicable to the construction of any new stationary

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source, or the modification of an existing stationary source, or the installation or modification of an air pollution control device on a stationary source.

The associated project must result in an increase of the potential to emit rate equal to or greater than five tons per year (5 tpy) of any of the criteria pollutants and HAPs.

The date of the applications was November 8, 2013 while installation of the equipment occurred well before this date. This is earlier than the effective date of Minor New Source Review. Therefore, this regulation is not applicable to the units and hence no related requirements were included in the permit document.

Chapter 3: Operating Permits and Acid Rain Programs

Based on the evaluation of the PTE for the facility-wide NO_x emissions (at 500 hours of operation per year), the facility-wide NO_x emissions is approximately 26 tpy. This value is over the major source threshold of 25 tons per year, thus making the facility subject to Chapter 3 of 20 DCMR. In order to avoid NNSR applicability, federally enforceable limits on the operating hours needed to be established. Because AQD does not implement a “synthetic minor” permitting program, it is AQD’s procedure to require such sources to obtain Chapter 3 permits in lieu of Title V permits to memorialize such federally enforceable limits.

The facility was informed on September 3, 2014, that they are subject to Chapter 3 and will need to submit an application accordingly. Condition I(g) of the Chapter 2 permit document establishes this as a requirement. However, because the AQD is considering adopting a “synthetic minor” program in the future, additional language was added to clarify that, should such a rule be promulgated, DOC may opt to comply with the requirements of that program in lieu of the Title V permitting process.

20 DCMR 502: Testing, Monitoring and Record Keeping Requirements:

Testing, monitoring and record keeping requirements pursuant to 20 DCMR 500.8 and 502 have been included in the permit documents under Permit Conditions IV and V. However, there was no requirement for stack testing for the emergency generator engines and none was included in the permit documents.

Chapter 6: Particulates

The emergency generator engines could emit visible emissions during any period of equipment startup, operation or shutdown and as such 20 DCMR 606.1 is applicable. Permit Condition II(b) limits the extent of visible emissions from the emergency generator engines.

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Chapter 8: Asbestos, Sulfur, Nitrogen Oxides, and Lead

The provisions of 20 DCMR 801.1 with respect to sulfur content of fuel oils is applicable to the emergency generator engines. Condition III(d) was included in the permit documents to meet the requirement of this regulation (and in fact, goes beyond the requirement in this regulation due to other applicable regulatory requirements streamlined into the same permit condition).

Condition III(a) ensures that the emergency engines remain exempt from the requirements of 20 DCMR 805 by operating for less than five hundred (500) hours in any consecutive twelve (12) month period (in fact, the units are expected to operate well below 500 hours, and are to be limited in the permit to 400 hours). No other provisions of this chapter are applicable to the emergency generator engines hence these other provisions were not included in the permit document.

Chapter 9, Section 903: Odorous or Other Nuisance Air Pollutants

The emergency generator engines could emit emissions such as soot or diesel particulate matter (DPM) during any period of equipment startup, operation or shutdown and as such 20 DCMR 903.1 is applicable. Permit condition II(c) limits the extent of DPM or odorous emissions from the emergency generator engines.

Other Regulations

40 CFR 60, Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Pursuant to 40 CFR 60.4200, NSPS Subpart IIII applies to compression ignition internal combustion engines with a displacement of less than 30 liters per cylinder, and (1) the model year is 2007 or later (2) commenced construction after July 11, 2005 and manufactured after April 1, 2006, or 3) modified or reconstructed after July 11, 2005

All three engines were manufactured on October 29, 2010. Clearly the diesel engines are subject to this subpart. EPA certificate of conformity for 2010 model year was issued for the engines. The requirement for a certificate of conformity is in the permit document as are the other requirements of this regulation.

40 CFR 63, Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

The three emergency generator engines are deemed new, because their date of manufacture is later than June 12, 2006. For new engines, though the regulation is technically applicable, compliance with Subpart ZZZZ is deferred to 40 CFR 60 (NSPS), Subpart IIII. Consequently, Subpart ZZZZ requirements were not included in the permit document.

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RECOMMENDATIONS

The public notice for these draft permits is scheduled for posting in the D.C. Register on November 7, 2014 and will be available for public comment through December 8, 2014.

The proposed project and attached permit comply with all applicable federal and District air pollution control laws and regulations. Assuming no comments are received during the public review period, I recommend that the attached permit document be issued. If comments are received, they will be addressed before issuance of any permit for the units.

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