

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and Environment

**FACT SHEET AND STATEMENT OF BASIS
FOR PROPOSED PERMITTING ACTION
UNDER 20 DCMR 300 (TITLE V-OPERATING PERMIT PROGRAM)**

This “Fact Sheet and Statement of Basis” has been prepared pursuant to 20 DCMR 303.1(c) and 40 CFR 70.7(a)(5).

PERMIT NO. 002-R2

APPLICANT AND PERMITTEE:

Sibley Memorial Hospital – Johns Hopkins Medicine
5255 Loughboro Road, NW
Washington, DC 20016-2695

FACILITY LOCATION:

Sibley Memorial Hospital
5255 Loughboro Road, NW
Washington, DC 20016-2695

FACILITY DESCRIPTION:

Sibley Memorial Hospital provides medical and surgical health services to the community. It is covered by Standard Industrial Classification (SIC) Code 80 (Health Services) and NAICS Code 622110 (General Medical and Surgical Hospitals).

As background, Sibley Memorial Hospital obtained their first Chapter 3 (Title V) permit on September 22, 1998 and a Title V renewal was issued in September 27, 2004. The applicant submitted a Title V permit renewal application on March 27, 2009; however, per the Department’s correspondence with Sibley, based on the quantity of changes and modifications that occurred at the facility since the submittal of the Title V application in 2009, the Department requested that Sibley submit an updated Title V application. The applicant submitted a revised Title V permit application on December 23, 2015; subsequently, the applicant submitted an additional updated application package on March 1, 2016 to address the removal of three (3) emergency generators and three (3) fuel oil storage tanks from the facility. This permitting action is to address this Title V application.

The 2016 Title V permit application lists two (2) 38.532 MMBTU/hr dual fuel-fired (natural gas and No. 2 fuel oil) boilers, one 12.247 MMBTU/hr dual fuel-fired (natural gas and No. 2 fuel oil) boiler, three (3) 14.7 MMBTU/hr dual fuel-fired (natural gas and No. 2 fuel oil) boilers, four (4) 1,500 kW (2,328 hp) and one (1) 500 kW (760 hp) diesel-fired emergency generator sets covered by New Source Performance Standard (NSPS) Subpart IIII, and one (1) 750 kW (1,109 hp) diesel-fired non-NSPS emergency generator set.

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In addition, the facility maintains the following miscellaneous/insignificant sources:

- Laboratories (fume hoods and fugitive emissions)
- Morgue(s)
- Five (5) Underground Storage Tanks (USTs) – diesel oil
- Six (6) Aboveground Storage Tanks (ASTs) – diesel oil/distillate fuel
- Eight (8) Cooling Towers
- Natural gas fired fuel burning equipment with heat input ratings less than 5 MMBTU/hr including:
 - Six (6) natural gas fired clean steam boilers;
 - Two (2) condensing hot water heaters;
 - Four (4) low pressure boilers; and
 - Twelve (12) pieces of commercial cooking equipment.

It should be noted that the applicant indicated that x-ray processing is now digital and does not involve traditional developing chemicals and is therefore a trivial source of emissions. Similarly, with regard to carpentry operations, the applicant indicated that “Sibley cuts a few planks of wood a year associated with Plant maintenance and upkeep activities”. They asserted that the related emissions are so trivial that they do not warrant quantification. The Air Quality Division (“AQD”) of the Department of Energy and Environment (“DOEE” or “the Department”) agrees with these assessments based on the information provided, and has therefore left these items out of the permit.

EMISSIONS SUMMARY:

The following table provides a list of the estimated maximum emissions the facility could emit in a given 12-month period operating 24 hours per day and 365 days per year, under the terms of the permit and given the physical and operational design of the equipment at the facility.

Plantwide Emissions Summary (tons per year)	
Pollutant	Potential Emissions
Sulfur Dioxide (SO ₂)	198.6*
Oxides of Nitrogen (NO _x)	88.07
Total Particulate Matter (PM total)	21.37
Volatile Organic Compounds (VOCs)	4.64
Carbon Monoxide (CO)	44.22
Total Hazardous Air Pollutants (HAPs)	1.15

*This is an over-estimate of the PTE for SO₂ as it is based on a fuel sulfur content of 0.5% by weight. On November 13, 2015, DOEE issued a final rulemaking drastically reducing the allowable fuel sulfur content for newly purchased fuel to a level well below 0.5%.

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BASIS OF 20 DCMR CHAPTER 3 (TITLE V) APPLICABILITY:

This facility has the potential to emit 88.07 tons per year of oxides of nitrogen (NO_x). The values for this criteria pollutant exceed the major source thresholds in the District of Columbia of 25 TPY of NO_x or VOC, and/or 100 TPY of any other criteria pollutant. Because potential emissions of NO_x exceed the relevant major source thresholds, pursuant to 20 DCMR 300.1(a), the source is subject to Chapter 3 and must obtain an operating permit in accordance with that regulation and Title V of the federal Clean Air Act. Note also that, according to the calculations in the application, the facility is a major source of sulfur dioxide (SO₂) with potential emissions of 198.6 TPY, well above the 100 TPY threshold. Note, however, that due newly established fuel sulfur content requirements in 20 DCMR 801, the use of higher sulfur fuel is being phased out and this potential to emit is expected to be reduced to well below 100 TPY as a result.

LEGAL AND FACTUAL BASIS FOR DRAFT PERMIT CONDITIONS:

The conditions contained in the Title V operating permit are based on underlying requirements of 20 DCMR as well as various federal regulations promulgated pursuant to the federal Clean Air Act. The regulations that are the basis of each condition are cited in the permit, except that conditions added to make another condition, with a direct underlying regulation, enforceable as a practical matter may, in some cases, not have a specific citation. These latter, un-cited conditions generally consist of monitoring, record keeping, and reporting requirements authorized under 20 DCMR 500.1.

The draft Title V permit has been developed to incorporate the requirements of all applicable requirements as defined in 20 DCMR 399.1 along with additional conditions necessary to make all such requirements enforceable as a practical matter.

Any condition of the draft Title V Permit that is enforceable by the District but is not federally-enforceable is identified in the Title V permit as such with an asterisk.

It should also be noted that this permit will be issued to include updated requirements established pursuant to 20 DCMR Chapter 2 as well as Chapter 3. When the permit is issued for public review, the public notice will reflect this fact.

REGULATORY REVIEW:

This facility has been found to be subject to the requirements of the following regulations, except as noted in the discussion below:

Federal and District Enforceable:

20 DCMR Chapter 1 - General Rules

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- 20 DCMR Chapter 2 - General and Non-Attainment Area Permits
- 20 DCMR Chapter 3 - Operating Permits and Acid Rain Programs
- 20 DCMR 500 - Records and reports
- 20 DCMR 502 - Sampling, tests, and measurements.
- 20 DCMR 600 - Fuel burning particulate emission.
- 20 DCMR 604 - Open Burning
- 20 DCMR 605 - Control of Fugitive Dust
- 20 DCMR 606 - Visible Emissions
- 20 DCMR 800 - Control of Asbestos
- 20 DCMR 801 - Sulfur Contents of Fuel Oils
- 20 DCMR 803 - Sulfur Process Emissions
- 20 DCMR 805 - Reasonably Available Control Technology for Major Stationary Sources of the Oxides of Nitrogen
- 40 CFR 51.212, 52.12, 52.30, 60.11, and 61.12 - Credible Evidence
- 40 CFR 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
- 40 CFR 60, Subpart IIII- Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CIICE)
- 40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (NESHAP for RICE)
- 40 CFR 63, Subpart JJJJJ - National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers Area Sources
- 40 CFR 82, Subpart G - Protection of Stratospheric Ozone (Federally enforceable only except through Title V) (*Note: Air Quality Division [AQD] did not make a positive determination that this regulation was applicable to the facility, but included it as a standard requirement in the permit.*)
- 40 CFR 82, Subpart H - Halon Emissions Reduction (Federally enforceable only except through Title V) (*Note: AQD did not make a positive determination that this regulation was applicable to the facility, but included it as a standard requirement in the permit.*)

District Enforceable Only:

- 20 DCMR 402 – Chemical Accident Prevention (*Note: AQD did not make a positive determination that this regulation was applicable to the facility, but included it as a standard requirement in the permit.*)
- 20 DCMR 900 - Engine idling
- 20 DCMR 901 - Vehicular exhaust emissions
- 20 DCMR 902 - Lead Content of Gasoline
- 20 DCMR 903 - Odorous or other nuisance air pollutants

New Source Performance Standards (NSPS) [40 CFR 60]:

NSPSs apply to this facility as the following analyses and applicability determinations indicate:

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1. Five diesel emergency generator sets are subject to 40 CFR 60, Subpart IIII

40 CFR 60, Subpart IIII applies to stationary compression ignition internal combustion engines (CI-ICE) that: 1) are model year of 2007 or later, 2) commenced construction after July 11, 2005 and were manufactured after April 1, 2006, or 3) were modified or reconstructed after July 11, 2005.

Any new emergency generators with compression ignition internal combustion engines (generally consistent with diesel units) installed after July 11, 2005 and manufactured after April 1, 2006 are considered new engines subject to Subpart IIII. There are five (5) diesel generators at the facility that are subject to NSPS Subpart IIII.

DOEE confirmed that the diesel CI-ICE identified below are subject to 40 CFR 60, Subpart IIII:

Equipment ID and Location	Emission Unit Model / Serial Number	Emission Unit Description
EG-PT-1, Level 1-Above Ambulance Structure	Kohler Model 12V4000G43 generator set with Detroit Diesel/MTU Model 12V4000G43 engine, serial number 52620 12134	1,500 kW emergency generator set with 2,328 bhp diesel-fired engine, Installation / Modification Date 2014 (NSPS)
EG-PT-2, Level 1-Above Ambulance Structure	Kohler Model 12V4000G43 generator set with Detroit Diesel/MTU Model 12V4000G43 engine, serial number 52620 12131	1,500 kW emergency generator set with 2,328 bhp diesel-fired engine, Installation / Modification Date 2014 (NSPS)
EG-PT-3, Level 1-Above Ambulance Structure	Kohler Model 12V4000G43 generator set with Detroit Diesel/MTU Model 12V4000G43 engine, serial number 52620 12133	1,500 kW emergency generator set with 2,328 bhp diesel-fired engine, Installation / Modification Date 2014 (NSPS)
EG-PT-4, Level 1-Above Ambulance Structure	Kohler Model 12V4000G43 generator set with Detroit Diesel/MTU Model 12V4000G43 engine, serial number 52620 12132	1,500 kW emergency generator set with 2,328 bhp diesel-fired engine, Installation / Modification Date 2014 (NSPS)
EG-7	MTU Model 500RXC6D2 generator set with Detroit Diesel Model 6063HK36 engine, serial number 06R1034404	500 kW emergency generator set with 760 bhp diesel-fired engine, Installation/ Modification Date 2009 (NSPS)

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Note that EG-5 is not subject to NSPS Subpart IIII as it was installed in 1997.

2. Certain external combustion units (boilers) operating with fuel oil firing capability are subject to NSPS (40 CFR 60) Subpart Dc. Applicability of this for NSPS for boilers is based on unit size and age. The boilers must have heat input ratings greater than 10 MMBTU/hr, and must have been installed after June 9, 1989. Both criteria for age and size must be met for applicability of 40 CFR 60.40c – Subpart Dc to be triggered. The facility has six (6) dual fuel-fired boilers (natural gas and No. 2 fuel oil/diesel) in operation: CU-1, CU-2, CU-3, CU-PT-1, CU-PT-2 and CU-PT-3:
 - CU-1 and CU-2 are 38.532 MMBTU/hr in size and are installed in 1996. Subpart Dc is applicable to these units. The requirements of Subpart Dc have been incorporated in the permit as applicable.
 - CU-3 is 12.247 MMBTU/hr in size and was installed in 1996. Therefore, Subpart Dc is applicable to this unit. The requirements of Subpart Dc have been incorporated in the permit as applicable.
 - CU-PT-1, CU-PT-2 and CU-PT-3 are 14.7 MMBTU/hr in size and were installed in 2014. Therefore, Subpart Dc is applicable to these units. The requirements of Subpart Dc have been incorporated in the permit as applicable.

40 CFR 60, Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

Subpart Kb does not apply to any of the storage tanks at this facility. Of the many storage tanks at the facility, only one has a storage capacity greater than 75 cubic meters (19,813 gal). This 25,000 gal tank at the Patient Tower is used for storage of diesel fuel, which has a maximum true vapor pressure well below 3.5 kPa. Therefore this storage tank is exempt from this subpart per 40 CFR 60.110b(b).

40 CFR 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (NESHAP for RICE)

40 CFR 63, Subpart ZZZZ applies to stationary reciprocating internal combustion engines (RICE) at area sources of HAP emissions to regulate/monitor HAPs such as acetaldehyde, acrolein, benzene, toluene, xylene, cadmium, chromium, lead, etc., through surrogate compounds such as formaldehyde, CO and/or VOC.

A facility that emits or has the potential to emit 10 TPY of any single HAP or 25 TPY of any combination of HAPs, is consider a major source. Any source that is not a major source is an area source. Because this facility does not have the potential to emit more than 10 TPY of a single HAP or an aggregate of more than 25 TPY of total HAPs, it is an area source. Therefore the area source NESHAP requirements of Subpart ZZZZ are applicable to this facility.

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Subpart ZZZZ is applicable to new or reconstructed spark ignition (SI) and compression ignition (CI) engines at this facility, where “new” is defined as those engines that are manufactured or reconstructed after June 12, 2006. Note that for new engines, Subpart ZZZZ defers their regulations to the NSPS, 40 CFR Part 60 Subpart IIII and Subpart JJJJ. Five (5) new diesel engine for emergency generators at the facility fall into this category (as listed within the table under Subpart IIII). The draft Title V permit has been drafted to include the applicable requirements of the NSPSs for these units.

Additionally, Subpart ZZZZ has the potential to cover the other “existing” engine at the facility, listed below.

Emission Unit ID	Stack ID	Emission Unit Model (Engine/Generator Set)	Emission Unit Description
EG-5	SEG5	Caterpillar 3412/ Caterpillar SR4B	750 kWe emergency generator set with 1,109 bhp diesel-fired engine, Installation/Modification Date 1997 (Non-NSPS)

This unit was originally considered eligible for the exemption found in 40 CFR 63.6585(f)(3) for existing institutional emergency stationary RICE “that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).” Except in very limited situations, the District does not permit operation of units of this sort in demand response programs. Therefore, it is prohibited in the permit. Previously, the facility could have requested a 15-hour per year limitation on the use of these generators in low voltage or frequency situations to qualify for the exemption noted previously. However, based on a May 1, 2015 court ruling (with a mandate issued in May 2016) and EPA’s April 15, 2016 guidance memorandum, operation in low voltage or frequency situations is no longer considered to be emergency operation.

AQD does not allow the operation of emergency generator sets for non-emergency purposes unless they are complying with either one of the NSPS standards (40 CFR 60, Subpart IIII or JJJJ) or the 40 CFR 63, Subpart ZZZZ NESHAP. If they are complying with one of these standards, AQD incorporates the 50 hour per year non-emergency allowance contained in those standards into the permit. As a result, and because Sibley Memorial Hospital will need to operate this unit in low voltage or frequency situations, the requirements of Subpart ZZZZ have been incorporated into the permit.

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

This subpart has the potential to apply because the facility is an area source of HAPs and it has institutional boilers that could burn fuel oil at heat input rates above the trigger thresholds of the

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regulation.

However, pursuant to 40 CFR 63.11195(e), if a boiler meets the definition of a “gas-fired boiler” (see 40 CFR 63.11237), it is exempt from this regulation. As such, at the request of the applicant, Conditions III(a)(2)(C), III(b)(2)(C) and III(c)(2)(E) have been added to the permit to limit operations on fuel oil to gas supply emergencies, gas curtailment, and periodic testing activities (48 hours maximum per calendar year) to ensure that the facility continues to meet the definition of a “gas-fired boiler” and is therefore exempt from the requirements of 40 CFR 63, Subpart JJJJJJ.

As such, the requirements of 40 CFR 63, Subpart JJJJJJ have not been included in the permits for these boilers.

Compliance Assurance Monitoring (CAM) [40 CFR 64]:

A Compliance Assurance Monitoring Plan (CAM) does not apply to the emission units at Sibley Memorial Hospital that are covered by the draft Title V permit. The emissions units covered in the permit include primarily boilers and emergency generators/engines. These combustion units at the facility do not use control devices other than the inherent design of the unit and proper operation and maintenance. As such, they are not subject to CAM.

Greenhouse Gas (GHG) Requirements:

Because Chapter 3 (Title V) was triggered by other pollutants, no evaluation was made to determine if the facility would trigger Title V applicability under the GHG Tailoring Rule. No modifications have been made to the source that would trigger PSD applicability under the GHG Tailoring Rule (which has been overturned by the U.S. Supreme Court in any case). Other than this requirement, there are no other applicable requirements related to GHGs at this time, therefore none were included in the permit.

Chapter 2 Permits:

AQD is using Chapter 2 authority to update permit language for all equipment in the permit, wherever applicable and appropriate. As such, this draft Title V permit will be issued for public notice pursuant to both Chapter 2 and Chapter 3 public notice requirements. The requirements of the following permits issued under the authority of 20 DCMR Chapter 2 since the previous Title V permit (issued September 27, 2004) have been incorporated into the draft Title V permit and updated where appropriate:

Permit Number	Equipment Type/Description	Date Issued
6988-A1 Through 6990-A1	Three (3) 14.7 MMBTU/hr dual fuel-fired boilers, CU-PT-1, CU-PT-2, and CU-PT-3 classified as a gas-fired boilers	10/21/2015
6984 Through 6987	Four (4) 1,500 kW (2,328 hp) PT-1, PT-2, PT-3, and PT-4 Kohler -12 diesel-fired emergency generator sets	7/01/2015
6331-A1	One (1) 500 kW (760 hp) diesel-fired emergency	4/13/2010

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Permit Number	Equipment Type/Description	Date Issued
	generator set	

Note that permit 6331-A1 is being renewed as permit 6331-R1 simultaneously with the Title V permit renewal process, but is expected to be completed somewhat before completion of the Title V process. As such, the final Title V permit is expected to incorporate the conditions of permit amendment 6331-R1. .

COMPLIANCE HISTORY:

The applicant was subject to an enforcement action by AQD in the past three years. Seven air quality violations were identified as follows:

- o One notice of infraction (NOI) for seven (7) failures to obtain an air pollution construction and operating permit for three (3) 14.7 MM Btu per hour boilers, and four (4) 1,500 kW emergency generators. The fine for these infractions was \$14,000.00. The NOI was served July 13, 2015.

In response, the facility obtained Chapter 2 permits (discussed above) for the equipment. They paid the penalty in full on or about July 30, 2015. The case is now closed. The equipment in question is being incorporated into this Title V permit.

COMMENT PERIOD:

Beginning Date: August 5, 2016

Ending Date: September 5, 2016

All written comments should be addressed to the following individual and office:

Stephen S. Ours, P.E.
Chief, Permitting Branch
Department of Energy and Environment
Air Quality Division
1200 First Street, NE, 5th Floor
Washington, DC 20002

PROCEDURE FOR REQUESTING PUBLIC HEARING:

During the public comment period, any interested person may submit written comments on the draft Title V permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues

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proposed to be raised in the hearing. The District shall grant such a request if it is deemed appropriate. The venue, date, and time for any public hearing shall be announced in the District Register and a daily newspaper.

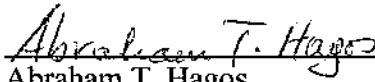
POINT OF CONTACT FOR INQUIRIES:

Abraham T. Hagos
Environmental Engineer
Department of Energy and Environment
Air Quality Division
1200 First Street NE, 5th Floor
Washington, DC 20002
(202) 535-1354

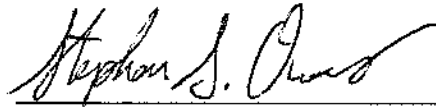
REVIEWS:

Prepared by:

Approved by:


Abraham T. Hagos

Environmental Engineer


Stephen S. Ours, P.E.

Chief, Permitting Branch

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