

INTERMEDIATE STATE PERMIT TO OPERATE

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth herein.

Intermediate Operating Permit Number: OP2018-035
Expiration Date APR 19 2023
Installation ID: 510-0204
Project Number: 2016-12-046

Installation Name and Address

Barnes-Jewish Hospital, St. Louis
One Barnes-Jewish Hospital Plaza
St. Louis, MO 63110
St. Louis City County

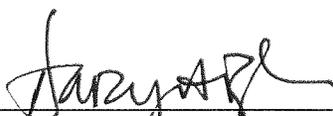
Parent Company's Name and Address

BJC Healthcare
8300 Eager Road, Mail Stop 90-75-582
St. Louis, MO 63144

Installation Description:

Barnes-Jewish Hospital, St. Louis is an existing medical campus, established as two separate hospitals in the early 1900s. The modern medical campus consists of the Center for Advanced Medicine (CAM), Center for Outpatient Health (COH), St. Louis Children's Hospital (SLCH), Goldfarb College of Nursing (CON), Clayton Avenue Building (CAB), Barnes Lodge, Peters, North Parking Garage, Power Plant, Shoenberg Pavilion, East Pavilion, Queeny Tower, Southwest Tower, West Pavilion, Duncan Central Garage, Institute of Health (IOH), South Parking Garage, and Parkview Tower (previously referred to as the New North Building while under construction). The medical campus has air emission sources which consist of natural gas fired boilers with and without fuel oil back-up, emergency generators, cooling towers, fuel oil storage tanks and day tanks, ethylene oxide sterilizers, a parts washer and miscellaneous natural gas fired equipment such as water heaters, dock heaters, etc. Potential air emissions from the medical campus exceed the major source levels for NO_x and CO. As such, the facility has taken plantwide emission limits below the major source levels on NO_x and CO in order to obtain an Intermediate operating permit.


Prepared by:
Jill Wade, P.E.
Operating Permit Unit


Director or Designee
Department of Natural Resources

APR 19 2018

Effective Date

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I. Installation Equipment Listing

EMISSION UNITS WITH LIMITATIONS

The following list provides a description of the equipment at this installation which emits air pollutants and identified as having unit-specific emission limitations.

Boilers and Other Combustion Sources		
Emission Unit	Description	Location
EP-01A	Boiler #2 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1971	East Pavilion
EP-01B	Boiler #3 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1984	
EP-01C	Boiler #4 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1984	
EP-32A	Boiler #1 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	Parkview Tower
EP-32B	Boiler #2 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32C	Boiler #3 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32D	Boiler #4 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32E	Boiler #5 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32F	Boiler #6 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-11A	Boiler #7 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	Power Plant
EP-11B	Boiler #8 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	
EP-11C	Boiler #9 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	
EP-27	Boiler – 1 MMBtu/hr natural gas; Constructed 2001	Barnes Lodge
EP-28B	Water Heater #2 – 0.2 MMBtu/hr natural gas; Constructed 2009	
EP-19A	Boiler #1 – 2 MMBtu/hr natural gas; Constructed 2007	Goldfarb College of Nursing (CON)
EP-19B	Boiler #2 – 2 MMBtu/hr natural gas; Constructed 2007	
EP-19C	Boiler #3 – 2 MMBtu/hr natural gas; Constructed 2007	
EP-20A	Water Heater #1 – 0.2 MMBtu/hr natural gas; Constructed 2007	
EP-20B	Water Heater #2 – 0.2 MMBtu/hr natural gas; Constructed 2007	
EP-12	Boiler #10 – 72.98 MMBtu/hr natural gas or 70.11	Power Plant

	MMBtu/hr fuel oil #2; Constructed 2000	
EP-29A	Boiler #1 – 3 MMBtu/hr natural gas; Constructed 2011	Center for Outpatient Health (COH)
EP-29B	Boiler #2 – 3 MMBtu/hr natural gas; Constructed 2011	
EP-29C	Boiler #3 – 3 MMBtu/hr natural gas; Constructed 2011	
EP-29D	Boiler #4 – 3 MMBtu/hr natural gas; Constructed 2011	
EP-29E	Boiler #5 – 3 MMBtu/hr natural gas; Constructed 2011	
EP-35	Air Handling Unit – 1.05 MMBtu/hr natural gas; Constructed 2016	Parkview Tower

Emergency Generators		
Emission Unit	Description	Location
EP-33A	Emergency Generator #1 – 2,937 HP diesel; Constructed 2016	Parkview Tower
EP-33B	Emergency Generator #2 – 2,937 HP diesel; Constructed 2016	
EP-33C	Emergency Generator #3 – 2,937 HP diesel; Constructed 2016	
EP-33D	Emergency Generator #1 – 1,474 HP diesel; Constructed 2016	St. Louis Children’s Hospital
EP-33E	Emergency Generator #2 – 1,474 HP diesel; Constructed 2016	
EP-03A	Emergency Generator #7 – 760 HP diesel; Constructed 1979	West Pavilion
EP-03B	Emergency Generator #8 – 760 HP diesel; Constructed 1979	
EP-03C	Emergency Generator #9 – 760 HP diesel; Constructed 1979	
EP-03D	Emergency Generator #10 – 760 HP diesel; Constructed 1979	
EP-03E	Emergency Generator #11 – 760 HP diesel; Constructed 1979	
EP-13A	Emergency Generator #1 – 1,135 HP diesel; Constructed 1981	St. Louis Children’s Hospital
EP-13B	Emergency Generator #2 – 1,135 HP diesel; Constructed 1981	
EP-13C	Emergency Generator #3 – 940 HP diesel; Constructed 1992	
EP-13D	Emergency Generator #4 – 1,135 HP diesel; Constructed 1990	
EP-13E	Emergency Generator #5 – 1,135 HP diesel; Constructed 1990	

EP-13F	Emergency Generator #6 – 1,135 HP diesel; Constructed 1990	
EP-04	Emergency Generator #12 – 685 HP diesel; Constructed 1984	Queeny Tower
EP-05	Emergency Generator #20 – 749 HP diesel; Constructed 2001	
EP-06	Emergency Generator #13 – 600 HP diesel; Constructed 1984	South Parking Garage
EP-09	Emergency Generator #1 – 890 HP diesel; Constructed 1987	Clayton Avenue Building (CAB)
EP-10	Emergency Generator #2 – 1,550 HP diesel; Constructed 1993	
EP-14A	Emergency Generator #1 – 1,662 HP diesel; Constructed 2002	Southwest Tower (SWT)
EP-14B	Emergency Generator #2 – 1,662 HP diesel; Constructed 2002	
EP-14C	Emergency Generator #3 – 1,662 HP diesel; Constructed 2002	
EP-08A	Emergency Generator #1 – 1,482 HP diesel; Constructed 2002	Center for Advanced Medicine (CAM)
EP-08B	Emergency Generator #2 – 1,482 HP diesel; Constructed 2002	
EP-08C	Emergency Generator #3 – 1,482 HP diesel; Constructed 2002	
EP-08D	Emergency Generator #4 – 1,482 HP diesel; Constructed 2002	
EP-02A	Emergency Generator #1 – 764 HP diesel; Constructed 2005	East Pavilion
EP-02B	Emergency Generator #2 – 764 HP diesel; Constructed 2005	
EP-02C	Emergency Generator #3 – 764 HP diesel; Constructed 2005	
EP-02D	Emergency Generator #4 – 764 HP diesel; Constructed 2005	
EP-15	Emergency Generator – 480 HP diesel; Constructed 2008	Goldfarb College of Nursing (CON)
EP-34	Emergency Generator – 2,710 kW diesel; Constructed 2015	Institute of Health (IOH)
EP-16	Emergency Generator – 516 kW diesel; Constructed 2012	Center for Outpatient Health (COH)
EP-31	Emergency Generator #1 – 177 kW diesel; Constructed 2015	Duncan Central Garage (DCG)

Ethylene Oxide Sterilizers		
Emission Unit	Description	Location
EP-17A*	Ethylene Oxide Sterilizer #1 – 170 g/cycle; Constructed 1993	Shoenberg Pavilion
EP-17B*	Ethylene Oxide Sterilizer #2 – 170 g/cycle; Constructed 1993	
EP-17C*	Ethylene Oxide Sterilizer #3 – 100 g/cycle; Constructed 2004	
EP-17D*	Ethylene Oxide Sterilizer #4 – 100 g/cycle; Constructed 2004	

**Please Note: Barnes-Jewish Hospital has discontinued use of ethylene oxide for sterilization purposes. The four ethylene oxide sterilizers were last operated in February 2018 and are being permanently dismantled and removed from the premises. It is anticipated that the sterilizers will no longer be on site after March 30, 2018.*

EMISSION UNITS WITHOUT SPECIFIC LIMITATIONS

The following list provides a description of the equipment, which does not have unit specific limitations at the time of permit issuance.

Cooling Towers		
Emission Unit	Description	Location
CWT-6A	Cooling Tower #1; Constructed 2005	East Pavilion
CWT-6B	Cooling Tower #2; Constructed 2005	
CWT-6C	Cooling Tower #3; Constructed 2005	
CWT-1A	Cooling Tower #1; Constructed 1963	Queeny Tower
CWT-1B	Cooling Tower #2; Constructed 1963	
CWT-7A	Cooling Tower #1; Constructed 2006	West Pavilion
CWT-7B	Cooling Tower #2; Constructed 2006	
CWT-7C	Cooling Tower #3; Constructed 2006	
CWT-4A	Cooling Tower #1; Constructed 2002	Southwest Tower (SWT)
CWT-4B	Cooling Tower #2; Constructed 2002	
CWT-4C	Cooling Tower #3; Constructed 2002	
CWT-5A	Cooling Tower #1; Constructed 2001	Center for Advanced Medicine (CAM)
CWT-5B	Cooling Tower #2; Constructed 2001	
CWT-5C	Cooling Tower #3; Constructed 2001	
CWT-9A	Cooling Tower #1; Constructed 2009	Shoenberg Pavilion
CWT-9B	Cooling Tower #2; Constructed 2009	
CWT-9C	Cooling Tower #3; Constructed 2009	
CWT-3A	Cooling Tower #1; Constructed 2005	St. Louis Children’s Hospital
CWT-3B	Cooling Tower #2; Constructed 2005	
CWT-3C	Cooling Tower #3; Constructed 2005	
CWT-3D	Cooling Tower #4; Constructed 2005	
CWT-8A	Cooling Tower #1; Constructed 2009	Goldfarb College of Nursing (CON)
CWT-8B	Cooling Tower #2; Constructed 2009	
CWT-10A	Cooling Tower #1; Constructed 2011	Center for Outpatient

CWT-10B	Cooling Tower #2; Constructed 2011	Health (COH)
CWT-2A	Cooling Tower #1; Constructed 1985	Peters
CWT-2B	Cooling Tower #2; Constructed 1985	
CWT-11	Cooling Tower; Constructed 2016	Parkview Tower

Storage Tanks		
Emission Unit	Construction Date	Location
Underground Storage Tank T-1 South – diesel 6,000 gallons (This tank is closed in place, filled with concrete, and will never be place in service again.)	1987	Clayton Avenue Building (CAB)
Underground Storage Tank T-2 North – diesel 6,000 gallons		
Day Tank #1 – diesel 500 gallons		
Day Tank #2 – diesel 500 gallons		
Underground Storage Tank – fuel oil #2 20,000 gallons	1990	St. Louis Children’s Hospital
Day Tank – diesel 500 gallons	1979	West Pavilion
Storage Tank – fuel oil #2 – 1,500 gallons	1997	South Parking Garage
Day Tank – diesel 50 gallons		
South Storage Tank – fuel oil #2 1,500 gallons	2001	Queeny Tower
North Storage Tank – fuel oil #2 1,500 gallons		
Day Tank #1 – diesel 750 gallons		
Day Tank #2 – diesel 750 gallons		
Storage Tank #1 – fuel oil #2 11,400 gallons	2002	Southwest Tower (SWT)
Storage Tank #2 – fuel oil #2 11,400 gallons		
Day Tank #1 – diesel 200 gallons		
Day Tank #2 – diesel 200 gallons		
Day Tank #3 – diesel 200 gallons		
Day Tank #1 – diesel 100 gallons		
Day Tank #2 – diesel 100 gallons		
Day Tank #3 – diesel 100 gallons	2002	Center for Advanced Medicine (CAM)
Day Tank #4 – diesel 100 gallons		
Storage Tank #1 – fuel oil #2 12,000 gallons		
Storage Tank #2 – fuel oil #2 12,000 gallons		
Storage Tank #3 – fuel oil #2 23,750 gallons	2002	North Parking Garage
Storage Tank #4 – fuel oil #2 23,750 gallons		

Storage Tank #5 – fuel oil #2 23,750 gallons	2003	East Pavilion
Storage Tank #6 – fuel oil #2 23,750 gallons		
East Underground Storage Tank – fuel oil #2 15,000 gallons		
West Underground Storage Tank –fuel oil #2 15,000 gallons		
Day Tank #1 – diesel 300 gallons		
Day Tank #2 – diesel 300 gallons		
Day Tank #3 – diesel 300 gallons		
Day Tank #4 – diesel 300 gallons		
Underground Storage Tank #1 – fuel oil #2 40,000 gallons	2015	Parkview Tower
Underground Storage Tank #2 – fuel oil #2 40,000 gallons		
Underground Storage Tank #3 – fuel oil #2 40,000 gallons		
Day Tank #1 –diesel 220 gallons	2016	Parkview Tower
Day Tank #2 – diesel 220 gallons		
Day Tank #3 – diesel 220 gallons		

Miscellaneous Combustion Equipment and Parts Washer		
Emission Unit	Construction Date	Location
EP-22A	Dock Heater #1 – natural gas 0.4 MMBtu/hr; Constructed 1987	Clayton Avenue Building (CAB)
EP-22B	Dock Heater #2 – natural gas 0.4 MMBtu/hr; Constructed 1987	
EP-21A	Boiler #1 – 2.049 MMBtu/hr natural gas; Constructed 1987	
EP-21B	Boiler #2 – 2.049 MMBtu/hr natural gas; Constructed 1987	
EP-30A	Hot Water Heater #1 – 0.2 MMBtu/hr natural gas; Constructed 2011	Center for Outpatient Health (COH)
EP-30B	Hot Water Heater #2 – 0.2 MMBtu/hr natural gas; Constructed 2011	
EP-30C	Hot Water Heater #3 – 0.2 MMBtu/hr natural gas; Constructed 2011	
EP-28A	Water Heater #1 – 0.2 MMBtu/hr natural gas; Constructed 2014	Barnes Lodge
Not assigned because it uses a water based solvent	Parts Washer	Renard Building

II. Plantwide Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance. The plantwide conditions apply to all emission units at this installation. All emission units are listed in Section I under Emission Units with Limitations and Emission Units without Limitations.

Monitoring:

The permittee shall calibrate, maintain and operate all pollution control devices and pollution monitoring related instruments according to the manufacturer's recommendations, or maintenance and operational history of similar units, as applicable. All calibrations, maintenance, and operations shall occur according to good engineering practices. All manufacturing specifications and operational/maintenance histories shall be kept on site.

Recordkeeping:

1. The permittee shall record all required record keeping in an appropriate format.
2. Records may be kept electronically using database or workbook systems, as long as all required information is readily available for compliance determinations.
3. The permittee shall keep a copy of this operating permit and review, copies of all issued construction permits and reviews, and copies of all Safety Data Sheets (SDS) on site.
4. All records must be kept for a minimum of 5 years and be made available to Department personnel upon request.

Reporting:

1. The permittee shall report any exceedance of any of the terms imposed by this permit, or any malfunction which could cause an exceedance of any of the terms imposed by this permit, no later than ten days after the exceedance or event causing the exceedance (unless otherwise specified in the specific condition).
2. The permittee shall report any deviations from the monitoring, recordkeeping, and reporting requirements of this permit condition in the annual compliance certification as required by Section V of this permit.
3. All reports and certifications shall be submitted to the Air Pollution Control Program's Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102.

PERMIT CONDITION PW001

10 CSR 10-6.020(2)(I)23. and 10 CSR 10-6.065(5)(C)2. Voluntary Limitation(s)

Emission Limitation:

1. The permittee shall emit less than 100.0 tons of nitrogen oxides (NO_x) in any consecutive 12-month period from the entire installation.
2. The permittee shall emit less than 100.0 tons of carbon monoxide (CO) in any consecutive 12-month period from the entire installation.

Monitoring/Recordkeeping:

1. The permittee shall record the monthly and 12-month rolling total emissions of NO_x using Attachment A or a similar form approved by the Air Pollution Control Program.
2. The permittee shall record the monthly and 12-month rolling total emissions of CO using Attachment B or a similar form approved by the Air Pollution Control Program.

III. Emission Unit Specific Emission Limitations

The installation shall comply with each of the following emission limitations. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance.

PERMIT CONDITION 1
 10 CSR 10-6.060 Construction Permits Required
 Construction Permit 102016-003, Issued October 17, 2016

Emission Unit	Description	Location
EP-32A	Boiler #1 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	Parkview Tower
EP-32B	Boiler #2 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32C	Boiler #3 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32D	Boiler #4 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32E	Boiler #5 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32F	Boiler #6 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-33A	Emergency Generator #1 – 2,937 HP diesel; Constructed 2016	Parkview Tower
EP-33B	Emergency Generator #2 – 2,937 HP diesel; Constructed 2016	
EP-33C	Emergency Generator #3 – 2,937 HP diesel;	
EP-35	Air Handling Unit – 1.05 MMBtu/hr natural gas; Constructed 2016	North Parking Garage Building
EP-33D	Emergency Generator #1 – 1,474 HP diesel; Constructed 2016	St. Louis Children’s Hospital
EP-33E	Emergency Generator #2 – 1,474 HP diesel; Constructed 2016	

Emission Limitation:

Special Condition 1.A: The permittee shall emit less than 40.0 tons of NOx in any consecutive 12-month rolling period from the equipment subject to Permit Condition 1.

Operational Limitations:

1. Special Condition 2.A: The emergency engines subject to Permit Condition 1 (EP33-A through E) shall meet the definition of *emergency stationary internal combustion engine* at §60.4219.
2. Special Condition 3.A: The dual-fuel fired boilers subject to Permit Condition 1 (EP-32-A through F) shall meet the definition of *gas-fired boiler* at §63.11237.

Monitoring/Recordkeeping:

Special Condition 1.B: The permittee shall maintain records of monthly and 12-month rolling total NOx emissions from the emission sources subject to Permit Condition 1 using Attachment C or an equivalent form, such as an electronic form, approved by the Air Pollution Control Program.

<p>PERMIT CONDITION 2 10 CSR 10-6.060 Construction Permits Required Construction Permit 092016-012, Issued September 21, 2016</p>
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EP-11A	Boiler #7 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	Power Plant
EP-11B	Boiler #8 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	
EP-11C	Boiler #9 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	
EP-10	Emergency Generator #2 – 1,550 HP diesel; Constructed 1993	Clayton Avenue Building (CAB)
EP-13C	Emergency Generator #3– 940 HP diesel; Constructed 1992	St. Louis Children’s Hospital

Emission Limitation:

Special Condition 2.A: The permittee shall emit less than 40.0 tons of NOx in any consecutive 12-month rolling period from the emission sources subject to Permit Condition 2.

Monitoring/Recordkeeping:

Special Condition 2.B: The permittee shall maintain records of monthly and 12-month rolling total NOx emissions from the emission sources subject to Permit Condition 2, using Attachment D or an equivalent form, such as an electronic form, approved by the Air Pollution Control Program.

<p>PERMIT CONDITION 3 10 CSR 10-6.060 Construction Permits Required Construction Permit 092016-012, Issued September 21, 2016</p>
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EP-12	Boiler #10 – 72.98 MMBtu/hr natural gas or 70.11 MMBtu/hr fuel oil #2; Constructed 2000	Power Plant
EP-05	Emergency Generator #20 – 749 HP diesel; Constructed 2001	Queeny Tower
EP-14A	Emergency Generator #1 – 1,662 HP diesel; Constructed 2002	Southwest Tower (SWT)
EP-14B	Emergency Generator #2 – 1,662 HP diesel; Constructed 2002	
EP-14C	Emergency Generator #3 – 1,662 HP diesel;	

	Constructed 2002	
EP-08A	Emergency Generator #1 – 1,482 HP diesel; Constructed 2002	Center for Advanced Medicine (CAM)
EP-08B	Emergency Generator #2 – 1,482 HP diesel; Constructed 2002	
EP-08C	Emergency Generator #3 – 1,482 HP diesel; Constructed 2002	
EP-08D	Emergency Generator #4 – 1,482 HP diesel; Constructed 2002	
EP-02A	Emergency Generator #1 – 764 HP diesel; Constructed 2005	East Pavilion
EP-02B	Emergency Generator #2 – 764 HP diesel; Constructed 2005	
EP-02C	Emergency Generator #3 – 764 HP diesel; Constructed 2005	
EP-02D	Emergency Generator #4 – 764 HP diesel; Constructed 2005	
EP-27	Boiler – 1 MMBtu/hr natural gas; Constructed 2001	Barnes Lodge
EP-28B	Water Heater #2 – 0.2 MMBtu/hr natural gas; Constructed 2009	
EP-15	Emergency Generator – 480 HP diesel; Constructed 2008	Goldfarb College of Nursing (CON)
EP-19A	Boiler #1 – 2 MMBtu/hr natural gas; Constructed 2007	
EP-19B	Boiler #2 – 2 MMBtu/hr natural gas; Constructed 2007	
EP-19C	Boiler #3 – 2 MMBtu/hr natural gas; Constructed 2007	
EP-20A	Water Heater #1 – 0.2 MMBtu/hr natural gas; Constructed 2007	
EP-20B	Water Heater #2 – 0.2 MMBtu/hr natural gas; Constructed 2007	

Emission Limitation:

Special Condition 3.A: The permittee shall emit less than 40.0 tons of NOx in any consecutive 12-month rolling period from the emission sources subject to Permit Condition 3.

Monitoring/Recordkeeping:

Special Condition 3.B: The permittee shall maintain records of monthly and 12-month rolling total NOx emissions from the emission sources subject to Permit Condition 3, using Attachment E or an equivalent form, such as an electronic form, approved by the Air Pollution Control Program.

PERMIT CONDITION 4
 10 CSR 10-6.060 Construction Permits Required
 Construction Permit 092016-012, Issued September 21, 2016

EP-17A	Ethylene Oxide Sterilizer #1 – 170 g/cycle; Constructed 1993	Shoenberg Pavilion
EP-17B	Ethylene Oxide Sterilizer #2 – 170 g/cycle; Constructed 1993	

Emission Limitation:

Special Condition 4.A: The permittee shall emit less than 0.1 tons of Ethylene Oxide emissions from EP-17A and EP-17B Ethylene Oxide Sterilizers in any consecutive 12-month rolling period.

Monitoring/Recordkeeping:

Special Condition 4.B: The permittee shall maintain records of monthly and 12-month rolling total Ethylene Oxide emissions from EP-17A and EP-17B using Attachment F or an equivalent form, such as an electronic form, approved by the Air Pollution Control Program.

PERMIT CONDITION 5
 10 CSR 10-6.060 Construction Permits Required
 Construction Permit 092016-012, Issued September 21, 2016

EP-17C	Ethylene Oxide Sterilizer #3 – 100 g/cycle; Constructed 2004	Shoenberg Pavilion
EP-17D	Ethylene Oxide Sterilizer #4 – 100 g/cycle; Constructed 2004	

Emission Limitation:

Special Condition 5.A: The permittee shall emit less than 0.1 tons of Ethylene Oxide emissions from EP-17C and EP-17D Ethylene Oxide Sterilizers in any consecutive 12-month rolling period.

Monitoring/Recordkeeping:

Special Condition 5.B: The permittee shall maintain records of monthly and 12-month rolling total Ethylene Oxide emissions from EP-17C and EP-17D using Attachment G or an equivalent form, such as an electronic form, approved by the Air Pollution Control Program.

PERMIT CONDITION 6
 10 CSR 10-6.060 Construction Permits Required
 Construction Permit 092016-012, Issued September 21, 2016

EP-03A	Emergency Generator #7 – 760 HP diesel; Constructed 1979	West Pavilion
EP-03B	Emergency Generator #8 – 760 HP diesel; Constructed 1979	

EP-03C	Emergency Generator #9 – 760 HP diesel; Constructed 1979	
EP-03D	Emergency Generator #10 – 760 HP diesel; Constructed 1979	
EP-03E	Emergency Generator #11 – 760 HP diesel; Constructed 1979	
EP-13A	Emergency Generator #1 – 1,135 HP diesel; Constructed 1981	St. Louis Children’s Hospital
EP-13B	Emergency Generator #2 – 1,135 HP diesel; Constructed 1981	
EP-13C	Emergency Generator #3– 940 HP diesel; Constructed 1992	
EP-13D	Emergency Generator #4 – 1,135 HP diesel; Constructed 1990	
EP-13E	Emergency Generator #5 – 1,135 HP diesel; Constructed 1990	
EP-13F	Emergency Generator #6 – 1,135 HP diesel; Constructed 1990	
EP-04	Emergency Generator #12 – 685 HP diesel; Constructed 1984	Queeny Tower
EP-05	Emergency Generator #20 – 749 HP diesel; Constructed 2001	
EP-06	Emergency Generator #13 – 600 HP diesel; Constructed 1984	South Parking Garage
EP-09	Emergency Generator #1 – 890 HP diesel; Constructed 1987	Clayton Avenue Building (CAB)
EP-10	Emergency Generator #2 – 1,550 HP diesel; Constructed 1993	
EP-14A	Emergency Generator #1 – 1,662 HP diesel; Constructed 2002	Southwest Tower (SWT)
EP-14B	Emergency Generator #2 – 1,662 HP diesel; Constructed 2002	
EP-14C	Emergency Generator #3 – 1,662 HP diesel; Constructed 2002	
EP-08A	Emergency Generator #1 – 1,482 HP diesel; Constructed 2002	Center for Advanced Medicine (CAM)
EP-08B	Emergency Generator #2 – 1,482 HP diesel; Constructed 2002	
EP-08C	Emergency Generator #3 – 1,482 HP diesel; Constructed 2002	
EP-08D	Emergency Generator #4 – 1,482 HP diesel; Constructed 2002	
EP-02A	Emergency Generator #1 – 764 HP diesel; Constructed 2005	East Pavilion
EP-02B	Emergency Generator #2 – 764 HP diesel; Constructed 2005	

EP-02C	Emergency Generator #3 – 764 HP diesel; Constructed 2005	
EP-02D	Emergency Generator #4 – 764 HP diesel; Constructed 2005	

Operational Limitation:

Special Condition 6.A: The permittee shall operate the emergency engines subject to Permit Condition 6 as *emergency stationary internal combustion engines* as defined at §63.6675.

<p>PERMIT CONDITION 7 10 CSR 10-6.060 Construction Permits Required Construction Permit 092016-012, Issued September 21, 2016</p>
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EP-15	Emergency Generator – 480 HP diesel; Constructed 2008	Goldfarb College of Nursing (CON)
EP-34	Emergency Generator – 2,710 kW diesel; Constructed 2015	Institute of Health (IOH)
EP-16	Emergency Generator – 516 kW diesel; Constructed 2012	Center for Outpatient Health (COH)
EP-31	Emergency Generator #1 – 177 kW diesel; Constructed 2015	Duncan Central Garage (DCG)

Operational Limitation:

Special Condition 6.B: The permittee shall operate the emergency engines subject to Permit Condition 7 as *emergency stationary internal combustion engines* as defined at §60.4219.

<p>PERMIT CONDITION 8 10 CSR 10-6.060 Construction Permits Required Construction Permit 092016-012, Issued September 21, 2016</p>
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EP-01A	Boiler #2 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1971	East Pavilion
EP-01B	Boiler #3 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1984	
EP-01C	Boiler #4 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1984	
EP-11A	Boiler #7 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	Power Plant
EP-11B	Boiler #8 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	
EP-11C	Boiler #9 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	
EP-12	Boiler #10 – 72.98 MMBtu/hr natural gas or 70.11 MMBtu/hr fuel oil #2; Constructed 2000	

Operational Limitation:

Special Condition 7.A: The permittee shall operate the dual-fuel boilers subject to Permit Condition 8 as *gas-fired boilers* as defined at §63.11237.

PERMIT CONDITION 9
 10 CSR 10-6.060 Construction Permits Required
 Construction Permit 092016-012, Issued September 21, 2016

EP-12	Boiler #10 – 72.98 MMBtu/hr natural gas or 70.11 MMBtu/hr fuel oil #2; Constructed 2000	Power Plant
EP-29A	Boiler #1 – 3 MMBtu/hr natural gas; Constructed 2011	Center for Outpatient Health (COH)
EP-29B	Boiler #2 – 3 MMBtu/hr natural gas; Constructed 2011	
EP-29C	Boiler #3 – 3 MMBtu/hr natural gas; Constructed 2011	
EP-29D	Boiler #4 – 3 MMBtu/hr natural gas; Constructed 2011	
EP-29E	Boiler #5 – 3 MMBtu/hr natural gas; Constructed 2011	

Operational Limitation:

Special Condition 7.B: The permittee shall equip the boilers subject to Permit Condition 9 with low NOx burners.

- a) The low NOx burners shall be operated and maintained in accordance with the manufacturer’s specifications. [Special Condition 7.B.1]
- b) The permittee shall maintain a copy of the manufacturer’s specifications for the low NOx burners on site. [Special Condition 7.B.2]

Monitoring/Recordkeeping:

Special Condition 7.B.3): The permittee shall maintain an operating and maintenance log (use Attachment H or equivalent form) for the low NOx burners which shall include the following:

- a) Incidents of malfunction, with impact on emissions, duration of event, probable cause and corrective actions; and
- b) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

PERMIT CONDITION 10
 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations
 40 CFR Part 63 Subpart WWWW National Emission Standards for Hospital Ethylene Oxide Sterilizers

EP-17A	Ethylene Oxide Sterilizer #1 – 170 g/cycle; Constructed 1993	Shoenberg Pavilion
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EP-17B	Ethylene Oxide Sterilizer #2 – 170 g/cycle; Constructed 1993	
EP-17C	Ethylene Oxide Sterilizer #3 – 100 g/cycle; Constructed 2004	
EP-17D	Ethylene Oxide Sterilizer #4 – 100 g/cycle; Constructed 2004	

Operational Limitations:

The permittee must sterilize full loads of items having a common aeration time, except under medically necessary circumstances as defined in §63.10448. [§63.10390]

Medically necessary means circumstances that a hospital central services staff, a hospital administrator, or a physician concludes, based on generally accepted medical practices, necessitate sterilizing without a full load in order to protect human health.

Monitoring/Recordkeeping/Reporting:

1. The permittee must demonstrate continuous compliance by recording the date and time of each sterilization cycle, whether each sterilization cycle contains a full load of items, and if not, a statement from a hospital central services staff, a hospital administrator, or a physician that it was medically necessary. [§63.10420]
2. The permittee must maintain a copy of the Initial Notification of Compliance Status that was submitted to comply with Subpart WWWW. [§63.10432(a)]
3. All records must be in a form suitable and readily available for expeditious review. [§63.10434(a)]
4. All records must be kept for 5 years and must be kept onsite for at least 2 years after the date of each record. Records may be kept offsite for the remaining 3 years. [§63.10434(b) and (c)]
5. The permittee must comply with Table 1 of 40 CFR Parts 63.1 through 63.16, as applicable.

PERMIT CONDITION 11
 10 CSR 10-6.070 New Source Performance Regulations
 40 CFR Part 60 Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional
 Steam Generating Units

Emission Unit	Description	Location
EP-11A	Boiler #7 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	Power Plant
EP-11B	Boiler #8 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	
EP-11C	Boiler #9 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	
EP-12	Boiler #10 – 72.98 MMBtu/hr natural gas or 70.11 MMBtu/hr fuel oil #2; Constructed 2000	

Emission Limitation:

1. The permittee shall not combust oil in this emission unit that contains greater than 0.5 weight percent sulfur. [§60.42c(d)]
 - a) For distillate oil-fired affected emission units with heat input capacities between 2.9 and 29 MW (10 and 100 million Btu/hr), compliance with the emission limits or fuel oil sulfur limits under

- §60.42c may be determined based on a certification from the fuel supplier, as described under §60.48c(f)(1). [§60.42c(h)(1)]
- b) The SO₂ emission limits, fuel oil sulfur limits and percent reduction requirements under §60.42c apply at all times, including periods of startup, shutdown and malfunction. [§60.42c(i)]
2. The permittee shall not cause to be discharged into the atmosphere from this emission unit any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. [§60.43c(c)]
 - a) The PM and opacity standards under §60.43c apply at all times, except during periods of startup, shutdown, or malfunction. [§60.43c(d)]

Performance Testing:

1. For emission units subject to §60.42c(h)(1) where the permittee seeks to demonstrate compliance with the SO₂ standards based on fuel supplier certification, the performance test shall consist of the certification from the fuel supplier, as described under §60.48c(f)(1). [§60.44c(h)]
2. For emission units subject to the PM and/or opacity standards under §60.43c, the permittee shall conduct an initial performance test as required under §60.8, and shall conduct subsequent performance tests as requested by the Director, to determine compliance with the standards using the following procedures and reference methods: [§60.45c(a)]
 - a) USEPA Test Method 9 (6-minute average of 24 observations) shall be used for determining the opacity of stack emissions. [§60.45c(a)(8)]

Monitoring:

1. The monitoring requirements of paragraphs (a) and (d) of §60.46c shall not apply to emission units subject to §60.42c(h) (1) where the permittee seeks to demonstrate compliance with the SO₂ standards based on fuel supplier certification, as described under §60.48c(f) (1). [§60.46c(e)]2.
2. The permittee shall conduct visible emissions observations on this emission unit using the procedures contained in USEPA Test Method 22. Observations are only required when the emission unit is operating on fuel oil with a load on the boilers and when the weather conditions allow. (During periods when there is no load on the boilers and only the burners are being fired for testing or maintenance, observations are not required.) If no visible emissions are observed using these procedures, then no further observations would be required. For emission units with visible emissions, the source representative would then conduct a USEPA Test Method 9 observation.3.
3. When fuel oil is burned as a primary fuel:
 - a) Weekly observations shall be conducted for a minimum of eight consecutive weeks. Should no violation of this regulation be observed during this period then-
 - b) Observations shall be made once every two weeks for a period of eight weeks. If a violation is noted, monitoring reverts to weekly. Should no violation of this regulation be observed during this period then
 - c) Observations shall be made once per month. If a violation is noted, monitoring reverts to weekly. If an emission source reverts to weekly monitoring at any time, the monitoring will proceed with the same frequency as the initial monitoring stated above.

Record Keeping

1. For emission units subject to the SO₂ emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.42c, the permittee shall submit reports to the Director. [§60.48c(d)]

2. For each emission unit subject to the SO₂ emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.42c, the permittee shall keep records and submit reports as required under paragraph (d) of §60.48c, including the following information:
 - a) Calendar dates covered in the reporting period. [§60.48c(e)(1)]
 - b) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1) of §60.48c. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the responsible official that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period. [§60.48c(e)(1)]
3. Fuel supplier certification shall include the following information:
 - a) For distillate oil:
 1. The name of the oil supplier; and [§60.48c(f)(1)(i)]
 2. A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in §60.41c. [§60.48c(f)(1)(ii)]
 3. The sulfur content or maximum sulfur content of the oil. [§60.48c(f)(1)(iii)]
4. The permittee shall record and maintain records of the amounts of each fuel combusted during each month. [§60.48c(g)(2)]
5. The permittee shall maintain records of all observation results (see Attachment I), noting:
 - a) Whether any air emissions (except for water vapor) were visible from the emission units,
 - b) All emission units from which visible emissions occurred, and
 - c) Whether the visible emissions were normal for the process.
6. The permittee shall maintain records of any equipment malfunctions (see Attachment H).
7. The permittee shall maintain records of any USEPA Test Method 9 opacity test performed (see Attachment J) in accordance with this permit condition.

Reporting

1. The reporting period for the reports required under Subpart Dc is each six-month period. All reports shall be submitted to the Director and shall be postmarked by the 30th day following the end of the reporting period. [§60.48c(j)]
2. In addition to the applicable requirements in §60.7, the permittee shall submit excess emission reports for any excess emissions from the facility that occur during the reporting period and maintain records to the requirements specified below: [§60.48c(c)]
 - a) For each performance test conducted using USEPA Test Method 9 and/or USEPA Test Method 22 the permittee shall keep the dates and time intervals of all opacity/visible emissions observation periods; name, affiliation and copy of current visible emission reading certification for each visible emission observer participating in the test; and copies of all visible emission observer opacity field data sheets.

PERMIT CONDITION 12 10 CSR 10-6.070 New Source Performance Regulations 40 CFR Part 60 Subpart IIII Standards of Performance for Compression Ignition Stationary Internal Combustion Engines
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EP-33A	Emergency Generator #1 – 2,937 HP diesel; Constructed 2016	Parkview Tower
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EP-33B	Emergency Generator #2 – 2,937 HP diesel; Constructed 2016	
EP-33C	Emergency Generator #3 – 2,937 HP diesel; Constructed 2016	
EP-33D	Emergency Generator #1 – 1,474 HP diesel; Constructed 2016	St. Louis Children’s Hospital
EP-33E	Emergency Generator #2 – 1,474 HP diesel; Constructed 2016	
EP-34	Emergency Generator – 2,710 kW diesel; Constructed 2015	Institute of Health (IOH)
EP-16	Emergency Generator – 516 kW diesel; Constructed 2012	Center for Outpatient Health (COH)
EP-31	Emergency Generator #1 – 177 kW diesel; Constructed 2015	Duncan Central Garage (DCG)
EP-15	Emergency Generator – 480 HP diesel; Constructed 2008	Goldfarb College of Nursing (CON)

*Engines complying with the requirements of 40 CFR Part 60, Subpart IIII are deemed to be in compliance with the requirements of 40 CFR Part 63, Subpart ZZZZ.

Emission Limitations:

2007 model year and later emergency CI ICE - with a displacement of less than 30 liters per cylinder

1. The permittee must comply with the emission standards for new non-road CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power: [§60.4205(b)]
 - a) For EP-33A through E, and EP-34: Exhaust emissions from nonroad engines (kW>560) (Tier 2) shall not exceed the following limits from Table 1 of 40 CFR Part 89.112:
 - i. 6.4 g/kW-hr of NMHC + NOx;
 - ii. 3.5 g/kW-hr of CO;
 - iii. 0.2 g/kW-hr of PM.
 - b) For EP-15, EP-16 and EP-31: Exhaust emissions from nonroad engines (130≤kW≤225; 225≤kW≤450; and 450≤kW≤560) (Tier 3) shall not exceed the following limits from Table 1 of 40 CFR Part 89.112:
 - i. 4.0 g/kW-hr of NMHC + NOx;
 - ii. 3.5 g/kW-hr of CO;
 - iii. 0.2 g/kW-hr of PM.
2. The permittee must operate and maintain the engines so as to achieve the emission standards over the entire life of the engine. [§60.4206]
3. The General Provisions of 40 CFR 60.1 through 19 apply as indicated in Table 8 of 40 CFR 60, Subpart IIII except that the permittee is not required to submit initial notification. [§60.4218 & §60.4214(b)]

Operational Limitation:

The permittee must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted: [§60.4207(b)]

1. Sulfur content. 15 parts per million (ppm) maximum. [§80.510(b)(1)(i)]
2. Cetane index or aromatic content, as follows: [§80.510(b)(2)]

- a) A minimum cetane index of 40; or [§80.510(b)(2)(i)]
- b) A maximum aromatic content of 35 volume percent. [§80.510(b)(2)(ii)]

Monitoring:

The permittee must operate and maintain the engine according to the manufacturer's emission-related written instructions. [60.4211(a), (c)]

Continuous Compliance:

1. The permittee must operate and maintain the engine to achieve required emission standards over the entire life of the engine. [§60.4206]
2. The permittee must operate and maintain the engine (and any control device) according to the manufacturer's emission-related written instructions. [§60.4211(a)]
3. Engine must be certified to the applicable emission standards by the manufacturer and the engine must be installed and configured according to the manufacturer's emission-related specifications [§60.4211(c)]
4. The permittee must change only those emission-related settings that are permitted by the manufacturer; and [§60.4211(a)(2)]
5. The permittee must meet the requirements of 40 CFR Parts 89, 94 and/or 1068, as applicable to these engines. [§60.4211(a)(3)]
6. The permittee must operate the engine within the time limitations in §60.4211(f)(1) through (3) to maintain the engine's status as an emergency engine. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in §60.4211(f)(1), (f)(2)(i) and (f)(3), is prohibited. If the permittee does not operate the engine according to the requirements in §60.4211(f)(1), (f)(2)(i) and (f)(3), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines. [§60.4211(f)]
 - a) There is no time limit on the use of emergency stationary ICE in emergency situations. [§60.4211(f)(1)]
 - b) The permittee may operate the emergency stationary ICE for any combination of the purposes specified in paragraphs §60.4211 (f)(2)(i) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by §60.4211(f)(3) counts as part of the 100 hours per calendar year allowed by this paragraph §60.4211 (f)(2)(i). [§60.4211(f)(2)]
 - i. Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. [§60.4211(f)(2)(i)]
 - c) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in §60.4211(f)(2). Except as provided in §60.4211(f)(3)(i), the 50 hours per calendar

year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [§60.4211(f)(3)]

- i. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: [§60.4211(f)(3)(i)]
 - (A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator; [§60.4211(f)(3)(i)(A)]
 - (B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region. [§60.4211(f)(3)(i)(B)]
 - (C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. [§60.4211(f)(3)(i)(C)]
 - (D) The power is provided only to the facility itself or to support the local transmission and distribution system. [§60.4211(f)(3)(i)(D)]
 - (E) The permittee identifies and records the entity that dispatches the engine and the specific North American Electric Reliability Corporation (NERC), regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the permittee. [§60.4211(f)(3)(i)(E)]

<p>PERMIT CONDITION 13 10 CSR 10-6.261 Control of Sulfur Dioxide Emissions</p>

EP-01A	Boiler #2 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1971	East Pavilion
EP-01B	Boiler #3 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1984	
EP-01C	Boiler #4 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1984	
EP-32A	Boiler #1 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	Parkview Tower
EP-32B	Boiler #2 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32C	Boiler #3 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32D	Boiler #4 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32E	Boiler #5 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32F	Boiler #6 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	

*This regulation has not yet been adopted into Missouri’s SIP; therefore, this regulation is a state only requirement. Upon adoption into Missouri’s SIP, this regulation will be both a state and federal requirement.

Emission/Operational Limitation:

During the months of October, November, December, January, February, and March of every year, the permittee shall not burn or permit the burning of any fuel oil containing more than two percent (2%) sulfur. Otherwise, the permittee shall not burn or permit the burning of fuel oil containing more than four percent (4%) sulfur. [10CSR 10-6.261(3)(B)2.B.(I)]

Part (3)(B)2.B.(I) of this rule shall not apply to any installation if it can be shown that emissions of sulfur dioxide from the installation into the atmosphere will not exceed two and three-tenths (2.3) pounds per million Btus of heat input to the installation.

Monitoring/Recordkeeping:

1. The permittee shall determine compliance using fuel delivery records.
2. The permittee must maintain a list of modifications to the source’s operating procedures or other routine procedures instituted to prevent or minimize the occurrence of any excess emissions.
3. The permittee must maintain a record of reports from any fuel deliveries, and/or fuel sampling tests.
4. The permittee of sources using fuel delivery records for compliance must also maintain the fuel supplier certification information to certify all fuel deliveries. Bills of lading and/or other fuel deliver documentation containing the following information for all fuel purchases or deliveries are deemed acceptable to comply with the requirements of this rule:
 - a) The name, address, and contact information of the fuel supplier;
 - b) The type of fuel;
 - c) The sulfur content or maximum sulfur content expressed in percent sulfur by weight or in ppm sulfur; and
 - d) The heating value of the fuel.

Reporting:

1. The permittee must furnish the Director all data necessary to determine compliance status.
2. The permittee shall report any excess emissions other than startup, shutdown, and malfunction excess emissions already required to be reported under 10 CSR 10-6.050 to the Director for each calendar quarter within thirty (30) days following the end of the quarter. In all cases, the notification must be written and include the information listed in 10 CSR 10-6.261 (4) (A) 1.

PERMIT CONDITION 14	
10 CSR 10-6.261 Control of Sulfur Dioxide Emissions	

EP-03A	Emergency Generator #7 – 760 HP diesel; Constructed 1979	West Pavilion
EP-03B	Emergency Generator #8 – 760 HP diesel; Constructed 1979	
EP-03C	Emergency Generator #9 – 760 HP diesel; Constructed 1979	
EP-03D	Emergency Generator #10 – 760 HP diesel; Constructed 1979	

EP-03E	Emergency Generator #11 – 760 HP diesel; Constructed 1979	
EP-13A	Emergency Generator #1 – 1,135 HP diesel; Constructed 1981	St. Louis Children’s Hospital
EP-13B	Emergency Generator #2 – 1,135 HP diesel; Constructed 1981	
EP-13C	Emergency Generator #3– 940 HP diesel; Constructed 1992	
EP-13D	Emergency Generator #4 – 1,135 HP diesel; Constructed 1990	
EP-13E	Emergency Generator #5 – 1,135 HP diesel; Constructed 1990	
EP-13F	Emergency Generator #6 – 1,135 HP diesel; Constructed 1990	
EP-04	Emergency Generator #12 – 685 HP diesel; Constructed 1984	Queeny Tower
EP-05	Emergency Generator #20 – 749 HP diesel; Constructed 2001	
EP-06	Emergency Generator #13 – 600 HP diesel; Constructed 1984	South Parking Garage
EP-09	Emergency Generator #1 – 890 HP diesel; Constructed 1987	Clayton Avenue Building (CAB)
EP-10	Emergency Generator #2 – 1,550 HP diesel; Constructed 1993	
EP-14A	Emergency Generator #1 – 1,662 HP diesel; Constructed 2002	Southwest Tower (SWT)
EP-14B	Emergency Generator #2 – 1,662 HP diesel; Constructed 2002	
EP-14C	Emergency Generator #3 – 1,662 HP diesel; Constructed 2002	
EP-08A	Emergency Generator #1 – 1,482 HP diesel; Constructed 2002	Center for Advanced Medicine (CAM)
EP-08B	Emergency Generator #2 – 1,482 HP diesel; Constructed 2002	
EP-08C	Emergency Generator #3 – 1,482 HP diesel; Constructed 2002	
EP-08D	Emergency Generator #4 – 1,482 HP diesel; Constructed 2002	
EP-02A	Emergency Generator #1 – 764 HP diesel; Constructed 2005	East Pavilion
EP-02B	Emergency Generator #2 – 764 HP diesel; Constructed 2005	
EP-02C	Emergency Generator #3 – 764 HP diesel; Constructed 2005	
EP-02D	Emergency Generator #4 – 764 HP diesel; Constructed 2005	

*This regulation has not yet been adopted into Missouri’s SIP; therefore, this regulation is a state only requirement. Upon adoption into Missouri’s SIP, this regulation will be both a state and federal requirement.

Emission Limitation:

The permittee must limit fuel sulfur content for the emission units subject to Permit Condition 14 (listed above) to no more than 8,812 parts per million (ppm_w) of sulfur for distillate fuel. [10 CSR 10-6.261(3)(C)]

Compliance Demonstration:

The permittee must determine compliance with the fuel sulfur content limitation of this permit condition as follows:

1. Fuel delivery records; or
2. Fuel sampling and analysis; or
3. Fuel supplier certification letters may be used as an alternate method of compliance.

Monitoring/Recordkeeping:

1. The permittee shall determine compliance using fuel delivery records.
2. The permittee must maintain a list of modifications to the source’s operating procedures or other routine procedures instituted to prevent or minimize the occurrence of any excess emissions.
3. The permittee must maintain a record of reports from any fuel deliveries, and/or fuel sampling tests.
4. The permittee of sources using fuel delivery records for compliance must also maintain the fuel supplier certification information to certify all fuel deliveries. Bills of lading and/or other fuel deliver documentation containing the following information for all fuel purchases or deliveries are deemed acceptable to comply with the requirements of this rule:
 - a) The name, address, and contact information of the fuel supplier;
 - b) The type of fuel;
 - c) The sulfur content or maximum sulfur content expressed in percent sulfur by weight or in ppm sulfur; and
 - d) The heating value of the fuel.

Reporting:

1. The permittee must furnish the Director all data necessary to determine compliance status.
2. The permittee shall report any excess emissions other than startup, shutdown, and malfunction excess emissions already required to be reported under 10 CSR 10-6.050 to the Director for each calendar quarter within thirty (30) days following the end of the quarter. In all cases, the notification must be written and include the information listed in 10 CSR 10-6.261 (4) (A) 1.

PERMIT CONDITION 15
 10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds

EP-33A	Emergency Generator #1 – 2,937 HP diesel; Constructed 2016	Parkview Tower
EP-33B	Emergency Generator #2 – 2,937 HP diesel; Constructed 2016	
EP-33C	Emergency Generator #3 – 2,937 HP diesel;	

	Constructed 2016	
EP-33D	Emergency Generator #1 – 1,474 HP diesel; Constructed 2016	St. Louis Children’s Hospital
EP-33E	Emergency Generator #2 – 1,474 HP diesel; Constructed 2016	
EP-34	Emergency Generator – 2,710 kW diesel; Constructed 2015	Institute of Health (IOH)
EP-16	Emergency Generator – 516 kW diesel; Constructed 2012	Center for Outpatient Health (COH)
EP-31	Emergency Generator #1 – 177 kW diesel; Constructed 2015	Duncan Central Garage (DCG)
EP-15	Emergency Generator – 480 HP diesel (358 kW); Constructed 2008	Goldfarb College of Nursing (CON)
EP-03A	Emergency Generator #7 – 760 HP diesel; Constructed 1979	West Pavilion
EP-03B	Emergency Generator #8 – 760 HP diesel; Constructed 1979	
EP-03C	Emergency Generator #9 – 760 HP diesel; Constructed 1979	
EP-03D	Emergency Generator #10 – 760 HP diesel; Constructed 1979	
EP-03E	Emergency Generator #11 – 760 HP diesel; Constructed 1979	
EP-13A	Emergency Generator #1 – 1,135 HP diesel; Constructed 1981	St. Louis Children’s Hospital
EP-13B	Emergency Generator #2 – 1,135 HP diesel; Constructed 1981	
EP-13C	Emergency Generator #3– 940 HP diesel; Constructed 1992	
EP-13D	Emergency Generator #4 – 1,135 HP diesel; Constructed 1990	
EP-13E	Emergency Generator #5 – 1,135 HP diesel; Constructed 1990	
EP-13F	Emergency Generator #6 – 1,135 HP diesel; Constructed 1990	
EP-04	Emergency Generator #12 – 685 HP diesel; Constructed 1984	Queeny Tower
EP-05	Emergency Generator #20 – 749 HP diesel; Constructed 2001	
EP-06	Emergency Generator #13 – 600 HP diesel; Constructed 1984	South Parking Garage
EP-09	Emergency Generator #1 – 890 HP diesel; Constructed 1987	Clayton Avenue Building (CAB)
EP-10	Emergency Generator #2 – 1,550 HP diesel; Constructed 1993	
EP-14A	Emergency Generator #1 – 1,662 HP diesel;	Southwest Tower (SWT)

	Constructed 2002	
EP-14B	Emergency Generator #2 – 1,662 HP diesel; Constructed 2002	
EP-14C	Emergency Generator #3 – 1,662 HP diesel; Constructed 2002	
EP-08A	Emergency Generator #1 – 1,482 HP diesel; Constructed 2002	Center for Advanced Medicine (CAM)
EP-08B	Emergency Generator #2 – 1,482 HP diesel; Constructed 2002	
EP-08C	Emergency Generator #3 – 1,482 HP diesel; Constructed 2002	
EP-08D	Emergency Generator #4 – 1,482 HP diesel; Constructed 2002	
EP-02A	Emergency Generator #1 – 764 HP diesel; Constructed 2005	East Pavilion
EP-02B	Emergency Generator #2 – 764 HP diesel; Constructed 2005	
EP-02C	Emergency Generator #3 – 764 HP diesel; Constructed 2005	
EP-02D	Emergency Generator #4 – 764 HP diesel; Constructed 2005	

*This regulation was rescinded by the State of Missouri on November 30, 2015. The regulation remains in this operating permit as it is contained in Missouri's SIP and remains an applicable federal requirement. This is a federal only requirement. This permit condition will no longer be applicable when EPA takes final action to incorporate 10 CSR 10-6.261 in Missouri's SIP in place of 10 CSR 10-6.260. No action is required on the part of the permittee to remove this permit condition from this operating permit upon the removal of 10 CSR 10-6.260 from the Missouri SIP.

Emission Limitation:

The permittee shall not cause or permit the emission into the atmosphere gases containing more than five hundred parts per million by volume (500 ppmv) of sulfur dioxide or more than thirty-five milligrams per cubic meter (35 mg/cubic meter) of sulfuric acid or sulfur trioxide or any combination of those gases averaged on any consecutive three (3)-hour period.

Monitoring:

Compliance with the requirements of Permit Condition 12 (use fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel) and Permit Condition 14 (fuel sulfur limit of 8,812 ppm) ensure compliance with the emission limitations for this permit condition. No additional monitoring, recordkeeping or reporting is necessary.

PERMIT CONDITION 16
 10 CSR 10-6.260 Restriction of Emission of Sulfur Compounds

EP-11A	Boiler #7 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	Power Plant
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EP-11B	Boiler #8 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	
EP-11C	Boiler #9 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	
EP-12	Boiler #10 – 72.98 MMBtu/hr natural gas or 70.11 MMBtu/hr fuel oil #2; Constructed 2000	
EP-01A	Boiler #2 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1971	East Pavilion
EP-01B	Boiler #3 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1984	
EP-01C	Boiler #4 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1984	
EP-32A	Boiler #1 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	Parkview Tower
EP-32B	Boiler #2 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32C	Boiler #3 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32D	Boiler #4 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32E	Boiler #5 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32F	Boiler #6 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	

*This regulation was rescinded by the State of Missouri on November 30, 2015. The regulation remains in this operating permit as it is contained in Missouri's SIP and remains an applicable federal requirement. This is a federal only requirement. This permit condition will no longer be applicable when EPA takes final action to incorporate 10 CSR 10-6.261 in Missouri's SIP in place of 10 CSR 10-6.260. No action is required on the part of the permittee to remove this permit condition from this operating permit upon the removal of 10 CSR 10-6.260 from the Missouri SIP.

Emission Limitations:

During the months of October, November, December, January, February, and March of every year, the permittee shall not burn or permit the burning of any fuel oil containing more than two percent (2%) sulfur. Otherwise, the permittee shall not burn or permit the burning of fuel oil containing more than four percent (4%) sulfur. [10CSR 10-6.261(3)(B)2.B.(I)]

Part (3)(B)2.B.(I) of this rule shall not apply to any installation if it can be shown that emissions of sulfur dioxide from the installation into the atmosphere will not exceed two and three-tenths (2.3) pounds per million Btus of heat input to the installation.

Monitoring:

Compliance with the requirements of Permit Condition 11 (0.5% weight fuel oil sulfur limit) ensure compliance with the emission limitations for this permit condition. No additional monitoring, recordkeeping or reporting is necessary.

PERMIT CONDITION 17
 10 CSR 10-6.220 Restriction of Emission of Visible Air Contaminants

EP-01A	Boiler #2 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1971	East Pavilion
EP-01B	Boiler #3 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1984	
EP-01C	Boiler #4 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1984	
EP-12	Boiler #10 – 72.98 MMBtu/hr natural gas or 70.11 MMBtu/hr fuel oil #2; Constructed 2000	
EP-32A	Boiler #1 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	Parkview Tower
EP-32B	Boiler #2 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32C	Boiler #3 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32D	Boiler #4 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32E	Boiler #5 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	
EP-32F	Boiler #6 – 6.12 MMBtu/hr natural gas or fuel oil #2; Constructed 2016	

Emission Limitation:

The permittee shall not cause or permit visible emissions to be discharged into the atmosphere from the emission units subject to Permit Condition 17 (listed above) with an opacity greater than 20%.

Exception: A person may discharge into the atmosphere from any source of emissions for one (1) continuous six (6)-minute period in any 60 minutes air contaminants with an opacity up to 40%.

Monitoring (only required when units are combusting fuel oil):

- 1) The permittee shall conduct visible emissions observations on this emission unit using the procedures contained in USEPA Test Method 22. At a minimum, the observer should be trained and knowledgeable about the effects on visibility of emissions caused by background contrast, ambient lighting, observer position relative to lighting, wind and the presence of uncombined water. Readings are only required when the emission unit is operating on fuel oil with a load on the boilers and when the weather conditions allow. (During periods when there is no load on the boilers and the burners are only being fired for testing or maintenance, observations are not required.) If no visible emissions are observed using these procedures, then no further observations would be required. For emission units with visible emissions, the source representative would then conduct a USEPA Test Method 9 observation.
- 2) The following monitoring schedule must be maintained when fuel oil is burned as a primary fuel:
 - a) Weekly observations shall be conducted for a minimum of eight consecutive weeks after permit issuance. Should no violation of this regulation be observed during this period then-

- b) Observations shall be made once every two (2) weeks for a period of eight weeks. If a violation is noted, monitoring reverts to weekly. Should no violation of this regulation be observed during this period then-
 - c) Observations shall be made once per month. If a violation is noted, monitoring reverts to weekly.
- 3) If the source reverts to weekly monitoring at any time, monitoring frequency will progress in an identical manner from the initial monitoring frequency.

Recordkeeping:

- 1) The permittee shall maintain records of all observation results (see Attachment I), noting:
 - a) Whether any air emissions (except for water vapor) were visible from the emission units,
 - b) All emission units from which visible emissions occurred, and
 - c) Whether the visible emissions were normal for the process.
- 2) The permittee shall maintain records of any equipment malfunctions. (see Attachment H)
- 3) The permittee shall maintain records of any USEPA Test Method 9 test performed in accordance with this permit condition. (see Attachment J)
- 4) Attachments H, I, and J contain logs including these recordkeeping requirements. These logs, or an equivalent created by the permittee, must be used to certify compliance with this requirement.

IV. Core Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR), Code of State Regulations (CSR), and local ordinances for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect on the date of permit issuance. The following are only excerpts from the regulation or code, and are provided for summary purposes only.

10 CSR 10-6.045 Open Burning Requirements and St. Louis City Ordinance 68657 §16 Open Burning Restrictions

- 1) No person shall cause, suffer, allow or permit the open burning of refuse.
- 2) No person shall conduct, cause or permit the conduct of a salvage operation by open burning.
- 3) No person shall conduct, cause or permit the disposal of trade waste by open burning.
- 4) No person shall cause or permit the open burning of leaves, trees or the byproducts therefrom, grass, or other vegetation.
- 5) It shall be prima-facie evidence that the person who owns or controls property on which open burning occurs, has caused or permitted said open burning.

10 CSR 10-6.050 Start-up, Shutdown and Malfunction Conditions

- 1) In the event of a malfunction, which results in excess emissions that exceed one hour, the permittee shall submit to the Director within two business days, in writing, the following information:
 - a) Name and location of installation;
 - b) Name and telephone number of person responsible for the installation;
 - c) Name of the person who first discovered the malfunction and precise time and date that the malfunction was discovered.
 - d) Identity of the equipment causing the excess emissions;
 - e) Time and duration of the period of excess emissions;
 - f) Cause of the excess emissions;
 - g) Air pollutants involved;
 - h) Estimate of the magnitude of the excess emissions expressed in the units of the applicable requirement and the operating data and calculations used in estimating the magnitude;
 - i) Measures taken to mitigate the extent and duration of the excess emissions; and
 - j) Measures taken to remedy the situation that caused the excess emissions and the measures taken or planned to prevent the recurrence of these situations.
- 2) The permittee shall submit the paragraph 1 information to the Director in writing at least ten days prior to any maintenance, start-up or shutdown activity which is expected to cause an excessive release of emissions that exceed one hour. If notice of the event cannot be given ten days prior to the planned occurrence, notice shall be given as soon as practicable prior to the activity.
- 3) Upon receipt of a notice of excess emissions issued by an agency holding a certificate of authority under section 643.140, RSMo, the permittee may provide information showing that the excess emissions were the consequence of a malfunction, start-up or shutdown. The information, at a minimum, should be the paragraph 1 list and shall be submitted not later than 15 days after receipt of the notice of excess emissions. Based upon information submitted by the permittee or any other pertinent information available, the Director or the commission shall make a determination whether the excess emissions constitute a malfunction, start-up or shutdown and whether the nature, extent and duration of the excess emissions warrant enforcement action under section 643.080 or 643.151, RSMo.

- 4) Nothing in this rule shall be construed to limit the authority of the Director or commission to take appropriate action, under sections 643.080, 643.090 and 643.151, RSMo to enforce the provisions of the Air Conservation Law and the corresponding rule.
- 5) Compliance with this rule does not automatically absolve the permittee of liability for the excess emissions reported.

10 CSR 10-6.060 Construction Permits Required

The permittee shall not commence construction, modification, or major modification of any installation subject to this rule, begin operation after that construction, modification, or major modification, or begin operation of any installation which has been shut down longer than five years without first obtaining a permit from the permitting authority.

10 CSR 10-6.065 Operating Permits

The permittee shall file a complete application for renewal of this operating permit at least six months before the date of permit expiration. In no event shall this time be greater than eighteen months. The permittee shall retain the most current operating permit issued to this installation on-site. The permittee shall immediately make such permit available to any Missouri Department of Natural Resources personnel upon request.

10 CSR 10-6.080 Emission Standards for Hazardous Air Pollutants and 40 CFR Part 61 Subpart M National Emission Standard for Asbestos

The permittee shall follow the procedures and requirements of 40 CFR Part 61, Subpart M for any activities occurring at this installation which would be subject to provisions for 40 CFR Part 61, Subpart M, National Emission Standard for Asbestos.

10 CSR 10-6.100 Alternate Emission Limits

Proposals for alternate emission limitations shall be submitted on Alternate Emission Limits Permit forms provided by the Department. An installation owner or operator must obtain an Alternate Emission Limits Permit in accordance with 10 CSR 10-6.100 before alternate emission limits may become effective.

10 CSR 10-6.110 Reporting of Emission Data, Emission Fees and Process Information

- 1) The permittee shall submit a Full Emissions Report either electronically via MoEIS, which requires Form 1.0 signed by an authorized company representative, or on Emission Inventory Questionnaire (EIQ) paper forms on the frequency specified in this rule and in accordance with the requirements outlined in this rule. Alternate methods of reporting the emissions, such as spreadsheet file, can be submitted for approval by the Director.
- 2) Public Availability of Emission Data and Process Information. Any information obtained pursuant to the rule(s) of the Missouri Air Conservation Commission that would not be entitled to confidential treatment under 10 CSR 10-6.210 shall be made available to any member of the public upon request.
- 3) The permittee shall submit a full EIQ for the 2017 and 2020 reporting years. In the interim years the installation may submit a Reduced Reporting Form; however, if the installation's emissions increase or decrease by more than five tons when compared to their last submitted full EIQ, the installation shall submit a full EIQ rather than a Reduced Reporting Form.
- 4) In addition to the EIQ submittal schedule outlined above, any permit issued under 10 CSR 10-6.060 section (5) or (6) triggers a requirement that a full EIQ be submitted in the first full calendar year after the permitted equipment initially operates.

5) The permittee shall pay an annual emission fee per ton of regulated pollutant.

10 CSR 10-6.130 Controlling Emissions During Episodes of High Air Pollution Potential

This rule specifies the conditions that establish an air pollution alert (yellow/orange/red/purple), or emergency alert (maroon) and the associated procedures and emission reduction objectives for dealing with each. The permittee shall submit an appropriate emergency plan if required by the Director.

10 CSR 10-6.150 Circumvention

The permittee shall not cause or permit the installation or use of any device or any other means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission or air contaminant which violates a rule of the Missouri Air Conservation Commission.

10 CSR 10-6.165 Restriction of Emission of Odors

This is a State Only permit requirement.

No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when one volume of odorous air is diluted with seven volumes of odor-free air for two separate trials not less than 15 minutes apart within the period of one hour. This odor evaluation shall be taken at a location outside of the installation property line.

10 CSR 10-6.170 Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin

Emission Limitation:

- 1) The permittee shall not cause or allow to occur any handling, transporting or storing of any material; construction, repair, cleaning or demolition of a building or its appurtenances; construction or use of a road, driveway or open area; or operation of a commercial or industrial installation without applying reasonable measures as may be required to prevent, or in a manner which allows or may allow, fugitive particulate matter emissions to go beyond the premises of origin in quantities that the particulate matter may be found on surfaces beyond the property line of origin. The nature or origin of the particulate matter shall be determined to a reasonable degree of certainty by a technique proven to be accurate and approved by the Director.
- 2) The permittee shall not cause nor allow to occur any fugitive particulate matter emissions to remain visible in the ambient air beyond the property line of origin.
- 3) Should it be determined that noncompliance has occurred, the Director may require reasonable control measures as may be necessary. These measures may include, but are not limited to, the following:
 - a) Revision of procedures involving construction, repair, cleaning and demolition of buildings and their appurtenances that produce particulate matter emissions;
 - b) Paving or frequent cleaning of roads, driveways and parking lots;
 - c) Application of dust-free surfaces;
 - d) Application of water; and
 - e) Planting and maintenance of vegetative ground cover.

10 CSR 10-6.180 Measurement of Emissions of Air Contaminants

- 1) The Director may require any person responsible for the source of emission of air contaminants to make or have made tests to determine the quantity or nature, or both, of emission of air contaminants from the source. The Director may specify testing methods to be used in accordance with good

professional practice. The Director may observe the testing. All tests shall be performed by qualified personnel.

- 2) The Director may conduct tests of emissions of air contaminants from any source. Upon request of the Director, the person responsible for the source to be tested shall provide necessary ports in stacks or ducts and other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.
- 3) The Director shall be given a copy of the test results in writing and signed by the person responsible for the tests.

10 CSR 10-6.241 Asbestos Projects – Registration, Abatement, Notification, Inspection, Demolition, and Performance Requirements

The permittee shall conduct all asbestos abatement projects within the procedures established in 10 CSR 10-6.241, as applicable. The rule requires that each person who intends to perform asbestos projects in Missouri register annually with the Missouri Department of Natural Resources' Air Pollution Control Program. Any person undertaking a demolition or asbestos project must submit a notification to the appropriate agency of the Department for each asbestos project and each notification must be accompanied by a fee.

10 CSR 10-6.250 Asbestos Abatement Projects – Certification, Accreditation, and Business Exemption Requirements

The permittee shall conduct all asbestos abatement projects within the procedures established for certification and accreditation by 10 CSR 10-6.250. This rule requires individuals who work in asbestos abatement projects to be certified by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires training providers who offer training for asbestos abatement occupations to be accredited by the Missouri Department of Natural Resources Air Pollution Control Program. This rule requires persons who hold exemption status from certain requirements of this rule to allow the Department to monitor training provided to employees.

10 CSR 10-6.280 Compliance Monitoring Usage

- 1) The permittee is not prohibited from using the following in addition to any specified compliance methods for the purpose of submission of compliance certificates:
 - a) Monitoring methods outlined in 40 CFR Part 64;
 - b) Monitoring method(s) approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and
 - c) Any other monitoring methods approved by the Director.
- 2) Any credible evidence may be used for the purpose of establishing whether a permittee has violated or is in violation of any such plan or other applicable requirement. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred at an installation:
 - a) Monitoring methods outlined in 40 CFR Part 64;
 - b) A monitoring method approved for the permittee pursuant to 10 CSR 10-6.065, "Operating Permits", and incorporated into an operating permit; and
 - c) Compliance test methods specified in the rule cited as the authority for the emission limitations.
- 3) The following testing, monitoring or information gathering methods are presumptively credible testing, monitoring, or information gathering methods:
 - a) Applicable monitoring or testing methods, cited in:
 - i) 10 CSR 10-6.030, "Sampling Methods for Air Pollution Sources";

- ii) 10 CSR 10-6.040, "Reference Methods";
- iii) 10 CSR 10-6.070, "New Source Performance Standards";
- iv) 10 CSR 10-6.080, "Emission Standards for Hazardous Air Pollutants"; or
- b) Other testing, monitoring, or information gathering methods, if approved by the Director, that produce information comparable to that produced by any method listed above.

10 CSR 10-5.040 Control of Emissions from Hand-Fired Equipment

No owner or operator shall operate applicable hand-fired fuel burning equipment unless the owner or operator meets the conditions set forth in 10 CSR 10-5.040. This regulation shall apply to all hand-fired fuel-burning equipment at commercial facilities including, but not limited to, furnaces, heating and cooking stoves and hot water furnaces. It shall not apply to wood-burning fireplaces and wood-burning stoves in dwellings, nor to fires used for recreational purpose, nor to fires used solely for the preparation of food by barbecuing or to other equipment exempted under 10 CSR 10-5.040. Hand-fired fuel-burning equipment is any stove, furnace, or other fuel-burning device in which fuel is manually introduced directly into the combustion chamber.

**10 CSR 10-5.060 Refuse Not to be Burned in Fuel Burning Installations
(Rescinded on February 11, 1979, Contained in State Implementation Plan)**

No person shall burn or cause or permit the burning of refuse in any installation which is designed for the primary purpose of burning fuel.

40 CFR Part 82 Protection of Stratospheric Ozone (Title VI)

- 1) The permittee shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E:
 - a) All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to 40 CFR §82.106.
 - b) The placement of the required warning statement must comply with the requirements of 40 CFR §82.108.
 - c) The form of the label bearing the required warning statement must comply with the requirements of 40 CFR §82.110.
 - d) No person may modify, remove, or interfere with the required warning statement except as described in 40 CFR §82.112.
- 2) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B of 40 CFR Part 82:
 - a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices described in 40 CFR §82.156.
 - b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment described in 40 CFR §82.158.
 - c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR §82.161.
 - d) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with the record keeping requirements of 40 CFR §82.166. ("MVAC-like" appliance as defined at 40 CFR §82.152).

- e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to 40 CFR §82.156.
 - f) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR §82.166.
- 3) If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR Part 82, Subpart A, Production and Consumption Controls.
 - 4) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements contained in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant.
 - 5) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR Part 82, Subpart G, Significant New Alternatives Policy Program. *Federal Only - 40 CFR Part 82.*

V. General Permit Requirements

The installation shall comply with each of the following requirements. Consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. All citations, unless otherwise noted, are to the regulations in effect as of the date that this permit is issued.

10 CSR 10-6.065, §(5)(C)1, §(6)(C)1.B, §(5)(E)2.C Permit Duration

This permit is issued for a term of five years, commencing on the date of issuance. This permit will expire at the end of this period unless renewed. If a timely and complete application for a permit renewal is submitted, but the Air Pollution Control Program fails to take final action to issue or deny the renewal permit before the end of the term of this permit, this permit shall not expire until the renewal permit is issued or denied.

10 CSR 10-6.065, §(5)(C)1 and §(6)(C)1.C General Record Keeping and Reporting Requirements

- 1) Record Keeping
 - a) All required monitoring data and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report or application.
 - b) Copies of all current operating and construction permits issued to this installation shall be kept on-site for as long as the permits are in effect. Copies of these permits shall be made immediately available to any Missouri Department of Natural Resources' personnel upon request.
- 2) Reporting
 - a) All reports shall be submitted to the Air Pollution Control Program, Compliance and Enforcement Section, P. O. Box 176, Jefferson City, MO 65102.
 - b) The permittee shall submit a report of all required monitoring by:
 - i) April 1st for monitoring which covers the January through December time period.
 - ii) Exception. Monitoring requirements which require reporting more frequently than annually shall report no later than 30 days after the end of the calendar quarter in which the measurements were taken.
 - c) Each report shall identify any deviations from emission limitations, monitoring, record keeping, reporting, or any other requirements of the permit.
 - d) Submit supplemental reports as required or as needed. All reports of deviations shall identify the cause or probable cause of the deviations and any corrective actions or preventative measures taken.
 - i) Notice of any deviation resulting from an emergency (or upset) condition as defined in paragraph (6)(C)7A. of 10 CSR 10-6.065 (Emergency Provisions) shall be submitted to the permitting authority either verbally or in writing within two working days after the date on which the emission limitation is exceeded due to the emergency, if the permittee wishes to assert an affirmative defense. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that indicate an emergency occurred and the permittee can identify the cause(s) of the emergency. The permitted installation must show that it was operated properly at the time and that during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or requirements in the permit. The notice must contain a description of the emergency, the steps taken to mitigate emissions, and the corrective actions taken.

- ii) Any deviation that poses an imminent and substantial danger to public health, safety or the environment shall be reported as soon as practicable.
- iii) Any other deviations identified in the permit as requiring more frequent reporting than the permittee's annual report shall be reported on the schedule specified in this permit, and no later than ten days after any exceedance of any applicable rule, regulation, or other restriction.
- e) Every report submitted shall be certified by the responsible official, except that, if a report of a deviation must be submitted within ten days after the deviation, the report may be submitted without a certification if the report is resubmitted with an appropriate certification within ten days after that, together with any corrected or supplemental information required concerning the deviation.
- f) The permittee may request confidential treatment of information submitted in any report of deviation.

10 CSR 10-6.065 §(5)(C)1.A and §(6)(C)1.D Risk Management Plan Under Section 112(r)

If the installation is required to develop and register a risk management plan pursuant to Section 112(R) of the Act, the permittee will verify that it has complied with the requirement to register the plan.

10 CSR 10-6.065(5)(C)1.A General Requirements

- 1) The permittee must comply with all of the terms and conditions of this permit. Any noncompliance with a permit condition constitutes a violation and is grounds for enforcement action, permit termination, permit revocation and re-issuance, permit modification or denial of a permit renewal application.
- 2) The permittee may not use as a defense in an enforcement action that it would have been necessary for the permittee to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit
- 3) The permit may be modified, revoked, reopened, reissued or terminated for cause. Except as provided for minor permit modifications, the filing of an application or request for a permit modification, revocation and reissuance, or termination, or the filing of a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- 4) This permit does not convey any property rights of any sort, nor grant any exclusive privilege.
- 5) The permittee shall furnish to the Air Pollution Control Program, upon receipt of a written request and within a reasonable time, any information that the Air Pollution Control Program reasonably may require to determine whether cause exists for modifying, reopening, reissuing or revoking the permit or to determine compliance with the permit. Upon request, the permittee also shall furnish to the Air Pollution Control Program copies of records required to be kept by the permittee. The permittee may make a claim of confidentiality for any information or records submitted under this rule.
- 6) Failure to comply with the limitations and conditions that qualify the installation for an Intermediate permit make the installation subject to the provisions of 10 CSR 10-6.065(6) and enforcement action for operating without a valid Part 70 operating permit.

10 CSR 10-6.065(5)(C)1.C Reasonably Anticipated Operating Scenarios

Alternate operating scenario for Parts Washer: Barnes-Jewish Hospital, St. Louis is requesting the flexibility of switching between non-aqueous and aqueous* cleaners in the parts washer during the five-year term of this permit.

This parts washer is currently using an aqueous based cleaning solution and is not subject to the requirements of 10 CSR 10-5.300 which include solvent vapor pressure limitations, operator/supervisor training, recordkeeping, monitoring, and reporting requirements. The parts washer will be subject to all the requirements of 10 CSR 10-5.300 when switching to a non-aqueous cleaner, including the vapor pressure limit of 1.0 mmHg at 20 C for the cleaning solution.

*(Per 10 CSR 10-5.300 (2) (C), an aqueous solvent cleaner is defined as any cleaner consisting of 60% or more by volume water with a flashpoint greater than 93 degrees Celsius.)

10 CSR 10-6.065, §(5)(B)4; §(5)(C)1, §(6)(C)3.B; and §(6)(C)3.D; and §(5)(C)3 and §(6)(C)3.E.(I) – (III) and (V) – (VI) Compliance Requirements

- 1) Any document (including reports) required to be submitted under this permit shall contain a certification signed by the responsible official.
- 2) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized officials of the Missouri Department of Natural Resources, or their authorized agents, to perform the following (subject to the installation's right to seek confidential treatment of information submitted to, or obtained by, the Air Pollution Control Program):
 - a) Enter upon the premises where a permitted installation is located or an emissions-related activity is conducted, or where records must be kept under the conditions of this permit;
 - b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c) Inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
 - d) As authorized by the Missouri Air Conservation Law, Chapter 643, RSMo or the Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the terms of this permit, and all applicable requirements as outlined in this permit.
- 3) All progress reports required under an applicable schedule of compliance shall be submitted semiannually (or more frequently if specified in the applicable requirement). These progress reports shall contain the following:
 - a) Dates for achieving the activities, milestones or compliance required in the schedule of compliance, and dates when these activities, milestones or compliance were achieved, and
 - b) An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measures adopted.
- 4) The permittee shall submit an annual certification that it is in compliance with all of the federally enforceable terms and conditions contained in this permit, including emissions limitations, standards, or work practices. These certifications shall be submitted annually by April 1st, unless the applicable requirement specifies more frequent submission. These certifications shall be submitted to the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102. All deviations and exceedances must be included in the compliance certifications. The compliance certification shall include the following:
 - a) The identification of each term or condition of the permit that is the basis of the certification;
 - b) The current compliance status, as shown by monitoring data and other information reasonably available to the installation;
 - c) Whether compliance was continuous or intermittent;
 - d) The method(s) used for determining the compliance status of the installation, both currently and over the reporting period; and

- e) Such other facts as the Air Pollution Control Program will require in order to determine the compliance status of this installation.

10 CSR 10-6.065, §(5)(C)1 and §(6)(C)7 Emergency Provisions

- 1) An emergency or upset as defined in 10 CSR 10-6.065(6)(C)7.A shall constitute an affirmative defense to an enforcement action brought for noncompliance with technology-based emissions limitations. To establish an emergency- or upset-based defense, the permittee must demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, the following:
- a) That an emergency or upset occurred and that the permittee can identify the source of the emergency or upset,
 - b) That the installation was being operated properly,
 - c) That the permittee took all reasonable steps to minimize emissions that exceeded technology-based emissions limitations or requirements in this permit, and
 - d) That the permittee submitted notice of the emergency to the Air Pollution Control Program within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken.
- 2) Be aware that an emergency or upset shall not include noncompliance caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

10 CSR 10-6.065(5)(C)5 Off-Permit Changes

- 1) Except as noted below, the permittee may make any change in its permitted installation's operations, activities or emissions that is not addressed in, constrained by or prohibited by this permit without obtaining a permit revision. Off-permit changes shall be subject to the following requirements and restrictions:
- a) The change must meet all applicable requirements of the Act and may not violate any existing permit term or condition; the permittee may not change a permitted installation without a permit revision if this change is a Title I modification; Please Note: Changes at the installation which affect the emission limitation(s) classifying the installation as an intermediate source (add additional equipment to the record keeping requirements, increase the emissions above major source level) do not qualify for off-permit changes.
 - b) The permittee must provide contemporaneous written notice of the change to the Air Pollution Control Program, Compliance and Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, as well as EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219. This written notice shall describe each change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply as a result of the change; and
 - c) The permittee shall keep a record describing all changes made at the installation that result in emissions of a regulated air pollutant subject to an applicable requirement and the emissions resulting from these changes.

10 CSR 10-6.020(2)(R)34 Responsible Official

The application utilized in the preparation of this permit was signed by Gregory Patterson, Vice President, Facilities and Support Services. If this person terminates employment, or is reassigned different duties such that a different person becomes the responsible person to represent and bind the installation in environmental permitting affairs, the owner or operator of this air contaminant source

shall notify the Director of the Air Pollution Control Program of the change. Said notification shall be in writing and shall be submitted within 30 days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the installation in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the installation until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

10 CSR 10-6.065 §(5)(E)4 and §(6)(E)6.A(III)(a)-(c) Reopening-Permit for Cause

This permit may be reopened for cause if:

- 1) The Missouri Department of Natural Resources (MoDNR) or EPA determines that the permit contains a material mistake or that inaccurate statements were made which resulted in establishing the emissions limitation standards or other terms of the permit,
- 2) Additional applicable requirements under the Act become applicable to the installation; however, reopening on this ground is not required if—:
 - a) The permit has a remaining term of less than three years;
 - b) The effective date of the requirement is later than the date on which the permit is due to expire;or
 - c) The additional applicable requirements are implemented in a general permit that is applicable to the installation and the installation receives authorization for coverage under that general permit,
- 3) MoDNR or EPA determines that the permit must be reopened and revised to assure compliance with applicable requirements.

10 CSR 10-6.065 §(5)(E)1.A and §(6)(E)1.C Statement of Basis

This permit is accompanied by a statement setting forth the legal and factual basis for the permit conditions (including references to applicable statutory or regulatory provisions). This Statement of Basis, while referenced by the permit, is not an actual part of the permit.

VI. Attachments

Attachments follow.

Attachment A
 Plantwide NO_x Emissions Tracking

Barnes-Jewish Hospital, St. Louis
 St. Louis City
 Installation ID Number: 510-0204

This sheet covers the period from _____ to _____
 (month, year) (month, year)

Boilers				
Emission Source	Monthly Fuel Usage	NO_x Emission Factor	Emission Factor Source	Monthly NO_x Emissions¹ (tons)
EP-01A Boiler #2	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	20 lb/Mgal	AP-42 Table 1.3-1	
EP-01B Boiler #3	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	20 lb/Mgal	AP-42 Table 1.3-1	
EP-01C Boiler #4	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	20 lb/Mgal	AP-42 Table 1.3-1	
EP-29A Boiler #1	MMscf natural gas	38.765 lb/MMscf	Manufacturer's Specifications	
EP-29B Boiler #2	MMscf natural gas	38.765 lb/MMscf	Manufacturer's Specifications	
EP-29C Boiler #3	MMscf natural gas	38.765 lb/MMscf	Manufacturer's Specifications	
EP-29D Boiler #4	MMscf natural gas	38.765 lb/MMscf	Manufacturer's Specifications	
EP-29E Boiler #5	MMscf natural gas	38.765 lb/MMscf	Manufacturer's Specifications	
EP-22A Dock Heater #1	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1	
EP-22B Dock Heater #2	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1	
EP-21A Boiler #1 – Clayton Avenue Building	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1	
EP-21B Boiler #2 – Clayton Avenue Building	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1	
EP-30A Hot Water Heater #1	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1	
EP-30B Hot Water Heater #2	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1	
EP-30C Hot Water Heater #3	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1	
EP-28A Water Heater #1	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1	

¹ Monthly NO_x Emissions (tons) = Monthly Fuel Usage x NO_x Emission Factor x 0.0005 (ton/lb).

Emergency Generators					
Emission Source	Current Month's Hourly Meter Reading	Previous Month's Hourly Meter Reading	Monthly Usage ² (hours)	NO _x Emission Factor (lb/hr)	Monthly NO _x Emissions ³ (tons)
EP-03A Emergency Generator #7				18.24 ⁴	
EP-03B Emergency Generator #8				18.24 ⁴	
EP-03C Emergency Generator #9				18.24 ⁴	
EP-03D Emergency Generator #10				18.24 ⁴	
EP-03E Emergency Generator #11				18.24 ⁴	
EP-04 Emergency Generator #12				16.44 ⁴	
EP-13A Emergency Generator #1				27.24 ⁴	
EP-13B Emergency Generator #2				27.24 ⁴	
EP-13D Emergency Generator #4				27.24 ⁴	
EP-13E Emergency Generator #5				27.24 ⁴	
EP-13F Emergency Generator #6				27.24 ⁴	
EP-09 Emergency Generator #1				21.36 ⁴	
EP-34 Emergency Generator				38.24 ⁵	
EP-16 Emergency Generator				4.55 ⁶	
EP-31 Emergency Generator #1				1.56 ⁷	
EP-06 Emergency Generator #13				18.60 ⁸	

² Monthly Usage (hours) = Current Month's Hourly Meter Reading – Previous Month's Hourly Meter Reading.

³ Monthly NO_x Emissions (tons) = Monthly Usage (hours x NO_x Emission Factor (lb/ton) x 0.0005 (ton/lb).

⁴ AP-42 Table 3.4-1 listed the NO_x Emission Factor as 0.024 lb/hp-hr. The emission factor was multiplied by the engines' horsepower rating to obtain the lb/hr NO_x Emission Factor.

⁵ This engine is subject to a NO_x emission limit of 6.4 g/kW-hr by NSPS IIII (§89.112 Tier 2). The engine is rated at 2,710 kW and the generator is rated at 2,500 kW. A conversion factor of 0.0022046 lb/g was used.

⁶ This engine is subject to a NO_x emission limit of 4.0 g/kW-hr by NSPS IIII (§89.112 Tier 3). The engine is rated at 516 kW and the generator is rated at 450 kW. A conversion factor of 0.0022046 lb/g was used.

⁷ This engine is subject to a NO_x emission limit of 4.0 g/kW-hr by NSPS IIII (§89.112 Tier 3). The engine is rated at 177 kW and the generator is rated at 150 kW. A conversion factor of 0.0022046 lb/g was used.

⁸ AP-42 Table 3.3-1 listed the NO_x Emission Factor as 0.031 lb/hp-hr. The emission factor was multiplied by the engines' horsepower rating to obtain the lb/hr NO_x Emission Factor.

Emission Sources	Monthly NO _x Emissions (tons)
Sum of Monthly NO _x Emissions from Emission Sources on Record Keeping Attachment A (tons)	
Monthly NO _x Emissions from Emission Sources on Record Keeping Attachment C (tons)	
Monthly NO _x Emissions from Emission Sources on Record Keeping Attachment D (tons)	
Monthly NO _x Emissions from Emission Sources on Record Keeping Attachment E (tons)	
Total Plantwide Monthly NO_x Emissions from all Attachments (tons)	
12-Month Rolling Total of Plantwide NO_x Emissions from all Attachments (tons)	
Annual SSM Emissions from all NO _x Sources ⁹	
12-Month Rolling Total Plantwide NO_x Emissions (tons)¹⁰:	

⁹ As reported to the Air Pollution Control Program’s Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050.

¹⁰ 12-Month Rolling Plantwide NO_x Emissions (tons) = the sum of the 12 most recent Monthly Plantwide NO_x Emissions (tons). **The permittee is in compliance with Plantwide Permit Condition PW001 if 12-Month Rolling Total for NO_x Emissions are less than 100.0 tons.**

Attachment B
 Plantwide CO Emissions Tracking

Barnes-Jewish Hospital, St. Louis
 St. Louis City
 Installation ID Number: 510-0204

This sheet covers the period from _____ to _____
 (month, year) (month, year)

Boilers & Air Handling Unit				
Emission Source	Monthly Fuel Usage	CO Emission Factor	Emission Factor Source	Monthly CO Emissions¹¹ (tons)
EP-32A Boiler #1	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	5 lb/Mgal	AP-42 Table 1.3-1	
EP-32B Boiler #2	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	5 lb/Mgal	AP-42 Table 1.3-1	
EP-32C Boiler #3	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	5 lb/Mgal	AP-42 Table 1.3-1	
EP-32D Boiler #4	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	5 lb/Mgal	AP-42 Table 1.3-1	
EP-32E Boiler #5	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	5 lb/Mgal	AP-42 Table 1.3-1	
EP-32F Boiler #6	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	5 lb/Mgal	AP-42 Table 1.3-1	
EP-35 Air Handling Unit	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
EP-01A Boiler #2	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	5 lb/Mgal	AP-42 Table 1.3-1	
EP-01B Boiler #3	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	5 lb/Mgal	AP-42 Table 1.3-1	
EP-01C Boiler #4	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	5 lb/Mgal	AP-42 Table 1.3-1	
EP-29A Boiler #1	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
EP-29B Boiler #2	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
EP-29C Boiler #3	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
EP-29D Boiler #4	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
EP-29E Boiler #5	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
EP-11A Boiler #7	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	5 lb/Mgal	AP-42 Table 1.3-1	
EP-11B Boiler #8	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	5 lb/Mgal	AP-42 Table 1.3-1	
EP-11C Boiler #9	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	5 lb/Mgal	AP-42 Table 1.3-1	
EP-12 Boiler #10	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2	5 lb/Mgal	AP-42 Table 1.3-1	
EP-27 Boiler	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
EP-28B Water Heater #2	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
EP-19A Boiler #1	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
EP-19B Boiler #2	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	
EP-19C Boiler #3	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1	

¹¹ Monthly CO Emissions (tons) = Monthly Fuel Usage x CO Emission Factor x 0.0005 (ton/lb).

EP-20A Water Heater #1	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1		
EP-20B Water Heater #2	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1		
EP-22A Dock Heater #1	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1		
EP-22B Dock Heater #2	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1		
EP-21A Boiler #1 – Clayton Avenue Building	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1		
EP-21B Boiler #2 – Clayton Avenue Building	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1		
EP-28B Water Heater #2 Barnes Lodge	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1		
EP-30A Hot Water Heater #1	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1		
EP-30B Hot Water Heater #2	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1		
EP-30C Hot Water Heater #3	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1		
EP-28A Water Heater #1	MMscf natural gas	84 lb/MMscf	AP-42 Table 1.4-1		
Emergency Generators					
Emission Source	Current Month's Hourly Meter Reading	Previous Month's Hourly Meter Reading	Monthly Usage ¹² (hours)	CO Emission Factor (lb/hr)	Monthly CO Emissions ¹³ (tons)
EP-33A Emergency Generator #1				16.90 ¹⁴	
EP-33B Emergency Generator #2				16.90 ¹⁴	
EP-33C Emergency Generator #3				16.90 ¹⁴	
EP-33D Emergency Generator #1				8.48 ¹⁵	
EP-33E Emergency Generator #2				8.48 ¹⁵	
EP-03A Emergency Generator #1				4.18 ¹⁶	
EP-03B Emergency Generator #2				4.18 ¹⁶	
EP-03C Emergency Generator #3				4.18 ¹⁶	
EP-03D Emergency Generator #1				4.18 ¹⁶	
EP-03E Emergency Generator #2				4.18 ¹⁶	
EP-04 Emergency Generator #12				3.77 ¹⁶	
EP-13A Emergency Generator #1				6.24 ¹⁶	

¹² Monthly Usage (hours) = Current Month's Hourly Meter Reading – Previous Month's Hourly Meter Reading

¹³ Monthly CO Emissions (tons) = Monthly Usage (hours) x CO Emission Factor (lb/hr) x 0.0005 (ton/lb)

¹⁴ This engine is subject to a CO emission limit of 3.5 g/kW-hr by NSPS IIII (§89.112 Tier 2). The engine is rated at 2,190 kW and the generator is rated at 2,000 kW. A conversion factor of 0.0022046 lb/g was used.

¹⁵ This engine is subject to a CO emission limit of 3.5 g/kW-hr by NSPS IIII (§89.112 Tier 2). The engine is rated at 1,099 kW and the generator is rated at 1,000 kW. A conversion factor of 0.0022046 lb/g was used.

¹⁶ AP-42 Table 3.4-1 listed the CO Emission Factor as 0.0055 lb/hp-hr. The emission factor was multiplied by the engines' horsepower rating to obtain the lb/hr CO Emission Factor.

EP-13B Emergency Generator #2				6.24 ¹⁶	
EP-13D Emergency Generator #4				6.24 ¹⁶	
EP-13E Emergency Generator #5				6.24 ¹⁶	
EP-13F Emergency Generator #6				6.24 ¹⁶	
EP-09 Emergency Generator #1				4.90 ¹⁶	
EP-34 Emergency Generator				20.91 ¹⁷	
EP-16 Emergency Generator				3.98 ¹⁸	
EP-31 Emergency Generator #1				1.37 ¹⁹	
EP-10 Emergency Generator #2				8.53 ¹⁶	
EP-13C Emergency Generator #3				5.17 ¹⁶	
EP-05 Emergency Generator #20				4.12 ¹⁶	
EP-14A Emergency Generator #1				9.14 ¹⁶	
EP-14B Emergency Generator #2				9.14 ¹⁶	
EP-14C Emergency Generator #3				9.14 ¹⁶	
EP-08A Emergency Generator #1				8.15 ¹⁶	
EP-08B Emergency Generator #2				8.15 ¹⁶	
EP-08C Emergency Generator #3				8.15 ¹⁶	
EP-08D Emergency Generator #4				8.15 ¹⁶	
EP-02A Emergency Generator #1				4.20 ¹⁶	
EP-02B Emergency Generator #2				4.20 ¹⁶	
EP-02C Emergency Generator #3				4.20 ¹⁶	
EP-02D Emergency Generator #4				4.20 ¹⁶	
EP-06 Emergency Generator #13				4.01 ²⁰	

¹⁷ This engine is subject to a CO emission limit of 3.5 g/kW-hr by NSPS IIII (§89.112 Tier 2). The engine is rated at 2,710 kW and the generator is rated at 2,500 kW. A conversion factor of 0.0022046 lb/g was used.

¹⁸ This engine is subject to a CO emission limit of 3.5 g/kW-hr by NSPS IIII (§89.112 Tier 3). The engine is rated at 516 kW and the generator is rated at 450 kW. A conversion factor of 0.0022046 lb/g was used.

¹⁹ This engine is subject to a CO emission limit of 3.5 g/kW-hr by NSPS IIII (§89.112 Tier 3). The engine is rated at 177 kW and the generator is rated at 150 kW. A conversion factor of 0.0022046 lb/g was used.

²⁰ AP-42 Table 3.3-1 listed the CO Emission Factor as 0.00668 lb/hp-hr. The emission factor was multiplied by the engines' horsepower rating to obtain the lb/hr CO Emission Factor.

EP-15 Emergency Generator				2.31 ²¹	
SSM Emissions					
Emission Sources					Monthly CO Emissions (tons)
Plantwide CO Emissions from startup, shutdown and malfunctions ²²					
Monthly Plantwide CO Emissions²³ (tons):					
12-Month Rolling Plantwide CO Emissions²⁴ (tons):					

²¹ This engine is subject to a CO emission limit of 3.5 g/kW-hr by NSPS IIII (§89.112 Tier 3). The engine is rated at 300 kW and the generator is rated at 300 kW. A conversion factor of 0.0022046 lb/g was used.

²² As reported to the Air Pollution Control Program’s Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050.

²³ Monthly Plantwide CO Emissions (tons) = The sum of each emission source’s Monthly CO Emissions (tons).

²⁴ 12-Month Rolling Total Plantwide CO Emissions (tons) = the sum of the 12 most recent Monthly Plantwide CO Emissions (tons). **The permittee is in compliance with Plantwide Permit Condition PW001 if 12-Month Rolling Total Plantwide CO Emissions are less than 100.0 tons.**

Attachment C
NOx Emissions Tracking

Barnes-Jewish Hospital, St. Louis
 St. Louis City
 Installation ID Number: 510-0204

This sheet covers the period from _____ to _____
 (month, year) (month, year)

Boilers & Air Handling Unit					
Emission Source	Monthly Fuel Usage		NO_x Emission Factor	Emission Factor Source	Monthly NO_x Emissions²⁵ (tons)
EP-32A Boiler #1	MMscf natural gas		100 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2		20 lb/Mgal	AP-42 Table 1.3-1	
EP-32B Boiler #2	MMscf natural gas		100 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2		20 lb/Mgal	AP-42 Table 1.3-1	
EP-32C Boiler #3	MMscf natural gas		100 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2		20 lb/Mgal	AP-42 Table 1.3-1	
EP-32D Boiler #4	MMscf natural gas		100 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2		20 lb/Mgal	AP-42 Table 1.3-1	
EP-32E Boiler #5	MMscf natural gas		100 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2		20 lb/Mgal	AP-42 Table 1.3-1	
EP-32F Boiler #6	MMscf natural gas		100 lb/MMscf	AP-42 Table 1.4-1	
	Mgal fuel oil #2		20 lb/Mgal	AP-42 Table 1.3-1	
EP-35 Air Handling Unit	MMscf natural gas		100 lb/MMscf	AP-42 Table 1.4-1	
Emergency Generators					
Emission Source	Current Month's Hourly Meter Reading	Previous Month's Hourly Meter Reading	Monthly Usage²⁶ (hours)	NO_x Emission Factor (lb/hr)	Monthly NO_x Emissions²⁷ (tons)
EP-33A Emergency Generator #1				30.90 ²⁸	
EP-33B Emergency Generator #2				30.90 ²⁸	
EP-33C Emergency Generator #3				30.90 ²⁸	
EP-33D Emergency Generator #1				15.506 ²⁹	
EP-33E Emergency Generator #2				15.506 ²⁹	

²⁵ Monthly NO_x Emissions (tons) = Monthly Fuel Usage x NO_x Emission Factor x 0.0005 (ton/lb).

²⁶ Monthly Usage (hours) = Current Month's Hourly Meter Reading – Previous Month's Hourly Meter Reading

²⁷ Monthly NO_x Emission (tons) = Monthly Usage (hours) x NO_x Emission Factor (lb/hr) x 0.0005 (ton/lb)

²⁸ This engine is subject to a NOx emission limit of 6.4 g/kW-hr by NSPS IIII (§89.112 Tier 2). The engine is rated at 2,190 kW and the generator is rated at 2,000 kW. A conversion factor of 0.0022046 lb/g was used.

²⁹ This engine is subject to a NOx emission limit of 6.4 g/kW-hr by NSPS IIII (§89.112 Tier 2). The engine is rated at 1,099 kW and the generator is rated at 1,000 kW. A conversion factor of 0.0022046 lb/g was used.

SSM Emissions	
Emission Sources	Monthly NO_x Emissions³⁰ (tons)
Boilers (EP-32A, EP-32B, EP-32C, EP-32D, EP-32E, and EP-32F), EP-35 Air Handling Unit, and Emergency Generators (EP-33A, EP-33B, EP-33C, EP-33D, and EP-33E)	
Monthly Project NO_x Emissions³¹ (tons):	
12-Month Rolling Total Project NO_x Emissions³² (tons):	

³⁰ As reported to the Air Pollution Control Program's Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050.

³¹ Monthly Project NO_x Emissions (tons) = The sum of each emission source's Monthly NO_x Emissions (tons).

³² 12-Month Rolling Total Project NO_x Emissions (tons) = the sum of the 12 most recent Monthly Project NO_x Emissions (tons). **The permittee is in compliance with Special Condition 1 if 12-Month Rolling Total Project NO_x Emissions are less than 40.0 tons.**

Attachment D
NO_x Emissions Tracking

Barnes-Jewish Hospital, St. Louis
 St. Louis City
 Installation ID Number: 510-0204

This sheet covers the period from _____ to _____
 (month, year) (month, year)

Boilers					
Emission Source	Monthly Fuel Usage	NO_x Emission Factor	Emission Factor Source	Monthly NO_x Emissions³³ (tons)	
EP-11A Boiler #7	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1		
	Mgal fuel oil #2	20 lb/Mgal	AP-42 Table 1.3-1		
EP-11B Boiler #8	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1		
	Mgal fuel oil #2	20 lb/Mgal	AP-42 Table 1.3-1		
EP-11C Boiler #9	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1		
	Mgal fuel oil #2	20 lb/Mgal	AP-42 Table 1.3-1		
Emergency Generator					
Emission Source	Current Month's Hourly Meter Reading	Previous Month's Hourly Meter Reading	Monthly Usage³⁴ (hours)	NO_x Emission Factor (lb/hr)	Monthly NO_x Emissions³⁵ (tons)
EP-10 Emergency Generator #2				37.200 ³⁶	
EP-13C Emergency Generator #3				22.560 ³⁷	
SSM Emissions					
Emission Sources				Monthly NO_x Emissions³⁸ (tons)	
EP-11A Boiler #7, EP-11B Boiler #8, EP-11C Boiler #9, EP-10 Emergency Generator #2, and EP-13C Emergency Generator #3					
Monthly Project #5 NO_x Emissions³⁹ (tons):					
12-Month Rolling Total Project #5 NO_x Emissions⁴⁰ (tons):					

³³ Monthly NO_x Emissions (tons) = Monthly Fuel Usage x NO_x Emission Factor x 0.0005 (ton/lb).

³⁴ Monthly Usage (hours) = Current Month's Hourly Meter Reading – Previous Month's Hourly Meter Reading

³⁵ Monthly NO_x Emission (tons) = Monthly Usage (hours) x NO_x Emission Factor (lb/hr) x 0.0005 (ton/lb)

³⁶ AP-42 Table 3.4-1 listed the NO_x Emission Factor as 0.024 lb/hp-hr. The emission factor was multiplied by the engines' horsepower rating of 1550 HP to obtain the lb/hr NO_x Emission Factor.

³⁷ AP-42 Table 3.4-1 listed the NO_x Emission Factor as 0.024 lb/hp-hr. The emission factor was multiplied by the engines' horsepower rating of 940 HP to obtain the lb/hr NO_x Emission Factor.

³⁸ As reported to the Air Pollution Control Program's Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050.

³⁹ Monthly Project #5 NO_x Emissions (tons) = The sum of each emission source's Monthly NO_x Emissions (tons).

⁴⁰ 12-Month Rolling Total Project #5 NO_x Emissions (tons) = the sum of the 12 most recent Monthly Project #5 NO_x Emissions (tons). **The permittee is in compliance with Special Condition 2 if 12-Month Rolling Total Project #5 NO_x Emissions are less than 40.0 tons.**

Attachment E
NOx Emissions Tracking

Barnes-Jewish Hospital, St. Louis
 St. Louis City
 Installation ID Number: 510-0204

This sheet covers the period from _____ to _____
 (month, year) (month, year)

Boilers & Water Heaters					
Emission Source	Monthly Fuel Usage	NO_x Emission Factor	Emission Factor Source	Monthly NO_x Emissions⁴¹ (tons)	
EP-12 Boiler #10	MMscf natural gas	51 lb/MMscf	Manufacturer's Guarantee		
	Mgal fuel oil #2	20 lb/Mgal	AP-42 Table 1.3-1		
EP-27 Boiler	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1		
EP-28B Water Heater #2	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1		
EP-19A Boiler #1	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1		
EP-19B Boiler #2	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1		
EP-19C Boiler #3	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1		
EP-20A Water Heater	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1		
EP-20B Water Heater	MMscf natural gas	100 lb/MMscf	AP-42 Table 1.4-1		
Emergency Generators					
Emission Source	Current Month's Hourly Meter Reading	Previous Month's Hourly Meter Reading	Monthly Usage⁴² (hours)	NO_x Emission Factor (lb/hr)	Monthly NO_x Emissions⁴³ (tons)
EP-05 Emergency Generator #20				17.976 ⁴⁴	
EP-14A Emergency Generator #1				39.888 ⁴⁴	
EP-14B Emergency Generator #2				39.888 ⁴⁴	

⁴¹ Monthly NO_x Emissions (tons) = Monthly Fuel Usage x NO_x Emission Factor x 0.0005 (ton/lb).

⁴² Monthly Usage (hours) = Current Month's Hourly Meter Reading – Previous Month's Hourly Meter Reading

⁴³ Monthly NO_x Emission (tons) = Monthly Usage (hours) x NO_x Emission Factor (lb/hr) x 0.0005 (ton/lb)

⁴⁴ AP-42 Table 3.4-1 listed the NO_x Emission Factor as 0.024 lb/hp-hr. The emission factor was multiplied by the engine's horsepower rating to obtain the lb/hr NO_x Emission Factor.

EP-14C Emergency Generator #3				39.888 ⁴⁴	
EP-08A Emergency Generator #1				35.568 ⁴⁴	
EP-08B Emergency Generator #2				35.568 ⁴⁴	
EP-08C Emergency Generator #3				35.568 ⁴⁴	
EP-08D Emergency Generator #4				35.568 ⁴⁴	
EP-02A Emergency Generator #1				18.336 ⁴⁴	
EP-02B Emergency Generator #2				18.336 ⁴⁴	
EP-02C Emergency Generator #3				18.336 ⁴⁴	
EP-02D Emergency Generator #4				18.336 ⁴⁴	
EP-15 Emergency Generator				2.646 ⁴⁵	
SSM Emissions					
Emission Sources					Monthly NO_x Emissions⁴⁶ (tons)
Boilers (EP-12, EP-27, EP-19A, EP-19B, EP-19C), Water Heaters (EP-20A, EP-20B, and EP-28B), and Emergency Generators (EP-05, EP-14A, EP-14B, EP-14C, EP-08A, EP-08B, EP-08C, EP-08D, EP-02A, EP-02B, EP-02C, EP-02D, and EP-15)					
Monthly Project #7 NO_x Emissions⁴⁷ (tons):					
12-Month Rolling Total Project #7 NO_x Emissions⁴⁸ (tons):					

⁴⁵ This generator is subject to a NO_x limit of 4.0 g/kW-hr by NSPS IIII (§89.112 Tier 3). The engine has a rating of 300 kW. A conversion factor of 0.0022046 lb/g was used.

⁴⁶ As reported to the Air Pollution Control Program's Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050.

⁴⁷ Monthly Project #7 NO_x Emissions (tons) = The sum of each emission source's Monthly NO_x Emissions (tons).

⁴⁸ 12-Month Rolling Total Project #7 NO_x Emissions (tons) = the sum of the 12 most recent Monthly Project #7 NO_x Emissions (tons). **The permittee is in compliance with Special Condition 3 if 12-Month Rolling Total Project #7 NO_x Emissions are less than 40.0 tons.**

Attachment F
 Ethylene Oxide Emissions Tracking

Barnes-Jewish Hospital, St. Louis
 St. Louis City
 Installation ID Number: 510-0204

This sheet covers the period from _____ to _____
 (month, year) (month, year)

Emission Source	Monthly Ethylene Oxide Usage (grams)	Conversion Factor (ton/gram)	Monthly Ethylene Oxide Emissions⁴⁹ (tons)
EP-17A Ethylene Oxide Sterilizer #1		1.1023 x 10 ⁻⁶	
EP-17B Ethylene Oxide Sterilizer #2		1.1023 x 10 ⁻⁶	
SSM Emissions			
Emission Sources			Monthly Ethylene Oxide Emissions⁵⁰ (tons)
Ethylene Oxide Sterilizers (EP-17A and EP-17B)			
Monthly Project #5 Ethylene Oxide Emissions⁵¹ (tons):			
12-Month Rolling Total Project #5 Ethylene Oxide Emissions⁵² (tons):			

⁴⁹ Monthly Ethylene Oxide Emissions (tons) = Monthly Ethylene Oxide Usage (grams) x Conversion Factor (ton/gram).

⁵⁰ As reported to the Air Pollution Control Program's Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050.

⁵¹ Monthly Project #5 Ethylene Oxide Emissions (tons) = The sum of each emission source's Monthly Ethylene Oxide Emissions (tons).

⁵² 12-Month Rolling Total Project #5 Ethylene Oxide Emissions (tons) = the sum of the 12 most recent Monthly Project #5 Ethylene Oxide Emissions (tons). **The permittee is in compliance with Special Condition 4 if 12-Month Rolling Total Project #5 Ethylene Oxide Emissions are less than 0.1 tons.**

Attachment G
 Ethylene Oxide Emissions Tracking

Barnes-Jewish Hospital, St. Louis
 St. Louis City
 Installation ID Number: 510-0204

This sheet covers the period from _____ to _____
 (month, year) (month, year)

Emission Source	Monthly Ethylene Oxide Usage (grams)	Conversion Factor (ton/gram)	Monthly Ethylene Oxide Emissions⁵³ (tons)
EP-17C Ethylene Oxide Sterilizer #3		1.1023 x 10 ⁻⁶	
EP-17D Ethylene Oxide Sterilizer #4		1.1023 x 10 ⁻⁶	
SSM Emissions			
Emission Sources			Monthly Ethylene Oxide Emissions⁵⁴ (tons)
Ethylene Oxide Sterilizers (EP-17C and EP-17D)			
Monthly Project #7 Ethylene Oxide Emissions⁵⁵ (tons):			
12-Month Rolling Total Project #7 Ethylene Oxide Emissions⁵⁶ (tons):			

⁵³ Monthly Ethylene Oxide Emissions (tons) = Monthly Ethylene Oxide Usage (grams) x Conversion Factor (ton/gram).

⁵⁴ As reported to the Air Pollution Control Program's Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050.

⁵⁵ Monthly Project #7 Ethylene Oxide Emissions (tons) = The sum of each emission source's Monthly Ethylene Oxide Emissions (tons).

⁵⁶ 12-Month Rolling Total Project #7 Ethylene Oxide Emissions (tons) = the sum of the 12 most recent Monthly Project #7 Ethylene Oxide Emissions (tons). **The permittee is in compliance with Special Condition 5 if 12-Month Rolling Total Project #7 Ethylene Oxide Emissions are less than 0.1 tons.**

Attachment J
 Opacity Emissions Observations

USEPA Test Method 9 Opacity Emissions Observations								
Company					Observer			
Location					Observer Certification Date			
Date					Emission Unit			
Time					Control Device			
Hour	Minute	Seconds				Steam Plume (check if applicable)		Comments
		0	15	30	45	Attached	Detached	
	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
SUMMARY OF AVERAGE OPACITY								
Set Number	Time				Opacity			
	Start	End	Sum	Average				

Readings ranged from _____ to _____ % opacity.

Was the emission unit in compliance at the time of evaluation?
 YES NO Signature of Observer

STATEMENT OF BASIS

Voluntary Limitations

In order to qualify for this Intermediate State Operating Permit, the permittee has accepted voluntary, federally enforceable emission limitations. Per 10 CSR 10-6.065(5)(C)1.A.(VI), if these limitations are exceeded, the installation immediately becomes subject to 10 CSR 10-6.065(6) and enforcement action for operating without a valid Part 70 operating permit. It is the permittee's responsibility to monitor emission levels and apply for a Part 70 operating permit far enough in advance to avoid this situation. This may mean applying more than eighteen months in advance of the exceedance, since it can take that long or longer to obtain a Part 70 operating permit.

INSTALLATION DESCRIPTION

Barnes-Jewish Hospital, St. Louis is an existing medical campus, established as two separate hospitals in the early 1900s. The modern medical campus consists of the Center for Advanced Medicine (CAM), Center for Outpatient Health (COH), St. Louis Children's Hospital (SLCH), Goldfarb College of Nursing (CON), Clayton Avenue Building (CAB), Barnes Lodge, Peters, North Parking Garage, Power Plant, Shoenberg Pavilion, East Pavilion, Queeny Tower, Southwest Tower, West Pavilion, Duncan Central Garage, Institute of Health (IOH), South Parking Garage, and Parkview Tower (previously referred to as the New North Building while under construction). The medical campus has air emission sources which consist of natural gas fired boilers with and without fuel oil back-up, emergency generators, cooling towers, fuel oil storage tanks and day tanks, ethylene oxide sterilizers, a parts washer and miscellaneous natural gas fired equipment such as water heaters, dock heaters, etc. Potential air emissions from the medical campus exceed the major source levels for NO_x and CO. As such, the facility has taken plantwide emission limits below the major source levels on NO_x and CO in order to obtain an Intermediate operating permit. This installation is not on the List of Named Sources, therefore fugitive emissions are not included in potential to emit calculations

Updated Potential to Emit for the Installation

Pollutant	Potential to Emit (tons/yr) ¹
CO	Less than 100.0 ²
HAP	2.10
NO _x	Less than 100.0 ³
PM ₁₀	22.97
PM _{2.5}	11.09
SO ₂	46.81
VOC	51.16

¹Potential Emissions were taken from the latest issued construction permit: CP102016-003.

²Emissions of CO are limited to less than 100 tons/year by Plantwide Permit Condition PW001.

³Emissions of NO_x are limited to less than 100 ton/year by Plantwide Permit Condition PW001.

Reported Air Pollutant Emissions, tons per year

Pollutants	2016	2015	2014	2013	2012
Particulate Matter ≤ Ten Microns (PM ₁₀)	13.57	20.95*	2.20	0.35	0.26
Particulate Matter ≤ 2.5 Microns (PM _{2.5})	2.46	13.41*	2.20	0.35	0.26
Sulfur Oxides (SO _x)	0.17	0.16	0.67	0.46	0.46
Nitrogen Oxides (NO _x)	34.11	26.01	34.25	9.13	7.88
Volatile Organic Compounds(VOC)	1.82	1.58	2.08	0.67	0.60
Carbon Monoxide (CO)	26.74	23.57	24.07	3.60	2.62

*Please note that this total emission rate includes emissions from all facility cooling towers which were not included in the prior reporting years. The 2015 PM-10 and PM-2.5 emissions from the towers were estimated using conservatively high emission factors from AP-42, Section 13.4, Table 13.4-1. For the 2016 reporting year, the emission estimation approach for the cooling towers was revised and new Department-approved PM-10 and PM-2.5 emissions factors were used consistent with those developed in the facility’s recently issued construction permit #092016-012. The new factors were much lower than those provided in AP-42, thereby yielding lower particulate emissions for 2016 when compared to 2015.

Permit Reference Documents

These documents were relied upon in the preparation of the operating permit. Because they are not incorporated by reference, they are not an official part of the operating permit.

- 1) Intermediate Operating Permit Application, received December 22, 2016;
- 2) 2016 Emissions Inventory Questionnaire, received date; and
- 3) U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition
- 4) Construction Permit 102016-003, Issued October 17, 2016;
- 5) Construction Permit 092016-012, Issued September 21, 2016

Applicable Requirements Included in the Operating Permit but Not in the Application or Previous Operating Permits

In the operating permit application, the installation indicated they were not subject to the following regulation(s). However, in the review of the application, the agency has determined that the installation is subject to the following regulation(s) for the reasons stated.

None.

Other Air Regulations Determined Not to Apply to the Operating Permit

The Air Pollution Control Program (APCP) has determined that the following requirements are not applicable to this installation at this time for the reasons stated.

10 CSR 10-6.350, *Emission Limitations and Emissions Trading of Oxides of Nitrogen*

This rule applies to any fossil fuel-fired electric generating unit that serves a generator with a nameplate capacity of greater than twenty-five megawatts (25 MW). There are no such electric generating units at this facility; therefore, this rule is not applicable.

10 CSR 10-6.360, *Control of NOx Emissions from Electric Generating Units and Non-Electric Generating Boilers*

This rule applies to any fossil fuel-fired electric generating unit that serves a generator with a nameplate capacity of greater than twenty-five megawatts (25 MW) and non-electric generating boilers having a maximum design heat input greater than 250 MMBtu/hr. There are no such electric generating units at this facility and all boilers at this facility are rated less than 250 MMBtu/hr, each; therefore, this rule is not applicable.

10 CSR 10-6.390, *Control of NOx Emissions from Large Stationary Internal Combustion Engines*

The internal combustion engines at this facility that are greater than 1300 HP operate only as emergency standby engines, and thus, are exempt from this rule.

10 CSR 10-6.400, *Restriction of Emission of Particulate Matter from Industrial Processes*

The boilers and miscellaneous combustion equipment which operate on natural gas or fuel oil #2 are exempt per 10 CSR 10-6.400(1)(B)6. The internal combustion engines on the emergency generators are not subject to this rule because the definition of process weight excludes liquids and gases that are used solely as fuels and air introduced for the purposes of combustion. The cooling towers are also exempt per 10 CSR 10-6.400(1)(B)7 because they are sources of fugitive emissions.

10 CSR 10-6.405, *Maximum Allowable Emission of Particulate Matter from Fuel Burning Equipment Used for Indirect Heating*

This installation is exempt from this rule per 10 CSR 10-6.405(1)(C) which exempts an installation if all applicable units are fueled only by natural gas or fuel oils #2-#6 with a sulfur content less than 1.2%.

10 CSR 10-5.220, *Control of Petroleum Liquid Storage Loading and Transfer*

This installation is exempt from this rule since none of the tanks on-site store a petroleum liquid as defined in 10 CSR 10-6.020 (2) Definitions.

10 CSR 10-5.300, *Control of Emissions from Solvent Metal Cleaning*

This rule is not applicable because the parts washer at this installation uses a water based cleaning solution that is exempt from the rule.

10 CSR 10-5.510, *Control of Emissions of Nitrogen Oxides*

This rule does not apply to this facility because it has taken a federally enforceable plant-wide emissions limit on NOx of less than 100 tons/year.

10 CSR 10-5.455, *Control of Emissions from Solvent Cleanup Operations*

This installation is exempt from this rule because VOC emissions from solvent cleanup operations are less than 3 tons per 12-month rolling period.

10 CSR 10-5.500, *Control of Emissions from Volatile Organic Liquid Storage*

This installation is exempt from this rule because it does not store its volatile organic liquids in tanks that have storage capacities greater than or equal to 40,000 gallons.

10 CSR 10-5.520, *Control of Volatile Organic Compounds From Existing Major Sources*.

This rule is not applicable because the installation is not a major source for volatile organic compounds.

10 CSR 10-5.570, *Control of Sulfur Emissions from Stationary Boilers*

This rule does not apply to the boilers at this installation because they burn exclusively natural gas or fuel oil #2 with a sulfur content less than 0.5%.

Construction Permit History

The following construction permits have been issued for this installation:

Construction Permits Issued by the City of St. Louis:

All permits issued by the City of St. Louis have been superseded by Construction Permit 092016-012.

Permit Number	Description
98-07-044T	Expired temporary construction permit.
99-11-076	Installation of EP-12 – a 72.7 MMBtu/hr dual-fired boiler
00-04-020	Installation of EP-11A, EP-11B, and EP-11C – three 44 MMBtu/hr dual-fired boilers.
01-02-006	Increased fuel oil usage in EP-11A, EP-11B, and EP-11C.
01-05-008	Installation of EP-05 – a 500 kW diesel emergency generator.
01-05-008A	Administrative amendment.
01-02-006A	Administrative amendment.
01-12-038	Installation of EP-08A, EP-08B, EP-08C, EP-08D, EP-14A, EP-14B, and EP-14C – four 1,000 kW diesel emergency generators and three 1,250 kW diesel emergency generators.
01-12-038A	Administrative amendment.

Construction Permit 022013-004 Issued February 25, 2013

This permit was issued to clean up permits issued by the City of St. Louis' Division of Air Pollution Control. It has been superseded by Construction Permit 092016-012.

Construction Permit 102016-003, Issued October 17, 2016

This construction permit authorized the construction of six dual-fired (natural gas and fuel oil #2) boilers, five diesel emergency generators, a cooling tower, three underground storage tanks, three day storage tanks and a natural gas-fired air handling unit. The following table contains a complete list of equipment installed under this project:

Project Equipment/Emission Source List

Emission Source	Description	Location
EP-32A	Boiler #1 – 6.12 MMBtu/hr natural gas or fuel oil #2	Parkview Tower
EP-32B	Boiler #2 – 6.12 MMBtu/hr natural gas or fuel oil #2	
EP-32C	Boiler #3 – 6.12 MMBtu/hr natural gas or fuel oil #2	

EP-32D	Boiler #4 – 6.12 MMBtu/hr natural gas or fuel oil #2	
EP-32E	Boiler #5 – 6.12 MMBtu/hr natural gas or fuel oil #2	
EP-32F	Boiler #6 – 6.12 MMBtu/hr natural gas or fuel oil #2	
EP-33A	Emergency Generator #1 – 2,937 HP diesel	
EP-33B	Emergency Generator #2 – 2,937 HP diesel	
EP-33C	Emergency Generator #3 – 2,937 HP diesel	
CWT-11	Cooling Tower – 9,360 gpm, 0.001% drift loss	
ST-2	(3) Underground Storage Tanks – diesel 40,000 gallons each	
DT-2	(3) Day Tanks – diesel 220 gallons each	
EP-33D	Emergency Generator #1 – 1,474 HP diesel	
EP-33E	Emergency Generator #2 – 1,474 HP diesel	
EP-35A	Air Handling Unit – 1.05 MMBtu/hr natural gas	North Parking Garage

Construction Permit 092016-012, Issued September 21, 2016

This construction permit was issued as a remedial action to correct errors within previously issued construction permits and to permit equipment that was installed without properly obtaining a construction permit. The conditions of this permit supersede all special conditions found in Construction Permits 98-07-044T, 99-11-076, 00-04-020, 01-05-008, 01-05-008A, 01-02-006, 01-02-006A, 01-12-038, and 01-12-038A previously issued by the City of St. Louis' Division of Air Pollution Control. The conditions of this permit also supersede all special conditions found in Construction Permit 022013-004 previously issued by the MO Air Pollution Control Program.

New Source Performance Standards (NSPS) Applicability

10 CFR Part 60 Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators* is not applicable to this installation because none of the boilers are rated greater than 250 MMBtu/hr.

40 CFR Part 60 Subpart Da, *Standards of Performance for Electric Utility Steam Generating Units* is not applicable to the boilers at this installation because they are not *electric utility steam generating units* as defined at §60.41Da.

40 CFR Part 60 Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units* does not apply to the boilers at this installation because they each have a maximum heat input rate less than 100 MMBtu/hr.

40 CFR Part 60 Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* is applicable to the following boilers:

Emission Unit	Description	Location
EP-11A	Boiler #7 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	Power Plant
EP-11B	Boiler #8 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	
EP-11C	Boiler #9 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	

EP-12	Boiler #10 – 72.98 MMBtu/hr natural gas or 70.11 MMBtu/hr fuel oil #2; Constructed 2000	
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40 CFR Part 60 Subpart K, *Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction or Modification Commenced After June 11, 1973, and Prior to May 19, 1978*; and 40 CFR Part 60 Subpart Ka, *Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction or Modification Commenced After May 18, 1978 and Prior to July 23, 1984* do not apply to this installation because all petroleum storage tanks were constructed after 1984.

40 CFR Part 60 Subpart Kb, *Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984*: Several tanks at this installation have storage capacities that fall within the regulated volumes stated in the rule; however, the maximum true vapor pressure (as defined in the regulation) of the fuel oil stored does not exceed 15kPa (112.51 mmHg). Per the manufacturer’s SDS, the vapor pressure of the fuel oil is approximately 0.02 mmHg; therefore, this rule is not applicable. Applicability must be re-determined if any of the storage tanks begin holding other substances.

40 CFR Part 60 Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* and 40 CFR Part 63, Subpart ZZZZ are applicable to EP-33A through E, EP-15, EP-34, EP-16 and EP-31. However, when the engines are in compliance with 40 CFR Part 60 Subpart IIII, they are deemed in compliance with 40 CFR Part 63, Subpart ZZZZ.

Maximum Achievable Control Technology (MACT) Applicability

40 CFR Part 63 Subpart DDDDD, *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial and Institutional Boilers and Process Heaters* is not applicable to the boilers and water heaters at this installation because the installation is not a major source of HAPs.

40 CFR Part 63 Subpart JJJJJ, *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* is not applicable to the following emissions units because they will be operated such that they meet the definition of gas-fired boiler at §63.11237:

Emission Unit	Description	Location
EP-01A	Boiler #2 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1971	East Pavilion
EP-01B	Boiler #3 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1984	
EP-01C	Boiler #4 – 25.106 MMBtu/hr natural gas or fuel oil #2; Constructed 1984	
EP-11A	Boiler #7 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	Power Plant
EP-11B	Boiler #8 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	
EP-11C	Boiler #9 – 44 MMBtu/hr natural gas or fuel oil #2; Constructed 1992	
EP-12	Boiler #10 – 72.98 MMBtu/hr natural gas or 70.11	

	MMBtu/hr fuel oil #2; Constructed 2000	
EP-32A	Boiler #1 – 6.12 MMBtu/hr natural gas or 5.99 MMBtu/hr fuel oil #2; Constructed 2016	Parkview Tower
EP-32B	Boiler #2 – 6.12 MMBtu/hr natural gas or 5.99 MMBtu/hr fuel oil #2; Constructed 2016	
EP-32C	Boiler #3 – 6.12 MMBtu/hr natural gas or 5.99 MMBtu/hr fuel oil #2; Constructed 2016	
EP-32D	Boiler #4 – 6.12 MMBtu/hr natural gas or 5.99 MMBtu/hr fuel oil #2; Constructed 2016	
EP-32E	Boiler #5 – 6.12 MMBtu/hr natural gas or 5.99 MMBtu/hr fuel oil #2; Constructed 2016	
EP-32F	Boiler #6 – 6.12 MMBtu/hr natural gas or 5.99 MMBtu/hr fuel oil #2; Constructed 2016	

All other boilers are exempt because they burn only natural gas.

40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. The following table provides an analysis for the applicability of Subpart ZZZZ to the emergency generators at this installation:

Emission Unit	Description	Location	ZZZZ Applicable?
EP-10	Emergency Generator #2 – 1,550 HP diesel; Constructed 1993	Clayton Avenue Building (CAB)	No, exempt per §63.6585(f)(3)
EP-13C	Emergency Generator #3 – 940 HP diesel; Constructed 1992	St. Louis Children’s Hospital	No, exempt per §63.6585(f)(3)
EP-33A	Emergency Generator #1 – 2,937 HP diesel; Constructed 2016	Parkview Tower	Yes, will demonstrate compliance by complying with NSPS III per §63.6590(c)
EP-33B	Emergency Generator #2 – 2,937 HP diesel; Constructed 2016		
EP-33C	Emergency Generator #3 – 2,937 HP diesel; Constructed 2016		
EP-33D	Emergency Generator #1 – 1,474 HP diesel; Constructed 2016	St. Louis Children’s Hospital	Yes, will demonstrate compliance by complying with NSPS III per §63.6590(c)
EP-33E	Emergency Generator #2 – 1,474 HP diesel; Constructed 2016		
EP-03A	Emergency Generator #7 – 760 HP diesel; Constructed 1979	West Pavilion	No, exempt per §63.6585(f)(3)
EP-03B	Emergency Generator #8 – 760 HP diesel; Constructed 1979		
EP-03C	Emergency Generator #9 – 760 HP diesel; Constructed 1979		
EP-03D	Emergency Generator #10 – 760 HP diesel; Constructed 1979		
EP-03E	Emergency Generator #11 – 760 HP diesel; Constructed 1979		
EP-13A	Emergency Generator #1 – 1,135 HP	St. Louis Children’s	No, exempt per

	diesel; Constructed 1981	Hospital	§63.6585(f)(3)
EP-13B	Emergency Generator #2 – 1,135 HP diesel; Constructed 1981		
EP-13C	Emergency Generator #3– 940 HP diesel; Constructed 1992		
EP-13D	Emergency Generator #4 – 1,135 HP diesel; Constructed 1990		
EP-13E	Emergency Generator #5 – 1,135 HP diesel; Constructed 1990		
EP-13F	Emergency Generator #6 – 1,135 HP diesel; Constructed 1990		
EP-04	Emergency Generator #12 – 685 HP diesel; Constructed 1984	Queeny Tower	No, exempt per §63.6585(f)(3)
EP-05	Emergency Generator #20 – 749 HP diesel; Constructed 2001		
EP-06	Emergency Generator #13 – 600 HP diesel; Constructed 1984	South Parking Garage	No, exempt per §63.6585(f)(3)
EP-09	Emergency Generator #1 – 890 HP diesel; Constructed 1987	Clayton Avenue Building (CAB)	No, exempt per §63.6585(f)(3)
EP-10	Emergency Generator #2 – 1,550 HP diesel; Constructed 1993		
EP-14A	Emergency Generator #1 – 1,662 HP diesel; Constructed 2002	Southwest Tower (SWT)	No, exempt per §63.6585(f)(3)
EP-14B	Emergency Generator #2 – 1,662 HP diesel; Constructed 2002		
EP-14C	Emergency Generator #3 – 1,662 HP diesel; Constructed 2002		
EP-08A	Emergency Generator #1 – 1,482 HP diesel; Constructed 2002	Center for Advanced Medicine (CAM)	No, exempt per §63.6585(f)(3)
EP-08B	Emergency Generator #2 – 1,482 HP diesel; Constructed 2002		
EP-08C	Emergency Generator #3 – 1,482 HP diesel; Constructed 2002		
EP-08D	Emergency Generator #4 – 1,482 HP diesel; Constructed 2002		
EP-02A	Emergency Generator #1 – 764 HP diesel; Constructed 2005	East Pavilion	No, exempt per §63.6585(f)(3)
EP-02B	Emergency Generator #2 – 764 HP diesel; Constructed 2005		
EP-02C	Emergency Generator #3 – 764 HP diesel; Constructed 2005		
EP-02D	Emergency Generator #4 – 764 HP diesel; Constructed 2005		
EP-15	Emergency Generator – 480 HP diesel; Constructed 2008	Goldfarb College of Nursing (CON)	Yes, will demonstrate compliance by complying with NSPS

			III per §63.6590(c)
EP-34	Emergency Generator – 2,710 kW diesel; Constructed 2015	Institute of Health (IOH)	Yes, will demonstrate compliance by complying with NSPS III per §63.6590(c)
EP-16	Emergency Generator – 516 kW diesel; Constructed 2012	Center for Outpatient Health (COH)	Yes, will demonstrate compliance by complying with NSPS III per §63.6590(c)
EP-31	Emergency Generator #1 – 177 kW diesel; Constructed 2015	Duncan Central Garage (DCG)	Yes, will demonstrate compliance by complying with NSPS III per §63.6590(c)

40 CFR Part 63 Subpart WWWW, *National Emission Standards for Hospital Ethylene Oxide Sterilizers* is applicable to EP-17A, EP-17B, EP-17C and EP-17D.

40 CFR Part 63 Subpart Q, *National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers* does not apply to the cooling towers at this installation because they do not use chromium-based water treatment chemicals.

40 CFR Part 63, Subpart T, *National Emission Standards for Halogenated Solvent Cleaning* does not apply to the parts washer at the installation because none of the regulated chemicals listed in the rule are used in the parts washer.

National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability

The installation is subject to Missouri Air Conservation Law, Asbestos Abatement, 643.225 through 643.250; 10 CSR 10-6.080, Emission Standards for Hazardous Air Pollutants, 40 CFR Part 61, Subpart M, National Standards for Asbestos; and 10 CSR 10-6.250, Asbestos Abatement Projects - Certification, Accreditation, and Business Exemption Requirements if they undertake any construction or demolition projects that deal with or involve any asbestos containing materials. If the installation should undertake any construction or demolition projects in the future that deal with or involve any asbestos containing materials, the installation must follow all of the applicable requirements of the above rules related to that specific project.

40 CFR Part 64, Compliance Assurance Monitoring (CAM)

The CAM rule applies to each pollutant specific emission unit that:

- Is subject to an emission limitation or standard, and
- Uses a control device to achieve compliance, and
- Has pre-control emissions that exceed or are equivalent to the major source threshold.

Regulation 40 CFR Part 64 is not applicable to the installation. There are no emission units at the installation that are subject to a standard that requires the use of control equipment to meet the limits in the standard. Additionally, the emergency generator engines that are subject to 40 CFR Part 60, Subpart III and units that are subject to 111 or 112 standards promulgated after 11/15/90 are excluded from CAM.

Greenhouse Gas Emissions

Note that this source may be subject to the Greenhouse Gas Reporting Rule. In addition, Missouri regulations do not require the installation to report CO₂ emissions in their Missouri Emissions Inventory Questionnaire; therefore, the installation's CO₂ emissions were not included within this permit. If required to report, the applicant is required to report the data directly to EPA. The public may obtain CO₂ emissions data by visiting <http://epa.gov/ghgreporting/ghgdata/reportingdatasets.html>.

Other Regulatory Determinations

10 CSR 10-6.220, Restriction of Emission of Visible Air Contaminants

This rule is not applicable to the emergency generators (diesel engines) at this installation. They are exempt per 10 CSR 10-6.220(1)(A). The natural gas-fired boilers and water heaters are exempt per 10 CSR 10-6.220 (1)(L). This regulation is applicable to the cooling towers, but cooling towers emit little or no visible emissions during normal operation. The cooling towers emit large amounts of water vapor which make it difficult to determine if/how much visible contaminant is being emitted. The Air Pollution Control Program is not requiring any monitoring, record keeping or reporting for the cooling towers at this time.

Emission Units EP-01A through C (Boilers #2-#4), and EP-32A through F (Boilers #1-#6) are subject to this rule and must perform visible emissions monitoring as required by Permit Condition 17 only while the units are combusting fuel oil.

10 CSR 10-6.260, Restriction of Emission of Sulfur Compounds

This regulation was rescinded by the State of Missouri on November 30, 2015. The regulation remains in this operating permit as it is contained in Missouri's SIP and remains an applicable federal requirement. This is a federal only requirement. Permit Conditions 15 and 16 will no longer be applicable when EPA takes final action to incorporate 10 CSR 10-6.261 in Missouri's SIP in place of 10 CSR 10-6.260. No action is required on the part of the permittee to remove this permit condition from this operating permit upon the removal of 10 CSR 10-6.260 from the Missouri SIP.

10 CSR 10-6.261, Control of Sulfur Dioxide Emissions

The following emission units are exempt from this rule per 10 CSR 10-6.261(1)(A) because they combust only pipeline grade natural gas: EP-19A-C, EP-20A&B, EP-21A&B, EP-22A&B, EP-27, EP-28A&B, EP-29A-E, EP-30A-C and EP-35. This rule does not apply to the four Power Plant Boilers (EP11A-C and EP-12) because these boilers are subject to 40 CFR Part 60, Subpart Dc which contains a more stringent sulfur limit for the boilers and thus, per 10 CSR 10-6.261(1)(C), they are exempt.

Other Regulations Not Cited in the Operating Permit or the Above Statement of Basis

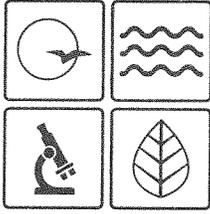
Any regulation which is not specifically listed in either the Operating Permit or in the above Statement of Basis does not appear, based on this review, to be an applicable requirement for this installation for one or more of the following reasons.

- 1) The specific pollutant regulated by that rule is not emitted by the installation.
- 2) The installation is not in the source category regulated by that rule.
- 3) The installation is not in the county or specific area that is regulated under the authority of that rule.
- 4) The installation does not contain the type of emission unit which is regulated by that rule.
- 5) The rule is only for administrative purposes.

Should a later determination conclude that the installation is subject to one or more of the regulations cited in this Statement of Basis or other regulations which were not cited, the installation shall determine and demonstrate, to the Air Pollution Control Program's satisfaction, the installation's compliance with that regulation(s). If the installation is not in compliance with a regulation which was not previously cited, the installation shall submit to the APCP a schedule for achieving compliance for that regulation(s).

Response to Public Comments

The draft Part 70 Operating Permit for Barnes-Jewish Hospital, St. Louis (510-0204) was placed on public notice as of February 23, 2018 for a 30-day comment period. The public notice was published on the Department of Natural Resources' Air Pollution Control Program's web page at: <http://www.dnr.mo.gov/env/apcp/PermitPublicNotices.htm>. No comments were received during this period.



Missouri Department of

dnr.mo.gov

NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

APR 19 2018

Mr. Gregory Patterson
Barnes-Jewish Hospital, St. Louis
4901 Forest Park Avenue, Mail Stop:90-75-582
St. Louis, MO 63110

Re: Barnes-Jewish Hospital, St. Louis, 510-0204
Permit Number: OP2018-035

Dear Mr. Patterson

Enclosed with this letter is your intermediate operating permit. Please review this document carefully. Operation of your installation in accordance with the rules and regulations cited in this document is necessary for continued compliance. It is very important that you read and understand the requirements contained in your permit.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

You may appeal this permit to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.078.16 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within thirty (30) days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If you send your appeal by registered or certified mail, we will deem it filed on the date you mailed it. If you send your appeal by a method other than registered or certified mail, we will deem it filed on the date the AHC receives it.

If you have any questions or need additional information regarding this permit, please contact the Air Pollution Control Program (APCP) at (573) 751-4817, or you may write to the Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Michael J. Stansfield, P.E.
Operating Permit Unit Chief

MJS:jwj

Enclosures

c: PAMS File: 2016-12-046



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