

STATE OF MISSOURI

PERMIT BOOK



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

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

Permit Number: 07 2 0 1 1 - 0 1 3 Project Number: 2011-03-026

Installation Number: 047-0020

Parent Company: North Kansas City Hospital

Parent Company Address: 2800 Clay Edwards Drive, North Kansas City, MO 64116

Installation Name: North Kansas City Hospital

Installation Address: 2800 Clay Edwards Drive, North Kansas City, MO 64116

Location Information: Clay County, S13, T50, R33W

Application for Authority to Construct was made for:

Four dual-fuel fired boilers, seven diesel fired emergency generators, six small natural gas fired boilers, six natural gas fired water heaters, two underground diesel tanks, and a parts washer. Each of these units was installed without a construction permit determination. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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- Standard Conditions (on reverse) are applicable to this permit.
 - Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

JUL 25 2011

EFFECTIVE DATE

A handwritten signature in cursive script, appearing to read "Kymberly Moore", written over a horizontal line.
DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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Project No.	2011-03-026

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

North Kansas City Hospital
Clay County, S13, T50, R33W

1. Emission Limitation
 - A. North Kansas City Hospital shall emit less than 40.0 tons of nitrogen oxides (NO_x) in any consecutive 12-month period from the emission units in Table 1.

Table 1

Emission Unit	Description
EU-01	24.378 MMBtu/hr Johnston dual fuel boiler
EU-02	24.378 MMBtu/hr Johnston dual fuel boiler
EU-18	896 horsepower Caterpillar emergency generator
EU-19	896 horsepower Caterpillar emergency generator

- B. Attachment A and A1 or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.A.
2. Boiler Fuel Requirement
 - A. North Kansas City Hospital shall combust only natural gas, fuel oil 1&2 (ASTM D396), or diesel fuel 1&2 (ASTM D975) in EU-01, EU-02, EU-03, and EU-04.
 - B. Oil or diesel fuel shall not exceed 0.0015% weight sulfur (15 parts per million weight).
 - C. North Kansas City Hospital shall obtain records from the fuel supplier for each oil or diesel fuel shipment that show sulfur content in weight percent or parts per million.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

3. **Emergency Generator Requirements**
 - A. The individual operating hours of each of the seven emergency generators (EU-17 through EU-23) shall not exceed 500 hours annually. Each emergency generator shall be equipped with a non-resettable running time meter. Each emergency generator shall only be operated during emergencies to provide back-up power when electric power from public utilities is interrupted, for demand response, and for maintenance and testing.
 - B. Attachment B or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with the operating hour restrictions in Special Condition 3.A.
 - C. North Kansas City Hospital shall combust only fuel oil 1&2 (ASTM D396), or diesel fuel 1&2 (ASTM D975) in each of the seven emergency generators (EU-17 through EU-23).
 - D. Oil or diesel fuel shall not exceed 0.0015% weight sulfur (15 parts per million weight).
 - E. North Kansas City Hospital shall obtain records from the fuel supplier for each oil or diesel fuel shipment that show sulfur content in weight percent or parts per million.
4. **Record Keeping and Reporting Requirements**
 - A. North Kansas City Hospital shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used.
 - B. North Kansas City Hospital shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

5. Performance Testing
 - A. North Kansas City Hospital shall conduct performance testing on EU-01, EU-02, EU-03, and EU-04 in accordance with 40 CFR 60 Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*.
 - B. These tests shall be performed within 60 days of this permit's issuance and shall be conducted in accordance with the Performance Testing Procedures outlined in Special Condition 5.A.
 - C. A completed Proposed Test Plan Form (enclosed) must be submitted to the Air Pollution Control Program 30 days prior to the proposed test date so that the Air Pollution Control Program may arrange a pretest meeting, if necessary, and assure that the test date is acceptable for an observer to be present. The Proposed Test Plan may serve the purpose of notification and must be approved by the Director prior to conducting the required emission testing.
 - D. Two copies of a written report of the performance test results shall be submitted to the Director within 30 days of completion of any required testing. The report must include legible copies of the raw data sheets, analytical instrument laboratory data, and complete sample calculations from the required U.S. EPA Method for at least one sample run.
 - E. The test report is to fully account for all operational and emission parameters addressed both in the permit conditions as well as in any other applicable state or federal rules or regulations.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2011-03-026
Installation ID Number: 047-0020
Permit Number:

North Kansas City Hospital
2800 Clay Edwards Drive
North Kansas City, MO 64116

Complete: March 28, 2011

Parent Company:
North Kansas City Hospital
2800 Clay Edwards Drive
North Kansas City, MO 64116

Clay County, S13, T50, R33W

REVIEW SUMMARY

- North Kansas City Hospital has applied for authority to construct four dual-fuel fired boilers, seven diesel fired emergency generators, six small natural gas fired boilers, six natural gas fired water heaters, two underground diesel tanks, and a parts washer. Each of these units was installed without a construction permit determination.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are from the combustion of fuel oil and natural gas.
- The four dual-fuel boilers are subject to 40 CFR Part 60 Subpart Dc - *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*. Compliance with fuel oil sulfur limits may be determined based upon certification from the fuel supplier according to § 60.42c(h)(1). The sulfur dioxide (SO₂) initial performance test shall consist of the certificate from the fuel supplier according to § 60.44c(h). The dual-fuel boilers are subject to opacity standards according to § 60.43c(c). The dual-fuel boilers are subject to initial performance testing required under § 60.8, according to § 60.45c.
- The emergency generators are not subject to 40 CFR Part 60 Subpart IIII - *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* as each of these generators was manufactured and installed in or before 2004.
- The four dual-fuel boilers are subject (effective May 20, 2011) to 40 CFR Part 63 Subpart JJJJJJ - *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* as they combust liquid fuel at an area source. The dual-fuel boilers are not affected sources subject to

another MACT, are not solid waste combustors, are not gas-fired boilers, and are not hot water heaters. Therefore, they do not meet the exemptions in § 63.11195.

- The seven emergency generators do not have to meet the requirements of 40 CFR Part 63 Subpart ZZZZ - *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* according to § 63.6590(b)(3)(viii), but must meet the requirements of § 63.6640(f)(1).
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of NOx are conditioned below the de minimis level. Potential emissions of other pollutants are proportionately reduced to de minimis levels.
- This installation is located in Clay County, a maintenance area for ozone and an attainment area for all other criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Performance testing is required for the four dual-fuel boilers according to NSPS Subpart Dc.
- A basic operating permit application is required for this installation within 30 days of the issuance of this permit.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

North Kansas City Hospital (herein referred to as hospital) is an existing hospital located in North Kansas City, Missouri. No permits have been issued to the hospital from the Air Pollution Control Program. However, the installation was issued a Notice of Violation KCR2010122212064356 as a result of a December 22, 2010 inspection. No construction permit application had been submitted for four dual-fuel fired boilers.

The installation is defined in Table 3. The installation does not have ethylene oxide sterilization units.

Table 3: Emission Units at the Installation

Emission Unit	¹ MHDR	Description	Manufacture / Install Year	Construction Permit Applicability by Project
6	2.35	Kewanee N.G. boiler	1971	no permit required, 10 CSR 10-6.060(1)(B)
7	2.48	Burnham N.G. boiler	1987	no permit required, project less than de minimis, 10 CSR 10-6.060(1)(B)
8	2.48	Burnham N.G. boiler	1987	
21	750	Cummins emergency generator	1991	no permit required, project less than de minimis, 10 CSR 10-6.060(1)(B)
22	750	Cummins emergency generator	1991	
23	519	Caterpillar emergency generator	1991	
11	0.26	AO Smith water heater	1992	
12	0.19	AO Smith water heater	1992	
18	896	Caterpillar emergency generator	1999	permit required, project above de minimis
19	896	Caterpillar emergency generator	1999	
1	24.378	Johnston dual fuel boiler	1999/2000	
2	24.378	Johnston dual fuel boiler	1999/2000	permit required, project above hourly insignificance level in 10 CSR 10-6.061(3)(A)3.
17	325	International emergency generator	2002	
3	24.345	Johnston dual fuel boiler	2003/2004	
4	24.345	Johnston dual fuel boiler	2003/2004	
20	896	Caterpillar emergency generator	2004	
9	2	Fulton N.G. boiler	2007	no permit required, 10 CSR 10-6.061(3)(A)1.A.
10	0.3	Dristream N.G. boiler	2007	
15	0.399	Dominator water heater	2007	
16	0.399	Dominator water heater	2007	
13	0.75	Dominator water heater	2008	
14	0.75	Dominator water heater	2008	
5	1.8	Fulton N.G. boiler	2009	no permit required, 10 CSR 10-6.061(3)(A)1.A.

¹ Maximum Hourly Design Rate (MHDR) listed in brake horsepower for generators and million British thermal units per hour (MMBtu/hr) for heaters and boilers.
N.G. = natural gas fired

PROJECT DESCRIPTION

No equipment is being installed under this permit. This project includes two separate projects where the installation should have applied for construction permits. Emissions are from combustion of fuel oil, diesel, and natural gas and evaporative losses from fuel tanks and a parts washer. None of the emission units are equipped with control devices. Emergency generators that meet the requirements of 10 CSR 10-6.061 *Construction Permit Exemptions* (3)(A)BB. are exempt from construction permitting, however their potential to emit is included in the project and installation.

EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.3 *Fuel Oil Combustion* September 1999, Section 1.4 *Natural Gas Combustion* July 1998, Section 3.3 *Gasoline and Diesel Industrial Engines* August 2000, Section 3.4 *Large Stationary Diesel and All Dual-fuel Engines* October 1996, Section 4.6 *Solvent Degreasing* April 1981, and TANKS software version 4.09D.

The dual-fuel boilers' potential emissions represent the higher potential emissions per pollutant based upon either natural gas or No. 2 fuel oil combustion. NSPS Subpart Dc requires the fuel oil sulfur content to not exceed 5,000 parts per million (ppm). The installation confirmed diesel fuel not exceeding 15 ppm would be used. Hazardous air pollutant (HAP) potential emissions from the dual-fuel boilers were based upon the closest matching emission factor for the process, source classification code (SCC) 10100401 for No. 6 oil combustion. The dual-fuel boilers are subject effective May 20, 2011 to MACT Subpart JJJJJJ.

Potential emissions of SO_x from the generators were calculated using fuel oil with sulfur content not exceeding 15 ppm. Potential emissions of SO_x from the generators with engines less than 600 horsepower were calculated using mass balance, and not the AP-42 emission factor. The generators are not subject to MACT Subpart ZZZZ if they meet the definition of emergency found in § 63.6640(f)(1), which states there is no time limit on the use of emergency stationary reciprocating internal combustion engines (RICE) in emergency situations. Also, each emergency stationary RICE 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. Each emergency stationary RICE may be operated up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity; except that owners and operators may operate the emergency engine for a maximum of 15 hours per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The engine may not be operated for more than 30 minutes prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent. The 15 hours per year of demand response operation are counted as part of the 50 hours of operation per year provided for non-emergency situations.

However, EPA has recommended that in determining the potential to emit for emergency generators, 500 hours of operation per year should be used. The guidance is not intended to discourage permitting authorities from establishing operational limitations in construction permits when such limitations are deemed appropriate or necessary. Individual hours of operation have been limited to 500 hours per year for potential emission purposes.

Potential emissions of the application represent the potential of the equipment installed under the projects associated with boiler construction in 2000 and 2004, assuming continuous operation (8,760 hours per year). The installation conditioned potential represents the potential emissions from all equipment in Table 3. The installation has not previously submitted an emissions inventory questionnaire (EIQ). The following table provides an emissions summary for this project.

Table 4: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	¹ Potential Emissions of the Application	² Potential Emissions of the Application	Installation Conditioned Potential
PM _{2.5}	10.0	N/D	3.32	3.51	7.72
PM ₁₀	15.0	N/D	3.69	3.89	8.49
SO _x	40.0	N/D	0.32	0.33	0.70
NO _x	40.0	N/D	< 40.0	38.36	97.46
VOC	40.0	N/D	1.39	1.50	4.14
CO	100.0	N/D	19.44	19.34	46.81
HAPs	10.0/25.0	N/D	0.39	0.40	0.91

N/D = Not Determined

¹ Potential emissions of the application for project associated with boiler construction in 2000.

² Potential emissions of the application for project associated with boiler construction in 2004.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of NO_x are conditioned below the de minimis level. Potential emissions of other pollutants are proportionately reduced to de minimis levels.

APPLICABLE REQUIREMENTS

North Kansas City Hospital shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110. The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of a hardcopy Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions. Alternatively, submission of an electronic copy via MoEIS is required May 1.
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *New Source Performance Regulations*, 10 CSR 10-6.070 – *New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units*, 40 CFR Part 60, Subpart Dc.
- *Maximum Achievable Control Technology (MACT) Regulations*, 10 CSR 10-6.075, *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 CFR Part 63, Subpart JJJJJJ.
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260 does not apply to the four dual-fuel boilers or exclusively natural gas fired boilers and water heaters. However, it does apply to the generators.
- *Maximum Allowable Emission of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating*, 10 CSR 10-2.040 does not apply to the four dual-fuel boilers since an NSPS applies. However, it does apply to the natural gas fired boilers and water heaters.
- *Control of Emissions from Solvent Metal Cleaning*, 10 CSR 10-2.210.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

David Little
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 4, 2011, received March 7, 2011, designating North Kansas City Hospital as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated March 30, 2011.

Mr. Joseph Becker
Manager Plant Operations
North Kansas City Hospital
2800 Clay Edwards Drive
North Kansas City, MO 64116

RE: New Source Review Permit - Project Number: 2011-03-026

Dear Mr. Becker:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application, and with your operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact David Little, at the Department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:dll

Enclosures

c: Kansas City Regional Office
PAMS File: 2011-03-026

Permit Number: