

STATE OF MISSOURI



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 2007 - 003** Project Number: 2007-04-004

Parent Company: The Curators of the University of Missouri

Parent Company Address: 8 Research Park Development Building
Columbia, MO 65211

Installation Name: University of Missouri - Columbia

Installation Address: 8 Research Park Development Building
Columbia, MO 65211

Location Information: Boone County, S13, T48N, R13W

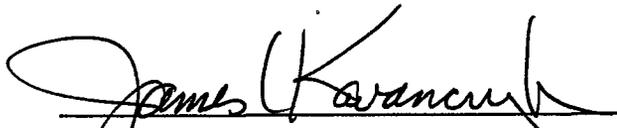
Application for Authority to Construct was made for:

The installation of three (3) Dual Fired Steam Boilers, Diesel Emergency Generator that will be running on Diesel and 6000-gallon Underground Storage Tank. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

JUL - 9 2007

EFFECTIVE DATE


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 (change to 18 months for PSD permits) 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 (change to 18 months for PSD permits) 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 this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located with 15 days after the actual start up of this (these) air contaminant source(s).

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

Project Number: 2007-04-004
Installation ID Number: 019-0047
Permit Number:

University of Missouri - Columbia
8 Research Park Development Building
Columbia, MO 65211

Complete: April 04, 2007
Reviewed: June 20, 2007

Parent Company:
The Curators of the University of Missouri
8 Research Park Development Building
Columbia, MO 65211

Boone County, S13, T48N, R13W

REVIEW SUMMARY

- University of Missouri - Columbia has applied for authority to install three (3) Dual Fired Steam Boilers, a Diesel Emergency Generator that will be running on Diesel and 6000-gallon Underground Storage Tank.
- Hazardous Air Pollutant (HAP) emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment.
40 CFR Part 60 - Subpart Dc does not apply to this project because the maximum design heat input capacity for each boiler is less than 2.9 MW (10 MMBtu/hr).
40 CFR Part 60 - Subpart Kb does not apply to this project because the storage vessel capacity is less than 75 cubic meters (m³)
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations applies to the proposed equipment.
- Flue Gas Recirculation is being used to control the pollutant emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of criteria pollutants are less than de minimis levels
- This installation is located in Boone County, an attainment area for all criteria air pollutants.

- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment/source.
- Modification to your Part 70 Operating Permit is required for this installation within one (1) year of completion of modification.
- Approval of this permit is recommended without special conditions.

INSTALLATION DESCRIPTION

University of Missouri - Columbia, Facility Number 019-0047, includes the University of Missouri - Columbia Campus and Hospital. The facility is a major source operating under a Part 70 Operating Permit (OP1999-031) issued on March 18, 1999. An application for the Part 70 Operating Permit Renewal was received on September 17, 2003 and is currently in technical review.

The following construction permits have been issued to University of Missouri – Columbia from the Air Pollution Control Program

| Permit Number | Description |
|---------------|--|
| 1181-003 | Installation of one (1) incinerator. |
| 0990-004 | Replacement of incinerator. |
| 0697-025 | Installation of ten (10) cold solvent parts washers. |
| 0697-024 | Installation of a 169 KVA emergency generator with a 500-gallon diesel tank. |
| 0299-013 | Installation of two (2) 900 kW diesel emergency generators with a 4,000-gallon tank. |
| 1299-022 | Installation of a 2.6 MMBtu/hr emergency generator. |
| 042000-009 | Installation of a 240 kW emergency generator. |
| 032002-002 | Installation of a paint booth and two (2) solvent parts washers. |
| 012003-005 | Installation of a 300 kW emergency generator, a 750 kW emergency diesel generator, and two (2) diesel tanks. |
| 032003-028 | Installation of a 450 kW Emergency diesel generator w/ 300-gallon fuel tank. |
| 112005-002 | Installation of a paint spray booth located in the MU Quarterdeck Building. |
| 022007-011 | Installation of ThermTec, Model A-8-P-S, animal incinerator |

PROJECT DESCRIPTION

The installation of three Dual Fired Steam Boilers (B-1, B-2 and B-3). B-1 and B-2 have a Maximum Hourly Design Rate of 3.36 Million BTU/HR each, B-3 has a Maximum Hourly Design Rate of 5.0 Million BTU/HR. B-1, B-2 and B-3 will be running on either Distillate Fuel 1-4 or Natural Gas. One Emergency Generator that will be running on Diesel and has a capacity of 1250 KW. A 6000-gallon Underground Storage Tank that will store Fuel # 2.

Boilers are equipped with Flue Gas Recirculation to control air pollutants. Flue Gas Recirculation is being used to control the pollutant emissions from each of the three (3) dual Fired Steam Boilers in this permit

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, chapter 1 section 1.3, 1.4 and Chapter 3 section 3.3. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year) and 500 hours per year for the emergency generator. The following table provides an emissions summary for this project.

Existing potential emissions are from the previous issued permits (Permit Numbers 022007-011). Existing actual emissions are from the 2006 Emissions Inventory Questionnaire (EIQ). The following table provides an emissions summary for this project

Table 1: Emissions Summary (tons per year)

| Pollutant | Regulatory De Minimis Levels | Existing Potential Emissions | Existing Actual Emissions (2006 EIQ) | Potential Emissions of the Application | New Installation Conditioned Potential |
|------------------|------------------------------|------------------------------|--------------------------------------|--|--|
| PM ₁₀ | 15.0 | 143.68 | N/A | 1.42 | N/A |
| SO _x | 40.0 | 58.54 | N/A | 2.69 | N/A |
| NO _x | 40.0 | 880.25 | N/A | 21.83 | N/A |
| VOCs | 40.0 | 301.1 | 5.35 | 1.48 | N/A |
| CO | 100.0 | 323.64 | N/A | 7.44 | N/A |
| HAPs | 10.0/25.0 | 158.26 | N/A | 0.11 | N/A |

*N/A = Not Applicable

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 all criteria pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

University of Missouri - Columbia 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 an Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions.
- *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 Visible Air Contaminants, 10 CSR 10-6.220*
- *Restriction of Emission of Odors, 10 CSR 10-3.090*

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Sulfur Compounds, 10 CSR 10-6.260*
- *Maximum Allowable Emissions of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating, 10 CSR 10-3.060*

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 without special conditions.

Samer Al-Shoukhi
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 03, 2007, received March 30, 2007 designating The Curators of the University of Missouri as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Northeast Regional Office Site Survey, dated April 26, 2007.

Mr. Peter C. Ashbrook
Director, Environmental Health & Safety
University of Missouri - Columbia
8 Research Park Development Building
Columbia, MO 65211

RE: New Source Review Permit - Project Number: 2007-04-004

Dear Mr. Ashbrook:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, 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 amended 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 contact me at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or telephone (573) 751-4817. Thank you for your time and cooperation.

Thank you,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH: sak

Enclosures

c: Northeast Regional Office
PAMS File: 2007-04-004

Permit Number: