



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: **062013-009**Project Number: 2013-02-062
Installation Number: 077-0005

Parent Company: City Utilities of Springfield

Parent Company Address: 301 E. Central, P. O. Box 551, Springfield, MO 65801-0551

Installation Name: City Utilities of Springfield - James River Power Station

Installation Address: 5701 South Kissick Road, Springfield, MO 65804

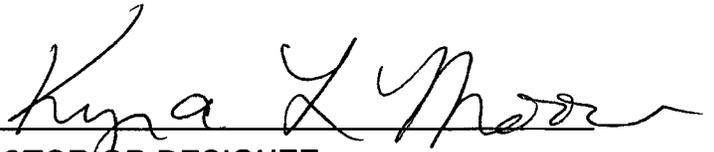
Location Information: Greene County, SE 1/4 of SW 1/4 of S20, T28N, R21W

Application for Authority to Construct was made for:

A natural gas-fired building heat boiler. 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.

JUN 19 2013

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 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 startup 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 startup 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.

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

Project Number: 2013-02-062
Installation ID Number: 077-0005
Permit Number:

City Utilities of Springfield - James River Power Station Complete: February 25, 2013
5701 South Kissick Road
Springfield, MO 65804

Parent Company:
City Utilities of Springfield
301 E. Central, P. O. Box 551
Springfield, MO 65801-0551

Greene County, SE 1/4 of SW 1/4 of S20, T28N, R21W

REVIEW SUMMARY

- City Utilities of Springfield - James River Power Station has applied for authority to install a natural gas-fired package heating boiler with an approximate 350 horsepower rating. The boiler's input MHDR will not exceed 15 MMBtu/hr. Its annual natural gas usage is not expected to exceed 130 million cubic feet, and it will use natural gas from an existing pipeline which also supplies other equipment. It will provide building heat to the power station as an alternative to operating the unit boilers.
- Very low lead and HAP emissions are expected from natural gas combustion.
- New Source Performance Standard (NSPS) 40 CFR 60 Subpart Dc, "*Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*" applies to the proposed equipment.
- None of the NESHAPs apply to the proposed equipment.
- Maximum Achievable Control Technology (MACT) regulation 40 CFR 63 Subpart DDDDD, "*National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*", applies to the proposed equipment.
- Low NO_x burners with a control efficiency of 30% are being used to control the NO_x 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 all pollutants are below de minimis levels.

- This installation is located in Greene County, an attainment area for all criteria pollutants.
- This installation is on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation is classified as item number No. 26, fossil-fuel-fired steam electric plants totaling more than 250 million British thermal units per hour heat. The installation's major source level is 100 tons per year and fugitive emissions are counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for this equipment.
- City Utilities of Springfield - James River Power Station is due to submit an application to renew its Operating Permit on or before May 26, 2013. This new equipment will be incorporated into the Operating Permit when it is renewed.
- Approval of this permit is recommended without special conditions.

INSTALLATION DESCRIPTION

City Utilities of Springfield - James River Power Station is an electric power generation facility located on approximately 1,440 acres within the city of Springfield, Missouri. The plant site is on 147 acres bordering Lake Springfield. The installation is a major source of criteria air pollutants. It consists of five (5) boilers that can burn coal, natural gas, fuel oil, and propane. These boilers are used to create steam that powers a turbine to produce electricity. The boilers vary in size from 250 to 1,000 MMBtu/hr heat input and have a combined electrical output capacity of 253 MW. The installation also has two natural gas-fired combustion turbines with nameplate capacities of 75 MW and 80 MW. The turbines are used to provide peaking generation during periods of high electrical demand or system emergencies. Particulate emissions from the coal-fired units are controlled by electrostatic precipitators. The turbines utilize water injection to control nitrogen oxide emissions. A Part 70 Operating Permit (OP2008-055) was issued in November 2008.

The following New Source Review permits have been issued to City Utilities of Springfield - James River Power Station from the Air Pollution Control Program.

Table 1. Previously Issued Construction Permits

| Permit Number | Description |
|----------------|---|
| 1085-002A | Dry Fly Ash Collection System |
| 0888-002A | Construct Gas Turbine |
| 0391-002 (PSD) | Installation Of Second Gas Turbine Generator |
| 0697-008 | Construction Of Coal Unloading And Handling Equipment |
| 042000-016 | Installation Of Water Fogging System To Air Inlet Of CT#12 |
| 082001-003 | Modification To Increase Coal Handling And Unloading |
| 032003-017 | Modification Of Fly Ash Collection System |
| 032003-017A | Amendment To Permit No. 032003-017 |
| 102006-006 | Propane Peak Shaving |
| 032007-003 | Replacement of existing Over-Fire Air (OFA) combustion controls and upgrade of existing burner configuration with an "ultra low-NO _x " design on Unit 3, Unit 4, and Unit 5. A High Energy Reagent Technology (HERT) system will be installed for additional NO _x control |
| 062007-002 | Addition of coal crusher and fuel oil storage tank |
| 072009-014 | Temporary permit for biomass combustion |

Acid rain permits have also been issued to City Utilities of Springfield - James River Power Station from the Air Pollution Control Program.

No NOEs or NOV's have been issued to City Utilities of Springfield – James River Power Station in the last five years.

PROJECT DESCRIPTION

City Utilities of Springfield – James River Power Station has applied for authority to install a natural gas-fired package heating boiler with an approximate 350 horsepower rating and low NO_x burners. The boiler's input MHR will not exceed 15 MMBtu/hr. It will provide building heat to the power station as an alternative to operating the unit boilers.

EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were taken from the "Cleaver-Brooks Boiler Expected Emission Data" document dated 01/02/13. This document was provided by a potential manufacturer/supplier indicating emission rates for a typical boiler similar to the proposed project. The boiler, which is yet to be purchased, will conform to the emission rates supplied in the application. It is usual to test manufacturer's data to confirm emission rates. However, using emission rates from the EPA document AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, also gives less than de minimis values for all criteria pollutants. Therefore testing is deemed unnecessary for this project's permit.

The following table provides an emissions summary for this project. Existing potential emissions were taken from the most recent non-temporary NSR permit, 062007-002. Existing actual emissions were taken from the installation's 2012 EIQ. Uncontrolled potential emissions of the application represent the potential of the new equipment without controls, assuming continuous operation (8760 hours per year). Controlled potential emissions of the application represent the potential of the new equipment with low NO_x burners, also assuming continuous operation.

Table 2: Emissions Summary (tons per year)

| Pollutant | Regulatory <i>De Minimis</i> Levels | Existing Potential Emissions | Existing Actual Emissions (2012 EIQ) | Uncontrolled Potential Emissions of the Application | Controlled Potential Emissions of the Application |
|--------------------------------|---|------------------------------------|---|---|---|
| PM ^A | 25.0 | N/D | N/D | 0.46 | 0.46 |
| PM ₁₀ ^B | 15.0 | 1069 | 278.56 | 0.85 | 0.85 |
| PM _{2.5} ^B | 10.0 | N/D | 175.14 | 0.83 | 0.83 |
| SO _x | 40.0 | 32157 | 1723.70 | 0.04 | 0.04 |
| NO _x | 40.0 | <9078 | 879.28 | 6.66 | 4.66 |
| VOC | 40.0 | 147 | 15.12 | 0.26 | 0.26 |
| CO ^C | 100.0 | 3388 | 425.31 | 2.37 | 2.37 |
| GHG (CO ₂ e) | 75,000 / 100,000 | N/D | N/D | 7642 | 7642 |
| Pb | 0.6 | N/D | 0.015 | 3.3E-09 | 3.3E-09 |
| HAPs | 10.0/25.0 | 796 | 8.17 | 4.8E-04 | 4.8E-04 |

N/D = Not Determined

^A Filterable only

^B Filterable and condensable

^C Worst case, at 100% firing rate, was determined by multiplying emission factor (in lb/MMBtu) at 25%, 50%, 75%, and 100% firing rates by heat input (in MMBtu/hr) for the firing rate.

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 pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

City Utilities of Springfield - James River Power Station 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. Springfield/Greene County local ordinances may also apply.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.060
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

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

SPECIFIC REQUIREMENTS

- *New Source Performance Regulations*, 10 CSR 10-6.070
 - *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 CFR Part 60, Subpart Dc.
- *MACT Regulations*, 10 CSR 10-6.075
 - *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters* 40 CFR Part 63, Subpart DDDDD.

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.

Cheryl Steffan
New Source Review Unit

Date

PERMIT DOCUMENTS

The followings document is incorporated by reference into this permit:

- The Application for Authority to Construct form, dated February 21, 2013, received February 25, 2013, designating City Utilities of Springfield - James River Power Station as the owner and operator of the installation.
- "Cleaver-Brooks Boiler Expected Emission Data" document dated 01/02/13, received February 25, 2013 with the application.

APPENDIX A

Abbreviations and Acronyms

| | | | |
|-------------------------------|--|-------------------------------|--|
| % | percent | m/s | meters per second |
| °F | degrees Fahrenheit | Mgal | 1,000 gallons |
| acfm | actual cubic feet per minute | MW | megawatt |
| BACT | Best Available Control Technology | MHDR | maximum hourly design rate |
| BMPs | Best Management Practices | MMBtu | Million British thermal units |
| Btu | British thermal unit | MMCF | million cubic feet |
| CAM | Compliance Assurance Monitoring | MSDS | Material Safety Data Sheet |
| CAS | Chemical Abstracts Service | NAAQS ... | National Ambient Air Quality Standards |
| CEMS | Continuous Emission Monitor System | NESHAPs | |
| CFR | Code of Federal Regulations | | National Emissions Standards for Hazardous Air Pollutants |
| CO | carbon monoxide | NO_x | nitrogen oxides |
| CO₂ | carbon dioxide | NSPS | New Source Performance Standards |
| CO_{2e} | carbon dioxide equivalent | NSR | New Source Review |
| COMS | Continuous Opacity Monitoring System | PM | particulate matter |
| CSR | Code of State Regulations | PM_{2.5} | particulate matter less than 2.5 microns in aerodynamic diameter |
| dscf | dry standard cubic feet | PM₁₀ | particulate matter less than 10 microns in aerodynamic diameter |
| EQ | Emission Inventory Questionnaire | ppm | parts per million |
| EP | Emission Point | PSD | Prevention of Significant Deterioration |
| EPA | Environmental Protection Agency | PTE | potential to emit |
| EU | Emission Unit | RACT | Reasonable Available Control Technology |
| fps | feet per second | RAL | Risk Assessment Level |
| ft | feet | SCC | Source Classification Code |
| GACT | Generally Available Control Technology | scfm | standard cubic feet per minute |
| GHG | Greenhouse Gas | SIC | Standard Industrial Classification |
| gpm | gallons per minute | SIP | State Implementation Plan |
| gr | grains | SMAL | Screening Model Action Levels |
| GWP | Global Warming Potential | SO_x | sulfur oxides |
| HAP | Hazardous Air Pollutant | SO₂ | sulfur dioxide |
| hr | hour | tph | tons per hour |
| hp | horsepower | tpy | tons per year |
| lb | pound | VMT | vehicle miles traveled |
| lbs/hr | pounds per hour | VOC | Volatile Organic Compound |
| MACT | Maximum Achievable Control Technology | | |
| µg/m³ | micrograms per cubic meter | | |

Mr. Daniel S. Hedrick
Manager - Environmental Compliance
City Utilities of Springfield
301 E. Central, P. O. Box 551
Springfield, MO 65801-0551

RE: New Source Review Permit - Project Number: 2013-02-062

Dear Mr. Hedrick:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. 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 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 Cheryl Steffan, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:csk

Enclosures

c: Southwest Regional Office
PAMS File: 2013-02-062

Permit Number: