

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:

112011-009

Project Number: 2011-06-094

Installation Number: 095-0031

Parent Company: Great Plains Energy, Inc.

Parent Company Address: P.O. Box 418679, Kansas City, MO 64141

Installation Name: KCP & L Greater Missouri Operations Company – Sibley Generating Station

Installation Address: 33200 E Johnson Road, Sibley, MO 64088

Location Information: Jackson County, S1, T50N, R30W

Application for Authority to Construct was made for:

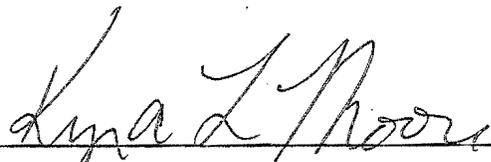
The addition of hauling and storage for off-site coal combustion by-products. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

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

NOV 21 2011

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 Departments' 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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| Permit No. | |
| Project No. | 2011-06-094 |

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."

KCP & L Sibley Generating Station
Jackson County, S1, T50N, R30W

1. Emission Limitation
 - A. KCP & L Sibley Generating Station shall emit less than 25.0 tons of particulate matter (PM) in any consecutive 12-month period from the hauling and storing of off-site coal combustion by-products (CCB).
 - B. Attachment A or equivalent forms, such as electronic forms, shall be used to demonstrate compliance with Special Condition 1.A. If an equivalent form is used, the facility shall base its calculations on the emission factor given in Attachment A.
2. Operating Restrictions
 - A. KCP & L Sibley Generating Station shall only store off-site CCB that have been conditioned to a minimum of 10% moisture content by weight. The conditioning may be performed either on-site or off-site.
 - B. KCP & L shall perform moisture content testing to show compliance with Special Condition 2.A.
 - 1) Testing shall be conducted according to the method prescribed by the American Society for Testing Materials (ASTM) D-2216, C-566 or another method approved by the Director.
 - 2) KCP & L shall keep a report detailing the results of the moisture content tests. The report shall include at a minimum the raw data and moisture content of each sample, the test date, which sites the samples were taken from and the original signature of the individual performing the test.
 - 3) KCP & L shall test one sample per month from each site that delivered CCB during that month.
 - 4) If any test required in Special Condition 2.B. shows moisture content less than the limit in Special Condition 2.A, KCP & L shall either apply for a permit modification to take into account the new moisture content or additionally condition the CCB to comply with Special Condition 2.A.

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| Permit No. | |
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SPECIAL CONDITIONS:

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

- 5) If KCP & L can show compliance with Special Condition 2.A. for 12 consecutive months, then the facility can apply for a reduction in the testing requirements from the Air Pollution Control Program.
3. KCP & L shall maintain all records required by this permit for not less than five years and shall make them available to any Missouri Department of Natural Resources' personnel upon request.
4. KCP & L Sibley Generating Station shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

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

Project Number: 2011-06-094
Installation ID Number: 095-0031
Permit Number:

KCP & L Greater Missouri Operations Company
Sibley Generating Station
33200 E Johnson Road
Sibley, MO 64088

Complete: May 31, 2011

Parent Company:
Great Plains Energy, Inc.
P.O. Box 418679
Kansas City, MO 64141

Jackson County, S1, T50N, R30W

REVIEW SUMMARY

- KCP&L Sibley Generating Station has applied for authority to haul and store coal combustion by-products (CCB) from other sites.
- Mercury, which is a hazardous air pollutant (HAP), emissions are expected from the proposed equipment but only in negligible amounts.
- None of the New Source Performance Standards (NSPS) apply to the proposed activities.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed activities.
- 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*. The conditioned potential emissions of all pollutants are below *de minimis* levels.
- This installation is located in Jackson County, a maintenance area for ozone and an attainment area for all other 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 21. Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input. 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 the conditioned potential emissions of the application are below *de minimis* levels.
 - Emissions testing is not required for the equipment.
 - A modification request for your operating permit application shall be submitted within one year of permit issuance.
 - Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

KCP&L Greater Missouri Operations Company owns and operates an electric energy generating station located in Sibley, Missouri. Equipment at this installation includes three (3) coal-fired and tire-derived fuel-fired boilers, coal and fly ash handling equipment, parts washer, welding equipment, storage tanks, spray booths and miscellaneous combustion equipment (i.e. emergency generators and diesel fire pumps). The installation is an existing major source for particulate matter less than two-and-a-half microns in diameter (PM_{2.5}), particulate matter less than ten microns in diameter (PM₁₀), particulate matter (PM), sulfur oxides (SO_x), nitrogen oxides (NO_x), volatile organic compounds (VOC), carbon monoxide (CO) and HAP for construction permits. A Part 70 Operating Permit was issued to the installation in 1999 (OP1999-026) and it was renewed in 2006. A renewal application of the operating permit was submitted to the Air Pollution Control Program in March, 2011 (Project 2011-03-006).

The following construction permits have been issued to KCP&L Greater Missouri Operations Company from the Air Pollution Control Program.

Table 1: Permit History

| Permit Number | Description |
|---------------|--|
| 0393-004 | Additional coal conveyor and fly ash handling system to handle low sulfur coal. |
| 0897-025 | Installation of a parts washer, spray paint booth and emergency fire pump. |
| 022008-003 | Temporary permit to burn biomass. Expired April 1, 2009. |
| 022008-003A | Increase the biomass from 10% of fuel blend to 20%. |
| 022009-007 | Temporary permit for an additional trial burn for the biomass. Expired February 17, 2010 |
| 092011-002 | Temporary permit to test a coal additive for the removal of mercury. |

PROJECT DESCRIPTION

KCP&L Greater Missouri Operations Company proposes to haul CCB from other KCP&L facilities to its Sibley Generating Station Utility Waste Landfill. The truck will enter through the main plant entrance and follow the haul road to the landfill and dispose of the CCB in the open portion of the landfill. The first 0.29 miles (1,531 feet) of the haul road are paved and the rest of the haul road (1.26 miles, 6,652 feet) are unpaved. The CCB will be conditioned to at least 10% moisture content to control particulate emissions from the load-in, load-out and wind erosion of the storage piles. The CCB will be conditioned by mixing with water in a pug mill and the conditioning may be performed on or off-site. No controls will be used on the haul roads or the vehicular activity areas.

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. Emissions from the paved haul roads were calculated using a predictive equation from AP-42, Chapter 13.2.1, *Paved Roads* (1/11). Emissions from the unpaved haul roads were calculated using a predictive equation from AP-42, Chapter 13.2.2, *Unpaved Roads* (11/06). Emissions from the load-in and load-out of the storage piles were calculated using an equation in AP-42, Chapter 13.2.4, *Aggregate Handling and Storage Piles* (11/06). Emissions from wind erosion were calculated using an equation found in the Air Pollution Control Program's Emissions Inventory Questionnaire Form 2.8, "Storage Pile Worksheet."

The haul trucks will load directly into the landfill and the ash will be spread and compacted as needed by a dozer in the landfill. During the spreading and compacting process, the dozer should not travel enough distance with enough speed to generate significant emissions. Therefore, particulate emissions from the vehicular activities around the storage pile were considered negligible.

The CCB contains mercury, which is a HAP. However, according to the paper, *Release of Mercury Vapor from Coal Combustion Ash*, University of North Dakota, Energy & Environmental Research Center, (2001), the total mercury content in powder river basin (PRB) sub-bituminous coal is estimated to be 7.36×10^{-5} % and that a coal-fired power plant with an annual production of 200,000 tons of ash per year may release 0.0044 pounds of mercury per year from the desorption of ash. Therefore, it was assumed that mercury emissions are negligible.

The following table provides an emissions summary for this project.

Table 2: Emissions Summary (tons per year)

| Pollutant | Regulatory <i>De Minimis</i> Levels | Existing Potential Emissions | Existing Actual Emissions (2010 EIQ) | Potential Emissions of the Application | New Application Conditioned Potential |
|-------------------|-------------------------------------|------------------------------|--------------------------------------|--|---------------------------------------|
| PM _{2.5} | 10.0 | Major | 280.12 | N/D | 0.94 |
| PM ₁₀ | 15.0 | Major | 293.58 | N/D | 7.75 |
| PM | 25.0 | Major | N/D | N/D | <25.0 |
| SO _x | 40.0 | Major | 13059.50 | N/A | N/A |
| NO _x | 40.0 | Major | 2532.40 | N/A | N/A |
| VOC | 40.0 | Major | 87.99 | N/A | N/A |
| CO | 100.0 | Major | 401.15 | N/A | N/A |
| HAPs | 10.0/25.0 | Major | 76.62 | N/A | N/A |

N/A = Not Applicable; N/D = Not Determined

Potential emissions of the application were not calculated because the facility did not provide a maximum design rate for the activities. Instead, it chose to take whatever limit in its production to ensure that its PM emissions do not exceed 25.0 tons per year. Attachment A, or equivalent forms approved by the Air Pollution Control Program, shall be used to show compliance with this limit. PM_{2.5} and PM₁₀ conditioned potential emissions are proportionally reduced.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Conditioned potential emissions of all pollutants are below *de minimis* levels.

APPLICABLE REQUIREMENTS

KCP & L Greater Missouri Operations Company 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
- *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 10-6.165

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.

Chia-Wei Young
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 24, 2011, received May 31, 2011, designating KCP & L Greater Missouri Operations Company 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 August 17, 2011.

Mr. Paul Ling
Environmental Services Department Manager
KCP & L Greater Missouri Operations Company
P.O. Box 418679
Kansas City, MO 64141

RE: New Source Review Permit - Project Number: 2011-06-094

Dear Mr. Ling:

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 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 Chia-Wei Young, 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
Permit Section Chief

KBH:cwy

Enclosures

c: Kansas City Regional Office
PAMS File: 2011-06-094

Permit Number: