PERMIT BOOK

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: 042012-003 Project Number: 2011-10-020

Installation Number: 083-0001

Parent Company: Great Plains Energy, Inc.

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

Installation Name: Kansas City Power & Light Company - Montrose Generating Station

Installation Address: 400 SW Highway P, Clinton, MO, 64735

Location Information: Henry County, S29,31,32, T41N, R27W

Application for Authority to Construct was made for:
Replacement of the burner nozzle tips, linkage components, and removable front panels with redesigned components and installation of an automated separated over-fire air (SOFA) system, including necessary drivers, wind boxes, dampers, and instrumentation on Units 1, 2, and 3. This review was conducted in accordance with Section (8), 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.

APR 09 2012

EFFECTIVE DATE

Kyra L Moore

DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within eighteen months from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within eighteen months 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 devises 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 start up. 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 thirty 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.

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."

Kansas City Power & Light Company - Montrose Generating Station
Henry County, S29,31,32, T41N, R27W

1. Standards of Performance for Best Available Control Technology (BACT) for Carbon Monoxide (CO)
   A. Kansas City Power & Light Company - Montrose Generating Station shall not emit more than 0.25 pounds of CO per million British thermal unit (lb/MMBtu) of heat input from Unit 1, Unit 2, and Unit 3 each, based on a 30-day rolling average. This limit is exclusive of emissions occurring during start-up, shutdown, and malfunction.

   B. Kansas City Power & Light Company - Montrose Generating Station shall not emit more than 2,343.30, 2,332.35, and 2,463.75 tons of CO in any consecutive 12-month period from Unit 1, Unit 2, and Unit 3, respectively. This limit is inclusive of emissions during start-up, shutdown, and malfunction.

   C. Kansas City Power & Light Company - Montrose Generating Station shall operate CO continuous emission monitor systems (CEMS) on Unit 1, Unit 2, and Unit 3 each, in accordance with Special Condition 2 to determine compliance with Special Conditions 1.A. and 1.B.

2. CO CEMS – Unit 1, Unit 2, and Unit 3
   A. Kansas City Power & Light Company - Montrose Generating Station shall install, certify, operate, calibrate, test and maintain CEMS for CO and any necessary auxiliary monitoring equipment in accordance with all applicable regulations. If there are conflicting regulatory requirements, the more stringent shall apply.

   B. CEMS certification shall be made pursuant to 40 CFR Part 60, Appendix B, Performance Specification 4.

   C. Periodic quality assurance assessments shall be conducted according to the procedures outlined in 40 CFR Part 60, Appendix F.

SPECIAL CONDITIONS:

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

D. Kansas City Power & Light Company - Montrose Generating Station shall install and operate a data acquisition and handling system to calculate emissions in units of the emission limitations in Special Conditions 1.A. and 1.B.

3. Record Keeping Requirements
Kansas City Power & Light Company - Montrose Generating Station 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.

4. Reporting Requirements
   A. Kansas City Power & Light Company – Montrose Generating Station shall report CO emissions in their current semi-annual monitoring (SAM) report and in the annual compliance certification (ACC).
      1) Demonstration of compliance for the lb/MMBtu 30-day rolling average limit in Special Condition 1.A. shall be based upon daily average emissions.
      2) Demonstration of compliance for the 12-month CO limits in Special Condition 1.B. shall be based upon the summation of the individual 1-hour CEMS data, respectively.
      3) Kansas City Power & Light Company – Montrose Generating Station shall electronically submit all Relative Accuracy Test Audit (RATA), quality assurance, and quality control reports used to demonstrate compliance with the limits in Special Conditions 1.A. and 1.B. with the current SAM and ACC for the 3-year period beginning with commencement of operations under this permit. After the 3-year period, the reports shall be kept on site.

   B. Kansas City Power & Light Company - Montrose 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 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.

5. Special Condition Applicability
Special Conditions 1, 2, 3, and 4 only apply to Montrose Generating Station units to which the equipment permitted herein was actually constructed.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (8) REVIEW
Project Number: 2011-10-020
Installation ID Number: 083-0001
Permit Number:

Kansas City Power & Light Company
Montrose Generating Station
400 SW Highway P
Clinton, MO 64735

Complete: October 11, 2011

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

Henry County, S29,31,32, T41N, R27W

REVIEW SUMMARY

- Kansas City Power & Light Company - Montrose Generating Station has applied for authority to replace the burner nozzle tips, linkage components, and removable front panels with redesigned components and installation of an automated separated over-fire air (SOFA) system, including necessary drivers, wind boxes, dampers, and instrumentation on Units 1, 2, and 3.

- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment, but are not expected to increase as a result of this project.

- 40 CFR Part 60 Subpart Da, *Standards of Performance for Electric Utility Steam Generating Units for Which Construction Is Commenced After September 18, 1978* (NSPS Da) does not apply to the units. This project is expected to cause an increase in CO emissions from the units; however the NSPS does not contain a CO emission standard. Therefore, this project is not a modification for NSPS purposes, and the NSPS does not apply.

- 40 CFR Part 61, *National Emission Standards for Hazardous Air Pollutants* (NESHAPs) do not apply to this installation.

- 40 CFR Part 63 Subpart UUUUU, *National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-fired Electric Utility Steam Generating Units* (MACT UUUUU, Mercury and Air Toxics Standards (MATS)) was signed by the Environmental Protection Agency (EPA) on December 16, 2011. These units are subject to the MATS.

- No air pollution control equipment is being used in association with the new equipment. The burner tips and SOFA will cause a reduction in NO_X emissions and an expected increase in CO emissions. Emissions of other pollutants are not expected to be affected as a result of this project.

- This review was conducted in accordance with Section (8) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of CO are above the major source threshold.

- This installation is located in Henry County, an attainment area for all criteria air pollutants.

- This installation is on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2]. *26. Fossil-fuel-fired steam electric plants of 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 performed to determine the ambient impact of CO.

- Emissions testing are not required for the equipment.

- Submittal of an application to revise the Part 70 operating permit is required for this installation within 1 year of equipment startup.

- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Kansas City Power & Light Company operates an existing, baseload, electric generating station (herein Montrose) near Montrose. Power is produced by three units, Unit 1 (EP-06), Unit 2 (EP-07), and Unit 3 (EP-08). Each unit is dry bottom and tangentially fired with coal. Fuel oil is used as start-up fuel. The units began operation in 1958, 1960, and 1964, respectively. Montrose was originally a mine-mouth installation, but switched to powder river basin (PRB) subbituminous coal in the late 1980s.

A single electric utility boiler maximum hourly design rate (MHDR) can vary depending upon coal moisture, cooling water temperature, ambient air temperature, load, and other factors. The following table represents the MHDR history of the units.

Table 1: MHDR History

Source	Unit 1	Unit 2	Unit 3
[1] Permit Application (CEMS for Clean Air Market)	2,140	2,130	2,250
[1] Operating Permit OP2006-070	1,668	1,668	1,640
[2] Great Plains Energy, Inc. (2011 Analyst Meeting)	334		176
[2] EPA 2003 Clean Air Market	155	153	161
[3] ASME (February 1999)	Similar to Unit 2	170	190

[1] MHDR in million British thermal units per hour (MMBtu/hr) heat input.
[2] MHDR in capacity megawatts (MW).
[3] MHDR in nominal MW, American Society of Mechanical Engineers (ASME).

Each unit has a dedicated cold-side electrostatic precipitator (ESP). No other post combustion controls are present. Unit 2 and Unit 3 share a common stack. Unit 1 has its own dedicated stack. Great Plains Energy, Inc. has indicated Units 1 and 2 may be

retired in 2016, and Unit 3 may be fitted with selective non-catalytic reduction, a scrubber, activated carbon injection, and a baghouse. However, KCP&L continues to plan the future of the Montrose units as the rules impacting the facility become available.

Montrose is a major source for construction and operating permits. The following permits have been issued to Montrose from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
-	Early reduction credit banking request, project ex20200001005
0296-004	Construction permit for railcar dump
OP	Phase II acid rain permit, project ex0830001021
OP1999-196	Part 70 operating permit
-	Phase II acid rain permit, project 1998-09-049
0699-008	Construction permit for diesel generator
OP	Operating permit for NO_X early reduction credit, project 2002-05-337
OP	Operating permit for NO_X early reduction credit, project 2002-05-341
OP2006-070	Part 70 operating permit
OP2006-021	Phase II acid rain permit
OP2006-070	Part 70 operating permit amendment
OP2010-003	Phase II acid rain permit
	Part 70 operating permit application, project 2011-03-080

PROJECT DESCRIPTION

The project consists of installing replacement burner tips and new SOFA on each boiler. The project may be implemented on each unit in phases, with construction on Units 2 and 3 planned to begin in 2012. Complete low NO_X burner (LNB) replacement is not proposed, just replacement burner tips. The purpose of the project is to lower NO_X emissions from Units 1, 2, and 3. The replacement burner tips are expected to create a stoichiometric fuel rich zone near the burners because some primary air is diverted away from the burners. As the flame will be oxygen starved, fuel bound nitrogen will be forced to combine to other fuel bound nitrogen, thus limiting NO_X. This results in incomplete combustion and lower combustion temperatures, thus increasing CO. The SOFA will introduce secondary combustion air at different boiler elevations, away from the burners, to help complete combustion of the remaining coal.

Low NO_X projects can result in an increase in loss on ignition (LOI) and a decrease in efficiency. LOI is a measure of the amount of residual fuel in coal ash. Some low NO_X projects attempt to minimize the increase in LOI by modifying or replacing coal pulverizers to produce a finer grade fuel. However, the applicant plans no changes to coal conveying and pulverizers at Montrose as a result of this project. Some low NO_X projects result in an increase in fuel input to compensate for decreased efficiency. The increase in fuel input can result in an increase of other pollutants. However, the applicant has stated the same LOI is expected after the project. Since there is no loss in efficiency, there are no changes planned in fuel delivery. If hourly heat input does not increase as a result of the project, then emissions of pollutants other than CO are not expected to increase.

EMISSIONS/CONTROLS EVALUATION

Potential CO emissions were calculated using the actual-to-potential test in 40 CFR 52.21(a)(2)(iv)(d), *Prevention of significant deterioration of air quality*. Potential emissions are allowed to replace projected actual emissions for existing emission units according to 52.21(b)(41)(ii)(d).

The baseline CO emission factor of 0.5 pounds per ton of subbituminous coal combusted used in this analysis was obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.1, *Bituminous and Subbituminous Coal Combustion*, September 1998. The baseline CO emissions were selected from the 24-month 2008-2009 period, cited from the installation's emission inventory questionnaire (EIQ). The post project CO emission factor of 0.25 lb/MMBtu fuel input was obtained according to 40 CFR 52.21(b)(12), *Best available control technology* (BACT). The resulting CO increase is 6,620.19 tons per year. Montrose expects a NO_X emission decrease of 30 to 40 percent on a lb/MMBtu basis. The lb/MMbtu emission rate of other pollutants is not expected to change as a result of this project.

Potential emissions of the application represent the BACT CO emission rate from each of the boilers at 100 percent load, assuming continuous operation (8,760 hours per year). The following table provides an emissions summary for this project.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory *De Minimis* Levels	Existing Potential Emissions	Existing Actual Emissions (2010 EIQ)	Potential Emissions of the Application	Units 1, 2, and 3 Conditioned Potential
PM	25.0	Major	N/D	N/A	N/A
PM_{10}	15.0	Major	441.15	N/A	N/A
$PM_{2.5}$	10.0	Major	238.57	N/A	N/A
SOx	40.0	Major	11,750.10	N/A	N/A
NOx	40.0	Major	5,933.00	decrease	N/A
VOC	40.0	Major	60.11	N/A	N/A
CO	100.0	Major	502.71	7,139.40	7,139.40
Lead	0.6	N/D	0.11	N/A	N/A
HAPs	10.0/25.0	Major	8.76	N/A	N/A
Sulfuric acid mist	7.0	N/D	N/D	N/A	N/A
Hydrogen chloride	10.0	N/D	5.22	N/A	N/A
Hydrogen fluoride	[2] 0.1	N/D	3.48	N/A	N/A
Mercury compounds	[2] 0.01	N/D	0.059	N/A	N/A
CO_2	0/100/250	N/A	[1] 3,647,880	N/A	N/A
CH_4		N/A	[1] 39	N/A	N/A
N_2O		N/A	[1] 61	N/A	N/A
GHG (CO_2e)	75,000/100,000	Major	[1] 3,667,702	N/A	N/A

N/A = Not Applicable; N/D = Not Determined [1] GHG cited from EPA's online Greenhouse Gas Data Publication Tool for 2010. Mass emission rates were back-calculated using respective 100 year global warming potentials. [2] Screening model action levels (SMAL)

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (8) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of CO are above the major source threshold.

APPLICABLE REQUIREMENTS

Kansas City Power & Light Company - Montrose Generating 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.

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 10-3.090

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 10-6.405

CO BACT ANALYSIS

Any source subject to Missouri State Rule 10 CSR 10-6.060*, Construction Permits Required*, Section (8) must conduct a BACT analysis on any pollutant emitted in greater than de minimis levels. The BACT requirements are detailed in Section 165(a)(4) of the Clean Air Act, at 40 CFR 52.21 and 10 CSR 10-0.60(8)(B). BACT analysis is required for CO at Montrose.

<u>Potential CO Control Technologies</u>
CO emissions can be controlled by either minimizing CO formation during combustion or by post-combustion oxidation systems to oxidize any CO formed in the combustion process. Combustion controls include good combustion practices. Post-Combustion controls include catalytic or thermal oxidation.

Good Combustion Practices

Good combustion practices prevent formation of CO during combustion. A number of measures can be taken to ensure that CO generation is minimized, including: maintaining proper fuel-to-air-flow ratios, visually monitoring combustion conditions for excessive haze, ash agglomeration and bridging on boiler tubes, periodically checking coal mill performance for coal fineness, periodically measuring unburned carbon to determine how combustion can be optimized, determining proper control settings for optimum efficiency and minimal CO generation, and empirically determining optimal CO emission rates and NOx emission reduction during unit testing and tuning.

Catalytic Oxidation

Catalytic oxidation requires oxygen, heat, and a catalyst to convert CO to CO_2. Catalytic oxidation is widely used in the refinery industry and for gas turbines in the utility industry. The noble metal catalysts typically used in catalytic oxidation are highly susceptible to poisoning from sulfur compounds resulting from coal combustion. The high particulate loading found in most coal-fired flue gas streams would cause rapid deactivation and fouling of the catalyst. Placement of the oxidation unit downstream from the ESP would make re-heating of the exhaust stream necessary, increasing emissions of NO_X and particulate matter from combustion of additional fuel. The conditions necessary for CO conversion also favor the conversion of SO_2 to SO_3. The SO_3 would combine with moisture in the flue gas, increasing sulfuric acid mist emissions from the stack. Catalytic oxidation is not employed on coal-fired boilers due to the reasons cited above, rendering it technically infeasible for application at Montrose.

Thermal Oxidation

Thermal oxidation also uses heat and oxygen for the CO to CO_2 conversion, but without the use of a catalyst. Temperatures in excess of 1,500 Fahrenheit (F) are required. As with the catalytic oxidation units, the thermal oxidizer (afterburner) would need to be located downstream of the ESP, to prevent fouling. Heat exchangers and a natural gas furnace would be needed to raise the temperature from approximately 300 F to the required temperature. Additional NOx and particulate matter emissions would result. The same problems exist for thermal oxidation as for catalytic oxidation. The use of thermal oxidation has historically been for the control of volatile organic compounds. Thermal oxidation is not considered to be technically feasible in this case.

BACT for CO

Good combustion control practices are the only technically feasible alternative for minimizing CO emissions. According to the RACT/BACT/LAER Clearinghouse (RBLC), existing, non-cyclone, pulverized, PRB-fired utility boilers retrofitted with LNB and over-fired air (OFA) have been permitted since 2005 with CO BACT limits ranging from 0.15 lb/MMBtu to 0.42 lb/MMBtu. RBLC CO BACT limits are summarized in the following table.

Table 4: Retrofit CO BACT Limits

RBLC ID	Permit Issuance Date	Facility and Unit	Project Description	Boiler Operation Year	Primary Fuel	CO BACT Limit (lb/MMBtu)
LA-0210	11/21/2006	Cleco – Dolet Hills	LNB, OFA	1986	Lignite	0.15
MN-0081	04/28/2010	Minnesota Power – Boswell, Unit 4	LNB, SOFA	1980	PRB	0.15
N/A	07/24/2006	Duke – Dan River, Units 1-3	SOFA	1949,1955	N/D	0.25
N/A	02/29/2008 and 10/04/2005	Westar – Jeffrey, Units 1-3	LNB, SOFA	1978, 1980, 1983	PRB	0.25
IA-0080	09/28/2005	MidAmerican Energy – Neal South, Unit 4	LNB, OFA	1979	PRB	0.42

Given the same firing configuration, the more recent the original boiler construction and LNB/OFA retrofit, the lower the permitted CO BACT limit. However, comparison of actual emission rates to permitted limits for the most recent retrofits has not been performed, as construction has not been completed or the emission rates are not available. Boiler combustion technology has improved since Montrose's units were constructed. Montrose's units are by comparison old in design and not undergoing full LNB replacement. A CO level of 0.25 lb/MMBtu heat input is chosen as the BACT limit (exclusive of start-up, shutdown and malfunction) on a 30-day rolling average. However, the applicant did not provide a comprehensive site specific analysis with calculations supporting the limit. Montrose shall utilize CEMS to monitor the CO emissions from the affected units. In addition to the lb/MMBTU emissions limit, an annual CO emission limit on a 12-month rolling basis will include start-up, shutdown, and malfunction events.

AMBIENT AIR QUALITY IMPACT ANALYSIS

Ambient air quality modeling was performed to determine the ambient impact of CO. Based upon the model reviewed by the Air Pollution Control Program staff, Montrose will not cause or contribute to any violation of the National Ambient Air Quality Standards (NAAQS). Additional analysis for secondary impacts shows either no analysis is required or adverse impacts are not likely to occur. For a more thorough discussion of the modeling methodology used and the results, please refer to the attached memorandum entitled *Ambient Air Quality Impact Analysis (AAQIA) for the Kansas City Power & Light Montrose Generating Station (KCP&L Montrose)-Prevention of Significant Deterioration (PSD) Modeling-Clinton, Missouri* dated January 26, 2012.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (8), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

_____ _____

David Little Date
Environmental Engineer

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated September 26, 2011, received October 11, 2011, designating Great Plains Energy, Inc. 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 October 27, 2011.
- American Society of Mechanical Engineers, Mechanical Engineering Magazine, *Upgrading the old turbine,* February 1999, http://www.memagazine.org/backissues/membersonly/february99/features/oldturbine/oldturbine.html accessed January 27, 2012.
- Great Plains Energy, Inc. *2011 Analyst Meeting,* August 08, 2011, www.greatplainsenergy.com/presentations/2Q11Webcast.pdf accessed January 27, 2011.
- U.S. EPA, *Attachment F – Emission Controls on Existing Units,* http://www.epa.gov/airmarkets/progsregs/epa-ipm/past-modeling.html accessed January 30, 2012.

Mr. Paul Ling
Manager of Environmental Services
Kansas City Power & Light Company
P.O. Box 418679
Kansas City, MO 64141

RE: New Source Review Permit - Project Number: 2011-10-020

Dear Mr. Ling:

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 revised 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, with the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or by phone 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:dpl

Enclosures

c: Kansas City Regional Office
PAMS File: 2011-10-020

Permit Number:

Comments and Responses on Kansas City Power & Light Company, Montrose Generating Station Prevention of Significant Deterioration (PSD) New Source Review Permit Project Number 2011-10-020

This document responds to comments made to the PSD draft permit. Comments have been summarized or paraphrased for the sake of clarity. The numbers of special conditions in the comments may have changed. The numbers referenced in the response reflect the final special condition numbering.

The following comments were submitted to the Air Pollution Control Program (APCP) by the Environmental Protection Agency (EPA), Region VII in a letter dated March 23, 2012:

EPA Comment: Reporting Requirements Special Conditions 4.A.

The semi-annual monitoring report (SAM) and the annual compliance certification shall include:

i. *The total annual emission from Unit 1, Unit 2 and Unit 3 based on a 30-day rolling average for each month in the reporting period;*
ii. *Average hourly CO ppm data from the CEMS and hourly output data, in #/mmbtu heat input, from the data acquisition and handling system as required in Special Condition 2.D.; and*
iii. *Any / all Quality Assurance or Quality Control data used in calculating the monthly average emission rate and annual total emission rate.*

KCP&L Response:

i. *The total annual CO mass emissions from each unit will be calculated by summation of the hourly CEMS data collected for all unit operating hours. It is not clear how "a 30-day rolling average for each month in the reporting period" could be used to determine total annual emissions. EPA's proposed language is also not clear, in that a rolling average for each month in the reporting period is essentially the same as a monthly block average, which differs significantly from a 30-day rolling average. KCP&L believes this condition is not necessary as we would report the same value annually in the EIQ, but in the alternative suggests the condition be clarified to read, "The total annual emissions from each unit."*
ii. *The CEMS will be programmed to calculate the daily average CO emission rate in lb/MMBtu heat input. That is all that is necessary to demonstrate compliance with the 30-day rolling average limit. Reporting the hourly inputs to that calculation is not necessary as it is not the compliance limit. KCP&L suggests this condition is not necessary as it has not been required in other recent LNB MDNR issued permits, but in the alternative suggests the condition be clarified to read, "The 30-day rolling average from the CEMS in lb/MMBtu from the data acquisition and handling system as required in Special Condition 2.D."*
iii. *It is not clear what is meant by QA/QC data "used in calculating the monthly average emission rate and annual total emission rate". Any bias adjustment factor (BAF) determined during certification and testing of the CO CEMS will be applied to the hourly data in calculating total emissions. KCP&L suggests this condition be deleted.*

APCP Response:

i. The special condition has been updated to include the total annual CO emissions from each unit to be based on the summation of individual respective CO CEMS hourly data.

ii. The special condition has been updated to require 30-day average emissions based upon daily average emissions to demonstrate compliance with Special Condition 1.A., and to require total annual emissions based upon the summation of hourly emissions to demonstrate compliance with Special Condition 1.B.

iii. The program partially agrees with EPA's comment. CEMS adjustment, quality assurance, and quality control methods/factors used to demonstrate compliance with the emission limits in the permits are to be reported with SAM and ACC, however only for 3 years. Afterwards the records can be kept on site.