

Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

JUN 05 2018

BEFORE THE MISSOURI DEPARTMENT OF NATURAL RESOURCES

IN THE MATTER OF:

KCP&L Greater Missouri Operations Company

No. APCP-2015-118

**AMENDMENT #1
TO
ADMINISTRATIVE ORDER ON CONSENT**

WHEREAS, the Missouri Department of Natural Resources and the KCP&L Greater Missouri Operations Company (KCP&L) (collectively, the “Parties”) entered into Administrative Order on Consent No. APCP-2015-118,

WHEREAS, KCP&L has subsequently elected to use only low sulfur coal for Boiler 5 that can easily meet the sulfur requirements in Administrative Order on Consent No. APCP-2015-118,

WHEREAS, KCP&L agrees to discontinue the blending of high and medium sulfur coal with low sulfur coal, and begin using only low sulfur coal in Boiler No 5 for compliance. Therefore, the Parties by mutual consent have agreed to amend Table 1, the equation in paragraph 13, paragraph 17.b, and the Appendix of Administrative Order on Consent No. APCP-2015-118.

THE PARTIES AGREE AS FOLLOWS:

I. Table 1 shall be modified as follows:

Table 1: Fuel Requirements

Unit	Primary Fuel	Secondary Fuel
Boiler No. 1, 2, 4	Natural Gas	No. 2 Fuel Oil



Boiler No. 3	Natural Gas	None
Boiler No. 5	Coal (low Sulfur)	Natural Gas
Boiler No. 6	Natural Gas	No. 2 Fuel Oil
Combustion Turbine No. 5	Natural Gas	No. 2 Fuel Oil
Combustion Turbine No. 6	No. 2 Fuel Oil	Natural Gas
Combustion Turbine No. 7	No. 2 Fuel Oil	Natural Gas

3. The equation for Boiler 5 in Paragraph 13 shall be modified to read as follows:

For Boiler 5:

$$\left[\frac{\sum_{hour=1}^{24} \left[\left(\frac{\# \text{ coal}}{\text{hour}} \right) \left(\frac{\# S}{\# \text{ coal}} \right) \right]}{\sum_{hour=1}^{24} \left(\frac{\text{mmBtu}_{(\text{coal}+\text{gas})}}{\text{hour}} \right)} \right] \leq 1.349 \left(\frac{\# SO_2}{\text{mmBtu}} \right)$$

4. Paragraph 17.b. shall be modified to read as follows: Sampling and analysis of each coal shipment for coal charged to Boiler 5 (including the sulfur and heat content).

5. The remainder of Administrative Order on Consent No. ACP-2015-118 shall remain unchanged.

AGREED TO AND SO ORDERED:

**MISSOURI DEPARTMENT OF
NATURAL RESOURCES**

**KCP&L Greater Missouri
Operations Company**

Richard P. Bybee
For Darcy A. Bybee, Director
Air Pollution Control Program
Date: 6/13/18

Duane Anstaett
Duane Anstaett, Vice President Generation
Date: 6/7/2018.

Appendix

- Variable Table
- Supplier Certificate for Fuel Oil Sulfur Content
- Certificate for Fuel Sulfur Content
- Coal Yard Narrative

Variable	Definition
#coal/hour	Total hourly, as-fired coal mass rate to Boiler 5 determined by summing the weight output from each pulverizer
#S/#coal	Sulfur to coal weight fraction of each shipment coal sample collected and analyzed by a recognized ASTM analysis method
mmBTU (coal + gas)/hour	The total hourly, as fired heat input to Boiler 5 determined from the coal and gas firing rates and associated fuel heating values, determined as follows: mmBtu (coal+gas)/hour = # coal/hour * HVcoal + NGrate * HVgas
NGrate	The total hourly, as-fired volume of natural gas measured and recorded by the Boiler 5 gas-metering system. in units of mmcf/hour
HVcoal	The as-fired heating value of each coal shipment as determined by a recognized ASTM analysis method, in units of mmBtu/#coal.
HVgas	The as-fired heating value of pipeline grade natural gas, as determined by a recognized ASTM analysis method, a "worst-case" gas heating value of 950 Btu/cf, or other gas-heating value factor supported by on-site records from the gas supplier, in units of Btu/ft ³ gas.

**KCP&L Greater Missouri Operations Company
Lake Road Plant
Supplier Certificate of Fuel Oil Sulfur Content**

Under an agreement with the Missouri Department of Natural Resources and the United States Environmental Protection Agency, **KCP&L Greater Missouri Operations Company** (KCP&L) must purchase No. 2 fuel oil with a sulfur content of not greater than 0.05% maximum by weight and obtain certification from the supplier that the oil purchased meets this specification. This "Supplier Certificate of Fuel Oil Sulfur Content" must be completed and returned to KCP&L with each purchase order issued for No. 2 fuel oil.

I certify, to the best of my knowledge and belief, that the No. 2 fuel oil supplied by

_____ to KCP&L Lake Road Plant under KCP&L
Purchase Order No. _____ had a sulfur content of not more 0.05% by weight.

Signed: _____

Printed Name: _____

Title: _____

Company: _____

Date: _____

**KCP&L Greater Missouri Operations Company
Lake Road Plant
Certificate of Fuel Sulfur Content**

KCP&L Greater Missouri Operations Company (KCP&L), under agreement the Missouri Department of Natural Resources and the United States Environmental Protection Agency, must not burn fuel in certain Lake Road Plant generating units with a sulfur content greater than 0.05% maximum by weight.

I certify, to the best of my knowledge and belief, that during the following time period _____ either Natural Gas, Propane, or fuel oil No. 2 with a sulfur content of not more than 0.05% by weight was burned in the following Lake Road Plant units:

Boilers No. 1, 2, 3, 4 and 6, and Combustion Turbines No. 5, 6, and 7.

Signed: _____

Printed Name: _____

Title: _____

KCP&L Greater Missouri Operations Company

Date: _____

KCP&L Greater Missouri Operations Company Lake Road Plant

Coal Yard Narrative

This Coal Yard Narrative is to be illustrative of the processes and procedures followed by KCP&L Greater Missouri Operations Company (KCP&L). KCP&L reserves the right to make changes in these processes and procedures, provided such changes have no material impact on emissions.

The Lake Road Plant coal-handling system consists of equipment that unloads coal from rail cars, transfers it to external storage areas, and reclaims it later for use within the plant. The plant burns low sulfur PRB coal maintained in storage piles in the coal yard. Coal is the fuel used in coal-fired Boiler 5 (a pulverized coal or PC boiler).

Typically, coal is unloaded from rail cars with a bottom car dumper into underground hoppers. From there, by a system of conveyors (Conveyors 3A, 3B, 3C, 6 and 7), the coal is transferred to an aboveground stock-out point in the middle of the coal yard storage area. Conveyors 3A, 3B and 3C are short conveyors that collect the coal from the unloading hoppers and transfer it to Conveyor 6, which then transfers the coal to Conveyor 7. Conveyor 7 is a long inclined conveyor, which carries the coal from below grade to the aboveground stock out point. From this location, a coal dozer pushes the coal to its respective long-term storage area. It typically takes two days to unload a unit-train shipment of coal and one or two additional days to complete pushing it to its long-term storage area. Within 10 days of coal receipt, KCP&L will have sampling and analysis available for inspection for each coal shipment. Coal analysis will be in accordance with ASTM standards. Typically, the mine conducts the sampling and analysis however there maybe occasions that a local entity is required to conduct the sampling and analysis.

The normal reclaim point for coal is located directly under the discharge end of Conveyor 7 (near the middle of the coal storage area). A below-grade hopper system at this location accepts coal supplied from the yard and feeds it onto Conveyor 8. Conveyor 8 is a long inclined conveyor, which then transfers the coal to the top of the crusher house, located at the east end of the coal yard. Chutes from the coalhouse discharge onto Conveyor 3.

Conveyor 3 is a long inclined conveyor, which transfers coal from the discharge point of the coalhouse (located at ground level) to the top of the power plant, where it can be directed to the Boiler 5 coalbunkers.

The control center for the reclaim process is located in the crusher house. The coal handler overseeing this operation monitors and controls the process from this location. He starts and stops conveying and other equipment as necessary, sets desired feed rates using the PLC-based controls, and monitors all the various status indications provided on the control system CRT screens. Belt scales installed on Conveyors 8, 1 and 3 provide highly accurate measurement of coal flow for control and indication. Installed cameras monitor the continuity of coal flow at each reclaim point, with TV monitors located in the crusher house control room. This allows early

detection of plugging problems caused by wet coal. The reclaim hoppers have vibration equipment installed to assist when this occurs.

Coal handlers typically take part in the daily reclaim operation. A dozer operator retrieves coal from the long-term storage area and pushes it to the conveyor intake point. A third coal handler is generally stationed at the plant-end of the conveying system to monitor filling of the bunkers and silos. The coal handler overseeing the controls maintains continuous communication with the other two coal handlers via a dedicated plant radio system. On a typical day, coal handlers fill the Boiler 5 bunker in about two hours.

Plant management establishes the target (desired) coal feed for each boiler each day. This target is set, based on current operating conditions, on heat input considerations and on achieving compliance with the enforceable SO₂ limits. The coal handler operating the controls enters the appropriate feed rate to achieve the target and monitors the process to maintain continuous proper operation through the day. At the end of the workday, he records the actual tonnage amounts (as determined by the new belt scales) of coal transferred to each boiler on a log sheet. As-fired coal scales are on each boiler. These scales measure the coal flow as it is transferred from the plant bunkers and silos to their respective boilers. Plant operators record the daily fuel burn by reading these scales (midnight-to-midnight).

Originally written October 2000

Revised February 2016

Revised May 2018

BEFORE THE MISSOURI DEPARTMENT OF NATURAL RESOURCES

IN THE MATTER OF:)
)
KCP&L Greater Missouri Operations)
Company) No. ACP-2015-118
)
)

ADMINISTRATIVE ORDER ON CONSENT

SERVE:

Kevin Noblet, Vice President Generation
1200 Main
P.O. Box 418679
Kansas City, Missouri 64141

I. BACKGROUND

1. The issuance of this Administrative Order on Consent No. ACP-2015-118 (Order) by the Missouri Department of Natural Resources (Department) is a formal administrative action by the State of Missouri. This Order is being issued with the concurrence of KCP&L Greater Missouri Operations Company (KCP&L) and embodies the agreement between the Department and KCP&L for the implementation of control strategies, which under current information and belief, are necessary to attain and maintain the federal and Missouri ambient air quality standard for sulfur dioxide (SO₂). This Order is issued under Sections 643.060(4). Failure to comply with this Order is, by itself, a violation of the Missouri Air Conservation Law.
2. On or about May 25th, 2001, the Circuit Court of Buchanan County entered a Consent Decree in Case No. 01-CV-74164 (Consent Decree) requiring the St. Joseph Light & Power Company to undertake an SO₂ emissions reduction program in order to attain the national ambient air quality standard for SO₂ as

required by the federal Clean Air Act Amendments of 1990. The SO₂ emissions reduction program outlined in the Consent Decree contained terms requiring St. Joseph Light & Power Company, and their successors, assigns, agents, subsidiaries, affiliates, and lessees to use certain fuels in each combustion unit, unless otherwise authorized by the Department's Air Pollution Control Program. KCP&L, as a successor, assign, agent, subsidiary, affiliate, or lessee, of the St. Joseph Light & Power Company, is bound by the terms of the Consent Decree.

3. On March 30, 2015, KCP&L submitted a letter to the Department notifying the Department of their intent to cease the combustion of coal at the KCP&L Lake Road Station Boiler 6 (Boiler 6) by April 16, 2016. Currently, Boiler 6 combusts coal as a primary fuel and natural gas as a secondary fuel. KCP&L states in their letter that the purpose of the change in SO₂ control strategy is to comply with the Federal Mercury Air Toxics Standard, 40 CFR PART 63. SUBPART UUUUU.
4. The location of KCP&L Boiler 6 is 1413 SW Lower Lake Road, St. Joseph, MO 64504. This Order does not originate from an enforcement action. There are three purposes to this Order. They are as follows:
 - a. provide concurrence for changing the previously stated SO₂ control strategy from the primary fuel of coal to natural gas and change the secondary fuel from natural gas to No. 2 fuel oil;
 - b. clarify that the terms "primary" and "secondary" related to fuels are an indicator of priority of typical usage but are not restrictive to the actual fuel combusted; and
 - c. to carry forward into this Order the stipulated requirements for other KCP&L emission units embodied in the Consent Decree. The agreement embodied in this Order will subsume and replace the Consent Decree.

II. AGREEMENT

5. The Department and KCP&L agree that this Order shall not be construed as a waiver or a modification of any requirements of the Missouri Air Conservation Law and regulations or any other source of law, and that this Order does not resolve any claims based on any failure by KCP&L to meet the requirements of this Order, or claims for past, present, or future violations of any permits, statutes, or regulations.
6. The provisions of this Order shall apply to and be binding upon the parties executing this Order, their agents, subsidiaries, successors, assigns, affiliates, and lessees, including the officers, agents, servants, corporations and any persons acting under, through, or for the parties agreeing hereto. Any changes in ownership or corporate status, including but not limited to any transfer of assets or real or personal property, shall not affect the responsibilities of KCP&L under this Order. If KCP&L sells or otherwise transfers its business or the real estate that is the situs of this Order, then KCP&L shall cause as a condition of such sale or transfer, that the buyer will assume the obligations of KCP&L under this Order in writing. In such event, KCP&L shall provide thirty (30) days prior written notice of such assumption to the Department. Any notification shall be mailed to the Department's Air Pollution Control Program at P.O.B. 176, Jefferson City, MO 65102-0176.
7. KCP&L agrees to undertake the following actions set forth in paragraphs 8 – 16. The control measures are reasonably available control measures implemented for the purpose of attaining the National Ambient Air Quality Standard (NAAQS) for SO₂ as required by the federal Clean Air Act Amendments of 1990.

III. FUEL REQUIREMENTS

8. KCP&L shall cease the combustion of coal as the primary fuel in Boiler 6 by April 16, 2016. After April 16, 2016, KCP&L shall combust natural gas as the

primary fuel in Boiler 6. KCP&L may combust No. 2 fuel oil as the secondary fuel in Boiler 6.

9. Up to the date of April 16, 2016, KCP&L may combust coal or natural gas as the primary fuel in Boiler 6 and may combust natural gas or No. 2 fuel oil as the secondary fuel in Boiler 6.
10. Other than the change from coal to natural gas as the primary fuel and natural gas to No. 2 fuel oil as the secondary fuel for Boiler 6, the compliance plan regarding types of fuel shall remain in place as stipulated in the Consent Decree and further outlined below in Table 1. Unless authorized by MDNR's Air Pollution Control Program (APCP), each unit shall operate in accordance with the requirements in Table 1. These fuel requirements shall be effective upon the full execution of this Order. The sulfur content of the No. 2 fuel oil purchased for use in the boilers and combustion turbines shall not exceed 0.05% by weight. Compliance with this Order alone does not exempt KCP&L from these requirements. KCP&L may combust propane in place of No. 2 fuel oil or coal in Boilers 1, 2, 4, 5, and 6 for light off and flame stabilization during periods of natural gas curtailment and for testing of the propane combustion system.

Table 1: Fuel Requirements

Unit	Primary Fuel	Secondary Fuel
Boiler No. 1, 2, 4	Natural Gas	No. 2 Fuel Oil
Boiler No. 3	Natural Gas	None
Boiler No. 5	Coal (high or medium Sulfur blended w/low Sulfur)	Natural Gas
Boiler No. 6	Natural gas	No. 2 Fuel Oil
Combustion Turbine No. 5	Natural Gas	No. 2 Fuel Oil
Combustion Turbine No. 6	No. 2 Fuel Oil	Natural Gas
Combustion Turbine No. 7	No. 2 Fuel Oil	Natural Gas

11. KCP&L shall comply with the requirements listed in the Table 1 upon the execution of this Order except that Boiler 6 shall demonstrate compliance as of April 16, 2016 after the cessation of coal used as a primary fuel.

IV. EMISSION LIMITATIONS

12. Compliance with the NAAQS at the Lake Road Plant is dependent on operation of the combustion units in accordance with Table 2. The maximum allowable emission rates were developed based on the maximum hourly design rates and maximum loads submitted in the compliance plan. KCP&L shall not exceed the emission rates listed as the Maximum Allowable Emission Rates on a 24-hour daily block average basis.

Table 2: Emissions Limitations*

<u>Unit</u>	<u>Maximum Allowable Emission Rate</u>	
	(lbs SO ₂ /hr)	(lbs SO ₂ /mmBtu)
Boiler No. 1 and 2	10.06	0.0524
Boiler No. 3	0.15	0.0006
Boiler No. 4	16.29	0.0524
Boiler No 5	453.26	1.3490
Boiler No 6	1400	-----
Combustion Turbine 5	44.30	0.0511
Combustion Turbine 6	14.05	0.0511
Combustion Turbine 7	15.12	0.0511

*All emission rates are currently effective.

V. COMPLIANCE MONITORING

13. Compliance with the 24-hour daily block average for Boiler 5 will be determined by using the following procedures. The 24-hour daily block average is defined as a midnight to midnight block average, which includes SO₂ emission rates for only the hours during which the unit was operating. The

Variable Table located in the Appendix should be used when making these calculations:

For Boiler 5:

$$\left[\frac{\sum_{hour=1}^{24} \left[\left(\frac{\# \text{ coal}}{\text{hour}} \right) \left(\frac{\# S}{\# \text{ coal}} \right) \left(\frac{F_{blend} \cdot \# SO_2}{\# S} \right) \right]}{\sum_{hour=1}^{24} \left(\frac{mmBtu_{(coal+gas)}}{\text{hour}} \right)} \right] \leq 1.349 \left(\frac{\# SO_2}{mmBtu} \right)$$

14. Boilers 1, 2, and 4 and combustion turbines 5, 6, and 7 have been modeled at maximum load and maximum hours of operation, as provided by KCP&L. The modeling shows that these units will be in compliance with their maximum allowable emission rates when burning No. 2 fuel oil, natural gas or propane with a sulfur content of 0.05% by weight or less (hereafter referred to as compliant fuel). Therefore, the monitoring required to show compliance with this Order for these six units shall be monthly record keeping of the sulfur content of the fuel used.
15. Boiler 3 has been modeled at maximum load and maximum hours of operation. The modeling shows that this unit will be in compliance with its maximum allowable emission rate when burning pipeline grade natural gas. Therefore, the monitoring required to show compliance with this Order for this unit shall be monthly record keeping of the fuel used.
16. For the combustion of pipeline grade natural gas in Boiler 6, the monitoring required to show compliance with this Order for this unit shall be monthly record keeping of the fuel used.

VI. DELIVERABLES

17. KCP&L shall submit to the Department's Air Pollution Control Program, Enforcement Section on a quarterly basis no later than 30 days after the end of the previous quarter:

- a. A Fuel Certification which shall consist of the following:
 - A *Supplier Certificate for Fuel Oil Sulfur Content* (see Appendix).
The certificate is completed by the fuel supplier and certifies the fuel is compliant;
 - A *Certificate of Fuel Sulfur Content* (see Appendix). This certifies that only compliant fuel was charged to boilers 1-4 and 6 and combustion turbines 5-7 and shall be completed by KCP&L;
 - b. Sampling and analysis of coal blend for Boiler 5 (including the sulfur and heat content);
 - c. Quarterly Excess Emission Report for Boiler 5.
18. Records of the coal sampling and analysis shall be kept on file at the Lake Road Plant for a period of five years from the date of sampling.
19. In the case that KCP&L fails to adhere to the requirements as stated in this Order, such actions will be considered a violation of this Order and the Missouri Air Conservation Law.

VIII. OTHER PROVISIONS

20. KCP&L agrees to comply with the Missouri Air Conservation Law and regulations.
21. By signing this Order, all signatories assert that they have read and understand the terms of this Order, that they had the opportunity to consult with counsel, and that they have the authority to sign this Order on behalf of their respective parties.
22. This Order shall be construed and enforced according to the laws of the State of Missouri, and the terms stated herein shall constitute the entire and exclusive agreement of the parties hereto with respect to the matters addressed herein. The terms of this Order supersede all previous memoranda of understanding, notes, conversations, and agreement whether expressed or implied. This Order may not be modified orally.

23. If any provision of this Order is found to be unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions shall not in any way be affected or impaired.
24. Nothing in this Order excuses KCP&L for any future non-compliance with the laws of the State of Missouri, and the Department expressly reserves the right to address future noncompliance in any manner authorized by law.
25. This Order will become final, effective, and fully enforceable upon the date the Department signs it. The Department shall send a fully executed copy of this Order to KCP&L for their records.

V. CORRESPONDENCE AND DOCUMENTATION

Correspondence or documentation with regard to this Order shall be directed to the following persons, subject to change upon written notification from either party:

For the Department:

Clifford Johnson
Compliance and Enforcement Section
Air Pollution Control Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, Missouri 65102-0176

For KCP&L:

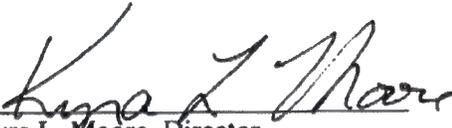
Paul M. Ling
Director of Compliance
P.O. Box 418679
Kansas City, Missouri 64141

VI. RIGHT OF APPEAL

By signing this Order, KCP&L waives any right to appeal, seek judicial review, or otherwise challenge this Order pursuant to Sections 643.130, 643.085, or 621.250 RSMo, Chapters 536, 643, or 640 RSMo, 10 CSR 10-1.030, or any other source of law.

AGREED TO AND SO ORDERED:

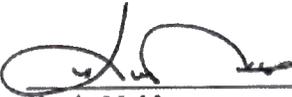
**MISSOURI DEPARTMENT OF
NATURAL RESOURCES**



Kyra L. Moore, Director
Air Pollution Control Program

Date: 4/6/16

**KCP&L Greater Missouri
Operations Company**



Kevin Noblet
Vice President Generation

Date: 3-30-16

Kansas City Power and Light Lake Road Facility

EPA Rulemakings

CFR: 40 C.F.R. 52.1320 (d)
FRM: 84 FR 44233 8/23/19
PRM: 84 FR 27996 6/17/19
State Submission: 11/2/18
State Proposal:
State Final: 9/27/18 effective date
APDB File: MO-379 effective 9/23/2019
Description: This action replaces (17) St. Joseph Light & Power SO₂ with (32) and (33).

Difference Between the State and EPA-Approved Regulation

None.