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MISSOURI PUBLIC SERVICE COMMISSION

COMMISSION STAFF DIVISION

ENGINEERING ANALYSIS UNIT

REBUTTAL TESTIMONY

OF

CHARLES T. POSTON

KCP&L GREATER MISSOURI OPERATIONS COMPANY

CASE NO. ER-2016-0156

Jefferson City, Missouri
August 2016

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** **Denotes Highly Confidential Information** **

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CHARLES T. POSTON

KCP&L GREATER MISSOURI OPERATIONS COMPANY

CASE NO. ER-2016-0156

Q. Please state you name and business address.

A. My name is Charles T. Poston and my business address is Missouri Public Service Commission, 200 Madison Street P.O. Box 360, Jefferson City, MO 65102

Q. By whom are you employed and in what capacity?

A. I am employed by the Missouri Public Service Commission ("Commission") as a Utility Regulatory Engineer I.

Q. Are you the same Charles T. Poston who, on July 15, 2016, filed direct testimony as a part of Staff's Revenue Requirement Cost of Service Report?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to changes to the Lake Road electric/steam allocation factors that have been proposed by KCP&L Greater Missouri Operations Company ("GMO").

Q. What is your recommendation regarding GMO's proposed changes to the Lake Road electric/steam allocation factors?

A. Staff recommends that GMO's proposed changes to the Lake Road electric/steam allocation factors not be adopted and that the values of the allocation factors

proposed by GMO and adopted by the Commission in Case No. ER-2012-0175[1] remain in effect. Any changes to the allocation factors should be addressed in future steam and electric rate cases after a period of additional data collection and study by GMO.

Q. Why does Staff oppose the adoption of the new methods for calculating the Lake Road electric/steam allocation factors that were proposed by GMO?

A. The changes proposed by GMO would lead to an increase in costs allocated to electric customers without a mechanism in place to apply the corresponding decrease in the costs allocated to industrial steam customers. The new allocation factors would only go into effect for electric customers while allocation of industrial steam customers' costs would remain unchanged until a steam rate case is filed. This mismatch of allocation factors due to the lag between electric and steam rate cases would create a situation in which more than 100% of the costs associated with the Lake Road Plant were being collected by GMO. Additionally, GMO has not provided sufficient evidence to demonstrate that the electric customers served by the Lake Road Plant have received increased benefits that are commensurate with the increase in costs they are being asked to bear. Furthermore, substantial changes in the operation of the Lake Road Plant have occurred very recently and the impacts of those changes on the operation of the facility are not yet fully understood. For these reasons, Staff recommends that the allocation of costs remain unchanged until more data can be collected on the operational characteristics of the newly modified Lake Road Plant and GMO files appropriate cases before the Commission such that any changes to allocation factors would be reflected in the rates of both electric and industrial steam

[1] Case No. ER-2012-0175, Direct Testimony of John P. Weisensee, Schedule JPW-6 (SJLP).

customers. This would allow all affected parties to have more of an opportunity to study and provide input before any changes are made.

CHANGES TO ALLOCATION FACTORS PROPOSED BY GMO

Q. Which Lake Road electric/steam allocation factors is GMO proposing to change?

A. GMO has proposed to change the methods for calculating the 900 lb. steam demand factor and the total coal burned factor. Changes to the Allocated Plant Base Factor, Electric After Steam Allocation Factor ("O&M"), and Electric After Steam Allocation Factor ("A&G") were also proposed to account for the consolidation of the MPS and L&P rate districts.[2]

Q. Why has GMO proposed changing the methods for calculating the 900 lb. steam demand factor and the total coal burned factor?

A. GMO states[3] that due to "substantial changes" at the Lake Road Plant, the effects of increased wind generation, the abundance and low price of natural gas, and the launch of the Southwest Power Pool's (SPP's) Integrated Marketplace (IM) on March 1, 2014[4], that the methods for calculating these two allocation factors should be changed. GMO states[5] that, "*Changing the method has moved the current allocation factors to be more in line with those calculated prior to the operating changes that have been made at the plant in the last five years. As such, this change will move less costs to the Steam business than were allocated in the surveillance reporting and will bring the allocation process more in line with the actual operations of the businesses.*"

[2] Case No. ER-2016-0156, Direct Testimony of Ronald A. Klote, Page 8, Line 12 – Page 9, Line 10.
[3] Case No. ER-2016-0156, Direct Testimony of Tim M. Rush, Page 12, Lines 10-14 and Page 13, Lines 8-14.
[4] Case No. ER-2016-0156, Direct Testimony of Tim M. Rush, Page 13, Lines 8-14.
[5] Case No. ER-2016-0156, GMO Response to Staff Data Request No. 0250.

Q. What are the "substantial changes" that GMO refers to at the Lake Road Plant?

A. In the spring of 2016, Lake Road Unit 4/6 switched from coal to natural gas as its primary fuel source. Lake Road Unit 4/6 is made up of Turbine-Generator #4 and Boiler #6. Boiler #6 operates at a nominal pressure of 1800 lb. and does not supply steam to the 900 lb. steam system. Likewise, Turbine-Generator #4 does not use the steam produced on the 900 lb. steam system to generate electricity.

Q. How might this change in primary fuel type impact the use of the 900 lb. steam system?

A. The change in primary fuel type is likely to change the way Unit 4/6 is dispatched within the SPP IM and may indirectly impact the dispatch of the three turbine-generators (Lake Road Units 1, 2, and 3) that are fed by the 900 lb. steam system. Not enough time has elapsed to make an accurate determination of how Unit 4/6 will be dispatched within the market and whether or not electrical generation on the 900 lb. system will be impacted by the change.

Q. Would increasing the Lake Road electric/steam allocation factors for electric customers in this rate case "move less costs" to industrial steam customers?

A. Absent a mechanism to reduce the corresponding allocation factors for industrial steam customers, no. Unless GMO takes action to file a case before the Commission to change its steam customer rates, a situation would exist where more than 100% of the costs associated with operating the Lake Road Plant would be allocated to its customers.

Q. Does Staff oppose changes to the Lake Road electric/steam allocations factors related to the consolidation of the MPS and L&P rate districts?

A. No. Staff has already begun discussions with GMO to determine appropriate changes to the Lake Road electric/steam allocation factors that are related to the consolidation of the MPS and L&P rate districts. Staff does not support the changes that GMO has proposed for the 900 lb. steam demand factor and total coal burned factor.

900 LB. STEAM DEMAND FACTOR

Q. How is the 900 lb. steam demand factor currently calculated?

A. The 900 lb. steam demand factor is currently calculated according to the following method: *"Determine the maximum coincident peaks for each month in the three year period. This produces 36 individual monthly maximum demands for the 900 psi system. From these 36 values, the three highest amounts are taken for each calendar year. This result* [sic] *in nine values. The percentage of steam and electric use in each of these nine values is then determined. The last step in the process is to add each of the nine percentages for electric and industrial steam allocation factors and divide by nine*[6]*."* In this method, the periods of peak steam use on the 900 lb. steam system were recorded and analyzed to determine the percentages of peak steam production that were benefitting industrial steam customers and electric customers. Because of the configuration of the Lake Road Plant, the steam sold for industrial use and the steam used to operate the turbine-generators comes from the same set of boilers and the same steam headers. The existing method allocates costs based on the actual uses of steam during times of peak steam demand.

Q. How does GMO's proposed change in method for calculating the 900 lb. steam demand factor differ from the current method?

[6] Case No. EO-94-36, Stipulation and Agreement / Allocation Procedures, Appendix II.

A. GMO's new method contains two inputs[7]. The first is the amount of fuel necessary (in mmBtu/hr) to generate the five-year average of the peak hourly steam use by industrial steam customers during the months of July and August ($Fuel_{Steam}$). The second is the theoretical amount of fuel necessary (in mmBtu/hr) to support the maximum gross electrical production at Lake Road Units 1, 2, and 3 ($Fuel_{GenPotential}$). The allocation factor for industrial steam customers is then calculated by dividing $Fuel_{Steam}$ by the sum of $Fuel_{Steam}$ and $Fuel_{GenPotential}$. The allocation factor for electric customers is equal to one minus the industrial steam customer allocation factor.

Q. Will GMO's proposed method for calculating the 900 lb. steam demand allocation factor more accurately reflect how the Lake Road Plant is being used?

A. No. GMO's proposed method for calculating the 900 lb. steam demand factor would not properly allocate costs between its electric and industrial steam customers. ** _____ _____ _____ _____ ** Under GMO's proposed method, actual levels of electrical generation would no longer influence the allocation of costs.

Staff has concerns with the way that GMO proposes to calculate $Fuel_{Steam}$. ** ____ _____ _____ - _____ :

[7] Case No. ER-2016-0156, Direct Testimony of Tim M. Rush, Page 14, Line 13 to Page 15, Line 10.
[8] Case No. ER-2016-0156, GMO Response to MECG Interrogatories, Q3-2.

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[redacted] ** The current method for calculating the 900 lb. steam demand factor considers the peak hourly steam demands from all twelve months of the year.

Staff also has concerns with GMO's proposed method for calculating $Fuel_{GenPotential}$. By choosing to calculate the amount of fuel necessary to support maximum gross electrical generation, the costs allocated to electric customers are maximized. ** [redacted]

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_____ ** The current method for calculating the 900 lb. steam demand factor considers actual steam demand for electrical generation during times of peak hourly steam usage.

Q. How are the turbine-generators on the 900 lb. steam system dispatched into the SPP IM?

A. GMO states[10] that the turbine-generators on the 900 lb. steam system are typically dispatched for peak generation, ancillary services, and spinning reserve. ** _____

_____

_____

_____ **

Q. Have the benefits provided to the electric customers served by Lake Road Units 1, 2, and 3 increased in the past five years?

A. No. Staff is unaware of any changes in the operation or dispatch of the turbine-generators on the 900 lb. steam system that have provided substantial additional benefits to electric customers over the past five years. For that reason, it would not be appropriate to increase the share of costs borne by the electric customers at this time.

Q. What method does Staff recommend that the Commission use to calculate the 900 lb. steam demand factor?

[9] Case No. ER-2016-0156, GMO Response to MECG Interrogatories, Q3-3.
[10] Case No. ER-2016-0156, Direct Testimony of Tim M. Rush, Page 13, Lines 15-18.
[11] Case No. ER-2016-0156, GMO Response to MECG Interrogatories, Q3-10.

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A. Staff recommends that neither the current method nor GMO's proposed method be adopted by the Commission to calculate the 900 lb. steam demand factor. Instead, Staff recommends that the current value[1] of the 900 lb. steam demand factor remain in effect. Staff further recommends that the method of calculation be revisited by all affected parties before and during future electric and steam rate cases once more data have been collected on the new operational characteristics of the Lake Road Plant.

TOTAL COAL BURNED FACTOR

Q. How is the total coal burned factor currently calculated?

A. The same way it was calculated in GMO's last electric rate case, as follows: "*The ratio of coal energy used for industrial steam sales to the total coal energy consumed by the entire Lake Road Plant, based on the previous three calendar* years.[6]"

Q. How does GMO's proposed change in the method used to calculate the total coal burned factor differ from the current method?

A. GMO's proposed method for calculating the total coal burned factor is a complete departure from the current method. GMO's proposed method would no longer be based on coal use and would instead be based on the value of the 900 lb. steam demand factor[12] and would be renamed the "Lake Road Plant Utilization Factor."

Q. If GMO's proposed method is not adopted, how would the total coal burned factor be impacted by the change in primary fuel at Lake Road Unit 4/6 from coal to natural gas?

A. Until the spring of 2016, Lake Road Unit 4/6 was the primary consumer of coal at the Lake Road Plant. With the switch in primary fuel from coal to natural gas,

[12] Case No. ER-2016-0156, Direct Testimony of Tim M. Rush, Page 17, Lines 2-14.

the only boiler at the Lake Road Plant that will continue to burn coal is Boiler #5. Boiler #5 supplies steam to the 900 lb. steam header and has historically produced more than ** ____ ** of all of the steam generated on the 900 lb. steam system[13]. With no more coal being burned at Lake Road Unit 4/6, the total coal burned factor would become entirely dependent on the use of coal at Boiler #5 and upon the split between the use of the 900 lb. steam system to generate steam for industrial steam customers and to generate electricity for electric customers. Based upon the previous allocations of coal on the 900 lb. steam system[14], upwards of ** ____ ** of the energy from the coal burned in Boiler #5 could be used to generate steam for industrial steam customers. The current method for calculating the total coal burned factor would not be appropriate to use following the conversion of Lake Road Unit 4/6 to natural gas.

Q. What method does Staff recommend that the Commission use to calculate the total coal burned factor?

A. Staff recommends that neither the current method nor GMO's proposed method be adopted by the Commission to calculate the total coal burned factor. Instead, Staff recommends that the current value[1] of the total coal burned factor remain in effect. Staff further recommends that the method of calculation be revisited by all affected parties before and during future electric and steam rate cases once more data have been collected on the new operational characteristics of the Lake Road Plant.

Q. Does this conclude your testimony?

A. Yes, it does.

[13] Case No. ER-2016-0156, GMO response to Staff Data Request No. 0328.
[14] Case No. ER-2016-0156, GMO response to Staff Data Request No. 0330.

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BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement A General Rate Increase for Electric Service	))))	Case No. ER-2016-0156

AFFIDAVIT OF CHARLES T. POSTON, PE

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COMES NOW CHARLES T. POSTON, PE and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing Rebuttal Testimony and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

CHARLES T. POSTON, PE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 12th day of August, 2016.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: December 12, 2016
Commission Number: 12412070

Notary Public