Exhibit No.:	
Issue:	Rate Design Policy Considerations, Fuel Adjustment Clause, Electric Vehicle Charging Station Tariff
Witness:	Tim M. Rush
Type of Exhibit:	Rate Design Rebuttal Testimony
Sponsoring Party:	Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company
Case Nos.:	ER-2018-0145 and ER-2018-0146
Date Testimony Prepared:	August 7, 2018

MISSOURI PUBLIC SERVICE COMMISSION

CASE NOS.: ER-2018-0145 and ER-2018-0146

REBUTTAL TESTIMONY

OF

TIM M. RUSH

ON BEHALF OF

KANSAS CITY POWER & LIGHT COMPANY and KCP&L GREATER MISSOURI OPERATIONS COMPANY

Kansas City, Missouri
August 2018

REBUTTAL TESTIMONY

OF

TIM M. RUSH

Case Nos. ER-2018-0145 and ER-2018-0146

Q: Please state your name and business address.

A: My name is Tim M. Rush. My business address is 1200 Main Street, Kansas City, Missouri 64105.

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

A: I am employed by Kansas City Power & Light Company ("KCP&L") as Director, Regulatory Affairs.

Q: On whose behalf are you testifying?

A**:** I am testifying on behalf of KCP&L and KCP&L Greater Missouri Operations Company ("GMO") (collectively, the "Company").

Q: Are you the same Tim M. Rush who filed Direct Testimony in both ER-2018-0145 and ER-2018-0146?

A: Yes, I am.

Q: What is the purpose of your rebuttal testimony?

A: The purpose of my rebuttal testimony is to:

I. Address policy considerations for the overall proposal on class cost of service and rate design presented by Staff.

II. Address certain issues presented by Staff on pages 59-63 of its Class Cost of Service Report ("CCOS Report") pertaining to the Fuel Adjustment

Clause ("FAC"). Staff witnesses Alan J. Bax, Brooke Richter and Catherine F. Lucia sponsored this section of the Staff report.

III. Address the Company's proposed Electric Vehicle ("EV") charging tariff.

I. RATE DESIGN POLICY CONSIDERATIONS

Q: Have you reviewed the CCOS Report prepared by Staff?

A: Yes.

Q: Do you have any general comments you wish to make about the subject presented in the Staff's CCOS Report?

A: Yes, there are a number of overarching concerns with many of the Staff proposals.

1.) As will be discussed in more detail later in my rate design rebuttal testimony, several of the Staff's proposals regarding electric vehicles are impractical would be quite difficult to implement in the current marketplace in the Company's service area. The Company's proposals, on the other hand, are intended to be a practical way to move the EV charging station marketplace forward and encourage a fair and competitively neutral development of the market. Hopefully, the Staff will address the Company's proposals in more detail in the Staff's rate design rebuttal testimony. However, it is critically important that the Commission adopt a proposal that is practical and can be implemented without substantial difficulty. I address the separately metered electric vehicle charging rate schedule later in my rate design Rebuttal Testimony and Company witness Brad Lutz addresses the Staff's Electric Vehicle Make Ready Model recommendation in his rate design Rebuttal Testimony.

2.) Staff 's residential time-of-use ("TOU") rate proposal is very simplistic, is not likely to have any material effect on the Company's load shapes and would not have a beneficial impact on customers or the Company. The Staff rate design proposal is not consistent with the Company's plan to offer three specific rate designs which can be evaluated to assess how each rate design affects the usage patterns of consumers. The Company's proposed residential rates included: 1) TOU energy rates; 2) TOU energy rates with a demand rate; and 3) a demand rate, all with a plan to implement in late 2019 after completing consumer education efforts for up to 1,000 participants on each pilot rate in each jurisdiction. The Company's proposal is to make these pilot rates a part of MEEIA in the Company's Cycle 3 plan. Staff's proposal does not include different rate structures that could be evaluated for more extensive implementation in the future. Instead, Staff's proposal assumes that the Staff rate design could be implemented throughout of the service area at the conclusion of this case. Nor would Staff's proposal allow for a reasonable and necessary customer education effort before implementing the TOU rate. Without sufficient customer education, the Company believes there will be an adverse reaction by customers. See the rate design Rebuttal Testimony of Marisol Miller and also Kimberly Winslow for further discussion on the proposal by Staff.

3.) The Staff developed its rate design proposal without any discussion or input from the Company. The Company met numerous times with Staff

and the Office of Public Counsel ("OPC") in person and by phone to discuss the Company's proposed rate design, and in particular, its plan for three proposed pilot rates. However, the Staff's proposals were not discussed and the Company was not aware of them until the Staff's filing of direct testimony in this case. As a result, there has not been an opportunity to provide input until now.

4.) One very important point that should always be considered in developing a rate design for customers is the impact the rate design will have on customers. The rate impact considerations, particularly for residential customers, are critical to the success of the rate plan and acceptance of the rate design by customers. There has not been adequate consideration of the rate impact of Staff's proposals on individual customers.

5.) Staff also recommends several changes to the Commercial and Industrial rates affecting the small general use, medium general use (KCP&L only), large general use and large power rate schedules. Staff is recommending changes to each class differently. As such, some customers will most likely see a lower overall bill by moving from one rate to another (i.e., rate switching). This topic has been addressed numerous times before the Commission and in these cases the revenue impact on the affected utility of customer rate switching was evaluated and accounted for prior to implementation of the new rate design.

Q: Was rate switching analysis recently performed in connection with GMO's recent consolidation of its rate jurisdictions?

A: Yes. The consolidation of GMO's MPS and Light & Power jurisdictions rate designs included an extensive analysis of rate switching issues. Perhaps more importantly, there was an extensive study of the individual customer impacts that would occur as a result of the consolidation of the rate jurisdictions. The Company worked closely with representatives of the various parties to evaluate and address rate impact concerns on individual customers or classes of customers.

II. FUEL ADJUSTMENT CLAUSE TARIFF ISUES

Q: Does the Company currently have an approved FAC?

A: Yes. Both KCP&L and GMO each have FACs that have been approved by this Commission.

Q: On page 59 of the CCOS Report, Staff witness Alan J. Bax recommends continuation of the current loss factors until he has further time for review. How do you respond?

A: I understand the time that is needed for his review and anticipate that he will conclude that the Loss Study presented by the Company will be acceptable and should be implemented.

Q: Are you proposing any changes to the FAC Tariff as a result of the Loss Study.

A: Yes. The Company is proposing to differentiate the losses for GMO between Transmission and Substation losses. For KCP&L, the Company is proposing to reflect Transmission losses. We currently don't have metering available to measure the distinction between Transmission and Substation for KCP&L. The following table shows

both the current loss factors and a comparison to those we are proposing as a result of the Line Loss Study.

Loss Study Table

	KCP&L	
	Current	**Proposed**
Transmission	1.0195	1.0129
Primary	1.0451	1.0383
Secondary	1.0707	1.0591
	GMO	
	Current	**Proposed**
Transmission	N/A	1.01
Substation	N/A	1.013
Primary	1.0419	1.0268
Secondary	1.0709	1.0426

Q: On page 60 of its CCOS Report, Staff has proposed five (5) tariff recommendations. Do you agree with these recommendations?

A: Yes. The Company agrees with those five recommendations.

Q: On pages 61 and 62 of its CCOS Report, Staff addresses three Tariff Sheet Modifications in sections C, D and E. How do you respond?

A: On page 61, Staff specifically sets out the new Base Factors for both KCP&L and GMO under item 1 and further defines the percentage of transmission costs to be included in the FAC in item 2. Both of these recommendations are based on the updated case presented by Staff in its direct testimony on revenue requirement and both the Base Factor and percentage of transmission costs will change with the true-up in this case. Because of this, I don't agree with these two items until the conclusion of the true-up in this proceeding, which will reflect a new Base Factor as well as new percentage of transmission costs for KCP&L and GMO.

I agree with Staff's third item, adding subaccounts 555035 and 447035 to reflect both the purchased power costs and revenues associated with the WAPA contract to the GMO tariff sheets.

III. SEPERATELY METERED EV CHARGING RATE SCHEDULE

Q: What is the purpose of this portion of your testimony?

A: I will respond to the Staff's Separately Metered Electric Vehicle ("EV") Charging Rate Schedule.

Q: Can you please describe generally what Staff is proposing for a separately metered EV charging rate schedule?

A: Yes. I understand Staff has combined its thoughts and proposal of the "make ready" tariff with a proposed EV charging rate schedule. As such, Staff recommends placing limits on the potential loads for both the equipment to be installed as well as limiting the loads for what the charging unit can provide. Staff uses the phrase "configured and throttled" so that the proposed demand limits cannot be exceeded. This "configured and throttled" concept is also used in establishing the make ready line extension all the way to the actual load on the meter consumed by the electric vehicle and the customer owned charging station.

Q: Is this a normal practice for the utility?

A: No. Placing load limiting conditions on customer loads is not a normal practice. It is also difficult, if not impossible, to manage and enforce.

Q: Why is Staff's proposal to place a load limiting condition on EV charging station customer loads difficult, if not impossible, to manage and enforce?

A: The Company has nearly 1,000 charging stations in the field, but none of these charging stations would qualify under Staff's proposal and Staff has not identified how these existing charging stations would be treated under its proposal. This is untenable. Company witness Brad Lutz further addresses the Staff's Electric Vehicle Make Ready recommendation in his rate design Rebuttal Testimony.

Q: Has Staff introduced any other conditions on its proposed EV charging tariff?

A: Beyond the limitations placed on the make ready line extension, Staff is recommending a TOU demand limiter which is seasonally differentiated. The demand limiter is not priced, but determines the maximum demands that can be placed on a meter during specific times of the day and season. Additionally, the energy price is time differentiated. Both of these conditions are not normally established in a rate, but because this is being proposed for a very limited sector, Staff is proposing to impose these conditions.

Q: How does the Company respond to this Staff proposal?

A: The Company has identified several errors in the Staff's proposal. As I previously stated, to implement such a complicated rate structure, implement a line extension practice that Staff has proposed and to manage such a program would be very difficult, if not impossible. Implementing such a complex program with so few locations is not practical and would be very costly to the Company and would further add costs to the rate and line extension. Beyond the complexity that is reflected in Staff's proposal, it is difficult to imagine any charging stations that would ask for such a plan. Additionally, it is most likely that a vehicle charging station would want other services and facilities combined

with the metered load, such as grocery stores, gas stations or other consumables. Or a charging station may be linked to retail stores, commercial businesses, schools, hospitals, etc. It is difficult to understand how a model similar to the one proposed by Staff would actually attract any takers.

Q: Would the charging stations currently installed qualify for this rate?

A: No. While the Company has nearly 1,000 charging stations in the field, none of these charging stations would qualify under Staff's proposal. Without additional equipment to place limitations on the stations, none of the charging stations would qualify.

Q: Did you find any problems with Staff's modeling of energy consumption from public EV charging stations?

A: Yes, Staff's spreadsheet contains an error in the calculation of monthly energy usage, labeled 'kWh/Month', for each scenario of the charging station. Staff's calculation multiplies the 'Number of Charges/Day' by the kWh/Charge, but omits the number of days per month. It would appear that this would then be multiplied by 30 days in a month.

Q: Why do you believe the Staff's TOU rate structure is inappropriate for separately metered EV Charging Service?

The "EPRI" analysis of EV adoption impacts[1] found that the Company's commercial distribution grid has sufficient capacity available to support a large number of EVs. In this analysis of public, retail and workplace charging patterns, EPRI found some small potential contribution to system peak during the 4:00 - 6:00 PM hours. EPRI does not expect any significant loading issues on the Company's commercial distribution feeders

[1] *Kansas City Power and Light (KCP&L) Clean Charge Network: Phase 2 Analysis and Valuation of PEV Adoption.* EPRI, Palo Alto, CA: 2018. 3002012248, pg. VIII.

resulting from workplace, retail, or public charging in the near future. The EPRI analysis also found that EV charging provides significant benefits to the Company's customers as a whole if the EV charging is sufficiently managed to minimize contribution to the summer late afternoon system peak periods. The Company believes that this can most effectively and efficiently be achieved through the calling of Demand Response events given the relative dearth of EV charging stations operated by customers in the Company's service territory.

Staff's recommendation that the rate for separately metered EV charging service have on on-peak rate period from 8:00 a.m. to 10:00 p.m. This provides no incentive for EV drivers to avoid charging their EVs during the late afternoon summer peak hours. This on-peak rate period is also inconsistent with the proposed summer daytime demand 'throttling' period of 10:00 a.m. to 6:00 p.m. proposed by Staff in the line extensions for the EV charging services. The proposed rate schedule will be billed to the EV charging service provider who may or may not pass the TOU price differential along to EV drivers.

In my direct testimony I also presented data showing that workplace charging was very complementary with the Company's daily load profile with very little charging occurring during the Company's late afternoon summer system peak load hours. As EV adoption increases, employees will drive more EVs than the number of charging ports that will typically be available at a workplace, requiring EV drivers to rotate their cars so others may charge. 'Throttling' or limiting the allowable charge rate of a charger, only lengthens the time it takes an EV to charge and can severely limit the number of EVs that can be serviced by a single charging station port. Requiring EV charging service

providers to reduce their charging load in response to Company issued Demand Response events is a more efficient and less impactful way to minimize the amount of EV charging during periods approaching system peak capacity.

Neither Staff's demand 'throttling' requirement nor its proposed long on-peak, low differential TOU rate for EV charging service provide the proper EV charging controls or incentives to realize the full benefits of increasing EV adoption while avoiding increasing system capacity requirements. The Company believes that, at this early stage of EV adoption, the impact of separately metered commercial charge service providers can be mitigated through EV charge level reductions during DR events.

If the Commission were to order that the rate schedule for separately metered EV charging service must be a TOU, the Company believes that a more appropriate time-of-day rate be designed for the commercial and industrial class that best suits that type of customer.

Q: Does that conclude your testimony?

A: Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Kansas City Power & Light Company's Request for Authority to Implement A General Rate Increase for Electric Service	)))	Case No. ER-2018-0145
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-2018-0146

AFFIDAVIT OF TIM M. RUSH

STATE OF MISSOURI)
) ss
COUNTY OF JACKSON)

Tim M. Rush, being first duly sworn on his oath, states:

1. My name is Tim M. Rush. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Director, Regulatory Affairs.

2. Attached hereto and made a part hereof for all purposes is my [Rate Design] Rebuttal Testimony on behalf of Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company consisting of eleven (11) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

Tim M. Rush

Subscribed and sworn before me this 7th day of August 2018.

Notary Public

My commission expires: 4/26/2021

ANTHONY R WESTENKIRCHNER
Notary Public, Notary Seal
State of Missouri
Platte County
Commission # 17279952
My Commission Expires April 26, 2021