

Exhibit No.:  
Issues: Weather  
Normalization  
Witness: Shawn E. Lange  
Sponsoring Party: MO PSC Staff  
Type of Exhibit: Rebuttal Testimony  
Case No.: ER-2007-0291  
Date Testimony Prepared: August 30, 2007

**MISSOURI PUBLIC SERVICE COMMISSION**

**UTILITY OPERATIONS DIVISION**

**REBUTTAL TESTIMONY**

**OF**

**SHAWN E. LANGE**

**KANSAS CITY POWER & LIGHT COMPANY**

**CASE NO. ER-2007-0291**

**Jefferson City, Missouri  
August 2007**

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**


In the Matter of the Application of Kansas )  
City Power and Light Company for )  
Approval to Make Certain Changes in its )  
Charges for Electric Service To )  
Implement Its Regulatory Plan. )

Case No. ER-2007-0291

**AFFIDAVIT OF SHAWN E. LANGE**

STATE OF MISSOURI     )  
                                      ) ss  
COUNTY OF COLE     )

Shawn E. Lange, of lawful age, on his oath states: that he has participated in the preparation of the following Rebuttal Testimony in question and answer form, consisting of 5 pages of Rebuttal Testimony to be presented in the above case, that the answers in the following Rebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true to the best of his knowledge and belief.

  
Shawn E. Lange

Subscribed and sworn to before me this 29<sup>th</sup> day of August, 2007.



SUSAN L. SUNDERMEYER  
My Commission Expires  
September 21, 2010  
Callaway County  
Commission #06942086

  
Notary Public

My commission expires 9-21-10

1  
2 **REBUTTAL TESTIMONY**  
3 **OF**  
4 **SHAWN E. LANGE**  
5 **KANSAS CITY POWER & LIGHT COMPANY**  
6 **CASE NO. ER-2007-0291**  
7

8 Q. Please state your name and business address.

9 A. My name is Shawn E. Lange and my business address is Missouri Public  
10 Service Commission, P.O. Box 360, Jefferson City, MO 65102.

11 Q. What is your present position with the Missouri Public Service Commission  
12 (Commission)?

13 A. I am a Utility Engineering Specialist II in the Engineering Analysis Section,  
14 Energy Department, Utility Operations Division.

15 Q. Would you please review your educational background and work experience?

16 A. My credentials are listed on page 4 of Appendix 1 in Staff's Cost-of-Service  
17 Report for Kansas City Power & Light Company As of March 31, 2007.

18 Q. What is the purpose of your rebuttal testimony?

19 A. The purpose of my rebuttal testimony is to respond to the direct testimony of  
20 Kansas City Power & Light Company (KCPL) witness George M. McCollister, Ph.D., who  
21 asserts the Large Power Service (LPS) customer class is weather sensitive during the summer  
22 months and, therefore, should be weather normalized in this case.

23 Q. Did Staff adjust the LPS class revenues to normalize them for weather?

1           A.     No. There are several adjustments made to class revenues, of which weather  
2     normalization is just one, and the adjustments are inter-related. When considering whether to  
3     weather normalize revenues for the LPS class, the ability to calculate a revenue adjustment for  
4     class growth must also be considered.

5           Q.     What does growth have to do with weather normalization?

6           A.     Growth and weather normalization are related. For the non-LPS classes such  
7     as the residential class, the customers are assumed to be somewhat homogenous. While there  
8     is a lot of difference between a small and large residential customer's usage, the usage pattern  
9     is similar and the response to weather is similar. When a weather impact study is performed  
10    at the class level for the non-LPS classes, typically growth in class usage is calculated by  
11    applying an increased number of customers to the average customer weather normal usage.

12          Q.     Why is the growth aspect different for the LPS class?

13          A.     The customers in the LPS class are not homogeneous in the amount of  
14    electricity they use. In this class, the largest nine customers, on a demand and energy basis,  
15    use 46% of the total annual energy consumed by the class. The largest three customers, on a  
16    demand and energy basis, use 22% of the total annual energy consumed by the class.

17                Even though these are KCPL's largest customers, the range in customer size is wide.  
18    On an annual energy basis, the largest customer is 53 times as large as the smallest customer.  
19    On an annual peak demand basis, the largest customer is 41 times as large as the smallest  
20    customer.

21                These statistics show that applying the assumption that there is a "typical" customer is  
22    not appropriate for this class. Using customer numbers and the weather normalized class'  
23    energy to account for growth would introduce significant error into the calculation.

1 Staff uses an annualization process on an individual customer basis to account for any  
2 growth in the LPS rate class. Because this is done on an individual customer basis, the  
3 assumption that there is a “typical” LPS customer is avoided. For more information on the  
4 annualization process, please see Staff witness Curt Wells’ Direct Testimony.

5 Q. How does the annualization process impact the weather normalization process?

6 A. Because the annualization process is done on an individual customer basis, it  
7 does not lend itself to performing weather normalization on a class basis, such as Staff and  
8 KCPL conducted on the other rate classes. To calculate a weather adjustment for LPS class,  
9 each customer must be weather normalized individually.

10 Q. Did Staff perform a weather normalization study on an individual customer  
11 basis?

12 A. Yes. Using each customer’s revenue month information and the calculated  
13 Cooling Degree Days and Heating Degree Days for the time period for each bill, Staff  
14 performed a weather impact study on an individual customer basis. While some customers  
15 were found to be weather sensitive, the total class impact was very small in comparison to the  
16 total energy usage of the class.

17 For other customers, their energy usage increases in the summer months, but they are  
18 more sensitive to seasonal changes in weather than they are to daily fluctuations in weather,  
19 and hence it is not appropriate to weather normalize.

20 Q. Do you agree with KCPL witness George M. McCollister’s assertion: “If the  
21 daily load were higher in August due only to seasonal factors, it would not vary with daily  
22 temperatures.” (ER-2007-0291 McCollister Direct, p. 5, ll. 10-13)

1           A.     This may be true if all customers of this class responded both only to and  
2 directly to seasonality. KCPL witness George M. McCollister performed his study on a class  
3 basis; his schedule GMM-4 shows the average LPS class' response during August. The  
4 increase could be explained by many different factors unrelated to weather. As I explained  
5 earlier, this rate class is comprised of a very diverse group of customers, several of which are  
6 large enough that day-to-day fluctuations of one customer may impact the daily energy usage  
7 of the class.

8           Another reason is the ramp-up period when a new customer goes on-line or if an  
9 existing customer expands their business. A ramp-up period is the period of time from which  
10 a customer comes on-line until they are at their normal operating level or, for a customer that  
11 increases their load due to expansions, it is the period of time in which a customer starts at  
12 their initial load until they reach their new normal operating level. During this time there is  
13 an increase in load. If this increase in load coincides with the summer months, this would  
14 show up in the class load and may exaggerate any response to weather. An example of this is  
15 shown in Schedule SELR-1.

16          Q.     Do you adjust usage in order to reflect seasonal sensitivity?

17          A.     No.

18          Q.     Why not?

19          A.     Seasonal fluctuations need to remain in the usage because they are "normal,"  
20 *i.e.*, they occur every year.

21          Q.     Did Staff include a weather adjustment to revenues for the LPS class?

22          A.     No. While the individual customer analysis showed that some customers are  
23 weather sensitive, to accurately account for these weather adjustments would only slightly

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Shawn E. Lange

1 change the class revenues and would add considerable potential for error in the calculation.

2 In addition, the Commission agreed with Staff's position of not weather normalizing the LPS

3 class in the last KCPL's rate case (Case No. ER-2007-0314), where the Commission stated,

4           The Commission finds that the competent and substantial evidence  
5 supports Staff's position, and finds this issue in favor of Staff. The LP class  
6 consists of a fairly small number of large businesses engaged in wildly  
7 different enterprises; hotels, office buildings, manufacturing, and hospitals are  
8 examples.<sup>137</sup> These businesses' electricity needs vary more due to the type of  
9 commerce they are in than due to day-to-day temperature changes. (ER-2007-  
10 0314 Report and Order, p. 73)

11  
12 Q. Does this conclude your rebuttal testimony?

13 A. Yes, it does.

Energy By Month

