

Exhibit No.:  
Issue: Weather Normalization, Customer  
Growth, Other Revenue Normalization  
Witness: George M. McCollister  
Type of Exhibit: Direct Testimony  
Sponsoring Party: Kansas City Power & Light Company  
Case No.: ER-2010-\_\_\_\_  
Date Testimony Prepared: June 4, 2010

**MISSOURI PUBLIC SERVICE COMMISSION**

**CASE NO.: ER-2010-\_\_\_\_**

**DIRECT TESTIMONY**

**OF**

**GEORGE M. McCOLLISTER**

**ON BEHALF OF**

**KANSAS CITY POWER & LIGHT COMPANY**

**Kansas City, Missouri  
June 2010**

**DIRECT TESTIMONY**  
**OF**  
**GEORGE M. McCOLLISTER**

**Case No. ER-2010-\_\_\_\_\_**

1 **Q: Please state your name and business address.**

2 A: My name is George M. McCollister, Ph.D. My business address is 1200 Main  
3 Street, Kansas City, Missouri 64105.

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

5 A: I am the Manager of Market Assessment at Kansas City Power & Light Company  
6 (“KCP&L” or the “Company”).

7 **Q: Please describe your education, experience and employment history.**

8 A: I earned three degrees from the University of California at San Diego. These  
9 include a Bachelor of Arts degree in mathematics and chemistry, a Master of Arts  
10 degree in mathematics, and a Ph.D. in economics. My specialties in the  
11 economics program were microeconomics and econometrics.

12 I was previously employed at three electric and natural gas utilities. I was  
13 employed as an Energy Economist at Pacific Gas and Electric Company where I  
14 was responsible for developing end-use models of electric and natural gas sales  
15 and for analyzing responses to energy-use surveys of our customers. I was  
16 employed as a Senior Forecast Analyst at San Diego Gas and Electric Company  
17 where I developed models of customer choice, energy sales and system reliability.  
18 I was also employed by UtiliCorp United, Inc. as the Forecast Leader where I was  
19 responsible for end-use forecasting in integrated resource plans, budget forecasts,

1 weather normalization, variance analysis and for statistical analysis. I have also  
2 been employed by several consulting firms including Resource Management  
3 International and Spectrum Economics, Inc. that specialized in regulated  
4 industries. The majority of my consulting projects focused on energy forecasting  
5 issues and modeling for electric and natural gas utilities.

6 **Q: Have you previously testified in a proceeding at the Missouri Public Service  
7 Commission (“MPSC” or “Commission”) or before any other utility  
8 regulatory agency?**

9 A: Yes, I have testified before the MPSC, the Oklahoma Corporation Commission,  
10 the Kansas Corporation Commission, and the Public Utilities Commission in  
11 Colorado.

12 **Q: What is the purpose of your testimony?**

13 A: I am sponsoring several normalizations to monthly Kilowatt-hour (“kWh”) sales  
14 and peak loads in Schedules GMM2010-1 through GMM2010-3. I recommend  
15 that the Commission adopt these results in the current case.

16 **Q: What are normalizations of kWh sales and hourly loads?**

17 A: Both kWh sales and hourly loads are adjusted to reflect normal weather  
18 conditions. This is called a weather adjustment. KWh sales are further adjusted  
19 for expected customer growth through December 2010 and for rate switchers  
20 (customers who were switched from one rate to another).

1 **Q: What adjustment was made for rate switchers?**

2 A: Each year a small percentage of customers switch from their current tariff to  
3 another that is expected to reduce their electric bills. We adjusted the customer  
4 numbers and kWh sales to reflect the switch for the entire test year.

5 **Q: What is the purpose of making a weather adjustment?**

6 A: Abnormal weather can increase or decrease a utility company's revenues, fuel  
7 costs and rate of return. Therefore, revenues and expenses are typically adjusted  
8 to reflect normal weather when these are used to determine a company's future  
9 electric rates. These adjustments are made by first adjusting kWh sales and  
10 hourly loads and then using these results to adjust revenues and fuel costs.

11 During the test year, there were 3.4 percent fewer heating degree days and  
12 17.7 percent fewer cooling degree days than normal as measured at the Kansas  
13 City International Airport. Thus, both heating and cooling loads were less than  
14 normal.

15 **Q: What method was used to weather-normalize kWh sales?**

16 A: Our method was based on load research ("LR") data, which was derived by  
17 measuring hourly loads for a sample of KCP&L's customers representing the  
18 Residential, Small General Service, Medium General Service, Large General  
19 Service and Large Power Service classes. The hourly loads were grossed up by  
20 the ratio of the number of customers for each of these classes divided by the  
21 number sampled.

1           In the first step, the hourly loads for the sample were calibrated to the  
2 annual billed sales of all customers in each class. The ratio of the billed sales  
3 divided by the sum of the hourly loads was multiplied by the load in each hour.

4           In the second step, the hourly loads were estimated for lighting tariffs and  
5 the loads for all tariffs, including sales for resale, were grossed up for losses and  
6 compared to Net System Input (“NSI”). The difference between this sum and the  
7 NSI was then allocated back to the LR data in proportion to the hourly precisions  
8 that were estimated for the load research data.

9           In the third step, regression analysis was used to model the hourly loads  
10 for each tariff. These models included a piecewise linear temperature response  
11 function of a two-day weighted mean temperature.

12           In the fourth step, this temperature response function was used to compute  
13 daily weather adjustments as the difference between loads predicted with normal  
14 weather and loads predicted with actual weather. Normal weather was derived  
15 using spreadsheets provided by the MPSC Staff. The normal weather represents  
16 average weather conditions over the 1971-2000 time period.

17           In the fifth step, the daily weather adjustments were split into hourly  
18 adjustments and these were added to NSI to weather-normalize that series.

19           In the sixth step, the daily weather adjustments were split into billing  
20 months based on the percentage of sales on each billing cycle and the meter  
21 reading schedule for the test year period. These weather adjustments are then  
22 summed by billing month and added to billed kWh sales to weather-normalize  
23 that data.

1 **Q: What adjustments were made for load and customer growth?**

2 A: The weather normalized kWh sales for the test year were adjusted for expected  
3 customer growth by multiplying the weather-normalized sales by the ratio of  
4 customers in December 2010 to the actual number of customers for that month.  
5 This adjustment was made to the Residential, Small General Service, Medium  
6 General Service and Large General Service customer classes. I also adjusted the  
7 individual customer loads of some large power customers to reflect permanent  
8 changes in their loads that occurred during or after the test year.

9 **Q: Are these your final calculations?**

10 A: After December 2010, I will re-compute the adjustments for customer growth and  
11 rate switchers as part of the true-up process in this case. Also, when load research  
12 data becomes available for the last quarter of 2009, I will provide weather  
13 normalized peak loads for that period.

14 **Q: What are the results of these normalizations?**

15 A: Schedule GMM2010-1 shows the adjustments for each normalization on kWh  
16 sales. Schedule GMM2010-2 shows weather-normalized customer annualized  
17 monthly peaks by class, and Schedule GMM2010-3 shows weather-normalized  
18 customer annualized loads by class at the time of the monthly system peak load.

19 **Q: How are these results used?**

20 A: Weather-normalized, customer-annualized kWh sales are used to calculate test  
21 year revenues and fuel costs.

1 **Q: How are the weather-normalized monthly peak loads used?**

2 A: These loads are used to calculate the demand allocator, which is used to allocate  
3 certain accounts in the Revenue Model. The use of the demand allocator is  
4 described in the Direct Testimony of KCP&L witness John P. Weisensee.

5 **Q: Does that conclude your testimony?**

6 A: Yes, it does.

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

In the Matter of the Application of Kansas City )  
Power & Light Company to Modify Its Tariffs to ) Docket No. ER-2010-\_\_\_\_  
Continue the Implementation of Its Regulatory Plan )

**AFFIDAVIT OF GEORGE M. McCOLLISTER**

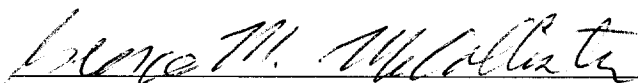
**STATE OF MISSOURI** )  
) ss  
**COUNTY OF JACKSON** )

George M. McCollister, being first duly sworn on his oath, states:

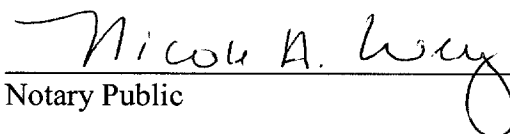
1. My name is George M. McCollister. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Manager of Market Assessment.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Kansas City Power & Light Company consisting of Six (6) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

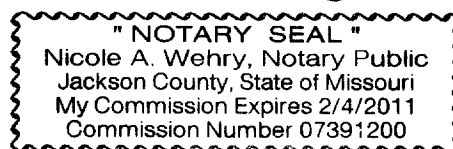
3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

  
George M. McCollister

Subscribed and sworn before me this 28<sup>th</sup> day of May, 2010.

  
\_\_\_\_\_  
Notary Public

My commission expires: Feb. 4 2011





## ADJUSTMENTS TO MONTHLY BILLED SALES OF KCP&L MISSOURI

| Tariff       | Weather Adjustments to Monthly Billed Sales |               |              |               |               |               |               |               |               |               |              |               |                | Dec 2010<br>Customer<br>Growth | Total<br>Adjustments |
|--------------|---|---------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|---------------|----------------|--------------------------------|----------------------|
|              | Jan-09                                      | Feb-09        | Mar-09       | Apr-09        | May-09        | Jun-09        | Jul-09        | Aug-09        | Sep-09        | Oct-09        | Nov-09       | Dec-09        | Test Year      |                                |                      |
| Residential  | -2,536                                      | 7,323         | 4,941        | -672          | -1,847        | -2,674        | 22,775        | 45,719        | 30,016        | 8,197         | 2,136        | 8,856         | 122,233        | 5,312                          | 127,545              |
| Small GS     | -210  | 542           | 267          | -122          | -19           | -197          | 1,251         | 2,686         | 1,884         | 510           | 367          | 588           | 7,548          | 315                            | 7,862                |
| Medium GS    | -231  | 586           | 153          | -282          | -30           | -462          | 2,969         | 6,546         | 4,419         | 2,118         | 1,135        | 483           | 17,403         | -1,976                         | 15,426               |
| Large GS     | -1,137                                      | 2,903         | 1,273        | -335          | 8             | -581          | 4,056         | 8,333         | 5,811         | 2,280         | 1,904        | 3,124         | 27,639         | 18,617                         | 46,256               |
| Large Power  | 32  | -345          | -836         | 358           | -78           | -898          | 3,981         | 4,127         | 3,089         | 3,235         | 73           | -436          | 12,303         | 15,816                         | 28,119               |
| <b>Total</b> | <b>-4,082</b>                               | <b>11,008</b> | <b>5,799</b> | <b>-1,053</b> | <b>-1,966</b> | <b>-4,812</b> | <b>35,031</b> | <b>67,411</b> | <b>45,219</b> | <b>16,340</b> | <b>5,614</b> | <b>12,615</b> | <b>187,125</b> | <b>38,084</b>                  | <b>225,209</b>       |

**WEATHER NORMALIZED MONTHLY PEAK LOADS (MW)**

**KCP&L Missouri Peaks by Tariff Class (Includes Losses) - With Customer Growth through December 2010 (MW)**

| Date                    | Oct-08 | Nov-08 | Dec-08 | Jan-09 | Feb-09 | Mar-09 | Apr-09 | May-09 | Jun-09 | Jul-09 | Aug-09 | Sep-09 | Oct08-Sept09 |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|
| <b>Residential</b>      | 388    | 503    | 618    | 583    | 549    | 453    | 437    | 549    | 795    | 895    | 903    | 589    | 903          |
| <b>Small GS</b>         | 72     | 69     | 78     | 90     | 87     | 66     | 66     | 89     | 111    | 109    | 105    | 93     | 111          |
| <b>Medium GS</b>        | 208    | 180    | 182    | 185    | 183    | 169    | 188    | 210    | 249    | 282    | 263    | 236    | 282          |
| <b>Large GS</b>         | 356    | 347    | 407    | 414    | 397    | 351    | 339    | 374    | 417    | 437    | 433    | 402    | 437          |
| <b>Large Power</b>      | 319    | 314    | 302    | 314    | 310    | 323    | 336    | 359    | 369    | 393    | 389    | 350    | 393          |
| <b>Street Lights</b>    | 17     | 17     | 17     | 17     | 17     | 17     | 17     | 17     | 17     | 17     | 17     | 17     | 17           |
| <b>Traffic</b>          | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0            |
| <b>Area Lights</b>      | 4      | 4      | 4      | 4      | 4      | 4      | 4      | 4      | 4      | 4      | 4      | 4      | 4            |
| <b>Sales for Resale</b> | 3      | 3      | 4      | 4      | 4      | 4      | 3      | 4      | 6      | 6      | 6      | 5      | 6            |

## WEATHER NORMALIZED MONTHLY COINCIDENT PEAK LOADS (MW)

### KCP&L Missouri Coincident Peaks by Tariff Class (Includes Losses) - With Customer Growth through December 2010 (MW)

| Date                    | Oct-08 | Nov-08 | Dec-08 | Jan-09 | Feb-09 | Mar-09 | Apr-09 | May-09 | Jun-09 | Jul-09 | Aug-09 | Sep-09 | Oct08-Sept09 |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|
| <b>Residential</b>      | 388    | 465    | 561    | 513    | 460    | 384    | 317    | 549    | 762    | 865    | 888    | 546    | 888          |
| <b>Small GS</b>         | 48     | 51     | 61     | 78     | 63     | 58     | 53     | 58     | 76     | 86     | 79     | 81     | 86           |
| <b>Medium GS</b>        | 146    | 144    | 165    | 166    | 151    | 142    | 153    | 176    | 217    | 239    | 231    | 215    | 239          |
| <b>Large GS</b>         | 239    | 311    | 379    | 414    | 378    | 340    | 322    | 281    | 381    | 415    | 411    | 386    | 415          |
| <b>Large Power</b>      | 250    | 271    | 279    | 300    | 303    | 293    | 262    | 272    | 320    | 374    | 373    | 338    | 374          |
| <b>Street Lights</b>    | 17     | 17     | 17     | 3      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 17           |
| <b>Traffic</b>          | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0            |
| <b>Area Lights</b>      | 4      | 4      | 4      | 1      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 4            |
| <b>Retail</b>           | 1,093  | 1,263  | 1,466  | 1,474  | 1,355  | 1,217  | 1,107  | 1,336  | 1,757  | 1,979  | 1,983  | 1,566  | 1,983        |
| <b>Sales for Resale</b> | 3      | 3      | 4      | 4      | 4      | 3      | 3      | 4      | 5      | 6      | 6      | 5      | 6            |