

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

DIRECT TESTIMONY OF

GEORGE M. MCCOLLISTER, PH.D

**ON BEHALF OF
KANSAS CITY POWER & LIGHT COMPANY**

**IN THE MATTER OF THE APPLICATION OF
KANSAS CITY POWER & LIGHT COMPANY
TO MODIFY ITS TARIFFS TO BEGIN THE
IMPLEMENTATION OF ITS REGULATORY PLAN**

DOCKET NO. 06-KCPE-____ - ____

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

2 A: My name is George M. McCollister, Ph.D. My business address is 1201 Walnut,
3 Kansas City, MO, 64106-2124.

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 (“KCPL”).

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

1 was responsible for developing end-use models of electric and natural gas sales
2 and for analyzing responses to energy-use surveys of our customers. I was
3 employed as a Senior Forecast Analyst at San Diego Gas and Electric Company
4 where I developed models of customer choice, energy sales and system reliability.
5 I was also employed by UtiliCorp United, Inc. as the Forecast Leader where I was
6 responsible for end-use forecasting in integrated resource plans; budget forecasts;
7 weather normalization; variance analysis; and for statistical analysis. I have also
8 been employed by several consulting firms including Resource Management
9 International and Spectrum Economics, Inc. that focused on regulated industries.
10 The majority of my consulting projects focused on energy forecasting issues and
11 modeling for electric and natural gas utilities.

12 **Q: Have you previously testified in a proceeding at the State Corporation**
13 **Commission for the State of Kansas (“KCC” or “Commission”) or before**
14 **any other utility regulatory agency?**

15 A: Yes, I have testified before the KCC, the Missouri Public Service Commission,
16 the Oklahoma Corporation Commission, and the Public Utilities Commission in
17 Colorado.

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

19 A: I am sponsoring several normalizations to monthly Kilowatt hour (“kwh”) sales
20 and peak loads in Schedules GMM-1 through GMM-3. I recommend that the
21 Commission adopt these results in the current case.

1 **Q: What are normalizations of kwh sales and hourly loads?**

2 A: Both kwh sales and hourly loads are adjusted to reflect normal weather
3 conditions. This is called a weather adjustment. Kwh sales are further adjusted to
4 restate the sales on a calendar month or accrued basis rather than on a billing
5 month basis, and for expected customer growth through September 2006.

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

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

12 During the period October 2004 to September 2005, there were 12% fewer
13 heating degree days and 20% more cooling degree days than normal. Thus,
14 heating loads were less than normal and cooling loads were greater than normal.

15 **Q: What is the purpose of restating kwh sales on a calendar month or accrued
16 basis?**

17 A: Fuel costs are typically measured over calendar months whereas revenues are
18 measured and invoiced daily throughout the month. Because it is important to
19 measure revenues and fuel costs over the same time period, it is customary to
20 adjust revenues to a calendar month basis. This is accomplished by first adjusting
21 kwh billed sales to a calendar month basis and then determining how this change
22 affects revenues. Because the test year consists of a 12-month period, this

1 adjustment is computed by adding unbilled sales from the end of the period and
2 subtracting unbilled sales at the beginning of the period.

3 **Q: What method was used to weather normalize kwh sales?**

4 A: Our method was based on load research (“LR”) data, which was derived by
5 measuring hourly loads for a sample of KCPL’s customers representing the
6 Residential, Small General Service, Medium General Service, Large General
7 Service and Large Power Service classes. The hourly loads were grossed up by
8 the ratio of the number of customers in each of these classes divided by the
9 number sampled.

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

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

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

21 In the fourth step, this temperature response function was used to compute
22 daily weather adjustments as the difference between loads predicted with normal
23 weather and loads predicted with actual weather. Normal weather was derived

1 using spreadsheets provided by the MPSC Staff. The normal weather represents
2 average weather conditions over the 1971-2000 time period.

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

5 In the sixth step, the daily weather adjustments were split into billing
6 months based on the percentage of sales in each billing cycle and the meter
7 reading schedule for the test year period. These weather adjustments are then
8 summed by billing month and added to billed kwh sales to weather normalize that
9 data.

10 **Q: What method was used to adjust weather normalized monthly billed sales to**
11 **a calendar month test period?**

12 A: The portion of weather normalized billed sales in October 2004 and October 2005
13 that was unbilled from the previous month was estimated using the meter reading
14 schedule and the amount of sales in each billing cycle. Then, from test year billed
15 sales, the unbilled portion from October 2004 was subtracted and the unbilled
16 portion from October 2005 was added.

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

18 A: First, KCPL's 2006-2010 budget forecast was used to project kwh sales, hourly
19 loads and peak loads for October, November and December 2005. The ratio of
20 projected growth for these months divided by the weather normalized sales in the
21 same month of 2004 was multiplied by weather normalized sales, hourly loads
22 and peaks loads in October, November and December 2004.

1 Then the customer projections in our budget forecast were used to “true
2 up” sales and peak loads for customer growth through September 2006.

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

4 A: The adjustments for load and customer growth are temporary because we expect
5 to weather normalize the last three months of 2005 when actual kwh sales become
6 available. Also, the true up will be based on actual customer growth when the
7 customer numbers become available.

8 **Q. What are the results of these normalizations?**

9 A. Schedule GMM-1 shows the adjustments for each normalization on kwh sales.
10 Schedule GMM-2 shows weather normalized peak loads by class and Schedule
11 GMM-3 shows weather normalized loads by class at the time of the monthly
12 system peak load.

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

14 A: Yes, it does.

WEATHER ADJUSTMENTS TO MONTHLY BILLED SALES

Class	Weather Adjustments to Monthly Billed Sales												To Accrued	Sept 2006 Customer Growth	Total 2005 Accrued Plus Customer Growth	
	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05				Oct04- Sep05
Residential	1,782	9,104	11,400	8,631	11,650	5,715	-921	-1,501	-13,298	-9,490	-11,376	-35,326	-23,631	3,923	65,416	45,708
Small GS	-123	429	646	466	708	469	-52	-189	-838	-433	-624	-1,692	-1,234	385	6,640	5,792
Medium GS	-633	56	296	331	603	578	-339	-247	-1,338	-923	-1,116	-3,494	-6,225	661	12,669	7,106
Large GS	-1,224	872	2,591	1,878	2,973	2,560	-134	-600	-2,682	-1,677	-1,787	-5,824	-3,053	3,081	38,920	38,948
Large Power	-518	-287	98	113	477	565	-134	-66	-653	-305	-423	-1,329	-2,465	2,169	23,240	22,944
Special Contract	0	0	0	0	0	0	0	0	0	0	0	0	0	0	768	768
Total	-717	10,174	15,030	11,418	16,410	9,887	-1,581	-2,603	-18,809	-12,827	-15,326	-47,665	-36,608	10,220	147,652	121,265

WEATHER NORMALIZED MONTHLY PEAK LOADS (MW)

Class	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Test Year
Residential	441	509	625	586	575	470	386	712	883	973	906	794	973
Small GS	63	57	65	71	60	55	51	70	85	93	92	77	93
Medium GS	131	116	113	122	114	119	130	153	181	187	177	165	187
Large GS	286	272	268	303	280	261	282	328	350	361	354	339	361
Large Power	107	103	101	99	99	102	105	114	115	119	122	114	122
Street Lights	4	4	4	4	4	4	4	4	4	4	4	4	4
Traffic Signals	0	0	0	0	0	0	0	0	0	0	0	0	0
Area Lights	1	1	1	1	1	1	1	1	1	1	1	1	1
Special Contract	7	7	7	7	7	7	7	7	7	7	7	7	7
Total Retail	938	978	1,109	1,104	1,065	923	844	1,223	1,538	1,655	1,580	1,311	1,655

Note: These numbers include losses.

WEATHER NORMALIZED MONTHLY COINCIDENT PEAK LOADS (MW)

Class	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Test Year
Residential	441	491	618	560	564	470	386	599	828	912	899	787	912
Small GS	39	44	45	62	46	38	38	64	81	82	64	58	82
Medium GS	113	94	95	99	96	91	93	141	166	175	159	124	175
Large GS	238	251	246	285	257	224	222	305	331	350	343	254	350
Large Power	95	85	93	95	90	88	93	108	111	115	116	88	116
Street Lights	4	4	4	1	4	4	4	0	0	0	0	0	4
Traffic Signals	0	0	0	0	0	0	0	0	0	0	0	0	0
Area Lights	1	1	1	0	1	1	1	0	0	0	0	0	1
Special Contract	7	7	7	1	7	6	7	0	0	0	0	0	7

Note: These numbers include losses.