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 CONTINUE THE
IMPLEMENTATION OF ITS REGULATORY PLAN

DOCKET NO. 09-KCPE-____-RTS

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, Missouri 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 ("KCP&L").

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 specialized in regulated
10		industries. The majority of my consulting projects focused on energy forecasting
11		issues and modeling for electric and natural gas utilities.
12	**Q:**	**Have you previously testified in a proceeding before the Kansas Corporation**
13		**Commission ("KCC" or "Commission") or before any other utility**
14		**regulatory agency?**
15	A:	Yes, I have testified before the KCC, the Missouri Public Service Commission
16		("MPSC"), the Oklahoma Corporation Commission, and the Public Utilities
17		Commission in 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. I am also adjusting kWh sales

4　　and customer counts for the test year to reflect "rate switchers." These are

5　　customers who were switched to a different tariff that is expected to lower their

6　　electric bills. This adjustment is made so that the tariff rates that are set in this

7　　rate case will reflect the current mix of customers in each tariff group.

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

9　A:　Abnormal weather can increase or decrease a utility company's revenues, fuel

10　　costs and rate of return. Therefore, revenues and expenses are typically adjusted

11　　to reflect normal weather to determine a company's future electric rates. These

12　　adjustments are made by first adjusting kWh sales and hourly loads and then

13　　using these results to adjust revenues and fuel costs.

14　　　In 2007, there were 6.4% fewer heating degree days and 20.5% more

15　　cooling degree days than normal at the Kansas City International Airport. Thus,

16　　heating loads were less than normal and cooling loads were greater than normal.

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

18　A:　Our method was based on load research ("LR") data, which was derived by

19　　measuring hourly loads for a sample of KCP&L's customers representing the

20　　Residential, Small General Service, Medium General Service, Large General

21　　Service and Large Power Service tariff groups. The hourly loads were grossed up

22　　by the ratio of the number of customers in each of these classes divided by the

23　　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   then the loads for all tariffs, including sales for resale, were grossed up for losses

6   and compared to Net System Input ("NSI"). The difference between this sum and

7   the NSI was then allocated back to the LR data in proportion to the hourly

8   precisions 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   representing average weather conditions over the 1971-2000 time period.

16   In the fifth step, the daily weather adjustments were split into hourly

17   adjustments and these were added to NSI to weather normalize that series.

18   In the sixth step, the daily weather adjustments were split into billing

19   months based on the percentage of sales in each billing cycle and the meter

20   reading schedule for the test year period. These weather adjustments are then

21   summed by billing month and added to billed kWh sales to weather normalize

22   that data.

1 Q: **Why was 1971-2000 time period used to weather normalize electric sales?**

2 A: Most public utility commissions, including the KCC, have traditionally used the

3   period that is used by the U.S. National Oceanic and Atmospheric Administration

4   ("NOAA") to compute normal weather statistics. NOAA computes normal

5   weather statistics using the last three decades, which is currently 1971-2000.

6   NOAA recomputes and publishes normal weather statistics every ten years at the

7   end of a decade. Scientists at NOAA have discussed alternatives to this 30-year

8   period, but no official decisions have been made to change this methodology.

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

10 A: Schedule GMM-1 shows the adjustments for weather normalization on kWh

11   sales. Schedule GMM-2 shows weather normalized peak loads by class and

12   Schedule GMM-3 shows weather normalized loads by class at the time of the

13   monthly system peak load.

14 Q: **Why did you use data from the weather station at the Kansas City**

15   **International Airport ("KCI")?**

16 A: To employ its weather normalization methodology, KCP&L needs 30 years of

17   daily minimum and maximum temperature data for a weather station located near

18   its service territory. KCI is a first order weather station, which means that the

19   data is collected by the national weather service using trained professionals and

20   this data is checked and edited to insure accuracy.

21 Q: **Have you considered using alternative weather stations to weather normalize**

22   **sales for KCP&L's service territory in Kansas?**

| 1 | A: | Yes. As part of the settlement agreement in KCP&L's previous rate case, Docket |
| 2 | | No. 07-KCPE-905-RTS, KCP&L agreed |

> to explore with Staff the use of weather stations within KCP&L's
> Kansas service territory for use in its future weather normalization
> analysis and load forecasting. KCP&L will review the availability
> and completeness of data from such stations and the suitability of
> such data for use within KCP&L's weather normalization and load
> forecasting methodology. Such review and exploration shall not
> require KCP&L to change its methodology for weather
> normalization and load forecasting.

Since most of our customers in Kansas reside in northeastern Johnson County, I reviewed the availability of data from weather stations in this area. On May 2, 2008, I met with Jim Sanderson of the KCC to discuss my findings.

Q: **And what were your findings?**

A: I examined data availability from several weather stations, including the New Century Airport, Olathe 3E, and the Johnson County Executive Airport. I concluded that none of these stations were adequate based on quality or completeness. As a result, KCP&L continues to use KCI weather station data.

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

A: Weather normalized kWh sales are used to calculate test year revenues.

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

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

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

A: Yes, it does.

BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

In the Matter of the Application of Kansas City)
Power & Light Company to Modify Its Tariffs to) Docket No. 09-KCPE-____-RTS
Continue the Implementation of Its Regulatory Plan)

AFFIDAVIT OF GEORGE M. MCCOLLISTER

STATE OF MISSOURI)
) ss
COUNTY OF JACKSON)

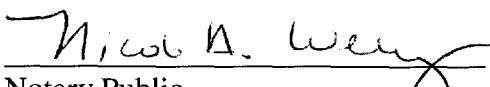George M. McCollister, being first duly sworn on his oath, states:

1. My name is George M. McCollister. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Senior Manager, 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 4th day of September 2008.

_____
Notary Public

My commission expires: Feb 4, 2011
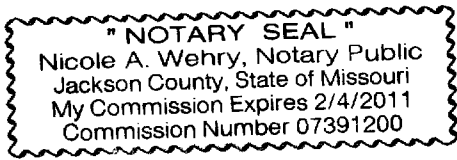
ADJUSTMENTS TO MONTHLY BILLED SALES

Tariff	Weather Adjustments to Monthly Billed Sales												
	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	2007
Residential	14,611	-5,721	7,101	-4,083	-7,819	-1,091	13,718	-32,590	-52,963	-18,448	1,546	-1,288	-87,028
Small GS	844	-236	88	-707	-779	-387	617	-1,556	-2,841	-1,413	-122	-88	-6,579
Medium GS	931	-336	-438	-1,658	-1,537	-875	1,107	-2,733	-5,123	-2,804	-525	-92	-14,083
Large GS	3,573	-997	-949	-4,121	-3,428	-2,408	2,096	-4,460	-9,791	-5,675	-1,258	-219	-27,637
Large Power	360	-76	-151	-199	-158	-107	60	-164	-310	-231	-56	79	-955
Total	20,319	-7,366	5,651	-10,767	-13,721	-4,868	17,598	-41,505	-71,028	-28,572	-415	-1,608	-136,282

WEATHER NORMALIZED MONTHLY PEAK LOADS (MW)

WEATHER NORMALIZED MONTHLY PEAK LOADS (MW)

Tariff	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	2007
Residential	629	584	506	488	648	883	989	897	834	548	538	668	989
Small GS	58	55	47	58	68	81	90	84	84	72	54	60	90
Medium GS	127	123	112	148	163	183	190	180	178	163	125	117	190
Large GS	377	358	344	388	426	458	460	451	446	410	360	352	460
Large Power	44	41	33	34	36	36	37	38	35	34	32	38	44
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
Off Peak Lighting	8	8	8	8	8	8	8	8	8	8	8	8	8
Total Retail	1,166	1,080	962	1,024	1,258	1,564	1,673	1,566	1,473	1,157	988	1,120	1,673

Note: These numbers include losses.

WEATHER NORMALIZED MONTHLY COINCIDENT PEAK LOADS (MW)

WEATHER NORMALIZED MONTHLY COINCIDENT PEAK LOADS (MW)

Tariff	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	2007
Residential	604	560	506	404	589	873	930	848	762	501	534	668	930
Small GS	43	45	37	54	67	63	87	74	81	69	39	41	87
Medium GS	104	100	86	141	154	164	174	164	168	157	86	86	174
Large GS	334	319	291	380	414	431	446	431	429	393	294	285	446
Large Power	37	36	30	31	35	32	36	36	32	32	22	27	37
Street Lights	4	4	4	0	0	0	0	0	0	0	4	4	4
Traffic Signals	0	0	0	0	0	0	0	0	0	0	0	0	0
Area Lights	1	1	1	0	0	0	0	0	0	0	1	1	1
Off Peak Lighting	8	8	8	0	0	0	0	0	0	0	8	8	8

Note: These numbers include losses.