Exhibit No.:
Issue: Weather Normalization
Witness: George M. McCollister, PhD
Type of Exhibit: Direct Testimony
Sponsoring Party: Kansas City Power & Light Company
Case No.: ER-2007-____
Date Testimony Prepared: January 31, 2007

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. ER-2007-____

DIRECT TESTIMONY

OF

GEORGE M. MCCOLLISTER, PH.D

ON BEHALF OF

KANSAS CITY POWER & LIGHT COMPANY

Kansas City, Missouri
January 2007

DIRECT TESTIMONY

OF

GEORGE M. MCCOLLISTER, Ph.D

Case No. ER-2007-____

Q: Please state your name and business address.

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

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

A: I am the Manager of Market Assessment at Kansas City Power & Light Company ("KCPL").

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

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

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

been employed by several consulting firms including Resource Management International and Spectrum Economics, Inc. that focused on regulated industries. The majority of my consulting projects focused on energy forecasting issues and modeling for electric and natural gas utilities.

Q: Have you previously testified in a proceeding at the Missouri Public Service Commission ("MPSC") or before any other utility regulatory agency?

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

Q: What is the purpose of your testimony?

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

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

A: Both kwh sales and hourly loads are adjusted to reflect normal weather conditions. This is called a weather adjustment. Kwh sales are further adjusted to restate the sales on a calendar month or accrued basis rather than on a billing month basis, and for expected customer growth through September 2007.

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

A: Abnormal weather can increase or decrease a utility company's revenues, fuel costs and rate of return. Therefore, revenues and expenses are typically adjusted to reflect normal weather when these are used to determine a company's future

electric rates. These adjustments are made by first adjusting kwh sales and hourly loads and then using these results to adjust revenues and fuel costs.

During 2006, there were 23% fewer heating degree days and 30% more cooling degree days than normal as measured at the Kansas City International Airport. Thus, heating loads were less than normal and cooling loads were greater than normal.

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

A: Fuel costs are measured over calendar months whereas revenues are measured and billed daily throughout the month. Because it is important to measure revenues and fuel costs over the same time period, it is customary to adjust revenues to a calendar month basis. This is accomplished by first adjusting kwh billed sales to a calendar month basis and then determining how this change affects revenues. Because the test year consists of a 12-month period, this adjustment is computed by adding unbilled sales from the end of the period and subtracting unbilled sales from the end of the previous period.

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

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

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

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

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

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

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

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

Q: Is the large power class weather sensitive or is it simply seasonal?

A: In our previous case, ER-2006-0314, I argued that as a result of a statistical regression, large power loads were driven by daily temperatures. Staff countered by arguing that large power customers were not weather sensitive but seasonal, meaning that the higher summer loads were not caused by weather but other seasonal factors. Schedule GMM-4 provides additional evidence that higher summer loads are driven by daily weather conditions. Schedule GMM-4 shows the daily mwh average loads for large power customers plotted against the two-day weighted mean temperature for the month of August in 2005 and 2006. As you can see, the load varies on a daily basis in response to temperature. A statistical regression of this data is highly statistically significant. If the daily load were higher in August due only to seasonal factors, it would not vary with daily temperatures.

Q: Are Large Power customers all industrial?

A: No, KCPL's Large Power customers are a combination of industrial and commercial customers.

Q: Are industrial customers typically weather sensitive?

A: Often times they are not.

Q: Are commercial customers typically weather sensitive?

A: Yes, almost always. Our Large Power commercial customers include hospitals, schools, office buildings and casinos. These customers nearly always have air conditioning and therefore are weather sensitive.

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

A: First, the meter reading schedule was used to compute the number of days in each calendar month that would be billed in the following month for the customers on each billing cycle. Then this result was used to compute the portion of monthly billed sales that was unbilled from the previous month. This computation was performed separately for each billing cycle, tariff group and month. The resulting ratios were then multiplied by the billed sales to compute the amount of unbilled kwh sales. Then from the billed sales for 2006, I added the unbilled sales at the end of 2006 and subtracted the unbilled sales at the end of 2005.

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

A: In the initial filing, kwh sales are projected for the last three months of 2006. These sales are projected by multiplying the weather-normalized sales in the last three months of 2005 by the ratio of customers for that month in 2006 to the number of customers in that month in 2005.

In addition to estimating weather-normalized sales for 2006, I have also estimated sales for the projected number of customers in September of 2007.

Q: Are these your final calculations?

A: These adjustments are temporary because I will weather normalize the last three months of 2006 when actual kwh sales become available. Also, the true up will be based on actual customer growth when the customer numbers become available.

Q: What are the results of these normalizations?

A: Schedule GMM-1 shows the adjustments for each normalization on kwh sales. Schedule GMM-2 shows weather normalized customer annualized monthly sales by class, and Schedule GMM-3 shows weather normalized customer annualized loads by class at the time of the monthly system peak load.

Q: How are these results used?

A: Weather normalized, customer annualized 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 Model. The use of the demand allocator is described in the direct testimony of KCPL witness John Weisensee.

Q: Does that conclude your testimony?

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 Continue the Implementation of Its Regulatory Plan	)))	Case No. ER-2007-____

AFFIDAVIT OF GEORGE M. MCCOLLISTER, PH.D

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, Ph.D. 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 Seven (7) pages and Schedules GMM-1 through GMM-4, all of which 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, Ph.D

Subscribed and sworn before me this 31st day of January 2007.

Notary Public

My commission expires: _____

CAROL SIVILS
Notary Public - Notary Seal
STATE OF MISSOURI
Clay County
My Commission Expires: June 15, 2007

ADJUSTMENTS TO MONTHLY BILLED SALES

Class	Weather Adjustments to Monthly Billed Sales													To Accrued	Sept 2007 Customer Growth	Total 2006 Accrued Plus Customer Growth
	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	2006			
Residential	18,899	22,440	7,017	-945	4,477	-44,084	-18,993	-52,880	-10,714				-74,783	-6,341	20,203	-60,920
Small GS	1,811	2,179	653	-359	80	-4,186	-1,296	-3,667	-794				-5,579	488	-962	-6,054
Medium GS	1,891	2,271	378	-992	-1,255	-7,229	-2,342	-6,181	-1,444				-14,904	2,592	8,584	-3,728
Large GS	9,030	10,018	2,470	-1,253	-1,573	-10,552	-3,709	-9,429	-1,864				-6,863	8,860	20,738	22,734
Large Power	-561	-651	-223	-3,886	-3,683	-4,935	-2,581	-6,355	1,563				-21,313	23,275	27,411	29,373
Special Contract	9	15	4	-1	2	-15	-3	-11	-2				-3	-14	0	-17
Total	31,078	36,270	10,299	-7,436	-1,953	-71,001	-28,923	-78,523	-13,256				-123,446	28,860	75,974	-18,612

WEATHER NORMALIZED MONTHLY SALES ADJUSTED FOR SEPTEMBER 2007 CUSTOMER GROWTH

(KWH)

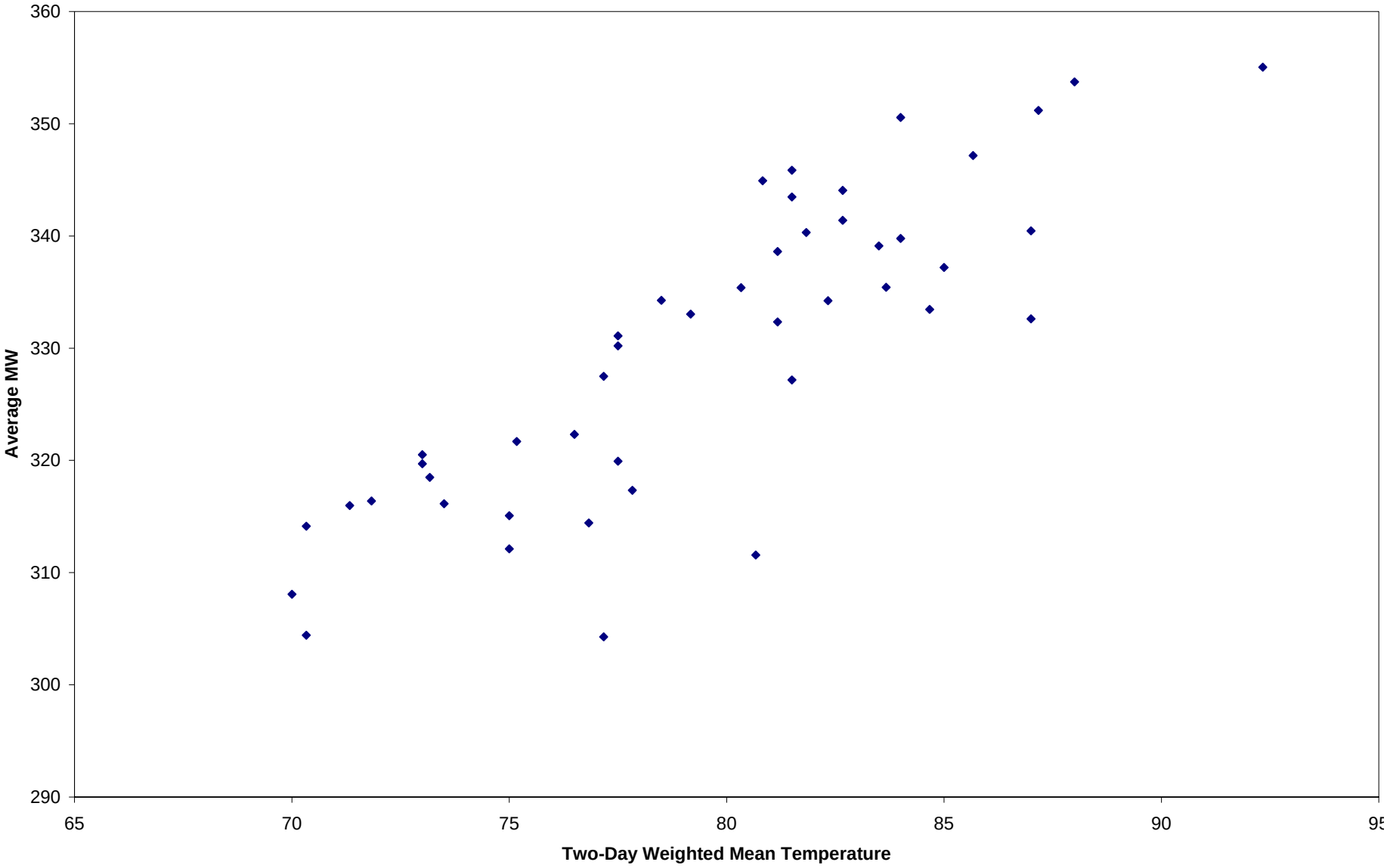
	Residential	Small GS	Medium GS	Large GS	Large Power	Special Contract
Jan	246,047,354	41,349,315	84,534,266	200,026,785	184,673,700	420,137
Feb	222,562,700	38,699,774	80,031,726	191,841,807	171,281,306	415,814
Mar	197,613,647	37,202,048	78,561,617	187,752,676	215,518,471	446,315
Apr	155,673,573	32,415,683	70,549,635	170,122,732	170,667,592	372,790
May	148,529,735	32,314,385	71,702,785	166,989,065	186,550,640	402,369
Jun	190,113,660	37,373,499	84,549,540	185,599,393	204,098,953	401,988
Jul	282,811,229	46,196,726	95,320,470	201,655,866	211,285,070	384,951
Aug	305,462,219	48,099,582	100,517,354	211,671,267	220,530,609	426,016
Sep	250,539,356	44,724,207	94,875,518	206,754,965	203,402,985	462,520
Oct	177,570,171	36,077,899	83,529,244	181,926,215	197,768,314	426,112
Nov	157,831,005	32,382,531	73,205,913	161,029,264	131,583,007	371,698
Dec	232,850,597	40,883,002	86,513,672	203,634,223	246,975,385	489,711
Test Year	2,567,605,245	467,718,651	1,003,891,740	2,269,004,258	2,344,336,032	5,020,421

WEATHER NORMALIZED MONTHLY COINCIDENT PEAK LOADS (MW)

	Missouri	Kansas	Sales for Resale	System
Jan	1,354	1,160	27	2,541
Feb	1,317	1,146	25	2,487
Mar	1,189	966	21	2,176
Apr	1,144	989	20	2,153
May	1,446	1,256	23	2,724
Jun	1,898	1,630	22	3,550
Jul	1,946	1,642	23	3,611
Aug	1,886	1,611	23	3,520
Sep	1,675	1,346	19	3,039
Oct	1,260	1,009	17	2,286
Nov	1,261	1,087	24	2,373
Dec	1,387	1,206	26	2,619
Test Year	1,946	1,642	26	3,611

Note: Includes projected customer growth for September 2007.

Large Power Missouri Weekday Loads vs Temperature



Schedule GMM-4