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Issues:	Rate Design Class Cost of Service
Witness:	Michael S. Scheperle
Sponsoring Party:	MO PSC Staff
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Case No.:	ER-2012-0174
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MISSOURI PUBLIC SERVICE COMMISSION

REGULATORY REVIEW DIVISION

REBUTTAL TESTIMONY

OF

MICHAEL S. SCHEPERLE

KANSAS CITY POWER & LIGHT COMPANY

CASE NO. ER-2012-0174

Jefferson City, Missouri
September 2012

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Kansas City Power & Light Company's Request for Authority to Implement a General Rate Increase for Electric Service	))))	Case No. ER-2012-0174

AFFIDAVIT OF MICHAEL S. SCHEPERLE

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Michael S. Scheperle, 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 13 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.

Michael S. Scheperle
Michael S. Scheperle

Subscribed and sworn to before me this 5th day of September, 2012.

SUSAN L. SUNDERMEYER
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: October 03, 2014
Commission Number: 10942086

Susan L. Sundermeyer
Notary Public

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Q. Please state your name and business address.

A. My name is Michael S. Scheperle and my business address is Missouri Public Service Commission, P. O. Box 360, Jefferson City, Missouri 65102.

Q. Are you the same Michael S. Scheperle who filed on August 16, 2012, direct testimony in question and answer format and as part of the Missouri Public Service Commission Staff's ("Staff's") Rate Design and Class Cost-of-Service Report ("CCOS Report")?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. I explain Staff's disagreement with certain parts of the class cost-of-service ("CCOS") studies of Kansas City Power & Light Company ("KCPL"); U.S. Department of Energy ("DOE"); and Mr. Maurice Brubaker. Mr. Brubaker represents the Missouri Industrial Energy Consumers ("MIEC") and the Midwest Energy Consumer's Group ("MECG"), collectively "Industrials." They filed three (3) CCOS studies. These CCOS studies could lead to a rate design that the Commission should not adopt. As part of that explanation I compare the results of the CCOS studies parties presented in direct testimony in this case. I also address a Southern Union Company d/b/a Missouri Gas Energy ("MGE") rate design recommendation to eliminate certain residential rate schedules, and the

Industrials' intra-class revenue shifts concerning the LGS and LPS rate schedules. I specifically address:

- Rate Design Recommendations
- Proposed certain residential rate schedule elimination
- Intra-class Revenue shifts
- Production Allocators

Rate Design Recommendations

Q. Have you prepared a summary of the CCOS results parties presented in their direct cases?

A. Yes. Because a CCOS study is not precise it should be used only as a guide for designing rates. In addition, bill impacts, revenue stability, rate stability, and public acceptance need to be considered. Based on its CCOS study results and judgment, Staff recommends revenue adjustments to all KCPL rate schedules except lighting. For ease of reference, I summarized each of the filed CCOS studies and present them in a relative Index of Return (see Table 1 below).

TABLE 1

Summary Results of Class Cost of Service Results INDEX OF RETURN						
				Industrials		
Customer Class	KCPL	Staff	U.S. DOE	A&E 4NCP	A&E 2NCP	4CP
RESIDENTIAL (RES)	0.98	0.53	0.49	0.42	0.42	0.49
Regular	1.08	0.54	0.48			
All Electric	0.75	0.57	0.50			
Separately Metered	0.53	0.24	0.52			
Time of Day	0.91	0.90	0.38			
SMALL GENERAL	1.98	2.13	1.84	2.02	1.99	1.84
Primary & Secondary	2.01	2.16	1.84			
Other	1.82	2.59	2.28			
All Electric	1.50	1.49	1.70			
Separately Metered	1.70	1.54	1.87			
MEDIUM GENERAL	1.28	1.55	1.31	1.42	1.41	1.31
Primary	1.65	1.43	1.99			
Secondary	1.32	1.63	1.32			
All Electric	0.96	1.06	1.20			
Separately Metered	1.31	1.15	1.32			
LARGE GENERAL	1.05	1.29	1.34	1.42	1.45	1.34
Primary	1.26	1.81	1.55			
Secondary	1.17	1.37	1.35			
All Electric	0.81	1.03	1.25			
Separately Metered	1.32	1.44	1.52			
LARGE POWER	0.54	1.16	1.28	1.38	1.33	1.28
Primary	0.65	1.22	1.37			
Secondary	0.62	1.24	1.26			
Substation	0.34	1.00	1.20			
Transmission	0.17	0.89	0.96			
LIGHTING	1.12	1.38	5.64	2.31	2.31	5.64

An Index of Return above 1.0 indicates revenue from the customer class exceeds KCPL's cost of providing service to that class; therefore, to equalize revenues and cost of service, rate revenues should be reduced, i.e., the class has overpaid. An Index of Return below 1.0 indicates revenue from the class is less than KCPL's cost of providing service to that class; therefore, to equalize revenues, and cost of service, rate revenues should be increased, i.e., the class has underpaid. Table 1 shows an Index of Return for the six CCOS studies filed in this case.

Q. Did all of the filed studies use the same rate classifications?

A. No. While KCPL, DOE, and Staff each filed a CCOS study based on rate classes, the three studies the Industrials filed were performed only on the large rate groups Residential ("RES"), Small General Service ("SGS"), Medium General Service ("MGS"), Large General Service ("LGS"), Large Power Service ("LPS") and Lighting. KCPL has twenty-one rate classes with the RES group having four rate classes, the SGS group having four rate classes, the MGS group having four rate classes, the LGS group having four rate classes and the LPS group having four rate classes, and Lighting having one rate class.

Q. Why didn't Staff study aggregate rate classes?

A. Staff examined each rate class's revenue responsibility, and recommends rates that attempt to move rate elements closer to cost of service, to enhance the price signals given to customers. If large rate groups are moved the same (revenue neutral increase/decrease), some rate classes may be moved in the wrong direction from their cost to serve. For example, the aggregated MGS rate group is overpaying its cost to serve as a large group, but the All-Electric and Separately Metered is not overpaying as much as the MGS Primary and MGS Secondary classes. Adjusting the MGS group with a revenue neutral increase/decrease to all

four MGS rate classes would further distort the Primary and Secondary rate schedules from the All Electric and Separately Metered rate schedule group from KCPL's cost to serve it, unless appropriate intra-class shifts are implemented.

Q. Is Staff recommending intra-class rate shifts?

A. Yes. Staff recommends the Commission in this case move rate classes closer to their costs to serve for the winter season. Staff recommends the first energy block rate of the winter All-Electric General Service rates (Small, Medium, and Large) be increased by 5%. Additionally, Staff recommends the first winter block of RESB (residential general use and space heat – one meter) and the winter season separately metered space heat rate of RESC (residential general use and space heat – two meters) each be increased by an additional 5%. These rates are being adjusted to bring the winter season rates closer to the classes' costs of service for the winter season. Additionally, Staff recommends the first energy block rate of the winter All-Electric General Service rates (Small, Medium, and Large) be increased by an additional 5%. The Commission has restricted the availability of the non-residential All-Electric and separately-metered space heating rates to customers currently served on one of those rate schedules, but only for so long as the customers continuously remains on that rate schedule. These rates are being adjusted to bring the winter season rates closer to its class cost of service for the winter season.

Q. Does Staff agree with KCPL's rate design recommendation?

A. No. KCPL is proposing that the requested increase be spread to all customer classes and all rate components on an equal percentage basis. Staff recommends that the residential classes should receive a positive 1% adjustment, the lighting class should receive the system average increase, and the remaining classes of customers each should receive a

negative adjustment of approximately 0.6%. After making the revenue neutral adjustments, any overall change in revenues the Commission orders should be applied on an equal percentage basis, along with the intra-class rate element changes previously mentioned.

Q. Does Staff agree with the DOE's rate design recommendation?

A. No. The DOE's rate design recommendation proposal is that the Commission approve an across-the-board revenue spread of any increase granted to KCPL. This mirrors the KCPL rate design proposal.

Q. Does Staff agree with MGE's rate design recommendation?

A. No. MGE's rate design recommendation is that the Commission eliminate KCPL's discounted (Cummings Direct Testimony, p. 2) residential electric rates. Specifically, Rate B – Residential General Use and Space Heat – One Meter; Rate C – Residential General Use and Space Heat – 2 Meters; and Rate D (applicable to electric space and water heating). At this time, Staff does not support MGE's recommendation to eliminate the residential rate schedules mentioned above. Staff does not oppose all-electric residential rates but recommends that customers on such rate schedule(s) be moved toward KCPL's cost to serve them.

Q. Does Staff agree with the Office of Public Counsel ("OPC") rate design recommendation?

A. No. OPC's rate design recommendation proposal is

> "that the Residential class and Large General Service class average rates of return are consistent with the system average rate of return so no revenue neutral shifts are warranted. On the other hand, the return provided by the Medium General Service class is 128% of the system return and the Small General Service class is approximately 198% of the system average return while the Large Power class is providing a return of only 54% of the system average return. In my opinion, Mr. Normand's CCOS results support some reduction in the return provided by the Small General Service and Medium

> General Service classes offset by an increase in the return provided by the Large Power class."
> (Meisenheimer, Direct Testimony, P. 3, 4).

Staff agrees that the rates of certain rate classes in the SGS, MGS and LPS rate groups need adjusting. However, Staff does not support OPC's proposal, as under it some rate groups may be moved in the opposite direction from KCPL's cost to serve them for the winter season.

Q. Does Staff agree with the Industrials' rate design recommendation?

A. No. The Industrials' rate design recommendation proposal is:

> [M]oving 25% of the way toward cost of service, which limits the Residential class revenue-neutral increase to 4.6% (as compared to the 18.5% increase required to move all the way to cost of service) is relatively moderate, and must be considered in light of the fact that other classes are being asked to continue to provide part of the revenue responsibility that rightly should be shouldered by the Residential class.
> (Brubaker, Direct Testimony, p. 28).

Staff does not support the Industrial's proposal, because when disaggregated into classes some classes would move differently than if treated as part of the aggregate.

Industrials' Proposed Rate Design Intra-class Revenue Shifts

Q. Do the Industrials propose intra-class revenue responsibility shifts?

A. Yes.

Q. What are they?

A. Mr. Maurice Brubaker, on behalf of the Industrials, proposes the following:

> [T]o maintain the energy charges for the high load factor (over 360 hours use per month, or over a 50% load factor) block at their current levels, increase the middle blocks (hours use from 181 to 360) by three quarters of the average percentage increase, and to collect the balance of the revenue requirement for the tariff by applying a uniform percentage increase to the remaining charges in the tariff. This includes the customer charge, the reactive demand charge, the facilities charges, the demand charges and the initial block energy charges.

If it is assumed that base load plants are built for high load factor customers, then the fixed costs for these customers is high and the variable (i.e., fuel) cost is low. Likewise, if it is assumed that peaking plants are built to serve low load factor customers, then fixed costs should be lower and variable costs high. For these customers the customer charge should be lower and the variable charges higher. Because there are too many customers to have a specific rate design for each customer, customers are grouped together and a rate design is developed for the customer class as a whole. This takes customer and cost information to appropriately complete a rate design.

The Staff believes that the Industrials' proposal does not provide the information necessary to support these changes, even though the difference per customer on the LPS rate structure class is within a narrow band (percentage-wise). Therefore, it is premature at this point to change the LPS and LGS rates as Mr. Brubaker proposes. Staff is concerned that no information is provided for customers who might switch (rate switchers) from a SGS or MGS to an LGS rate schedule or that the LGS All Electric rate schedule would be given the proper price signal for the winter season. Furthermore, unless the reduced revenues from rate switching are accounted for, KCPL will not realize the whole increase authorized by the Commission.

Class Cost-of-Service Study Allocators

Q. Who has presented CCOS study results in this case?

A. The Staff, KCPL, DOE, and the Industrials (three studies) presented CCOS study results. The OPC and MGE did not.

Q. Did they all use the same parameters in their CCOS studies?

A. No.

Q. Does Staff agree with the production allocators other parties used?

A. Not entirely. The Staff disagrees with the production allocators the other parties used. Since the production allocators (Production - fixed and Production – variable), comprise approximately 73% of the cost to serve, Staff is limiting this rebuttal testimony to these other parties' choice of production allocators.

Production-Capacity Allocator

Q. What are the different production-capacity allocators the parties used?

A. In this case, KCPL used a Base, Intermediate and Peak Method. Staff used a different Base, Intermediate, and Peak Method. The Industrials used two different Average and Excess Methods in two of their studies (A&E 4-NCP and A&E 2-NCP) and a 4 CP method in their third study. DOE used a 4 CP method. The Industrials' primary recommendation for allocating production-capacity is to use the Average and Excess 4-NCP method.

Q. Does Staff agree with KCPL's Production – Capacity allocator method?

A. No. Staff recognizes that the both KCPL and Staff used Base, Intermediate, and Peak ("BIP") methods of allocating production investment and costs. BIP methods take into consideration the differences in the capacity/energy cost trade-off that exists across a company's generation mix. The BIP methodologies give weight to both capacity and energy considerations. They do so by considering energy in the base component through the allocation of base units to all classes and by considering capacity in the allocation of intermediate and peak components.

Staff and KCPL used different methods for allocating the base component, intermediate component and the peak component. KCPL used the following method to allocate production:

- Base - Lowest monthly (non-zero usage) for each class. Assigns certain generating plants as Base units.
- Intermediate - 12 CP Remaining less Base. Assigns certain generating plants as intermediate units.
- Peak - 4 CP remaining less Base less Intermediate. Assigns certain generating plants as Peak units.

Staff used the following method to allocate production capacity:

- Base – Annual kWh usage @ generation for each rate schedule
- Intermediate – 12 NCP average less base
- Peak – 4 NCP remaining less base and intermediate

The largest difference between Staff's and KCPL's BIP methods is that KCPL bases its BIP production method by assigning certain generating plants to a Base unit, Intermediate unit, or Peak unit with all investment and expenses allocated on its specific component in the BIP methodology (Base or Intermediate or Peak). Staff bases it BIP methodology on kilowatt ("KW") and kilowatt-hours ("kWh") usage at generation within the Base, Intermediate or Peak component. In this case KCPL's methodology disproportionately allocates energy to certain classes, as detailed in Table 2 below and Schedule MSS-R1.

Table 2

BIP Components	Staff %	KCPL %	Investment %
Base Component	53.34%	46.39%	78.81%
Intermediate Component	34.87%	27.24%	13.66%
Peak Component	11.79%	26.37%	7.53%
Total	100.00%	100.00%	100.00%

For example, KCPL's witness Paul M. Normand proposes the KCPL generating plant mix as 46.39% for the Base Component, 27.24% for the intermediate component, and 26.37% for the Peak component. Assigning generating plant investments to a specific component (i.e., Wolf Creek nuclear plant, Iatan I and Iatan 2 coal plants to base components), KCPL assigns approximately 79% to the investment base component and approximately 21% (13.66% + 7.53%) to the intermediate and peak component. In essence, KCPL uses a base allocator of approximately 79% compared to Staff's base allocator of approximately 53% for investment. Table 2 summarizes Staff's calculation of its BIP method using the annual kWh energy and capacity requirements.

Q. Does Staff agree with the Industrials' Production – Capacity allocator method?

A. Not entirely. The Industrials' filed three CCOS studies. Two of the studies are based on Average and Excess ("A&E") methods. The two A&E methods are an A&E 4-NCP method and an A&E 2-NCP method. The other Industrials' CCOS study is a 4CP CCOS study, the same as the DOE filed.

Q. Would you explain the A&E method?

A. The A&E method consists of two parts. The first component of each class's allocation factor is its proportion of the class' total average demand (based on energy consumption) times the system load factor. This is the same as Staff's Base component in its BIP study with equal weighting of 53.34%. The second component in the A&E method is called the "excess" demand factor. This component is multiplied by the remaining proportion of production usage (1 minus system load factor). The first and second components (Average and Excess components) are then added to obtain the total allocator. The average piece is simply the total kWh usage divided by the total number of hours in the year for each class,

while the demand piece is each class's contribution to the system peak load (or to a specified group of system peak demands). The Average piece in the A&E method is the same as Staff's base piece in the BIP method as both use the annual kWh at generation converted to KW load. The difference in approach between the Average and Excess methods and Staff's BIP method is in how the demand piece of the allocator is determined. Both approaches use NCP information for the demand piece. The Industrials' use the "Excess" piece using four (A&E 4NCP) class peaks to determine the "Excess" piece less the average portion already allocated. Staff's BIP uses NCP but separates the remaining capacity piece into two components (an intermediate and peak component).

Q. Why is Staff's BIP method superior?

A. Since generation facilities are built to satisfy the demand for electricity throughout the year at the lowest cost, it is reasonable to allocate part of the production-capacity allocator (intermediate piece) on loads throughout the year. Then the peak component of the BIP method may be allocated to satisfy the peak portion less the base and intermediate component already allocated to each class based on each class' usage characteristics. Generation facilities are built to meet the entire load of the electric utility at every point in time. The BIP production allocator is a more reasonable approach because peak load is a function of the total loads of each class based on a base, intermediate and peak load requirement, not just the average and excess loads of each class.

Q. Does Staff agree with the DOE and Industrials' Production – Capacity allocator method using the 4CP method?

A. No. The DOE and the Industrials filed CCOS studies based on a 4 CP method. Staff agrees that KCPL is a summer peaking utility and CP information may be applicable and

accurate; however, a study based on CP information could be distorted. For example, using this methodology there can be free ride allocation for off-peak usage. Free ridership is when service rendered completely or mostly off-peak is not assigned any or very little responsibility for capacity costs. An example of free ridership may occur for street lighting. Street lights are not on during the day and would be allocated no capacity costs at all if the peak occurred during daylight hours. This apparently occurred in the DOE's and Industrials' 4CP allocations where the Lighting Index of Return shows a 5.64 (revenue far exceeds cost to serve) from Table 1. Other CCOS studies (BIP for Staff and KCPL) and A&E 4-NCP and A&E 2-NCP from Industrials show more modest Index of Returns for the Lighting class alleviating any free ride.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

Missouri Public Service Commission
Case No. ER-2012-0174

Summary Results of Class Cost of Service Results INDEX OF RETURN						
				Industrials		
Customer Class	KCPL (1)	Staff (2)	U.S. DOE (3)	A&E 4NCP (4)	A&E 2NCP (5)	4CP (6)
RESIDENTIAL (RES)	0.98	0.53	0.49	0.42	0.42	0.49
Regular	1.08	0.54	0.48			
All Electric	0.75	0.57	0.50			
Separately Metered	0.53	0.24	0.52			
Time of Day	0.91	0.90	0.38			
SMALL GENERAL SERVICE (SGS)	1.98	2.13	1.84	2.02	1.99	1.84
Primary & Secondary	2.01	2.16	1.84			
Other	1.82	2.59	2.28			
All Electric	1.50	1.49	1.70			
Separately Metered	1.70	1.54	1.87			
MEDIUM GENERAL SERVICE (MGS)	1.28	1.55	1.31	1.42	1.41	1.31
Primary	1.65	1.43	1.99			
Secondary	1.32	1.63	1.32			
All Electric	0.96	1.06	1.20			
Separately Metered	1.31	1.15	1.32			
LARGE GENERAL SERVICE (LGS)	1.05	1.29	1.34	1.42	1.45	1.34
Primary	1.26	1.81	1.55			
Secondary	1.17	1.37	1.35			
All Electric	0.81	1.03	1.25			
Separately Metered	1.32	1.44	1.52			
LARGE POWER SERVICE (LPS)	0.54	1.16	1.28	1.38	1.33	1.28
Primary	0.65	1.22	1.37			
Secondary	0.62	1.24	1.26			
Substation	0.34	1.00	1.20			
Transmission	0.17	0.89	0.96			
LIGHTING	1.12	1.38	5.64	2.31	2.31	5.64

(1) Direct Testimony, Paul M. Normand, Table 3, page 23
(2) Staff workpapers, Staff CCOS (Income Taxes worksheet
(3) Schedule DWG-1, Direct Testimony
(4) Schedule MEB - COS - 4, Direct Testimony
(5) Schedule MEB - COS - Appendix (page 2 of 4), Direct Testimony
(6) Schedule MEB - COS - Appendix (page 4 of 4), Direct Testimony