MIEC Ex 854

Exhibit No.:	
Issues:	Cost of Service | Rate Design
Witness:	Maurice Brubaker
Type of Exhibit:	Rebuttal Testimony
Sponsoring Parties:	Missouri Industrial Energy Consumers
Case No.:	ER-2016-0285
Date Testimony Prepared:	January 6, 2017

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-2016-0285**

Rebuttal Testimony and Schedules of

Maurice Brubaker

On behalf of

Missouri Industrial Energy Consumers

January 6, 2017

BRUBAKER & ASSOCIATES, INC.

Project 10277

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-2016-0285

STATE OF MISSOURI)
) SS
COUNTY OF ST. LOUIS)

Affidavit of Maurice Brubaker

Maurice Brubaker, being first duly sworn, on his oath states:

1. My name is Maurice Brubaker. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 16690 Swingley Ridge Road, Suite 140, Chesterfield, Missouri 63017. We have been retained by the Missouri Industrial Energy Consumers in this proceeding on their behalf.

2. Attached hereto and made a part hereof for all purposes are my rebuttal testimony and schedules which were prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. ER-2016-0285.

3. I hereby swear and affirm that the testimony and schedules are true and correct and that they show the matters and things that they purport to show.

Maurice Brubaker

Subscribed and sworn to before me this 5th day of January, 2017.

TAMMY S. KLOSSNER
Notary Public - Notary Seal
STATE OF MISSOURI
St. Charles County
My Commission Expires: Mar. 16, 2019
Commission # 15024862

Notary Public

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Rebuttal Testimony of Maurice Brubaker

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Maurice Brubaker. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q ARE YOU THE SAME MAURICE BRUBAKER WHO HAS PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING?

A Yes. I have previously filed direct testimony on cost of service/rate design issues presented in this proceeding.

Q ARE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE OUTLINED IN YOUR PRIOR TESTIMONY?

A Yes. This information is included in Appendix A to my direct testimony.

Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A This testimony is presented on behalf of the Missouri Industrial Energy Consumers ("MIEC"), a non-profit company that represents the interests of industrial customers in Missouri utility matters. These companies purchase substantial amounts of electricity from Kansas City Power & Light Company ("KCPL") and the outcome of this proceeding will have an impact on their cost of electricity.

Q WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A The purpose of my rebuttal testimony is to address the cost of service and certain rate design recommendations of KCPL and the Staff of the Missouri Public Service Commission ("Staff"). Although there are a number of differences among the various studies, the largest difference is with respect to the allocation of production plant investment and related fixed expenses. I will respond to KCPL's proposal to use an Average & Peak ("A&P") allocation method. I also will respond to Staff's allocation study that utilizes a Detailed Base, Intermediate and Peak ("BIP") method, and to several other aspects of Staff's allocation study.

Q PLEASE SUMMARIZE YOUR PRIMARY FINDINGS AND RECOMMENDATIONS.

A They may be summarized as follows:

1. KCPL's preferred allocation of generation fixed, or demand-related, costs is premised on the A&P allocation method that has been rejected by this and other Commissions. It double-counts energy consumption and over-allocates costs to high load factor customers, and should again be rejected.

2. Staff's BIP allocation method is outside the mainstream, and in many ways conflicts with prior Commission rulings, and should not be adopted.

3. Staff's studies use an inappropriate allocation of production system non-fuel O&M expense. That allocation is biased toward energy consumption and does not reflect the fact that these expenses are incurred primarily as a function of the existence of the assets, and that it is conventional to allocate these types of costs using a production demand allocation factor.

4. Staff's studies are also flawed because the allocation of administrative and general ("A&G") expense is on the basis of other previously allocated O&M expense that includes fuel and purchased power expenses. It is conventional to exclude fuel and purchased power expenses when developing the base used to allocate A&G expense because fuel and purchased power expenses themselves have little impact on A&G expense.

5. Staff has made several critical numerical errors in its allocation of distribution system costs.

CLASS COST OF SERVICE ISSUES

Q HAVE YOU REVIEWED THE TESTIMONY OF KCPL WITNESS MARISOL MILLER AND THE STAFF RATE DESIGN AND CLASS COST OF SERVICE REPORT ("STAFF REPORT") ON THE ISSUE OF CLASS COST OF SERVICE?

A Yes.

Q DO YOU HAVE REBUTTAL TO THE POSITIONS OF THESE WITNESSES?

A Yes, I do. I disagree with the methods that these witnesses have used for the allocation of generation system fixed costs and with respect to the allocation of certain other components of cost of service. In my rebuttal, I shall at times contrast the proposals of these witnesses with the Average and Excess Four Non-Coincident Peak ("A&E-4NCP") method that I supported in my direct testimony.

KCPL's Study

Q WHAT METHOD HAS KCPL USED FOR THE ALLOCATION OF GENERATION FIXED, OR DEMAND-RELATED, COSTS?

A Generation fixed, or demand-related costs, are fixed costs that KCPL incurs to meet the electricity demand of its customers and include the cost of power plants and transmission facilities. KCPL's recommended method is an A&P allocation method. In particular, KCPL uses the four monthly coincident peak demands of each customer class along with each class's annual energy consumption. The energy component is weighted equal to the system's annual load factor. The result is to give only about 44% weighting to the contributions of the four monthly coincident peaks, and 56% weighting to annual energy consumption.

Q IS KCPL'S USE OF THE A&P ALLOCATION METHOD UNIQUE AMONG REGIONAL ELECTRIC UTILITIES?

A Yes. In their recent rate cases, Ameren (ER-2016-0179); Empire District Electric Company (ER-2014-0351) and Westar (15-WSEE-115-RTS) have each relied upon the Average and Excess method for allocating generation fixed costs.

Q DOES KCPL JUSTIFY THE SELECTION OF ITS ALLOCATION METHODOLOGY?

A No. It does not attempt to justify why the A&P method is appropriate for KCPL. It only notes that this method is mentioned in the National Association of Regulatory Commissioners ("NARUC") Cost Allocation Manual ("NARUC Manual"), and was apparently mentioned in a survey that was reviewed.

Q DOES THE FACT THAT A METHOD IS MENTIONED IN THE NARUC MANUAL GIVE IT CREDIBILITY OR SUGGEST THAT IT IS ACCEPTED IN THE INDUSTRY?

A No.

Q PLEASE EXPLAIN.

A The fact that a particular method is noted in the NARUC Manual simply means that the individuals who prepared the NARUC Manual included it because it had been recommended by participants in one or more rate cases at or near the time the NARUC Manual was published – 1992. There are a number of allocation methods that are described in the NARUC Manual that are not commonly used and that have not found wide support in the industry. KCPL's A&P method clearly falls into that category.

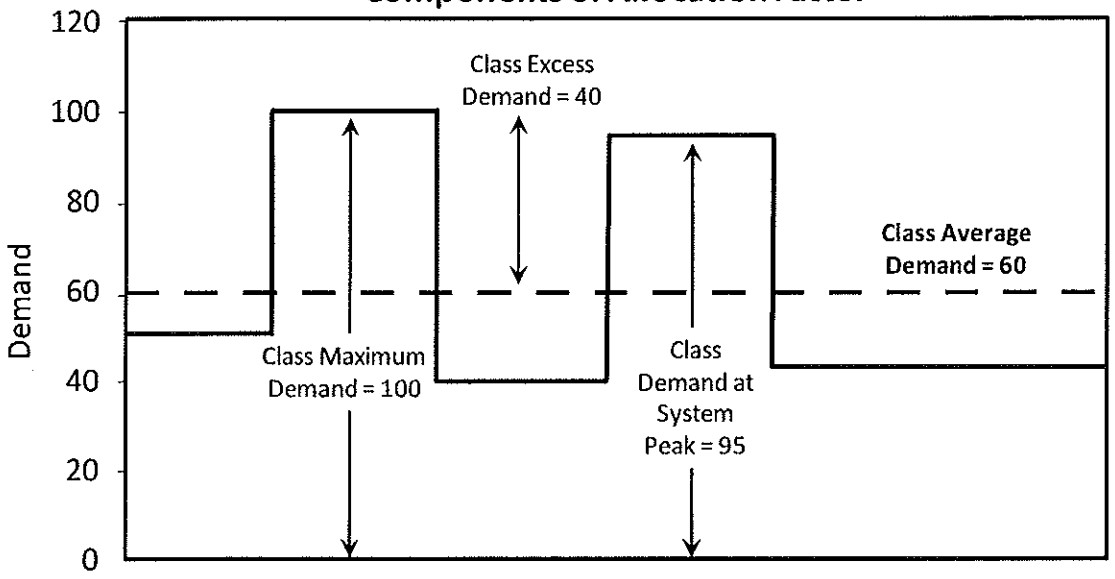
Q HOW DOES THE A&P ALLOCATION METHOD DIFFER FROM THE A&E METHODOLOGY THAT YOU USED IN YOUR CLASS COST OF SERVICE STUDY?

A KCPL's A&P allocator is constructed by multiplying each class's percentage energy responsibility factor (average demand) times the system load factor, and adding that result to each class's percentage contribution to the class peaks multiplied by the quantity 1 minus the load factor.

Both the A&P and A&E methods are two-step processes. In both methods, the first step is to weight the average demand by the system load factor. The second step is where a major difference occurs. This is illustrated in Figure 1.

Figure 1

Components of Allocation Factor



Q PLEASE REFER TO FIGURE 1 AND EXPLAIN THE DIFFERENCES.

A Figure 1 is a simplified representation of a class load. The maximum demand of this particular class is represented as 100. Its contribution at the time of the system peak

is 95, its average demand is 60, and the excess demand (the difference between its peak demand and its average demand) is 40.

As explained in more detail beginning at page 17 of my direct testimony on cost of service, the A&E method that I recommend, and that is accepted in the mainstream, combines the class average demand with the class excess demand in order to construct an allocation factor that reflects average use as well as the excess of each class's maximum demand over its average demand. The A&E allocation factor is developed using the average demand (60) and the excess demand (40) for this class, along with the corresponding demands for all other classes. (This is shown in detail on Schedule MEB-COS-3 attached to my direct testimony on cost of service.)

KCPL's A&P method, on the other hand, combines the average demand with the class monthly peak demands. As is evident from Figure 1, the average demand (60) is a component or sub-set of the class peak demand (100) and of the class load coincident with the system peak (95). Accordingly, in the A&P method when roughly equal weighting is given to the average demand and the contribution to system peak demand, the average demand is double-counted. This is a serious error, and has the effect of allocating significantly more costs to high load factor customers than is appropriate.

Q HAS THE COMMISSION PREVIOUSLY RULED ON KCPL'S PROPOSED METHOD?

A Yes. The Commission has previously rejected the use of the A&P method on numerous occasions. A recent rejection was at page 70 and 71 of the Commission's April 29, 2015 Order in an Ameren Missouri electric rate case, MoPSC Case No. ER-2014-0258, which reads:

> "The weakness with the P&A methodology is that after dividing the average and excess components, instead of allocating just the excess average demand to the cost-causing classes, it allocates the entire peak demand to the various classes. That has the effect of double counting the average demand and allocates more costs to large industrials that have a steady but high average demand that does not contribute as much to the system peaks. That method works to the benefit of the residential class whose usage varies more by time of day and time of year."[175]

(Report and Order, pages 70-71, paragraph 6, April 29, 2015, footnote omitted)

Q IS THE A&P METHOD USED BY KCPL A REASONABLE ONE TO USE?

A No, it is not. As noted above, this allocation gives more weighting to annual energy consumption than to the class peaks used in the allocation of the investment in generation facilities. Since generation facilities must be designed to carry the peak loads imposed on them, the heavy weighting given to energy consumption (56%) in the allocation factor is not related to cost of service at all.

Unlike the A&E method, which considers class individual peaks and class load factors, as well as diversity between class peaks and system peak, the A&P method arbitrarily allocates over half of these costs on annual energy consumption.

Symmetry of Fuel and Capital Cost Allocation

Q DO YOU HAVE ANY DISAGREEMENT WITH THE ALLOCATION OF FUEL AND VARIABLE PURCHASED POWER COSTS ON THE BASIS OF CLASS ENERGY REQUIREMENTS, ADJUSTED FOR LOSSES?

A In the context of traditional studies like coincident peak and A&E, I do not. However, in the context of the non-traditional studies like A&P and others, which heavily weight energy in the allocation of fixed or demand-related generation costs, it is not appropriate.

Q PLEASE EXPLAIN WHY IT IS NOT APPROPRIATE TO ALLOCATE ENERGY COSTS IN THIS FASHION WHEN USING NON-TRADITIONAL STUDIES SUCH AS A&P AND OTHERS.

A These studies allocate significantly more generation fixed costs to high load factor customers than do the traditional studies. In other words, the higher the load factor of a class, the larger the share of the generation fixed costs that gets allocated to the class. If the costs allocated to classes under these methods were divided by the contribution of these classes to the system peak demand, or by the A&E demand, the result is a higher capital cost per kW for the higher load factor classes, and a lower capital cost per kW for the low load factor classes. Effectively, this means that the high load factor classes have been allocated an above-average share of capital costs for generation, and the low load factor customer classes have been allocated a below average share of capital costs.

Given these allocations of capital costs, it would not be appropriate to use the same fuel costs for all classes. Rather, the fuel cost allocation should recognize that the higher load factor customer classes should receive below average fuel costs to correspond to the above-average capital costs (similar to base load units) allocated to them, and the lower load factor classes should get an allocation of fuel costs that is above the average, corresponding to the lower than average capital costs (i.e., peaking units) allocated to them.

Q WHY WOULD IT BE APPROPRIATE TO RECOGNIZE A LOWER FUEL COST ALLOCATION TO THOSE CLASSES THAT ARE ALLOCATED A HIGHER CAPITAL COST?

A It is not only appropriate, but it is essential if heavily energy-weighted allocations of generation costs are employed. Failure to make this kind of distinction would charge high load factor customers above-average capital costs, but not allow them to have the related below-average energy costs; and charge the low load factor customers below-average capital costs, yet still allow them to enjoy average fuel costs.

Q HAVE YOU PERFORMED ANY CALCULATIONS AND DEVELOPED A SCHEDULE TO ILLUSTRATE THIS?

A Yes, I have. Please refer to page 1 of Schedule MEB-COS-R-1 attached to this testimony. This schedule compares the capacity costs per kW and the energy costs per kilowatthour ("kWh") across classes for the traditional A&E allocation method and the A&P method. To establish a common framework of costs for the analysis, so as to isolate the impacts just of allocation methodology, I used the total generation capacity costs and total generation energy costs from KCPL's cost of service study and applied my allocation factors (traditional) as well as KCPL's demand and energy allocators to these total amounts. I then divided the results by the A&E capacity kW and by the class megawatthours ("MWh").

Q PLEASE EXPLAIN WHAT THIS SCHEDULE SHOWS.

A The top part of Schedule MEB-COS-R-1 shows that under traditional allocation methods the capacity costs per kW and the energy costs per kWh allocated to each class are the same.

The bottom part shows the allocation results under KCPL's A&P method. Note from line 13 that the impact is to allocate significantly more capital costs, in fact, 26% more per kW to the Large Power class than under the traditional approaches, which allocate average capacity costs to all classes. Note also that fuel costs per kWh are essentially the same for all classes.

Page 2 of Schedule MEB-COS-R-1 graphically shows the skewing under the A&P method.

Q YOU INDICATED THAT THE ENERGY COSTS PER KWH ARE SHOWN TO BE THE SAME UNDER THESE ALLOCATIONS. HOW DIFFERENT ARE THE ACTUAL ENERGY COSTS OF THE DIFFERENT GENERATING FACILITIES?

A They are quite diverse. For example, the fuel cost for the Wolf Creek nuclear unit is about 0.7¢ per kWh, the base load coal plants have fuel costs in the range of 1.5¢ to 2.0¢ per kWh, the combined cycle unit has fuel costs of about 5¢ per kWh, and peakers have costs that are 5¢ per kWh to 7¢ per kWh. (Note: These fuel costs are taken from KCPL's 2015 FERC Form 1 report.) Obviously, if some classes are allocated higher capacity costs than others, they should be entitled to at least an above-average share of the energy output from the higher capital cost, more fuel efficient, base load type generating units, which would make their fuel cost per kWh lower than average. The A&P allocation method advanced by KCPL does not recognize this correspondence, and as a result over-allocates energy costs to high load factor customers for this reason as well.

Q WHAT SHOULD BE CONCLUDED FROM SCHEDULE MEB-COS-R-1?

A This schedule clearly demonstrates that the non-traditional methods like A&P are highly non-symmetrical. They burden high load factor classes with above-average capacity costs, but do not allow them to benefit from the lower cost of energy that goes with the higher capacity costs. No theory supports this result and these types of studies should be rejected.

Staff's Study

Q WHAT COST OF SERVICE STUDY DID STAFF PROVIDE?

A Staff provided what it calls a Detailed BIP study ("BIP") as the basis for its recommendation.

Q WHAT SEEMS TO BE THE FUNDAMENTAL TENET OF THE BIP METHOD?

A Staff does not say explicitly, but on page 13 the Staff Report discusses assigning generation assets (deemed to be base load, intermediate or peaking) to BIP demands that are deemed to represent the components of each class's load curve that reflect the intended use of specific plant investments. By effectively choosing to allocate 100% of the investment (fixed costs) associated with base load plants essentially on the basis of class energy, Staff effectively is assuming that investment in base load plants is not driven by total system demands but rather by a component of class load profiles. We all know that this is not the basis for system planning. It appears from Staff's studies that about 53% of total generation fixed costs are allocated on the basis of class energy consumption rather than on the generally accepted basis of a measure of maximum demand.

Q PLEASE DESCRIBE GENERALLY THE DETAILED BIP STUDY.

A With this study, generation plants are identified as base, intermediate or peaking. Then, Staff looks at class load curves and attempts to associate class demand levels with different plants, on the assumption that each class uses a different combination of base, intermediate and peaking facilities. The demands for each class for each type of plant assumed in Staff's study appear on page 16 of the Staff Report, and the development of the production system fixed cost allocation factor appears at the bottom of page 19 of the Staff Report.

Q WITH THIS METHOD, HOW WAS THE COMPONENT OF THE ALLOCATION FACTOR REPRESENTING BASE CAPACITY ASSIGNED TO CLASSES?

A Although Staff goes through a very data-intensive analysis that entails looking at the load of each customer class in each hour, the end result is that with this method, the fixed costs associated with base load generation essentially are allocated on a measure of class energy consumption as demonstrated below. The intermediate plants are allocated as a function of class 12 monthly coincident peaks minus base demands, and facilities identified as peaking facilities are allocated on class four summer coincident peak demands reduced by the base and intermediate demands.

Since 100% of the fixed costs associated with plants designated as base load are allocated to customer classes using the customer class energy requirement factor as the basis for the allocation, Staff does not include any consideration of the times that energy is consumed (i.e., when demands occur), and would therefore attribute the same base load capacity cost to a customer that takes all of its load at the system peak hour as it would to a class with the same amount of energy consumption taken steadily at the same amount every hour throughout the year. (Please see the

discussion of demand versus energy costs at pages 12-14 of my direct testimony, including Figure 3 on page 13 of that testimony.)

Q HAVE YOU DEVELOPED A COMPARISON BETWEEN STAFF'S BASE CAPACITY BY CLASS AND CLASS ENERGY CONSUMPTION?

A Yes. That comparison appears in Table 1. Note that the relative percentages of base load costs for each class in Staff's detailed BIP allocation factor development is exactly equal to the relative responsibility of each class for energy.

TABLE 1

Comparison of Allocation of Base Load Plant Investment in Staff's Detailed BIP Study to an Allocation Based on Class Energy Usage

Line	Class	Staff's Base Capacity by Class[1] Costs (1)	Percent (2)	Energy by Class MWh at Generation[2] (3)	Percent (4)
1	Residential	$ 187,361,696	31.39%	2,843,707	31.39%
2	Small General Service	$ 27,247,972	4.57%	413,558	4.57%
3	Medium General Service	$ 83,294,759	13.96%	1,264,218	13.96%
4	Large General Service	$ 151,127,261	25.32%	2,293,757	25.32%
5	Large Power Service	$ 141,786,418	23.76%	2,151,978	23.76%
6	Lighting	$ 6,005,405	1.01%	91,144	1.01%
7	Missouri Retail	$ 596,823,511	100.00%	9,058,362	100.00%

[1] Staff's Rate Design and Class Cost-of-Service Report, page 19.

[2] Workpaper of S Kliethermes - market energy.xlsx, market compare tab.

Q DOES THE CONCEPT OF ALLOCATING BASE LOAD PLANT ON A MEASURE OF CLASS ENERGY MAKE SENSE IN LIGHT OF SYSTEM PLANNING CONSIDERATIONS?

A No. The BIP approach effectively attempts to assign only one purpose for each class of plant. In reality, when systems are planned, the utility attempts to install that combination of generation facilities which, giving consideration to fixed costs and variable costs, as well as to all other relevant factors, is expected to serve the needs of all customers, collectively, on a least-cost basis. All plants contribute to meeting peak demands, and the failure to allocate the fixed costs associated with base load plants on a measure of peak demand produces a biased result that over-allocates costs to high load factor customers and under-allocates costs to low load factor customers.

Q HAS THIS COMMISSION RULED ON THE USE OF DEMAND ALLOCATION METHODS THAT ARE HEAVILY DEPENDENT UPON THE ENERGY USAGE BY THE VARIOUS CUSTOMER CLASSES?

A Yes, numerous times. In an Ameren Missouri electric rate case, Case No. ER-2010-0036, cost of service studies were offered wherein the allocation basis for fixed generation cost was a weighted average of class energy consumption and class contribution to peak demands. In ruling on the case, the Commission rejected these heavily energy-weighted methods, stating:

> "The Peak and Average method, in contrast, initially allocates average costs to each class, but then, instead of allocating just the excess of the peak usage period to the various classes to the cost causing classes, the method reallocates the entire peak usage to the classes that contribute to the peak. Thus, the classes that contribute a large amount to the average usage of the system but add little to the peak, have their average usage allocated to them a second time. Thus, the

> Peak and Average method double counts the average system usage, and for that reason is unreliable."[278]

(Final Order, page 85, paragraph 14, May 28, 2010, footnote omitted)

Q IN THE REFERENCED AMEREN MISSOURI CASE, WHAT PERCENTAGE OF GENERATION FIXED COSTS WAS ALLOCATED ON ENERGY UNDER THOSE PROPOSALS?

A About 55%.

Q HOW DOES THE ALLOCATION OF GENERATION CAPACITY COSTS ON CLASS ENERGY CONSUMPTION UNDER THE BIP METHOD IN THIS CASE COMPARE TO THE WEIGHTING IN AMEREN MISSOURI CASE ER-2010-0036 WHERE THE ENERGY BASED ALLOCATION WAS REJECTED?

A It is similar: about 53% with BIP in this case as compared to 55% in the Ameren case.

Q WHAT IS THE BASIS FOR YOUR STATEMENT THAT THE WEIGHTING OF BASE LOAD COST IN THIS CASE IS ABOUT 53%?

A This is easily derived from the first table on the bottom of page 19 of the Staff Report, by dividing $597 million of base capacity cost by the total generation capacity cost of $1.134 billion.

Q DOES STAFF'S DETAILED BIP METHOD LACK SYMMETRY IN THE ALLOCATION OF FIXED COSTS AND FUEL COSTS?

A Yes. Staff's detailed BIP method clearly allocates above average capital cost to high load factor customers, such as those on the LPS rate, and below average capital cost

to low load factor customers such as the residential class. Staff does perform a separate allocation of fuel costs for each of its three categories of plant. However, this differential allocation of fuel cost in some cases produces an insignificantly different result as compared to allocating fuel costs on class kWhs, and in other cases is just counterintuitive.

Q **PLEASE EXPLAIN.**

A The end result of Staff's fuel cost allocation clearly demonstrates that the BIP Study is flawed. The LPS class (which has the highest load factor) is allocated fuel cost that is slightly higher than the overall average fuel cost (see Schedule MEB-COS-R-2). In particular, as compared to an allocation of fuel cost on a kWh basis, Staff allocates to the LPS class $0.09 per MWh, or 0.6%, more than the average. This clearly is contrary to expectations and at odds with the inverse relationship between fuel cost and capital cost. While the numerical difference from average cost is not significant, it does point out a conceptual flaw.

Even more telling is the fact that Staff's detailed BIP fuel cost allocation produces a below average cost per kWh for the low load factor residential class. For the residential class, the detailed BIP fuel allocation is less than the average fuel cost by an astounding $1.15 per MWh, or by about 7.8%. As noted above, it is counterproductive that this low load factor class (the lowest of all) would have not only below average capital costs but also below average fuel costs.

These kinds of anomalies are another reason why the BIP methodology and its results must be regarded with skepticism, and also helps to explain why the method has not received support in the industry.

Q AT PAGE 16 OF THE REPORT, STAFF INDICATES THAT THE BIP METHOD IS DISCUSSED IN THE NARUC MANUAL. DOES THE FACT THAT A GENERATION ALLOCATION METHOD IS MENTIONED IN THE NARUC MANUAL GIVE IT CREDIBILITY OR SUGGEST THAT IT IS ACCEPTED IN THE INDUSTRY?

A No, for the reasons I have previously noted (pages 3 and 4 of this testimony) in connection with my review of KCPL's proposed A&P method.

Q IS THE BIP STUDY METHODOLOGY ACCEPTED IN THE INDUSTRY?

A No, it is not. The BIP method first surfaced circa 1980 as an approach that some thought might be useful when trying to develop time-differentiated rates. However, the BIP method never caught on and is only infrequently seen in regulatory proceedings. The BIP method is certainly not among the frequently used mainstream cost allocation methodologies, and lacks meaningful precedent for its use.

Q YOU HAVE NOTED THAT THE STAFF'S BIP METHOD PROPOSED IN THIS PROCEEDING IS NOT USED IN OTHER JURISDICTIONS AND IS NOT SUPPORTED BY PRECEDENT OR ACCEPTED IN THE INDUSTRY. WHAT IS THE SIGNIFICANCE OF THIS?

A Cost of service studies for electric systems have been performed for well over 50 years. This means that a significant amount of analysis has gone into the question of determining how best to ascertain cost-causation on electric systems, across a broad spectrum of utility circumstances. Methods that have not had the benefit of that analysis and have not withstood the test of time must be viewed with skepticism. Proponents of such methods should bear a special burden of proving that they do a more accurate job of identifying cost-causation than do recognized

methods. Here, it should be clear that the BIP method does a less accurate job of identifying cost-causation than the recognized method that I advocate.

Q HAVE ANY OTHER WITNESSES IN THIS PROCEEDING PREPARED AND FILED A CLASS COST OF SERVICE STUDY?

A Yes. Dr. Michael Schmidt, who testified on behalf of the U.S. Department of Energy, has filed a class cost of service study. Dr. Schmidt uses a four coincident peak ("4CP") method for allocating the fixed costs associated with generation. Along with the A&E method, the coincident peak method is the most widely used method in the industry today.

Q HOW DO THE RESULTS OF THE FOUR COINCIDENT PEAK STUDY PREPARED BY DR. SCHMIDT COMPARE TO THE RESULTS OF YOUR A&E-4NCP STUDY?

A They are quite comparable. For the residential class, my A&E-4NCP study calculates a rate of return of current rates of approximately 2.5%, while Dr. Schmidt calculates a rate of return of 2.8% under his 4CP method. Both of these are in stark contrast to Staff's BIP rate of return of 7.2%.

For the Large Power Service class, the rate of return that I calculate with the A&E-4NCP study is 8.1%, and Dr. Schmidt calculates a rate of return of 7.0%. Both stand in stark contrast to the 4.5% rate of return that Staff calculates under its BIP method.[1]

[1]The rates of return under the A&E-4NCP study are shown on Schedule MEB-COS-5, and the results under the 4CP study are shown on page 11 of the corrected direct testimony of Dr. Michael Schmidt.

Other Problems With Staff's Cost of Service Study

Q ARE THERE ANY ADDITIONAL ISSUES WITH STAFF'S COST OF SERVICE STUDY THAT SHOULD BE NOTED?

A Yes. There are some problems with other allocations that impact Staff's cost of service study. They are the allocation of production non-fuel O&M expense, the allocation of A&G expense and the allocation of the costs of the distribution system.

Q WHAT IS THE ISSUE WITH RESPECT TO THE ALLOCATION OF PRODUCTION SYSTEM NON-FUEL O&M EXPENSE?

A Staff develops something that it calls BIP O&M Allocator, which is based on energy.

Q HOW ARE THESE COSTS TYPICALLY ALLOCATED?

A They typically are treated as demand-related costs because they "follow plant," meaning that expenses are closely related to the existence of the plant facilities. KCPL used the demand allocator, as I advocate, for these costs, and, in fact, the Staff's accounting witnesses used a demand allocation factor when allocating these costs between Kansas and Missouri.

Q WHAT IS THE ISSUE WITH RESPECT TO THE ALLOCATION OF A&G EXPENSE?

A A significant portion of A&G expense is allocated to classes on the basis of other O&M expenses, which include significant amounts of fuel and purchased power expense. Fuel and purchased power expense do not give rise to the incurrence of A&G expense in proportion to the level of fuel and purchased power expense because these costs are largely generated externally, as opposed to the labor and

other costs of maintaining the generation, transmission, distribution and other functions of the utility, which are internally incurred and do give rise to the occurrence of A&G expense.

Q STAFF HAS REFERRED TO THE NARUC MANUAL FOR CERTAIN ALLOCATIONS. DOES THE NARUC MANUAL CONTAIN A DISCUSSION OF THE ALLOCATION OF GENERAL PLANT AND A&G EXPENSES?

A Yes. Pages 105-107 of the January 1992 NARUC Manual discusses A&G expenses. I have attached these pages as Schedule MEB-COS-R-3. Note that the majority of A&G expenses are allocated on labor. Wherever the Manual refers to a more general category of expenses, note that the phrase "less fuel and purchased power" appears. This means that fuel and purchased power should be excluded from the allocations.

From a cost causation point of view, most expenses do not vary with energy consumption. This is why it is traditional to exclude fuel and purchased power from any allocation of A&G expenses and focus on the cost-causative nature for these expenses. That is what I have done; it clearly is not what Staff has done.

Q HAVE YOU DETERMINED HOW CHANGING THE ALLOCATION OF PRODUCTION NON-FUEL O&M EXPENSE AND A&G EXPENSE WOULD IMPACT THE CLASS REVENUE REQUIREMENTS?

A Yes. I have set this forth on Schedule MEB-COS-R-4. Page 1 shows the impact of changing the allocation of production non-fuel O&M expense coupled with changing the allocation of A&G expense, where the O&M expenses less A&G expenses allocator is replaced with the Payroll factor. Page 2 shows the combined effect of changing the allocation of production non-fuel O&M expense and A&G expense,

where the O&M Expenses less A&G expenses allocator is replaced with the Net Plant factor. Either change reduces the costs allocated to LPS by about $2 million and increases the costs allocated to the residential class by about $3 million.

Q HAVE YOU PREPARED A SCHEDULE SHOWING THE REVENUE CHANGES NEEDED TO BRING THE CLASSES TO COST OF SERVICE?

A Yes. Please refer to Schedule MEB-COS-R-5. Here I show the estimated percentage increases and decreases to move all classes to equal rate of return at the current overall rate level. I do this for my A&E study, for a 4CP allocation as recommended by DOE witness Dr. Schmidt, and for Staff's detailed BIP study.

For the LPS class, Staff's detailed BIP study results are considerably at odds with the results of both the A&E study and the 4CP study. In fact, Staff's detailed BIP study suggests an increase of 7.5%, whereas my traditional A&E study suggests a 7.4% decrease and the traditional 4CP study suggests a 7.1% decrease.

For the residential class, the detailed BIP study has a 0.5% decrease, compared to a 14.8% increase under my traditional A&E study and a 16.7% increase under the traditional 4CP study.

Along with the previously mentioned anomalies, this illustrates another reason why the BIP methodology and its results must be regarded with skepticism. The BIP method is certainly not among the frequently used mainstream cost allocation methodologies, and lacks meaningful precedent for its use.

Q HAVE YOU REVIEWED STAFF'S ALLOCATION OF DISTRIBUTION COSTS AMONG CUSTOMER CLASSES?

A Yes.

Q HAVE YOU NOTED ANY ERRORS IN STAFF'S ALLOCATION OF DISTRIBUTION COSTS TO THE LPS CUSTOMER CLASS?

A Yes. I have detected three major errors in the development of the demands Staff uses to allocate distribution costs to the LPS class.

Q WHAT IS THE FIRST ERROR?

A The first error is that Staff uses the demand of all LPS customers to develop an allocator for distribution plant. Staff uses a non-coincident peak ("NCP") at distribution of 337,000 kW. This is incorrect because, as clearly shown in KCPL's workpapers, approximately 49,000 kW of LPS load is served at the transmission level, does not use the distribution system, and should not be allocated any part of the distribution system.

Q WHAT IS THE SECOND ERROR?

A The second error is Staff's failure to recognize that approximately 49,000 kW of LPS load takes what is referred to as substation service, and therefore does not utilize any of the primary or secondary distribution facilities. Nevertheless, Staff allocated costs to them as if they did.

Q WHAT IS THE THIRD ERROR?

A The third error is in the development of the demand associated with secondary distribution level customers in the LPS class. In estimating that secondary customers have an NCP of approximately 158,000 kW, Staff started with the overstated class NCP (which includes transmission level service customers and distribution substation level service customers), and then subtracted from that number what it calls the load

of primary service customers to arrive at 158,000 kW of LPS secondary demand. The amount which Staff subtracts for primary service customers is too small because it uses the average load of all LPS customers, and not just the average load of primary service level customers, which is higher. KCPL's workpapers clearly show that the demand attributable to secondary voltage level service customers in the LPS class is only about 66,000 kW. Staff's calculation of demand and demand responsibility associated with secondary level service customers in the LPS class has been overstated by approximately 92,000 kW.

Q WHAT DO YOU CONCLUDE BASED ON YOUR REVIEW OF STAFF'S ALLOCATION OF THE DISTRIBUTION SYSTEM?

A Based on my review, and because of the numerical errors (not conceptual differences), Staff's class cost of service study should not be relied upon for any purpose.

Q DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A Yes, it does.

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Kansas City Power & Light Company
Case No. ER-2016-0285

Customer Class Generation Capacity Costs Per kW
And Energy Costs Per kWh Under Traditional Methods
As Compared to KCP&L Proposal

MIEC COST OF SERVICE STUDY
Traditional Avg. & Excess CCOS

		Capacity Rev Req.		Energy Rev Req.	
Line	Customer Class	Capacity Costs $ per kW (1)	% Difference From System Avg. (2)	Energy Costs ¢ per kWh (3)	% Difference From System Avg. (4)
1	Missouri Retail	257		1.99	
2	Residential	257	0%	1.99	0%
3	Small General Service	257	0%	1.99	0%
4	Medium General Service	257	0%	1.99	0%
5	Large General Service	257	0%	1.99	0%
6	Large Power Service	257	0%	1.99	0%
7	Lighting	257	0%	1.99	0%

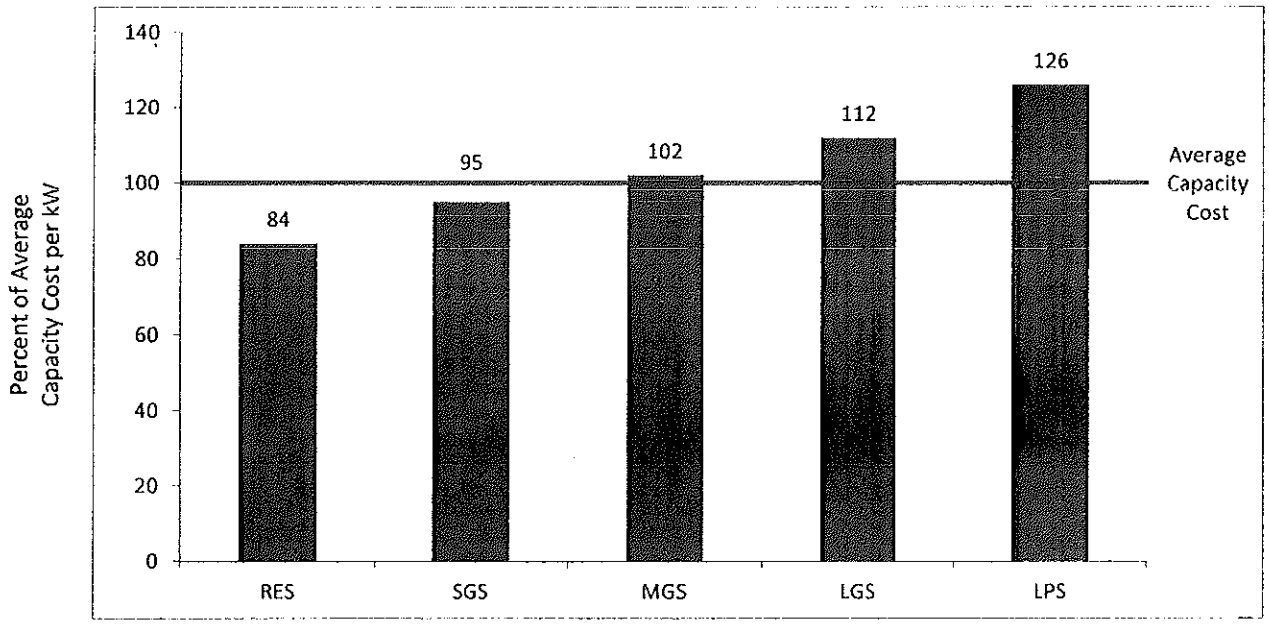
KCP&L COST OF SERVICE STUDY
KCLP Avg. and Peak CCOS

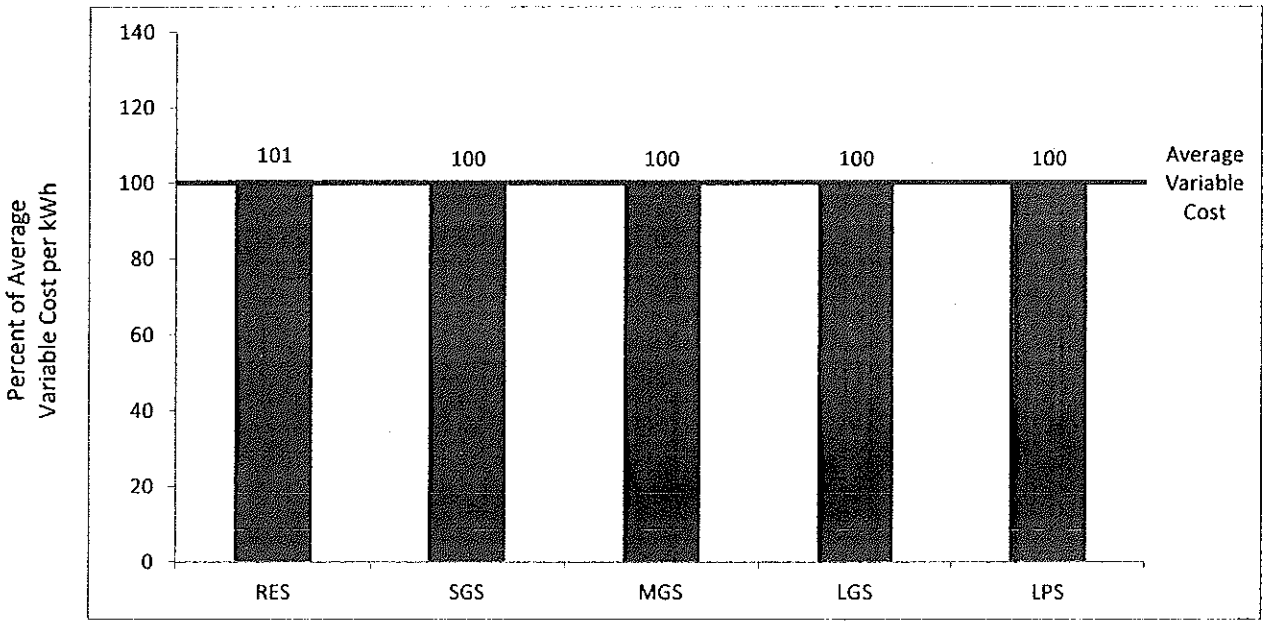
		Capacity Rev Req.		Energy Rev Req.	
Line	Customer Class	Capacity Costs $ per kW (1)	% Difference From System Avg. (2)	Energy Costs ¢ per kWh (3)	% Difference From System Avg. (4)
8	Missouri Retail	257		1.99	
9	Residential	215	-16%	2.00	0.5%
10	Small General Service	245	-5%	1.99	0.0%
11	Medium General Service	262	2%	1.99	0.0%
12	Large General Service	287	12%	1.99	0.0%
13	Large Power Service	323	26%	1.99	0.0%
14	Lighting	257	0%	1.98	-0.5%

Kansas City Power & Light Company

Case No. ER-2016-0285

Illustration of Skewed Allocation of Capital Costs and Energy Costs Under KCP&L's Allocation Proposal





KANSAS CITY POWER & LIGHT COMPANY
Case No. ER-2016-0285

$/MWh for Fuel

Line	Class	Sales at Generation MWh[1] (1)	Sales at Generation Allocator (2)	Staff's Detailed BIP Fuel for Energy Allocated on Sales at Gen (3)	Sales at Generation $/MWh (4)	Staff's Detailed BIP Fuel for Energy[2] (5)	Staff's Detailed BIP Fuel for Energy Allocator (6)	Staff's Detailed BIP $/MWh (7)	Percent Difference from Sales at Generation (8)
1	Residential	2,843,707	31.39%	$ 42,009,382	$ 14.77	$ 38,719,459	28.93%	$ 13.62	-7.8%
2	Small General Service	413,558	4.57%	$ 6,109,386	$ 14.77	$ 6,803,703	5.08%	$ 16.45	11.4%
3	Medium General Service	1,264,218	13.96%	$ 18,675,974	$ 14.77	$ 18,802,220	14.05%	$ 14.87	0.7%
4	Large General Service	2,293,757	25.32%	$ 33,885,103	$ 14.77	$ 35,835,762	26.78%	$ 15.62	5.8%
5	Large Power Service	2,151,978	23.76%	$ 31,790,645	$ 14.77	$ 31,978,392	23.90%	$ 14.86	0.6%
6	Lighting	91,144	1.01%	$ 1,346,451	$ 14.77	$ 1,677,407	1.25%	$ 18.40	24.6%
7	Total	9,058,362	100.00%	$ 133,816,942	$ 14.77	$ 133,816,942	100.00%	$ 14.77	0.0%

Source:

[1] Workpaper of S Kliethermes - market energy.xlsx, market compare tab.

[2] Workpaper of S Kliethermes - KCPL bip components 1a.xlsx, Allocator Calc tab.

ELECTRIC UTILITY COST ALLOCATION MANUAL

January, 1992

NATIONAL ASSOCIATION OF
REGULATORY UTILITY COMMISSIONERS
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Price: $25.00

CHAPTER 8

CLASSIFICATION AND ALLOCATION OF COMMON AND GENERAL PLANT INVESTMENTS AND ADMINISTRATIVE AND GENERAL EXPENSES

This chapter describes how general plant investments and administrative and general expenses are treated in a cost of service study. These accounts are listed in the general plant Accounts 389 through 399, and in the administrative and general Accounts 920 through 935.

I. GENERAL PLANT

General plant expenses include Accounts 389 through 399 and are that portion of the plant that are not included in production, transmission, or distribution accounts, but which are, nonetheless, necessary to provide electric service.

One approach to the functionalization, classification, and allocation of general plant is to assign the total dollar investment on the same basis as the sum of the allocated investments in production, transmission and distribution plant. This type of allocation rests on the theory that general plant supports the other plant functions.

Another method is more detailed. Each item of general plant or groups of general and common plant items is functionalized, classified, and allocated. For example, the investment in a general office building can be functionalized by estimating the space used in the building by the primary functions (production, transmission, distribution, customer accounting and customer information). This approach is more time-consuming and presents additional allocation questions such as how to allocate the common facilities such as the general corporate computer space, the Shareholder Relation Office space, etc.

Another suggested basis is the use of operating labor ratios. In performing the cost of service study, operation and maintenance expenses for production, transmission, distribution, customer accounting and customer information have already been functionalized, classified, and allocated. Consequently, the amount of labor, wages, and salaries assigned to each function is known, and a set of labor expense ratios is thus available for use in allocating accounts such as transportation equipment, communication equipment, investments or general office space.

II. ADMINISTRATIVE AND GENERAL EXPENSES

Administrative and general expenses include Accounts 920 through 935 and are allocated with an approach similar to that utilized for general plant. One methodology, the two-factor approach, allocates the administrative and general expense accounts on the basis of the sum of the other operating and maintenance expenses (excluding fuel and purchased power).

A more detailed methodology classifies the administrative and general expense accounts into three major components: those which are labor related; those which are plant related; and those which require special analysis for assignment or the application of the beneficiality criteria for assignment.

The following tabulation presents an example of the cost functionalization and allocation of administrative and general expenses using the three-factor approach and the two-factor approach.

Account Operation		Three-Factor Allocation Basis	Two-Factor Allocation Basis
920	A & G Salaries	Labor - Salary and Wages	Labor - Salary and Wages
921	Office Supplies	Labor - Salary and Wage	Labor - Salary and Wages
922	Administration Expenses Transferred-Credit	Other - Subtotal of Operating Expenses Less Fuel and Purchased Power	Labor - Salary and Wages
923	Outside Services Employed	Other - Subtotal of Operating Expenses Less Fuel and Purchased Power	Labor - Salary and Wages
924	Property Insurance	Plant - Total Plant [1]	Plant - Total Plant
925	Injuries and Damages	Labor - Salary and Wages[2]	Labor - Salary and Wages
926	Pensions and Benefits	Labor - Salary and Wages	Labor - Salary and Wages
927	Franchise Requirements	Revenues or specific assignment	Revenues or specific assignment

[1] A utility that self-insures certain parts of its utility plant may require the adjustment of this allocator to only include that portion for which the expense is incurred.

[2] A detailed analysis of this account may be necessary to learn the nature and amount of the expenses being booked to it. Certain charges may be more closely related to certain plant accounts than to labor wages.

Account Operation		Three Factor *Allocation Basis*	Labor-Ratio *Allocation Basis*
928	Regulatory Commission Expenses	Other - Subtotal of Operating Expenses Less Fuel and Purchased Power	Labor - Salary and Wages
928	Duplicate Charge-Cr.	Other - Subtotal of Operating Expenses Less Fuel and Purchased Power	Labor - Salary and Wages
930.1	General Advertising Expenses	Other - Subtotal of Operating Expenses Less Fuel and Purchased Power	Labor - Salary and Wages
930.2	Miscellaneous General Expenses	Other - Subtotal of Operating Expenses Less Fuel and Purchased Power	Labor - Salary and Wages
931	Rents	Plant - Total Plant[3]	Plant - Total Plant
Maintenance		Three Factor *Allocation Basis*	Labor-Ratio *Allocation Basis*
935	General Plant	Plant - Gross Plant	Labor - Salary and Wages

[3]A detailed analysis of rental payments may be necessary to determine the correct allocation bias. If the expenses booked are predominantly for the rental of office space, the use of labor, wage and salary allocators would be more appropriate.

KANSAS CITY POWER & LIGHT COMPANY
Case No. ER-2016-0285

Change in Class Revenue Requirement
in Staff's Preferred Study from
Revising Staff's Allocation of Production
Non-Fuel O&M Expense and A&G Expense*

Line	Class	Change from Non-Fuel Production O&M Expense Allocation ($000) (1)	Change from A&G Expense Allocation ($000) (2)	Total ($000) (3)
1	Residential	$ 3,113	$ (134)	$ 2,979
2	Small General Service	$ (92)	$ (16)	$ (108)
3	Medium General Service	$ (139)	$ 6	$ (133)
4	Large General Service	$ (47)	$ 71	$ 24
5	Large Power Service	$ (2,044)	$ 77	$ (1,967)
6	Lighting	$ (791)	$ (4)	$ (795)
7	Total	$ (0)	$ 0	$ (0)

* O&M Expenses less A&G Expenses allocator replaced with Payroll allocator.

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Change in Class Revenue Requirement
in Staff's Preferred Study from
Revising Staff's Allocation of Production
Non-Fuel O&M Expense and A&G Expense*

Line	Class	Change from Non-Fuel Production O&M Expense Allocation ($000) (1)	Change from A&G Expense Allocation ($000) (2)	Total ($000) (3)
1	Residential	$ 3,113	$ (35)	$ 3,078
2	Small General Service	$ (92)	$ (2)	$ (95)
3	Medium General Service	$ (139)	$ (33)	$ (172)
4	Large General Service	$ (47)	$ 11	$ (35)
5	Large Power Service	$ (2,044)	$ 56	$ (1,988)
6	Lighting	$ (791)	$ 3	$ (788)
7	Total	$ (0)	$ 0	$ (0)

* O&M Expenses less A&G Expenses allocator replaced with Net Plant allocator.

KANSAS CITY POWER & LIGHT COMPANY
Case No. ER-2016-0285

Comparison of Class Increases Needed
for Equal Rates of Return at
Present Overall Rate Level (Revenue Neutral)

Line	Class	Staff[1] Detailed BIP (1)	MIEC[2] (2)	DOE[3] (3)
1	Residential	-0.5%	14.8%	16.7%
2	Small General Service	-5.0%	-7.7%	-8.5%
3	Medium General Service	-5.2%	-6.2%	-6.8%
4	Large General Service	-0.6%	-10.4%	-13.3%
5	Large Power Service	7.5%	-7.4%	-7.1%
6	Lighting	-5.5%	-12.4%	-40.8%
7	Total	0.0%	0.0%	0.0%

[1] Staff's Rate Design and Class Cost-of-Service Report, Table 1
[2] Schedule MEB-COS-5 (A&E 4NCP)
[3] Based on 4CP allocation as recommended in direct testimony of DOE witness Dr. Michael Schmidt.