

Exhibit No.:  
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Witness: Maurice Brubaker  
Type of Exhibit: Rebuttal Testimony  
Sponsoring Parties: Missouri Industrial Energy Consumers  
Case Nos.: ER-2018-0145/ER-2018-0146  
Date Testimony Prepared: August 7, 2018

**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-2018-0145**  
\_\_\_\_\_)

\_\_\_\_\_)  
**In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service** ) **Case No. ER-2018-0146**  
\_\_\_\_\_)

Rebuttal Testimony and Schedules of

**Maurice Brubaker**

On behalf of

**Missouri Industrial Energy Consumers**

August 7, 2018



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In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service \_\_\_\_\_) **Case No. ER-2018-0146**

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

**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-2018-0145.
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.

/s/ Maurice Brubaker  
Maurice E. Brubaker

Subscribed and sworn to before me this 6<sup>th</sup> day of August, 2018.

/s/ Maria E. Decker  
Notary Public

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

|   |                              |
|---|------------------------------|
| _____ )   |                              |
| <b>In the Matter of Kansas City Power &amp;<br/>Light Company's Request for Authority<br/>to Implement a General Rate Increase<br/>for Electric Service</b> )         | <b>Case No. ER-2018-0145</b> |
| _____ )   |                              |
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| _____ )   |                              |

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**BEFORE THE PUBLIC SERVICE COMMISSION  
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) **Case No. ER-2018-0145**  
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In the Matter of KCP&L Greater Missouri Operations Company's Request for Authority to Implement a General Rate Increase for Electric Service )  
)  
) **Case No. ER-2018-0146**  
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**Rebuttal Testimony of Maurice Brubaker**

1 **Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

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

4 **Q ARE YOU THE SAME MAURICE BRUBAKER WHO HAS PREVIOUSLY FILED**  
5 **TESTIMONY IN THESE PROCEEDINGS?**

6 A Yes. I have previously filed direct testimony on cost of service/rate design issues  
7 presented in these proceedings.

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

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

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Page 1**

1 **Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?**

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

8 **INTRODUCTION AND SUMMARY**

9 **Q WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

10 A The purpose of my rebuttal testimony is to address the cost of service  
11 recommendations of the Staff of the Missouri Public Service Commission (“Staff”).  
12 Although there are a number of differences between the KCPL/GMO/MIEC and Staff  
13 cost of service studies, the largest difference is with respect to the allocation of  
14 production plant investment and related fixed expenses. I will respond to Staff’s  
15 allocation study that utilizes a Detailed Base, Intermediate and Peak (“BIP”) method,  
16 and to several other aspects of Staff’s allocation study.

17 **Q PLEASE SUMMARIZE YOUR PRIMARY FINDINGS AND RECOMMENDATIONS.**

18 A They may be summarized as follows:

- 19 1. Staff’s BIP allocation method is outside the mainstream, and produces distorted  
20 results. The Commission should be guided by the use of a mainstream method,  
21 such as average and excess or coincident peak.
- 22 2. Staff’s studies use an inappropriate allocation of production system non-fuel O&M  
23 expense. That allocation is biased toward energy consumption and does not  
24 reflect the fact that these expenses are incurred primarily as a function of the  
25 existence of the assets, and that it is conventional and appropriate to allocate  
26 these types of costs using a production demand allocation factor.

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Page 2**

- 1 3. Staff's studies are also flawed because the allocation of administrative and  
2 general ("A&G") expense is on the basis of other previously allocated O&M  
3 expense that includes fuel and purchased power expenses. Generally accepted  
4 practice, and best practice, is to exclude fuel and purchased power expenses  
5 when developing the base used to allocate A&G expense because fuel and  
6 purchased power expenses themselves have little impact on A&G expense.
- 7 4. Staff has made numerical errors in this development of certain allocation factors.

8 **CLASS COST OF SERVICE ISSUES**

9 **Q HAVE YOU REVIEWED THE STAFF RATE DESIGN AND CLASS COST OF**  
10 **SERVICE REPORT ("STAFF REPORT") ON THE ISSUE OF CLASS COST OF**  
11 **SERVICE?**

12 **A** Yes.

13 **Q DO YOU HAVE REBUTTAL TO THE POSITIONS EXPRESSED THEREIN?**

14 **A** Yes, I do. I disagree with the methods that Staff has used for the allocation of  
15 generation system fixed costs and with respect to the allocation of certain other  
16 components of cost of service.

17 **Staff's Allocation of Production Costs**

18 **Q WHAT COST OF SERVICE STUDY DID STAFF PROVIDE?**

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

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

22 **A** Staff does not say explicitly, but on page 9 the Staff Report discusses assigning  
23 generation assets (deemed to be base load, intermediate or peaking) to BIP demands

1 that are deemed to represent the components of each class's load curve that reflect  
2 the intended use of specific plant investments. By choosing to allocate 100% of the  
3 investment (fixed costs) associated with base load plants essentially on the basis of  
4 class energy, Staff effectively is assuming that investment in base load plants is not  
5 driven by total system demands but rather by a component of class load profiles. We  
6 all know that this is not the basis for system planning. It appears from Staff's studies  
7 that about 80% of total generation fixed costs are allocated on the basis of class energy  
8 consumption rather than on the generally accepted basis of a measure of maximum  
9 demand or coincident demand.

10 **Q PLEASE DESCRIBE GENERALLY THE DETAILED BIP STUDY.**

11 A With this study, generation plants are identified as base, intermediate or peaking.  
12 Then, Staff looks at class load curves and attempts to associate class demand levels  
13 with different plants, on the assumption that each class uses a different combination of  
14 base, intermediate and peaking facilities. The demands for each class for each type  
15 of plant assumed in Staff's study appear on page 11 of the Staff Report, and the  
16 development of the production system fixed cost allocation factor appears at the top of  
17 page 15 of the Staff Report.

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

20 A Although Staff goes through a very data-intensive analysis that entails looking at the  
21 load of each customer class in each hour, the end result is that with this method, the  
22 fixed costs associated with base load generation essentially are allocated on a  
23 measure of class energy consumption as demonstrated below. The intermediate

**Maurice Brubaker**  
**Page 4**

1 plants are allocated as a function of class 12 monthly coincident peaks minus base  
2 demands, and facilities identified as peaking facilities are allocated on class four  
3 summer coincident peak demands reduced by the base and intermediate demands.

4 Since 100% of the fixed costs associated with plants designated as base load  
5 are allocated to customer classes using the customer class energy requirement factor  
6 as the basis for the allocation, Staff does not include any consideration of the times that  
7 energy is consumed (i.e., when demands occur), and would therefore attribute the  
8 same base load capacity cost to a customer that takes all of its load at the system peak  
9 hour as it would to a class with the same amount of energy consumption taken steadily  
10 at the same amount every hour throughout the year. (Please see the discussion of  
11 demand versus energy costs at pages 12-14 of my direct testimony, including Figure 3  
12 on page 13 of that testimony.)

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

15 **A** Yes. That comparison appears in Table 1. Note that the relative percentages of base  
16 load costs for each class in Staff's detailed BIP allocation factor development is exactly  
17 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**

| <u>Line</u> | <u>Class</u>           | <u>Staff's Base Capacity by Class<sup>1</sup></u> |                | <u>Energy by Class</u>               |                |
|-------------|------------------------|---|----------------|--------------------------------------|----------------|
|             |                        | <u>Costs</u>                                      | <u>Percent</u> | <u>MWh at Generation<sup>2</sup></u> | <u>Percent</u> |
|             |                        | (1)   | (2)            | (3)                                  | (4)            |
| 1           | Residential            | \$ 356,215,370                                    | 31.04%         | 2,774,987                            | 31.04%         |
| 2           | Small General Service  | \$ 60,371,825                                     | 5.26%          | 470,308                              | 5.26%          |
| 3           | Medium General Service | \$ 171,014,118                                    | 14.90%         | 1,332,233                            | 14.90%         |
| 4           | Large General Service  | \$ 287,121,262                                    | 25.02%         | 2,236,730                            | 25.02%         |
| 5           | Large Power Service    | \$ 261,578,662                                    | 22.79%         | 2,037,748                            | 22.79%         |
| 6           | Lighting               | \$ 11,377,185                                     | 0.99%          | 88,630                               | 0.99%          |
| 7           | Missouri Retail        | \$ 1,147,678,422                                  | 100.00%        | 8,940,636                            | 100.00%        |

<sup>1</sup> Staff's Class Cost-of-Service Report, page 15.

<sup>2</sup> Workpaper of R Kliethermes - Staff CCOS allocators\_KCPL.xlsx

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

4 **A** No. The BIP approach effectively attempts to assign only one purpose for each class  
5 of plant. In reality, when systems are planned, the utility aims to install that combination  
6 of generation facilities which, giving consideration to fixed costs and variable costs, as  
7 well as to all other relevant factors, is expected to serve the needs of all customers,  
8 collectively, on a least-cost basis. All plants contribute to meeting peak demands, and  
9 the failure to allocate the fixed costs associated with base load plants on a measure of

1 peak demand produces a biased result that over-allocates costs to high load factor  
2 customers and under-allocates costs to low load factor customers.

3 **Q IN STAFF'S BIP STUDY, WHAT PERCENTAGE OF GENERATION FIXED COST IS**  
4 **EFFECTIVELY ALLOCATED ON ENERGY?**

5 A 80%.

6 **Q WHAT IS THE BASIS FOR YOUR STATEMENT THAT THE WEIGHTING OF BASE**  
7 **LOAD COST IN THIS CASE IS ABOUT 80%?**

8 A This is easily derived from the first table on the top of page 15 of the Staff Report, by  
9 dividing \$1,147.7 million of base capacity cost by the total generation capacity cost of  
10 \$1,429.9 million.

11 **Q WHAT WAS THE COMPARABLE PERCENTAGE IN THE PREVIOUS KCPL CASE?**

12 A It was 53%. This is a startlingly large change and further casts doubt on the analysis.

13 **Q AT PAGE 9 OF THE REPORT, STAFF INDICATES THAT THE BIP METHOD IS**  
14 **DISCUSSED IN THE NARUC MANUAL. DOES THE FACT THAT A GENERATION**  
15 **ALLOCATION METHOD IS MENTIONED IN THE NARUC MANUAL GIVE IT**  
16 **CREDIBILITY OR SUGGEST THAT IT IS ACCEPTED IN THE INDUSTRY?**

17 A No. The NARUC Manual presents various production system allocation methods that  
18 were being used or considered in 1992. A number of those methods, like BIP, never  
19 achieved general acceptance by utilities, commissions or other practitioners.

1 **Q IS THE BIP STUDY METHODOLOGY ACCEPTED IN THE INDUSTRY?**

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

7 **Q HAS STAFF PROVIDED ANY INFORMATION ABOUT THE USE OF BIP IN THE**  
8 **INDUSTRY?**

9 A Yes. In data requests, Staff was asked to provide a citation to Commission orders in  
10 regulatory proceedings of which it was aware in which one or more parties filed a BIP  
11 study. I have attached as Schedule MEB-COS-R-1 Staff's response to Data Request  
12 No. 458 in the KCPL case and to Data Request No. 430 in the GMO case. As indicated  
13 therein, Staff was only able to identify cases in Missouri. Staff did not provide any  
14 information to suggest that BIP is used or even offered in any other jurisdiction.

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

19 A Cost of service studies for electric systems have been performed for well over 50 years.  
20 This means that a significant amount of analysis has gone into the question of  
21 determining how best to ascertain cost-causation on electric systems, across a broad  
22 spectrum of utility circumstances. Methods that have not had the benefit of that  
23 analysis and have not withstood the test of time must be viewed with skepticism.

1 Proponents of such methods should bear a special burden of proving that they do a  
2 more accurate job of identifying cost-causation than do recognized mainstream  
3 methods. Here, it should be clear that the BIP method does a less accurate job of  
4 identifying cost-causation than the recognized methods that I support.

5 **Q HOW DOES THE STAFF'S DBIP ALLOCATION RESULT COMPARE TO**  
6 **CONVENTIONAL METHODS?**

7 A A comparison to conventional allocation methods clearly shows DBIP to be an outlier.  
8 Schedule MEB-COS-R-2 compares the DBIP allocator to Average and Excess-4NCP,  
9 Average and Excess-4CP and 4CP allocators.

10 Note that for all major customer classes the Average and Excess-4NCP,  
11 Average and Excess-4CP and 4CP allocation factors are very similar. This is not an  
12 unusual outcome. It generally is the case that mainstream methods that appropriately  
13 recognize seasonality of the utility's load pattern will produce similar results.

14 In this case, the Average and Excess-4NCP, Average and Excess-4CP and  
15 4CP methods would support similar cost-based allocations of any rate increase or  
16 decrease.

17 **Q WHY DID YOU SUPPORT THE AVERAGE AND EXCESS-4CP METHOD FILED BY**  
18 **KCPL AND GMO IN THIS CASE, WHEN YOU OFTEN SUPPORT AVERAGE AND**  
19 **EXCESS-4NCP?**

20 A My general approach is to review the cost allocation method proposed by the utility;  
21 and I generally will endorse it if I think it is reasonable. For example, Ameren Missouri  
22 uses an Average and Excess-4NCP method which I have found reasonable, and  
23 supported it. In recent KCPL cases where an unacceptable method like the Average

1 and Peak or BIP method was filed, I supported an alternative using Average and  
2 Excess-4NCP, since that method is mainstream and has found acceptance within  
3 Missouri. I sometimes file additional studies using different mainstream methods. For  
4 example, in the previous KCPL rate case (ER-2016-0285) I provided information using  
5 an Average and Excess-2NCP method, and also a 4CP method, in addition to the  
6 Average and Excess-4NCP method.

7 **Q THE AVERAGE AND EXCESS-4CP ALLOCATION FACTORS IN THIS TABLE ARE**  
8 **CONSIDERABLY DIFFERENT FROM WHAT STAFF SHOWS ON PAGE 17 OF ITS**  
9 **REPORT. CAN YOU EXPLAIN WHY?**

10 A Yes. Staff's calculation of the Average and Excess-4CP factor is in error. Staff has  
11 stated an intent to correct its error in rebuttal testimony.

## 12 **Other Problems With Staff's Cost of Service Study**

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

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

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

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

1 **Q HOW ARE THESE COSTS TYPICALLY ALLOCATED?**

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

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

8 A A significant portion of A&G expense is allocated to classes on the basis of other O&M  
9 expenses, which include significant amounts of fuel and purchased power expense.  
10 Fuel and purchased power expense do not give rise to the incurrence of A&G expense  
11 in proportion to the level of fuel and purchased power expense because these costs  
12 are largely generated externally, as opposed to the labor and other costs of maintaining  
13 the generation, transmission, distribution and other functions of the utility, which are  
14 internally incurred and do give rise to the occurrence of A&G expense.

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

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

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

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

8   A       Yes. I have set this forth on Schedule MEB-COS-R-4. Page 1 shows the impact of  
9 changing the allocation of production non-fuel O&M expense coupled with changing  
10 the allocation of A&G expense, where the O&M expenses less A&G expenses allocator  
11 is replaced with the Payroll factor. Page 2 shows the combined effect of changing the  
12 allocation of production non-fuel O&M expense and A&G expense, where the O&M  
13 Expenses less A&G expenses allocator is replaced with the Net Plant factor. Either  
14 change reduces the costs allocated to LPS by about \$1.2 million and increases the  
15 costs allocated to the residential class by about \$2.8 million.

16   **Q       DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

17   A       Yes, it does.

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