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Missouri Operations  
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Case Nos.: ER-2018-0145 and ER-  
2018-0146  
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**MISSOURI PUBLIC SERVICE COMMISSION**

**CASE NOS. ER-2018-0145 and ER-2018-0146**

**SURREBUTTAL TESTIMONY**

**OF**

**THOMAS J. SULLIVAN, JR.**

**ON BEHALF OF**

**KANSAS CITY POWER & LIGHT COMPANY, and  
KCP&L GREATER MISSOURI OPERATIONS COMPANY**

**September 2018**

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**SURREBUTAL TESTIMONY**

**OF**

**THOMAS J. SULLIVAN, JR.**

**CASE NOS. ER-2018-0145 AND CASE NO. ER-2018-0146**

**INTRODUCTION**

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

A. Thomas J. Sullivan, Jr., 15898 Millville Road, Richmond, Missouri, 64085.

**Q. ARE YOU THE SAME THOMAS J. SULLIVAN, JR. WHO FILED DIRECT TESTIMONY IN THESE MATTERS?**

A. Yes, I am.

**Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

A. The purpose of my surrebuttal testimony is to discuss issues raised in the rebuttal testimony of Mr. Maurice Brubaker who filed testimony on behalf of the Missouri Industrial Energy Consumers (“MIEC”) and Ms. Sarah L. K. Lange on behalf of the Missouri Public Service Commission Staff (“Staff”) related to the production cost allocation methodology proposed by the Missouri Public Service Commission Staff (“Staff”) for Kansas City Power & Light Company (“KCP&L”). In the current case, Staff refers to its production cost allocation as the Detailed Base, Intermediate, and Peak (“DBIP”) methodology but in actuality, the method used in this case is not different from what is commonly referred to and has been historically referred to as the Base, Intermediate, and Peak (“BIP”) methodology.

**Q. DO YOU SPONSOR ANY SCHEDULES WITH YOUR TESTIMONY?**

A. Yes. I sponsor the following schedules:

- 1           ▪       Schedule TJS-11 – Comparison of Staff BIP Allocation between
- 2                       2016 and 2018 Rate Cases
- 3           ▪       Schedule TJS-12 – Staff BIP Allocation – Corrected
- 4           ▪       Schedule TJS-13 – Staff Production Cost Allocation - Corrected

5 Schedules TJS-1 through TJS-10 were provided with my direct testimony.

6 **Q. PLEASE SUMMARIZE THE ISSUES RAISED BY MR. BRUBAKER IN HIS**

7 **REBUTTAL THAT YOU WILL ADDRESS IN YOUR SURREBUTTAL**

8 **TESTIMONY.**

9 A. The following are three issues raised by Mr. Brubaker that I will address in my

10 surrebuttal:

- 11           1. The significant change in the Staff’s production cost allocation using
- 12                       the Base-Intermediate-Peak (“BIP”) methodology between KCP&L’s
- 13                       current rate case and its last rate case.
- 14           2. The inconsistency in the Staff’s allocation of production operation
- 15                       and maintenance expenses.
- 16           3. The acceptance and use of the BIP methodology within the industry.

17 **Q. PLEASE SUMMARIZE THE ISSUES RAISED BY MS. LANGE IN HER**

18 **REBUTTAL THAT YOU WILL ADDRESS IN YOUR SURREBUTTAL**

19 **TESTIMONY.**

20 A. I will address the comparison made by Ms. Lange in Table 3 of her rebuttal

21 testimony with the issues raised by Mr. Brubaker.

22 **Q. PLEASE OUTLINE YOUR SURREBUTTAL TESTIMONY.**

23 A. My surrebuttal testimony addresses the following topics:

1. Discussion of Mr. Brubaker's rebuttal testimony;
2. Discussion of Ms. Lange's rebuttal testimony;
3. Other inherent flaws in the BIP/DBIP methodology; and
4. Discussion of the Commission's Order in KCP&L's last rate case.

**ISSUES RAISED IN MR. BRUBAKER'S REBUTTAL TESTIMONY**

**Q. PLEASE DISCUSS THE FIRST ISSUE RAISED BY MR. BURBAKER THAT YOU WOULD LIKE TO ADDRESS.**

A. As highlighted by Mr. Maurice Brubaker on Page 7 of his rebuttal testimony, Staff's BIP allocation differs substantially from the Staff's allocation in the Company's last rate case. Mr. Brubaker points out that the Staff's BIP allocation results in approximately 80 percent (Page 7, Line 5) of fixed capacity costs being allocated on an energy basis, whereas, the Staff's BIP allocation in the Company's last rate case resulted in approximately 53 percent (Page 7, Line 12) being allocated on an energy basis.

This concern of Mr. Brubaker is consistent with that expressed by Company witness Lutz on page 5 of his rebuttal testimony where he states:

I note that Staff does not establish a 'size' for the base component. Instead, the generating plants are simply grouped with no consideration of the load being served[.]

and then goes on to say

I would offer that in past determinations LaCygne was generally considered as an intermediate resource while in the Staff allocation, it is treated as base.

These two major flaws in the Staff's application of the BIP methodology result in Staff's failure to properly synchronize the assets being allocated with the customer

1 loads being served. Further, these two flaws contribute to the issue raised by Mr.  
2 Brubaker.

3 **Q. PLEASE FURTHER EXPLAIN THESE DIFFERENCES NOTED BY MR.**  
4 **BRUBAKER BETWEEN THE STAFF'S APPLICATION OF THE BIP**  
5 **METHODOLOGY IN CASE NO. ER-2016-0285 AND IN THIS CASE.**

6 A. On Page 15 of the Staff Report – Class Cost of Service dated July 6, 2018 (“2018  
7 Staff Report”), the Staff assigns \$1,147,678,422 to the Base function out of a total  
8 of \$1,429,867,203 in total capacity costs, or 80.26 percent to the Base function.  
9 The Staff allocates the Base function to customer classes based on average  
10 demand which is equivalent to allocating costs based on class annual energy  
11 requirements.

12 On Page 19 of the Staff's Rate Design and Class Cost of Service Report  
13 dated December 14, 2016 (“2016 Staff Report) which was prepared in connection  
14 with Case No. ER-2016-0285 (KCP&L's last Missouri rate case), the Staff assigns  
15 \$596,823,511 to the Base function out of a total of \$1,133,742,682 in total capacity  
16 costs, or 52.64 percent to the Base function.

17 **Q. DID THE STAFF CHANGE ITS ASSIGNMENT OF GENERATING UNITS**  
18 **BETWEEN THE 2016 AND 2018 REPORTS?**

19 A. No. The Staff assigned the same generating units to the Base, Intermediate, and  
20 Peak functions in both cases.

1 **Q. DID THE STAFF'S ASSIGNMENT OF CUSTOMER LOADS TO THE BIP**  
2 **FUNCTIONS CHANGE SIGNIFICANTLY BETWEEN THE 2016 AND 2018**  
3 **REPORTS?**

4 A. No. As shown in Schedule TJS-11, the relative percentages of class load assigned  
5 to the BIP functions in the current case (2018 Staff Report) and the relative  
6 percentages assigned in the last case (2016 Staff Report) differ very little. In fact,  
7 the class load assigned to the Base function in both cases was approximately 67  
8 percent.

9 **Q. PLEASE EXPLAIN FURTHER HOW THE STAFF'S APPLICATION OF THE BIP**  
10 **METHODOLOGY FAILS TO SYNCRONIZE THE GENERATING ASSETS WITH**  
11 **THE CUSTOMER LOADS AND CONTRIBUTES TO THE APPARENT**  
12 **VOLATILITY IN THE STAFF'S PRODUCTION COST ALLOCATION.**

13 A. As shown in Schedule TJS-12, the Staff has assigned customer loads to the Base,  
14 Intermediate, and Peak functions as follows:

- 15       ▪ Base – 51.54 percent
- 16       ▪ Intermediate – 25.85 percent
- 17       ▪ Peak – 22.61 percent

18 Yet, the actual capacity of the generating units that Staff has assigned to each of  
19 these functions is as follows:

- 20       ▪ Base – 69.16 percent
- 21       ▪ Intermediate – 15.46 percent
- 22       ▪ Peak – 15.39 percent

1 It does not make any logical sense that there is such a discrepancy between the  
2 class demands and the capacity of the resources Staff assumes meets these  
3 demands.

4 **Q. HAS THE STAFF ASSIGNED GENERATING UNITS TO THE BIP FUNCTIONS**  
5 **IN A REASONABLE MANNER?**

6 A. No. As indicated by Mr. Lutz, KCP&L, when it applied in the BIP methodology in  
7 the past, the resources assigned to the Base Function were synchronized with the  
8 load assigned to the Base Function and this was accomplished by assigning the  
9 LaCygne units to the Intermediate function. Based on the data reported by the  
10 Company in its 2017 FERC Form No.1. LaCygne Unit 1 operated at a 35 percent  
11 capacity factor and LaCygne Unit 2 operated at a 26 percent capacity factor. The  
12 Staff assignment of these units to the Base function results in significantly more  
13 capacity being assigned to the Base function than the customers' base load. In  
14 addition, Staff has assigned Hawthorn Units 6 and 9 to the Intermediate function,  
15 yet these units consistently operated at capacity factors of approximately 2  
16 percent. This is more consistent with a peaking unit.

17 **Q. IF THE STAFF HAD ASSIGNED GENERATING UNITS TO THE BIP**  
18 **FUNCTIONS IN A MANNER CONSISTENT WITH ITS CUSTOMER LOAD**  
19 **ASSIGNMENT AND THE ACTUAL USE OF THE GENERATING FACILITIES,**  
20 **HOW WOULD THIS IMPACT THE ASSIGNMENT OF CAPACITY TO THE BIP**  
21 **FUNCTIONS?**

22 A. As shown in Schedule TJS-12, the assignment of the LaCygne units to the  
23 Intermediate function results in 50.91 percent of generating capacity being



1 assigned to the Base function. This is much closer to the Staff's assignment of  
2 51.54 percent of customer demand to the Base function. Further, the assignment  
3 of the Hawthorn 6 and 9 units to the Peak function results in 26.83 percent of  
4 capacity being assigned to the Intermediate function and 22.26 percent to the Peak  
5 function, both of which are much closer to Staff's assignment of customer demands  
6 to these functions.

7 **Q. HOW DOES THE RECLASSIFICATION OF THESE GENERATING UNITS**  
8 **IMPACT THE STAFF'S BIP CAPACITY ALLOCATION FACTOR?**

9 A. In Schedule TJS-12, the Staff's proposed capacity allocation is shown on Line 8.  
10 When I changed the classification of the LaCygne and Hawthorn units in the Staff's  
11 DBIP calculation model, the resulting allocation is shown on Line 31 of Schedule  
12 TJS-12. The net result of Staff's improper assignment of the LaCygne and  
13 Hawthorn units is to overstate the BIP allocation to the high load factor customers.  
14 Staff allocates 19.69 percent of capacity costs to the Large Power customer class;  
15 the reclassification of these units would result in only 17.33 percent of capacity  
16 costs being assigned to the Large Power customer class.

17 In addition, primarily due to the fact that the Staff's DBIP allocation is not  
18 properly synchronized between class load and generating capacity, the total  
19 capacity cost of \$1,429,867,203 used in the Staff's "DBIP Installed Capacity  
20 Allocator) varies substantially from the actual capacity cost (i.e. rate base) of the  
21 generating units in Staff's DBIP allocation (\$1,825,069,917). The reclassification  
22 of the LaCygne and Hawthorn units results in a capacity cost of \$1,715,616,791

1 for the “DBIP Installed Capacity Allocator” which is at least in the ballpark of the  
2 actual rate base.

3 **Q. HAVE YOU ESTIMATED THE IMPACT OF THE MISCLASSIFICATION OF**  
4 **LACYGNE AND HAWTHORN GENERATING UNITS IN STAFF’S DBIP**  
5 **ALLOCATION?**

6 A. Yes. In Schedule TJS-13, I show the Staff’s production cost allocation on Line 1  
7 through 7. Please note that this summary does not include income taxes or the  
8 allocation of administrative and general expenses (discussed later in my  
9 surrebuttal testimony). On Lines 15 through 20, I show what the allocation of  
10 production related costs would be if the LaCygne and Hawthorn units were  
11 correctly classified. As shown on Line 21, the Staff’s misclassification results in a  
12 significant overstatement of the costs assigned to the higher load factor customer  
13 classes and particularly to the Large Power and Lighting classes. Please note that  
14 the differences would be slightly higher if income taxes and the change in the  
15 allocation of administrative and general expenses were included. The Staff’s DBIP  
16 allocation overstates the costs assigned to the Large Power class by  
17 approximately \$11.1 million and to the Lighting class by approximately \$1.6 million  
18 compared to a BIP allocation with the LaCygne and Hawthorn generating units  
19 properly classified.

20 **Q. IN YOUR OPINION, WHAT SHOULD BE THE PRIMARY DRIVER BEHIND THE**  
21 **ALLOCATIONS USED IN A CLASS COST OF SERVICE STUDY?**

22 A. The primary purpose of a class cost of service study is to allocate costs to customer  
23 classes based on each class’ responsibility for those costs and the allocation

1 factors used should reflect how those customers use the facilities being allocated.  
2 Secondly, one would not expect a reasonable allocation basis to change  
3 significantly over a relatively short period of time. The class cost of service  
4 allocation and a rate design relying on a class cost of service study should be  
5 relatively stable especially over the short term unless there have been significant  
6 changes in the overall revenue requirement or there has been a substantial change  
7 in the make-up of the customer classes (large losses in load for example).

8 **Q. DOES THE STAFF'S PROPOSED PRODUCTION CAPACITY COST**  
9 **ALLOCATION MEET THESE PRINCIPLES?**

10 A. No. In fact, the Staff's methodology produces a result that makes no sense at all.  
11 The Staff did not change its assignment of generating units and the class load  
12 characteristics did not change appreciably, yet the Staff's methodology results in  
13 an increase in the assignment of fixed costs to a variable allocation factor from 53  
14 percent in December 2016 to over 80 percent in July 2018. The primary driver in  
15 any allocation should reflect how the customer's use the facilities. Further, it is  
16 totally unreasonable to use an allocation methodology that is so volatile.

17 **Q. IS THE STAFF'S PROPOSED PRODUCTION CAPACITY COST ALLOCATION**  
18 **REASONABLE?**

19 A. No. As indicated above, the Staff's application of the BIP methodology does not  
20 produce stable results. Further, any methodology that assigns 80 percent of fixed  
21 capacity costs to a variable energy allocation cannot reasonably assign costs to  
22 customer classes based on how they use facilities unless that system is operating  
23 at a very high load factor. As indicated in my direct testimony, KCP&L's system

1 load factor is 56 percent (Schedule TJS-5). At this relatively low system load  
2 factor, allocation bases that give higher recognition to energy requirements  
3 become less and less appropriate because they fail to adequately recognize which  
4 classes are contributing to the lower system load factor. It doesn't matter into how  
5 many detailed parts you slice the allocation factor if in the end the result varies little  
6 from a simple average demand (or energy) allocation.

7 Also, as discussed later in my surrebuttal testimony, the Staff's model  
8 appears to have an inherent logical flaw in that the total dollar amount in its "DBIP  
9 Installed Capacity Allocator" bears little resemblance to the costs it is targeted to  
10 allocate (i.e. rate base) and furthermore, the total dollar amount in this allocator  
11 varies significantly depending upon how units are assigned to the functions. This  
12 lack of synchronization in their model raises serious questions about the veracity  
13 of Staff's DBIP allocation and their model.

14 **Q. DOES THE PRODUCTION COST ALLOCATION PROPOSED BY THE**  
15 **COMPANY PROVIDE A MORE REASONABLE BALANCE BETWEEN ENERGY**  
16 **AND DEMAND?**

17 A. Yes. The Company's proposed Average and Excess Demand allocation assigns  
18 56 percent of fixed costs to the energy function (compared to 80 percent for the  
19 Staff) and 44 percent to the capacity function. As system load factor improves or  
20 increases, the Average and Excess Demand allocation assigns more cost to the  
21 energy part of the allocation and as load factor declines, the Average and Excess  
22 Demand allocations assigns less cost to the energy part of the allocation. There  
23 are so many moving and inconsistent components in the Staff's DBIP allocation, it

1 is not clear whether there is any real link between changes in customer load and  
2 the resulting allocations (i.e. the Staff's allocation changes even when loads do  
3 not).

4 Furthermore, the Average and Excess Demand allocation focuses purely  
5 on class usage and load characteristics. Thus, the Average and Excess Demand  
6 methodology will provide more stable results over time and is not subject to the  
7 vagaries or biases of the assumptions made in the Staff's DBIP allocation and the  
8 inconsistencies in the logic of the Staff's model. The Average and Excess Demand  
9 methodology directly correlates with and differentiates between class load  
10 characteristics.

11 **Q. PLEASE DISCUSS THE SECOND ISSUE RAISED BY MR. BRUBAKER THAT**  
12 **YOU WOULD LIKE TO ADDRESS.**

13 A. On Pages 10 and 11 of his rebuttal testimony, Mr. Brubaker points two  
14 inconsistencies in the Staff's allocation of operation and maintenance expenses.  
15 First, Mr. Brubaker points out that non-fuel production O&M expenses are typically  
16 allocated in the same manner as the related plant costs (Page 11, Lines 2 through  
17 6). Second, Mr. Brubaker points out that administrative and general ("A&G") costs  
18 are not typically allocated based on other operation and maintenance expenses  
19 including fuel and purchased power costs (Page 11, Line 7 through Page 12, Line  
20 15).

1 **Q. DO YOU AGREE WITH MR. BRUBAKER'S ASSESSMENT OF THE STAFF'S**  
2 **ALLOCATION OF NON-FUEL PRODUCTION O&M EXPENSES?**

3 A. Yes. In my experience, rate base (including plant) costs are traditionally  
4 functionalized and classified first, then the operation and maintenance and  
5 depreciation expenses are functionalized and classified based on how their  
6 associated plant costs are functionalized and classified. The general exception to  
7 this is for operation and maintenances costs that are truly variable in nature. For  
8 example, fuel and purchased power costs are traditionally classified as production  
9 energy.

10 Staff's separate DBIP allocation of non-fuel production O&M expenses is  
11 even closer to a pure energy allocation than the DBIP allocation Staff uses to  
12 allocate capacity costs discussed earlier in my surrebuttal testimony. Any  
13 production allocation that allocates these fixed costs based on a variable allocation  
14 is unreasonable.

15 **Q. DO YOU AGREE WITH MR. BRUBAKER'S RECOMMENDED ALLOCATION OF**  
16 **ADMINISTRATIVE AND GENERAL EXPENSES?**

17 A. Yes. Based on my experience I have never prepared or seen a class cost of  
18 service study that allocates administrative and general expenses using an  
19 allocation bases that includes all of the fuel and purchased power costs. Similarly,  
20 the same can be said for class cost of service studies for natural gas distribution  
21 utilities. For them, administrative and general expenses are not allocated using a  
22 basis that includes purchased gas costs.

1 **Q. DO YOU AGREE WITH MR. BRUBAKER'S ASSESSMENT OF THE INDUSTRY**  
2 **ACCEPTANCE OF THE BIP METHODOLOGY?**

3 A. Yes. While I have worked with base, intermediate, and peak rate designs which  
4 are principally time-of-use type rates as mentioned by Mr. Brubaker on Line 3,  
5 Page 8 of his rebuttal testimony, I have never used and have never seen the BIP  
6 methodology used to allocate production costs in a class cost of service study  
7 accept for KCP&L. I first developed class cost of service models in the 1980's and  
8 the primary methodology I have used is the Average and Excess Demand  
9 methodology, and secondarily, a Coincident Peak methodology for capacity  
10 related production costs.

11 **MS. LANGE'S REBUTTAL TESTIMONY**

12 **Q. PLEASE COMPARE YOUR SCHEDULE TJS-13 TO TABLE 3 IN MS. LANGE'S**  
13 **REBUTTAL TESTIMONY.**

14 A. On Page 18 of her rebuttal testimony, Ms. Lange presents Table 3 that shows the  
15 impact of applying the Company's proposed Average and Excess Demand  
16 allocation (A&E 4CP) to the Staff's revenue requirement. Table 3 shows an \$11.1  
17 million "\$ change to exactly levelized RoR" for the Large Power customer class.  
18 An alternate way to state this is that this \$11.1 million is the amount by which the  
19 Large Power revenues exceed their cost of service based on using the A&E 4CP  
20 allocation. As shown in Schedule TJS-13, the errors and inconsistencies in the  
21 Staff's DBIP allocation result in at least \$11.1 million in overallocation of cost to the  
22 Large Power class. It should be noted that the Staff's overallocation is at least  
23 \$11.1 million because the analysis in Schedule TJS-13 does not including the

1 impact of income taxes and does not include the impact of properly allocating  
2 administrative and general expenses.

3 **OTHER INHERENT FLAWS IN STAFF'S DBIP ALLOCATION**

4 **Q. DOES THE STAFF'S APPLICATION OF THE BIP METHODOLOGY**  
5 **DEMONSTRATE SOME OF THE INHERENT PROBLEMS WITH THE BIP**  
6 **METHODOLOGY?**

7 A. Yes. As highlighted earlier in my surrebuttal testimony, Staff' DBIP methodology  
8 has a lot of moving parts, and if these moving parts are not properly synchronized,  
9 the methodology can produce widely varying and even illogical results. When  
10 applying any cost allocation methodology, it is important to not lose sight of the  
11 bigger picture. More detail and a bigger model are no surety of producing a more  
12 reasonable result. In fact, the added complexity can increase the potential of  
13 producing an unreasonable result if all of the assumptions and analyses are not  
14 consistent and properly aligned.

15 **Q. PLEASE DISCUSS SOME ADDITIONAL PROBLEMS WITH THE BIP**  
16 **METHODOLOGY?**

17 A. As discussed in my direct testimony and shown in Schedule TJS-9, the BIP  
18 methodology tends to be most similar to a pure energy allocation method on the  
19 scale between a 100 percent energy allocation and a 100 percent peak allocation.  
20 The principle problem with the BIP (or DBIP) approach is that it does not explicitly  
21 recognize the class usage characteristics that directly contribute to a deterioration  
22 in system load factor. As load factor declines (and KCP&L's system load factor is  
23 relatively low), it is important that the allocation of capacity recognize how this



1 impacts the efficiency of the resources and the resource decisions of the utility.  
2 Further, as highlighted earlier in my surrebuttal testimony, this problem can be  
3 further exacerbated by failing to synchronize class loads with generating  
4 resources.

5 A large part of the decline in load factor is attributable to the operation of  
6 customer equipment that is highly weather dependent. KCP&L's summer and  
7 winter peaks are driven primarily by weather extremes that cause wide variation in  
8 the use of this weather dependent customer equipment. The need for intermediate  
9 and peaking generation is driven by this incremental and variable weather-related  
10 load. The equipment that is highly weather dependent is concentrated in  
11 residential and small commercial customer classes whose highest demand  
12 equipment is typically their air conditioning and/or heating equipment whose  
13 demands are highly correlated with outside temperatures. Even larger commercial  
14 customers typically operate their businesses primarily during the utility's on-peak  
15 hours. High load factor customers are primarily using electricity for processes  
16 many of which operate throughout the entire day that do not incrementally add to  
17 the system peak. KCP&L's Large Power customers operate at a class average  
18 load factor near the capacity factors of KCP&L's largest base load units. As such,  
19 it could be argued that these Large Power customers have virtually no intermediate  
20 or peaking requirements.

21 As highlighted earlier, the BIP method is highly influenced by assumptions  
22 and potential biases introduced into the model. The most complicated part of the  
23 BIP model is determining what portions of each customer classes' load is met by

1 the base, intermediate and peaking facilities. As discussed earlier, Staff's capacity  
2 allocation is completely out of synch with customer demands. Further, Staff's DBIP  
3 energy allocation assigns 88 percent of generation to the Base function, yet 97  
4 percent of the system generation is provided by the resources that Staff has  
5 assigned to the Base function. Even though Staff appears to go through a very  
6 detailed hourly analysis assigning daily load to Base, Intermediate, and Peak, they  
7 have significantly overstated the amount assigned to the Intermediate and Peak  
8 functions for high load factor customers because they have failed to recognize the  
9 incremental nature of hourly loads and also how these incremental loads are  
10 actually served.

11 Finally, as also discussed in my direct testimony and pointed out by Mr.  
12 Brubaker in his rebuttal testimony, it is important to recognize what allocation  
13 methods are being used by other utilities. KCP&L does not operate its system in  
14 a vacuum. If a production allocation approach such as the BIP method is used for  
15 KCP&L and allocates significantly more cost to high low factor customers than  
16 does an Average and Excess Demand methodology that is more widely used,  
17 KCP&L and its industrial customers are put at a competitive disadvantage.

18 **COMMISSION ORDER IN CASE NO. ER-2016-0285**

19 **Q. DID THE COMMISSION ADDRESS STAFF'S BIP METHOD IN KCP&L'S LAST**  
20 **RATE CASE IN CASE NO. ER-2016-0285?**

21 **A.** Yes. On Page 50, the Commission's Report and Order dated May 3, 2017 states  
22 the following:

1 “133. Of all the studies filed in this matter, only Staff’s Base,  
2 Intermediate, Peak (“BIP”) study recognizes disparity in capacity and  
3 fuel costs.”

4 134. The BIP method uniquely recognizes the tradeoffs that exist  
5 between the cost of installing a plant, the generation capabilities of a  
6 plant, and the cost of obtaining energy from that plant.”

7 135. Staff’s **detailed** (emphasis added) BIP method takes into  
8 consideration the differences in the capacity costs associated with  
9 units that run at a stable level much of the year, versus the capacity  
10 costs associated with units that quickly dispatch only a few hours a  
11 year, as well as those units that have a cost and operation  
12 characteristic in between those extremes. Staff’s **detailed**  
13 (emphasis added) BIP method also considers the inverse  
14 relationship between this cost of capacity and the cost of energy  
15 produces by based, intermediate, and peaking units. Other common  
16 CCOS methods tend to assume that energy costs are the same  
17 amount regardless of the hour of consumption or the source of the  
18 energy, and or do not consider the operating characteristics of plants  
19 and assume that capacity costs are equal among types of plants.”

20 **Q. WHY DID YOU ADD EMPHASIS TO THE WORD “DETAILED” IN THE ABOVE**  
21 **QUOTATION?**

22 A. For two reasons. First, the Commission’s preference for the Staff’s approach  
23 appears to be primarily based on the greater level of detail in the BIP methodology  
24 compared to other methodologies, particularly as it related to the generating  
25 facilities. Second, in the current rate case, it appears as though the Staff picked  
26 up on this emphasis on “detail” and incorporated that adjective into the name of  
27 their approach for this case. In the Company’s last case, the Staff labeled its  
28 production cost allocation the BIP method. It has added the “D” in this case to  
29 emphasize the “detail”.

1 **Q. IS THE COMMISSION'S ASSESSMENT OF OTHER PRODUCTION COST**  
2 **ALLOCATION METHODS AND HOW THEY COMPARE TO THE BIP METHOD**  
3 **FAIR?**

4 A. I don't believe it is a fair assessment. The Commission's order focused on the fact  
5 that the BIP method puts a very high emphasis on classifying generating units and  
6 the added detail that this segregation provides. As discussed earlier in my  
7 surrebuttal, if this segregation is not synchronized with class loads, the BIP method  
8 can produce results that make little intuitive sense. The other methods, and the  
9 Average and Excess Demand method in particular, do not focus on specific  
10 generating resources. These methods focus on customer demands and most  
11 importantly on explicitly recognizing the relative differences in the demands  
12 between customer classes. The purpose of a class cost of service study is not to  
13 parse costs into as much detail as possible, the purpose of a class cost of service  
14 study is to recognize the differences in the cost to serve different classes of  
15 customers and how the load characteristics of those customers impact cost.

16 **Q. DOES THE ADDED DETAIL IN THE STAFF'S BIP METHOD MAKE IT**  
17 **SUPERIOR TO OTHER METHODS?**

18 A. No. As discussed earlier in my surrebuttal testimony, the Staff's allocation gets  
19 lost in the details and fails to recognize the goal. For all the detail in Staff's DBIP  
20 allocation it produces results that approach a pure energy (or average demand)  
21 allocation basis. Further, the Staff's analyses fail to get the details correct. The  
22 Staff's DBIP allocation fails to synchronize the loads and use of the generating  
23 assets with the loads and use of the customers; and it also fails to synchronize the

1 costs being allocated with the allocations bases. The Staff's allocation gets so lost  
2 in the details, that it ultimately produces an unreasonable result that fails to give  
3 proper recognition to what factors contribute to not only how system resources are  
4 used but what customer usage characteristics contribute to the need for the  
5 various resources. Staff's allocation is a clear example of more being less.

## 6 **SUMMARY**

### 7 **Q. PLEASE SUMMARIZE YOUR SURREBUTTAL TESTIMONY?**

8 A. I support MEGG witness Brubaker's recommendation that the Commission should  
9 reject the Staff's DBIP allocation of production related costs and accept the  
10 Company's proposed Average and Excess Demand allocation for the following  
11 reasons:

- 12 1. Staff is utilizing an approach that has an inherent bias against high  
13 load factor customers and Staff has made this bias even worse by  
14 misapplying the BIP method.
- 15 2. The BIP methodology is prone to biased and arbitrary assumptions  
16 regarding how generating units are defined as Base, Intermediate,  
17 and Peak.
- 18 3. The BIP methodology is prone to biased and arbitrary assumptions  
19 regarding how customer loads are defined as Base, Intermediate,  
20 and Peak.
- 21 4. The BIP model can provide inconsistent and unreasonable results  
22 when the assignment of generating units and the assignment of  
23 customer loads are not synchronized.

- 1           5.     The Staff's DBIP model fails to synchronize the allocation bases with  
2           the costs being allocated.
- 3           6.     The Staff's DBIP is overly detailed and thus easily prone to logical  
4           errors when not done properly, which is a significant problem in  
5           Staff's allocation in this case.
- 6           7.     The Staff's BIP/DBIP models are prone to volatile results overly  
7           relatively short periods of time even when the assignment of  
8           generating units and customer loads do not change appreciably.
- 9           8.     The BIP methodology is not widely used and changes in the industry  
10          since the 1992 NARUC Manual have made the BIP methodology  
11          archaic.
- 12          9.     Unlike the Average and Excess Demand methodology, the BIP (or  
13          DBIP) methodology does not explicitly recognize the class usage  
14          characteristics that contribute to lower system load factor and less  
15          efficient use of generating resources.
- 16          10.    The Average and Excess Demand methodology does not rely upon  
17          numerous and potentially contradictory assumptions in its application.
- 18          11.    The Average and Excess Demand methodology is not prone to  
19          widely varying results over short periods of time since the parameters  
20          are well defined.
- 21          12.    Unlike the BIP method, the Average and Excess Demand method is  
22          widely used.

1 Q. DOES THIS COMPLETE YOUR SURREBUTTAL TESTIMONY?

2 A. Yes, it does.

**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

**AFFIDAVIT OF THOMAS J. SULLIVAN, JR.**

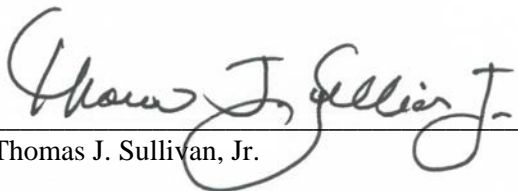
**STATE OF MISSOURI** )  
 ) ss  
**COUNTY OF JACKSON** )

Thomas J. Sullivan, Jr., being first duly sworn on his oath, states:

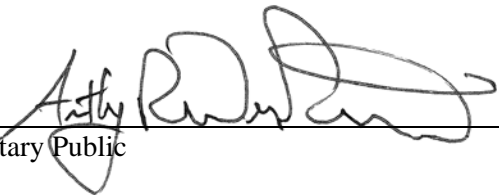
1. My name is Thomas J. Sullivan, Jr. and my business address is Navillus Utility Consulting LLC, 15898 Millville Road, Richmond, Missouri, 64085. I have been retained to serve as an expert witness to provide testimony on behalf of Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company.

2. Attached hereto and made a part hereof for all purposes is my Surrebuttal Testimony on behalf of Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company consisting of twenty-one (21) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

  
\_\_\_\_\_  
Thomas J. Sullivan, Jr.

Subscribed and sworn before me this 4<sup>th</sup> day of September 2018.

  
\_\_\_\_\_  
Notary Public

My commission expires: 4/26/2021





Kansas City Power & Light Company  
 Comparison of Staff BIP Allocation - 2016 and 2018 Rate Cases

	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
Line No.	Function	Residential	Small GS	Medium GS	Large GS	Large Power	Lighting	Total
1	<b><u>2018 Staff Report</u></b>							
2	<b><u>Class Assignment - MW</u></b>							
3	Base	317	54	152	255	233	10	1,021
4	Intermediate	227	33	91	127	34	0	512
5	Peak	289	24	47	53	35	0	448
6	Base							66.60%
7	Intermediate							33.40%
8	Peak							29.22%
9	<b><u>2016 Staff Report</u></b>							
10	<b><u>Class Assignment - MW</u></b>							
11	Base	325	47	144	262	246	10	1,034
13	Intermediate	233	35	67	111	39	0	485
13	Peak	277	32	61	44	44	0	458
14	Base							67.45%
15	Intermediate							31.65%
16	Peak							29.85%

Kansas City Power & Light Company  
Staff BIP Allocation - Corrected

	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
Line No.	Function	Residential	Small GS	Medium GS	Large GS	Large Power	Lighting	Total
1	<b><u>Class Assignment - MW</u></b>							
2	Base	317	54	152	255	233	10	1,021
3	Intermediate	227	33	91	127	34	0	512
4	Peak	289	24	47	53	35	0	448
5	Base							51.54%
6	Intermediate							25.85%
7	Peak							22.61%
8	BIP Allocation	35.07%	5.43%	14.95%	24.06%	19.69%	0.80%	100.00%
9	Fuel Allocation	32.21%	5.25%	14.91%	24.79%	21.60%	1.23%	100.00%
10	<b><u>Capacity of Generating Facilities Assigned to Functions</u></b>							
11	Base							3,029
12	Intermediate							677
13	Peak							674
14	Base							69.16%
15	Intermediate							15.46%
16	Peak							15.39%
17	<b><u>Assignment of LaCygne to Intermediate Function</u></b>							
18	Base							2,230
19	Intermediate							1,476
20	Peak							674
21	Base							50.91%
22	Intermediate							33.71%
23	Peak							15.39%
24	<b><u>Assignment of Hawthorn 6&amp;9 to Peaking Function</u></b>							
25	Base							2,230
26	Intermediate							1,175
27	Peak							975
28	Base							50.91%
29	Intermediate							26.83%
30	Peak							22.26%
31	BIP Allocation	36.93%	5.63%	15.40%	24.06%	17.33%	0.65%	100.00%
32	Fuel Allocation	31.95%	5.26%	14.92%	24.86%	21.83%	1.19%	100.00%

Kansas City Power & Light Company  
 Staff Production Cost Allocation - Corrected

	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]
Line No.	Functional Category	Class Cost of Service	Allocation Basis	Residential	SGS	MGS	LGS	LPS	Lighting	Total
<b>1 Staff's Production Cost Allocation</b>										
2	Production Capacity	258,080,348	2-BIP Installed Capacity	90,519,977	14,014,347	38,580,439	62,090,056	50,822,032	2,053,497	258,080,348
3	Production Energy	212,623,668	3-BIP Fuel for Energy	68,489,583	11,172,145	31,700,420	52,708,430	45,932,965	2,620,124	212,623,667
4	Production Fuel in Storage	5,157,118	4-BIP Fuel in Storage	1,698,653	281,136	789,239	1,287,451	1,056,837	43,801	5,157,117
5	Production O&M	150,166,176	5-BIP O&M	48,649,134	7,928,566	22,559,256	37,453,631	31,443,272	2,132,316	150,166,175
6	Energy	32,564,465	7-Sales @ Generation	10,107,329	1,713,003	4,852,390	8,146,838	7,422,087	322,819	32,564,466
7	Total			219,464,676	35,109,197	98,481,744	161,686,406	136,677,193	7,172,557	658,591,773
8	Energy - MWh			2,774,987	470,308	1,332,233	2,236,730	2,037,748	88,630	8,940,636
9	Unit Cost - \$/kWh		Line 7 / Line 8	0.0791	0.0747	0.0739	0.0723	0.0671	0.0809	0.0737
10	Fuel - \$/kWh		Line 3 / Line 8	0.0247	0.0238	0.0238	0.0236	0.0225	0.0296	0.0238
11	Non-fuel - \$/kWh		Line 9 - Line 10	0.0544	0.0509	0.0501	0.0487	0.0445	0.0514	0.0499
<b>12 Corrected Staff Production Cost Allocation</b>										
13	Corrected BIP		Schedule TJS-11	0.369329	0.056328	0.153968	0.240627	0.173250	0.006498	1.000000
14	Corrected Fuel		Schedule TJS-11	0.319500	0.052578	0.149163	0.248554	0.218299	0.011905	1.000000
15	Corrected Fuel in Storage		Staff Model - Corr.	0.338071	0.055388	0.154882	0.249403	0.194412	0.007844	1.000000
16	Production Capacity	258,080,348	Line 13	95,316,563	14,537,089	39,736,088	62,101,155	44,712,530	1,676,924	258,080,348
17	Production Energy	212,623,668	Line 14	67,933,343	11,179,429	31,715,568	52,848,393	46,415,597	2,531,339	212,623,668
18	Production Fuel in Storage	5,157,118	Line 15	1,743,472	285,643	798,745	1,286,201	1,002,605	40,452	5,157,118
19	Production O&M	150,166,176	Line 13	55,460,727	8,458,525	23,120,770	36,134,068	26,016,354	975,732	150,166,176
21	Energy	32,564,465	Energy	10,107,329	1,713,003	4,852,390	8,146,838	7,422,087	322,819	32,564,465
21	Total			230,561,433	36,173,688	100,223,560	160,516,655	125,569,173	5,547,265	658,591,775
22	Difference		Line 21 - Line 7	11,096,757	1,064,491	1,741,816	-1,169,751	-11,108,020	-1,625,292	2
23	Unit Cost - \$/kWh		Line 21 / Line 8	0.0831	0.0769	0.0752	0.0718	0.0616	0.0626	0.0737
24	Fuel - \$/kWh		Line 17 / Line 8	0.0245	0.0238	0.0238	0.0236	0.0228	0.0286	0.0238
25	Non-Fuel - \$/kWh		Line 23 - Line 24	0.0586	0.0531	0.0514	0.0481	0.0388	0.0340	0.0499