Exhibit No.:	
Issues:	Cost of Service, Revenue Allocation, and Rate Design
Witness:	Maurice Brubaker
Type of Exhibit:	Rebuttal Testimony
Sponsoring Party:	Missouri Industrial Energy Consumers
Case No.:	ER-2016-0179
Date Testimony Prepared:	January 24, 2017

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Revenues for Electric Service	**)))))**	**Case No. ER-2016-0179**

Rebuttal Testimony and Schedules of

Maurice Brubaker

on Cost of Service, Revenue
Allocation and Rate Design

On behalf of

Missouri Industrial Energy Consumers

January 24, 2017

BRUBAKER & ASSOCIATES, INC.

Project 10202

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Revenues for Electric Service	)))))	**Case No. ER-2016-0179**

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-2016-0179.

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.

M E Brubaker
Maurice Brubaker

Subscribed and sworn to before me this 23rd day of January, 2017.

TAMMY S. KLOSSNER
Notary Public - Notary Seal
STATE OF MISSOURI
St. Charles County
My Commission Expires: Mar. 18, 2019
Commission # 15024862

Tammy S Klossner
Notary Public

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Table of Contents to the
<u>Rebuttal Testimony of Maurice Brubaker</u>

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In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Revenues for Electric Service	)))))	**Case No. ER-2016-0179**

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 class cost of service, revenue allocation and 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 filed December 23, 2016.

Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A This testimony is presented on behalf of the Missouri Industrial Energy Consumers.

INTRODUCTION AND SUMMARY

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A In my rebuttal testimony I will address the cost of service and revenue allocation proposals put forth by the Staff of the Missouri Public Service Commission ("Staff") and the Office of Public Counsel ("OPC").

Q PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATIONS.

A They may be summarized as follows:

1. OPC's preferred allocation of generation fixed, or demand-related, costs is premised on a novel non-coincident peak and average allocation ("A&NCP") that is very similar to the average and peak ("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. OPC witness Johnstone takes issue with Ameren Missouri's allocation of off-system sales ("OSS"), and cites a position that an Ameren Missouri witness took in Case No. ER-2010-0036. Not only did the Missouri Public Service Commission ("Commission") reject that position in the 2010 case, but Ameren Missouri subsequently abandoned that position and is using the allocation of OSS that the Commission approved in ER-2010-0036.

3. Another deficiency in OPC's study is that OPC has failed to allocate any portion of the distribution system on the basis of the number of customers or weighted number of customers. This is at odds with conventional allocation procedures, and is inconsistent with Commission precedent. It materially over-allocates costs to the LPS customer class.

4. Staff's Detailed Base-Intermediate-Peak ("BIP") cost of service study is incorrect in theory.

5. Staff essentially has allocated the estimated margin from OSS on the basis of class demands. As is the case with OPC's treatment, this is incorrect and contrary to explicit findings of the Commission in prior Ameren Missouri and Kansas City Power & Light Company ("KCPL") cases that these non-firm sales should be allocated among classes using the class energy allocation.

6. Staff's study is also flawed because the allocation of A&G expenses is on the basis of other previously allocated operation and maintenance expense that includes fuel. It is conventional to exclude fuel from the base used to allocate A&G expense because fuel (and purchased power) itself has little impact on A&G expense. The failure to exclude fuel when developing the allocation factor

for A&G expense results in an over-allocation of costs to the LPS class, and should be rejected.

7. Staff ignored the distinction that must be made between high voltage primary distribution and regular primary distribution that is made by Ameren Missouri in this case (and in all recent cases) and as a result allocated an additional $21 million of investment to the LPS class.

CLASS COST OF SERVICE ISSUES

Q HAVE YOU REVIEWED THE STAFF RATE DESIGN AND CLASS COST OF SERVICE REPORT ("STAFF REPORT") AND THE TESTIMONY OF OPC WITNESS DONALD JOHNSTONE?

A Yes.

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

A Yes, I do. I disagree with the methods that OPC used for the allocation of production and transmission fixed costs and with respect to the allocation of certain other components of the cost of service.

I also have significant disagreements with the alternative study presented by Commission Staff, both with respect to the treatment of generation facilities and costs, as well as the allocation of a number of other cost of service elements.

OPC's Proposed Allocation of Generation Fixed Costs

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

A OPC's recommended method is a rather novel A&NCP. This is quite similar to the A&P allocation method that has been rejected many times in the past. In particular, OPC uses the four monthly non-coincident peak demands of each customer class along with each class's annual energy consumption. The energy component receives a 20% weighting.

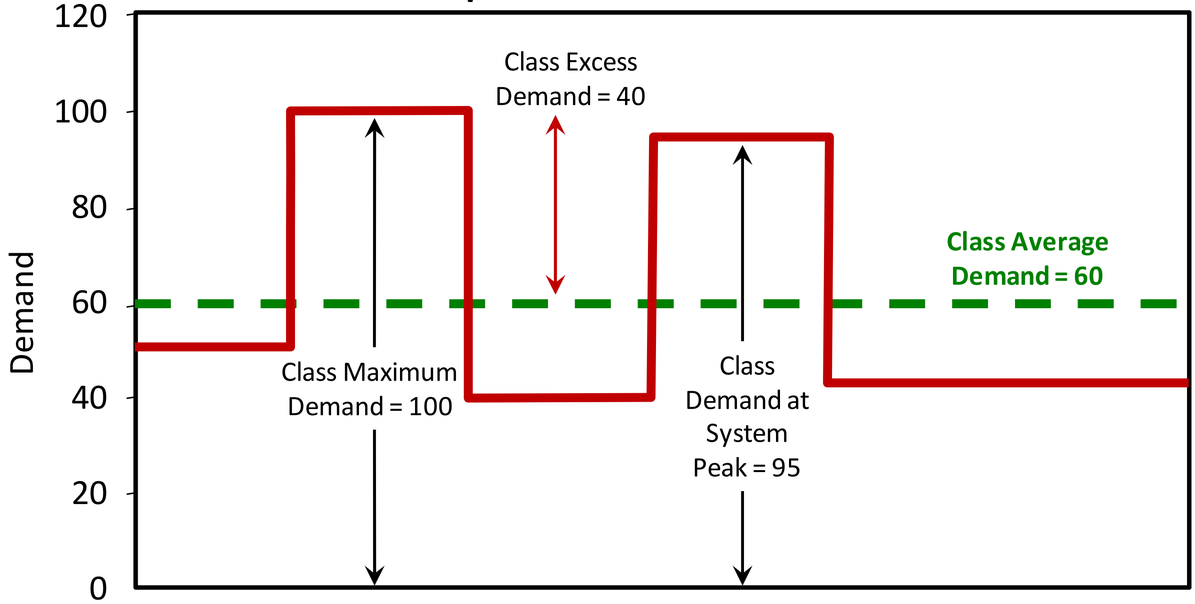
Q HOW DOES THE A&NCP ALLOCATION METHODOLOGY DIFFER FROM THE AVERAGE AND EXCESS ("A&E") METHODOLOGY THAT YOU AND AMEREN MISSOURI USED IN YOUR CCOS STUDIES, AND THAT THE COMMISSION HAS PREVIOUSLY ADOPTED?

A As noted above, OPC's A&NCP allocator is constructed by multiplying each class's percentage energy responsibility factor (average demand) by 20%, and adding that result to each class's percentage contribution to the four class peaks multiplied by 80%.

Both the A&NCP and A&E methods are two-step processes. In both methods, the first step is to weight the average demand by a given percentage (20% in the case of the A&NCP method and the system load factor in the case of the A&E method). The second step is where another 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 (its non-coincident peak) 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 25 of my direct testimony on cost of service, the A&E method 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.)

OPC's A&NCP method, on the other hand, combines the average demand with the four class non-coincident 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&NCP method, the <u>average demand is counted twice</u> – once in the average component and again in the NCP component. 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 METHODS SIMILAR TO OPC'S PROPOSED METHOD?

A Yes. The Commission has previously rejected the use of the A&P method.

Q IS EITHER THE A&P METHOD OR THE A&NCP METHOD A REASONABLE ONE TO USE?

A No, it is not. As noted above, these allocations give more weighting to annual energy consumption than is appropriate. Since generation facilities must be designed to carry the peak loads imposed on them, the weighting given to energy consumption 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&NCP method arbitrarily allocates some of these costs on annual energy consumption.

Q IN OPC'S A&NCP STUDY, HOW ARE ENERGY COSTS ALLOCATED?

A They are allocated to all customer classes in proportion to class energy usage.

Q IS THIS CONSISTENT WITH HOW THE A&NCP STUDY ALLOCATES CAPACITY COSTS?

A No. The A&NCP study, by giving a 20% weighting to energy consumption when developing the demand allocation factor, disproportionately allocates capital cost to high load factor customers. High load factor customers receive an above-average allocation of capital costs, but still must pay the overall system average fuel cost.

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 A&NCP 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, A&NCP 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 demand for the higher load factor classes, and a lower capital cost per kW demand 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 demand and the energy costs per kWh consumed across classes for the traditional A&E allocation method and the A&NCP 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 Ameren Missouri's cost of service study and applied my allocation factors (traditional) as well as OPC's demand and energy allocators to these total amounts. I then divided the capacity costs by the A&E capacity kW, and the energy costs by the class MWh.

Q PLEASE EXPLAIN WHAT THIS SCHEDULE SHOWS.

A The top part of the schedule shows that under traditional allocation methods each class has the same capacity costs per kW demand, and each class has the same energy cost per kWh.

The bottom part shows the allocation results under OPC's A&NCP method. Note that the impact is to allocate more capital costs to the LPS 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 lack of symmetry under the A&NCP method.

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

A They are quite diverse. For example, the fuel cost for the Callaway nuclear unit is about 0.90¢ per kWh, the base load coal plants have fuel costs in the range of 2.0¢ to 2.3¢ per kWh, the more efficient peaking units have fuel costs of around 5¢ per kWh, and other peakers have costs that are 10¢ per kWh or more. (Note: These fuel costs are taken from Ameren Missouri'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 and the A&NCP allocation methods advanced by OPC do not recognize this correspondence and, as a result, over-allocate costs to high load factor customers.

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

A This schedule clearly demonstrates that the non-traditional methods like A&P and A&NCP 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 fuel cost of energy that goes with the higher capacity costs. No theory supports this result and these studies should be rejected.

OPC's Perspective on Allocation of Revenues and Margins from OSS

Q DOES MR. JOHNSTONE DISCUSS THE ALLOCATION OF REVENUES AND MARGINS FROM OSS?

A Yes. His bottom line appears to be that some part of the margin should be allocated on a demand basis, rather than on an energy basis.

Q DO YOU AGREE?

A No, I do not. First, it is important to understand that the OSS being allocated are non-firm and/or short-term in nature. Accordingly, there is no capacity obligation created by entering into these sales and it would be inappropriate to assume that there is one. Also, all the revenues from these sales flow through the fuel adjustment clause ("FAC") and are allocated to customers on a kilowatthour basis.

Q DOES MR. JOHNSTONE RELY ON PRIOR TESTIMONY FROM AN AMEREN MISSOURI WITNESS NOT APPEARING IN THIS CASE IN SUPPORT OF THE CONCEPT OF ALLOCATING PART OF THESE REVENUES ON DEMAND?

A He does. He references Case No. ER-2010-0036 and some testimony offered by an Ameren Missouri witness.

Q HOW DID THE COMMISSION RULE IN THAT CASE?

A The Commission rejected the allocation method being proposed by Ameren Missouri in that case and instead adopted an energy-based allocation of OSS revenue. At page 87 of its May 28, 2010 Order in Case No. ER-2010-0036, the Commission said:

> "After carefully considering all these studies, the Commission finds that AmerenUE's class cost of service study, modified to allocate revenues

> from off-system sales on the basis of class energy requirements, is the most reliable of the submitted studies."

Q IS THAT THE ONLY TIME THE COMMISSION HAS FOLLOWED THIS APPROACH?

A No. For example, the Commission followed this approach with respect to the allocation of OSS revenue in the context of a Kansas City Power and Light Company ("KCPL") rate case. There it held that it is appropriate to allocate the margin earned from OSS on an energy basis.

> "The only costs assigned to non-firm off-system sales is the fuel and purchased power costs – the variable costs – hence the appropriateness of using the energy allocator. This is consistent with the way KCPL itself allocates the costs relating to the energy portion of firm capacity contracts – using the energy allocator. The reason is simple – the energy allocator is used to allocate variable costs of fuel and purchased power costs relating to retail sales. Using the same rationale, the energy allocator is equally appropriate to use as the allocation factor for both energy of firm (as KCPL does) and non-firm off-system sales." (Report and Order, Case No. ER-2006-0314, December 31, 2006)

This is also the most commonly used approach in the industry, and should be used in this case.

OPC's Failure to Recognize a Customer Component in the Distribution System

Q DO YOU HAVE ANY DISAGREEMENT WITH HOW OPC ALLOCATED DISTRIBUTION INVESTMENT AND EXPENSES?

A Yes. When allocating distribution investment and related expenses, it is common practice to recognize a customer component as well as a demand component. The reason is that distribution facilities are used not only to meet customer loads, but must be in place in order to move the power from the transmission system to the homes and businesses that take service from the distribution system throughout the service territory. (This is explained in somewhat more detail in my direct testimony from page 11 to page 13.) Mr. Johnstone, on the other hand, ignores the customer-related component that is recognized by Ameren Missouri, by Commission Staff and by me in the cost of service study I filed in my direct testimony. Ignoring the customer component of the distribution system as OPC has done is outside the mainstream, at odds with Commission precedent and materially distorts the cost of service results because it ignores a significant factor that must be considered in electric system design and operations.

Q WHAT IS THE IMPACT OF THIS ALLOCATION?

A It is significant. In terms of the LPS class, OPC's allocation allocates an additional $112 million of investment cost to that class, which is nearly 84% more than the class is allocated using widely accepted allocation methods.

Q ARE YOU AWARE OF ANY PRECEDENT OR AUTHORITY FOR TOTALLY IGNORING THE CUSTOMER COMPONENT OF THE DISTRIBUTION SYSTEM?

A No, I am not.

Staff's Allocation of Generation Costs

Q WHAT COST OF SERVICE STUDY DID STAFF PROVIDE?

A Staff provided what it characterizes as a Detailed BIP study.

Q PLEASE DESCRIBE GENERALLY THE DETAILED BIP STUDY.

A With this method, the fixed costs associated with base load generation essentially are allocated on a measure of class energy consumption. The intermediate plants are allocated as a function of class 12 monthly coincident peaks minus base demands. Facilities identified as peaking facilities are allocated on class four summer coincident peak demands reduced by the base and intermediate demands.

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 certainly is not among the frequently used mainstream cost allocation methodologies, and lacks precedent for its use.

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

A Staff does not say explicitly, but discussion in the Staff Report (starting at page 15) indicates that the method attempts to determine the intended use of specific plant investments and allocate their fixed costs to hours when Staff assumes they would run. By 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 caused by demands and that these plants aren't built for capacity. These are assumptions that we all know are false. All plants have a capacity role, and provide capacity value as well as supplying energy. Table 1 compares Staff's allocation of plant costs under its BIP method with an allocation based purely on energy use. As one can see, the allocation factors under those two methods are virtually identical. It appears from Staff's study that over 30% of total generation fixed costs are allocated on the basis of class energy consumption.

TABLE 1

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

		Staff's Base Capacity by Class[1]		Energy by Class	
Line	Class	Costs ($000)	Percent	MWh at Generation[2]	Percent
		(1)	(2)	(3)	(4)
1	Residential	$ 607,887,024	40.15%	13,879,186	40.15%
2	Small General Service	$ 157,963,534	10.43%	3,606,600	10.43%
3	Large General Service/Primary	$ 562,119,371	37.13%	12,834,226	37.13%
4	Large Primary	$ 174,088,758	11.50%	3,974,769	11.50%
5	Large Transmission	$ 1,374,328	0.09%	31,378	0.09%
6	Lighting	$ 10,427,756	0.69%	238,085	0.69%
7	Total	$ 1,513,860,771	100.00%	34,564,243	100.00%

[1] Staff's Rate Design and Class Cost-of-Service Report, page 22.
[2] Workpaper of S Kliethermes - market energy.xlsx, market compare tab.

Q PLEASE EXPLAIN WHAT YOU MEAN WHEN YOU SAY THAT BASE LOAD PLANTS ARE ALLOCATED "ESSENTIALLY" ON THE BASIS OF CLASS ENERGY.

A In Staff's Detailed BIP study, 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. By using the energy allocation factor, Staff does not include any consideration of the times that energy is consumed (i.e., when demands occur), and would therefore attribute the same 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 13-16 of my direct testimony, including Figure 3 on page 15.)

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 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, 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 GIVEN HOW STAFF HAS ALLOCATED CAPACITY, THAT IS WITH AN ABOVE AVERAGE ALLOCATION TO THE LPS CLASS, WOULD YOU EXPECT THAT THERE WOULD BE A SIGNIFICANT DIFFERENCE AMONG CLASSES WITH RESPECT TO THE ALLOCATION OF FUEL COSTS UNDER STAFF'S BIP STUDY?

A Yes, I would expect that but it does not occur for the major customer classes. Please see Schedule MEB-COS-R-2 for reference. This schedule shows the Staff's allocation of fuel cost to customer classes and the resulting cost per megawatthour under Staff's Detailed BIP method as compared to the conventional approach of allocating these costs on energy sales at generation. Despite having been allocated about 15% more capacity than the LPS class would get under the A&E method, the resulting fuel cost assigned to the LPS class is only 2.3% less than the system average. This is certainly not adequate compensation for the much higher capacity cost allocated to the LPS class by Staff with its Detailed BIP method.

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

A Yes. In a recent 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.

Q AT PAGE 15 OF THE REPORT, STAFF INDICATES THAT THE BIP METHOD IS DISCUSSED IN THE NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS COST ALLOCATION MANUAL ("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.

Q PLEASE EXPLAIN.

A The fact that a particular generation allocation 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. 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. Staff's BIP allocator clearly falls into that category.

Staff's Allocation of OSS

Q WHAT IS YOUR ISSUE WITH RESPECT TO HOW STAFF HAS ALLOCATED OSS?

A Staff has allocated the portion of OSS revenues that it attributes to energy cost using an energy cost allocator (which is reasonable), but has allocated what it deems to be the "margin" on a demand basis. This treatment fails to recognize that the OSS revenues are essentially non-firm, or short-term, and occur as a matter of opportunity, rather than as a matter of planning or obligation, and therefore these sales do not have an allocable capacity component to them. In fact, the revenues and expenses flow through the fuel adjustment clause, which is applied on an energy (kilowatthour) basis.

Staff's Allocation of A&G Expense

Q DO YOU HAVE AN ISSUE WITH STAFF'S ALLOCATION OF A&G EXPENSE?

A Yes. I have an issue with Staff's allocation of A&G expense.

Q WHAT IS THE ISSUE?

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 please 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, none of the salary expense, pensions and benefits, plant-related or other costs 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 of these expenses. That is what I have done; it clearly is not what Staff has done.

Q WHAT IS THE IMPACT OF A MORE APPROPRIATE ALLOCATION OF A&G EXPENSE?

A This is shown on Schedule MEB-COS-R-4. It shows the impact of allocating these costs using alternative and more appropriate allocation methods. Page 1 shows the use of a payroll allocator, and page 2 shows the result if a net plant allocator were applied. If a payroll allocator were used, the costs allocated to the LPS class would decrease by $775,000, and if a net plant allocator were used, it would decrease by $929,000. In both cases, the allocation of costs to the Residential class would increase by around $5 million.

<u>Staff's Allocation of Distribution Plant</u>

Q HAVE YOU REVIEWED STAFF'S ALLOCATION OF DISTRIBUTION PLANT INVESTMENT?

A Yes. Staff has allocated roughly $25 million (about 19%) more distribution plant cost to the LPS class than has Ameren Missouri. Part of this occurs as a result of Staff having a smaller customer component, and a larger demand component in various accounts. However, the majority of the difference is attributable to the fact that Staff ignored a very important distinction within the primary distribution network.

Q WHAT IS THAT DISTINCTION?

A Ameren Missouri specifically identifies two categories of distribution plant operating at primary voltages. These are the "high voltage" primary and the "regular" primary. This distinction is important because a number of customers in the LPS class take service from the high voltage primary network, and do not make any use of the regular (lower voltage) primary service network. These distinctions are clearly set forth in Ameren Missouri's cost of service study (and have been for years), yet Staff chooses to ignore this important distinction and allocates regular primary system costs to the LPS customers who take service from this high voltage primary network. As a result, Staff significantly over-allocates costs to the LPS customer class. This error accounts for over $21 million of the excess distribution plant that Staff has allocated to the LPS class.

Conclusion

Q SHOULD THE COMMISSION RELY UPON THE RESULTS OF STAFF'S OR OPC'S COST OF SERVICE STUDY?

A No. As noted previously, these studies are outside the mainstream, conflict with prior Commission rulings and contain inappropriate allocations. They should not be adopted or used.

Q YOU HAVE NOTED THAT THE STAFF AND OPC METHODS PROPOSED IN THIS PROCEEDING ARE NOT USED IN OTHER JURISDICTIONS AND ARE 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 there has been a significant amount of analysis that 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 withstood the test of time must be viewed with skepticism. Proponents of such methods bear a special burden of proving that they do a more accurate job of identifying cost-causation than do recognized methods, and are not merely ad hoc creations designed simply to support a particular result desired by the analyst.

Q DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A Yes.

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AMEREN MISSOURI

Case No. ER-2016-0179

Customer Class Generation Capacity Costs Per kW
And Energy Costs Per kWh Under Traditional Methods
As Compared to OPC 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	Total	182		1.96	
2	Residential	182	**0%**	1.96	**0%**
3	Small General Service	182	**0%**	1.96	**0%**
4	Large GS/Small PS	182	**0%**	1.96	**0%**
5	Large Power Service	182	**0%**	1.96	**0%**
6	Lighting	182	**0%**	1.96	**0%**

OPC COST OF SERVICE STUDY
OPC NCP & Average 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)
7	Total	182		1.96	
8	Residential	177	**-3%**	1.96	**0%**
9	Small General Service	179	**-2%**	1.96	**0%**
10	Large GS/Small PS	186	**2%**	1.96	**0%**
11	Large Power Service	193	**6%**	1.96	**0%**
12	Lighting	176	**-3%**	1.96	**0%**

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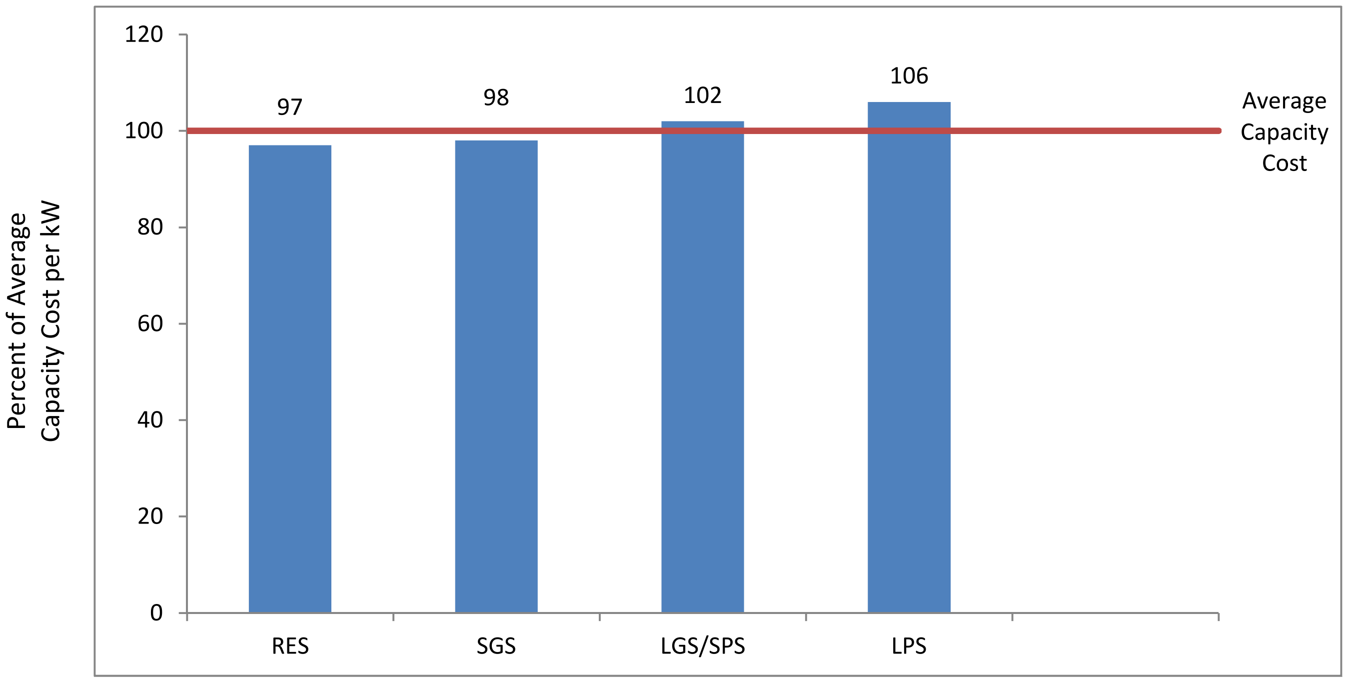
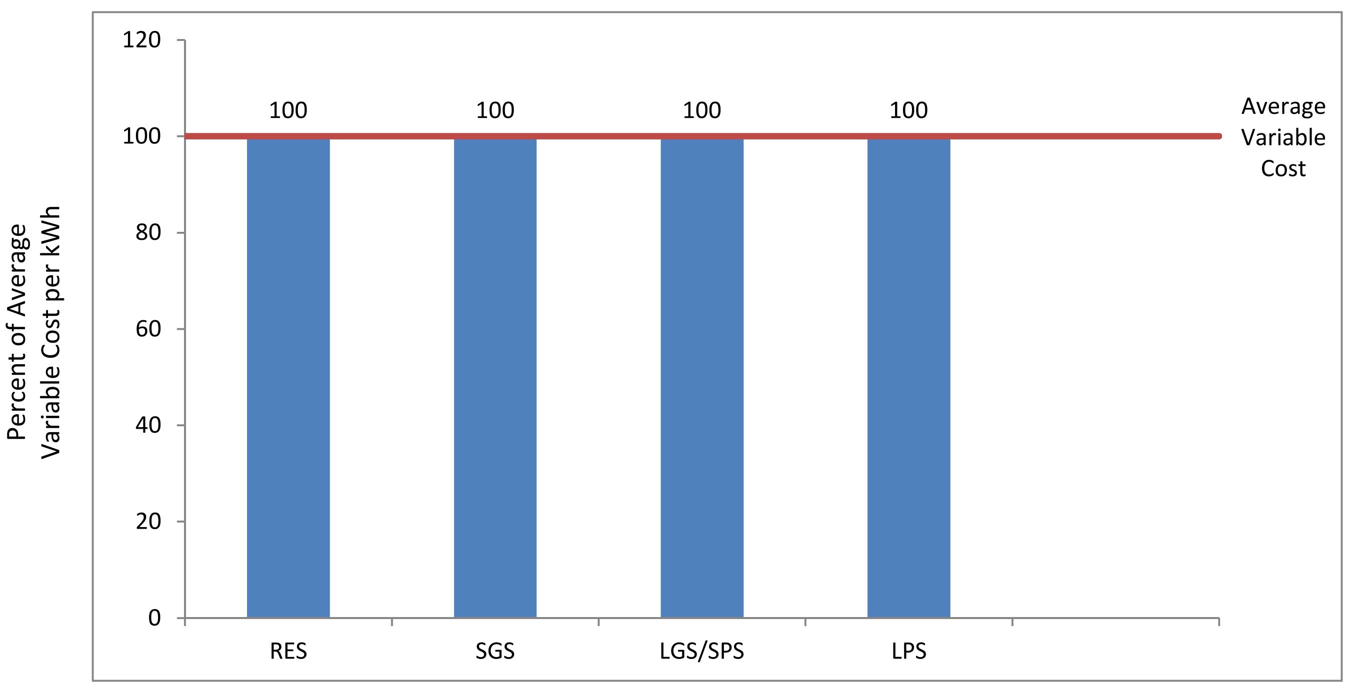
Illustration of Skewed Allocation of Capital Costs and Energy Costs Under OPC's Allocation Proposal





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$/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 ($000)[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	13,879,186	40.15%	$ 277,406,765	$ 19.99	$ 281,620,619	40.76%	$ 20.29	1.5%
2	Small General Service	3,606,600	10.43%	$ 72,086,015	$ 19.99	$ 72,380,539	10.48%	$ 20.07	0.4%
3	Large General Service/Primary	12,834,226	37.13%	$ 256,520,883	$ 19.99	$ 253,250,877	36.66%	$ 19.73	-1.3%
4	Large Primary	3,974,769	11.50%	$ 79,444,695	$ 19.99	$ 77,649,391	11.24%	$ 19.54	-2.3%
5	Large Transmission	31,378	0.09%	$ 627,169	$ 19.99	$ 611,971	0.09%	$ 19.50	-2.4%
6	Lighting	238,085	0.69%	$ 4,758,664	$ 19.99	$ 5,330,793	0.77%	$ 22.39	12.0%
7	Total	34,564,243	100.00%	$ 690,844,191	$ 19.99	$ 690,844,191	100.00%	$ 19.99	0.0%

Source:

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

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

ELECTRIC UTILITY
COST ALLOCATION MANUAL

January, 1992

NATIONAL ASSOCIATION OF
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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.

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Case No. ER-2016-0179

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)	Change from A&G Expense Allocation ($000)	Total ($000)
		(1)	(2)	(3)
1	Residential	$ 2,960	$ 1,704	$ 4,665
2	Small General Service	$ 448	$ 133	$ 581
3	Large General Service/Primary	$ (132)	$ (1,446)	$ (1,578)
4	Large Primary	$ (212)	$ (563)	$ (775)
5	Large Transmission	$ (16)	$ (6)	$ (22)
6	Lighting	$ (3,048)	$ 178	$ (2,870)
7	Total	$ 0	$ (0)	$ (0)

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

AMEREN MISSOURI
Case No. ER-2016-0179

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	$ 2,960	$ 2,093	$ 5,053
2	Small General Service	$ 448	$ 171	$ 620
3	Large General Service/Primary	$ (132)	$ (1,664)	$ (1,796)
4	Large Primary	$ (212)	$ (716)	$ (929)
5	Large Transmission	$ (16)	$ (8)	$ (24)
6	Lighting	$ (3,048)	$ 124	$ (2,924)
7	Total	$ 0	$ (0)	$ 0

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