

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-2022-0337
Date Testimony Prepared: February 15, 2023

**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 Adjust
its Revenues for Electric Service**

)
)
) **Case No. ER-2022-0337**
)
)

Rebuttal Testimony and Schedules of

Maurice Brubaker

**on Cost of Service, Revenue
Allocation and Rate Design**

On behalf of

Missouri Industrial Energy Consumers

February 15, 2023



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

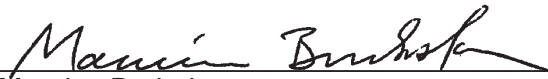
Affidavit of Maurice Brubaker

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.

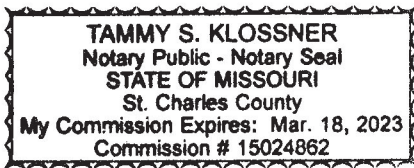
2. Attached hereto and made a part hereof for all purposes are my rebuttal testimony and schedules which were prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. ER-2022-0337.


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



Maurice Brubaker

Subscribed and sworn to before me this 15th day of February, 2023.





Notary Public

**BEFORE THE PUBLIC SERVICE COMMISSION
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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 THIS PROCEEDING?**

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

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 filed on
11 January 24, 2023.

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

13 A This testimony is presented on behalf of the Missouri Industrial Energy Consumers
14 (“MIEC”), a non-profit corporation that represents the interests of large consumers in
15 Missouri rate matters.

**Maurice Brubaker
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1 **INTRODUCTION AND SUMMARY**

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

3 A The purpose of my rebuttal testimony is to respond to the direct testimony of the
4 Commission Staff ("Staff") concerning the issues of class cost of service, revenue
5 allocation and rate design. I specifically address my response to the direct testimony
6 on Class Cost of Service/Rate Design of Staff witness Sarah L.K. Lange. I also address
7 some of the criticisms that Staff levels at Ameren Missouri's allocations and
8 assignments in the distribution and other functional categories. I also will address
9 Staff's "warning" ("Special Notice") on page 6 of witness Lange's direct testimony
10 concerning rate structure changes that Staff proposes. I then analyze Staff's
11 recommendation for the overall allocation of any change in revenues approved by the
12 Commission in this case, and explain why they are inappropriate and should not be
13 implemented.

14 **Q PLEASE PROVIDE A HIGH LEVEL SUMMARY OF YOUR FINDINGS AND**
15 **RECOMMENDATIONS?**

16 A In general, I find that Staff has proposed allocations of production, distribution and other
17 costs among customer classes that are not based on generally accepted cost allocation
18 principles, and that would seriously over-allocate costs to large, high load factor
19 customers, particularly those who take service under the Large Primary Service ("LPS")
20 rate. Many of Staff's allocation methods are outside of the mainstream and/or use
21 allocation parameters that have no reasonable relationship to cost-causation.

22 Staff's recommendations on allocation of any revenue change based on Staff's
23 flawed cost allocations are therefore flawed, and should be rejected. Instead, Ameren
24 Missouri's cost of service study (as filed or as modified by me in my direct testimony)

Maurice Brubaker
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1 should be used to define class revenue requirements under conventional approaches.
2 These studies also should be used to determine an appropriate allocation of any
3 change in revenues across customer classes.

4 For reference, my recommendation from Schedule MEB-COS-5 of my direct
5 testimony is included here as Schedule MEB-COS-R-1. The moderated allocation
6 which moves all classes 50% toward cost of service which I recommended in Schedule
7 MEB-COS-6 also is replicated here as Schedule MEB-COS-R-2.

8 **STAFF'S ALLOCATION OF PRODUCTION FUNCTION COSTS**

9 **Q HOW DOES STAFF FUNCTIONALIZE AND ALLOCATE PRODUCTION COSTS?**

10 A As explained on page 20 of the previously-referenced direct testimony, Staff designates
11 generation resources as either Type 1 or Type 2. Type 1 resources are defined as
12 those for which there are little or no variable costs incurred when the unit is off line and
13 generally is fully dispatchable, and defines Type 2 as having little or no variable costs
14 with the dispatch often limited by weather conditions or other factors beyond the control
15 of the utility. For Type 1 resources, variable revenue requirement components and
16 stable revenue requirement components were designated.

17 **Q HOW DID STAFF ALLOCATE COSTS ASSOCIATED WITH TYPE 1 RESOURCES?**

18 A At page 21 of the aforementioned direct testimony, the Staff basically allocates the cost
19 based on customer class loads during certain identified hours. Staff refers to the "All
20 Peak Hours Approach" described in the 1992 NARUC Electric Utility Cost Allocation
21 Manual ("Manual") and uses class loads during what the Midcontinent Independent
22 System Operator ("MISO") calls "Resource Adequacy hours, offset by the class'
23 allocation of hourly generation of production Type 2 resources."

1 **Q WHAT ARE RESOURCE ADEQUACY (“RA”) HOURS?**

2 A RA hours are those that MISO reviews to determine the likely availability of generation
3 resources. Section III of Schedule 53 of the MISO tariff defines RA hours as “...the
4 periods of highest risk and greatest need during a Season and throughout the year.
5 They include hours during Maximum Generation Emergency declarations and the
6 hours when the operating margin, a measure of available supply capacity above
7 demand and reserve requirements, is at its lowest.” Generation resource performance
8 during those hours is evaluated by MISO to determine the capability rating of a
9 generation resource.

10 **Q ARE LOADS DURING RA HOURS USED FOR ANY COST ALLOCATION OR**
11 **CAPACITY RESPONSIBILITY ALLOCATION PURPOSE?**

12 A No, they are not. They are used solely to define the availability of generation resources
13 owned by or available to MISO members.

14 **Q HOW IS CAPACITY RESPONSIBILITY DETERMINED?**

15 A The capacity responsibility of each load serving entity (“LSE”) equals its expected load
16 at the time of the MISO peak demand plus a reserve margin percentage that is
17 established by MISO based on reliability considerations.

18 **Q DOES MISO NOW LOOK AT LOADS AND RESOURCES DURING SPRING,**
19 **SUMMER, FALL AND WINTER PERIODS?**

20 A Yes.

1 **Q DOES THAT CHANGE HOW COSTS SHOULD BE ALLOCATED AMONG RETAIL**
2 **CUSTOMERS?**

3 A No. As shown on Schedules MEB-COS-1 and MEB-COS-2 that are attached to my
4 direct testimony, summer season demands on Ameren Missouri's system are
5 substantially higher than demands in other time frames. Generally speaking, having
6 capacity sufficient to meet the summer peak loads has been sufficient to meet loads in
7 other seasons.

8 **Q IN YOUR OPINION, IS THE AVERAGE AND EXCESS, FOUR NON-COINCIDENT**
9 **PEAK METHOD ("A&E-4NCP") STILL A REASONABLE ALLOCATION TO USE**
10 **FOR AMEREN MISSOURI?**

11 A Yes.¹ Evaluating conditions in four seasons does not justify allocating any costs to
12 classes based on hourly loads in those seasons.

13 **Q HOW DOES STAFF ALLOCATE THE REVENUE REQUIREMENTS ASSOCIATED**
14 **WITH TYPE 2 FACILITIES?**

15 A On page 21, Staff states that a "Partial Energy Weighting" method was used. The
16 details are not further explained but the allocation is more heavily energy weighted than
17 the allocation used for Type 1 resources.

18 **Q IS THIS APPROPRIATE?**

19 A No, there is no justification for this particular allocation.

¹Winter season capacity is beginning to be challenged, and if this continues, then consideration could be given to including winter loads in the cost allocation, or making some other adjustments to recognize the incremental non-summer requirements.

1 **Q STAFF HAS APPLIED DIFFERENT ALLOCATION METHODS AND ASSUMPTIONS**
2 **TO DIFFERENT KINDS OF PRODUCTION RESOURCES – IS THAT AN ACCURATE**
3 **STATEMENT?**

4 A Yes. Staff has applied different allocations to Type 1 resources, Type 2 resources and
5 to purchases and sales.

6 **Q IS THIS CONSISTENT WITH GENERALLY ACCEPTED COST ALLOCATION**
7 **APPROACHES FOR ELECTRIC UTILITIES?**

8 A No. Trying to allocate different resources using different allocation approaches is not
9 consistent with generally accepted practices. Typically, generation and purchased
10 power resources are categorized into fixed costs and variable costs. The variable costs
11 are allocated based on class energy consumption, and the fixed costs are allocated on
12 some measure of demand responsibility, such as A&E-4NCP. Staff's approach, which
13 attempts to allocate different resources in different ways, is not only complicated, but
14 unnecessary. It also ignores the fact that particular resources are not built for particular
15 customer classes or segments of load, but rather that each utility constructs a portfolio
16 consisting of various kinds of resources that have been acquired with the objective of
17 meeting customer requirements reliably and in a reasonable least cost manner.

18 Staff's approach is highly unusual and should be rejected.

19 **Q HOW DOES STAFF ALLOCATE PRODUCTION SALES AND PURCHASES?**

20 A This is explained on page 22. Essentially, this is an hourly analysis in which Staff
21 attempts to define the "...value of energy generated by the assets allocated to each
22 class," in each hour of the year.

1 The result is that while most classes are allocated a cost associated with
2 revenues and purchases, some classes get a credit. For example, under Staff's
3 allocation the Residential class receives a credit of almost \$200 million, out of a total
4 credit of about \$55 million!

5 **Q WHERE DOES THIS SHOW IN STAFF'S EXHIBIT?**

6 A It does not. It is buried along with other allocations. On page 23, the second unlabeled
7 table, contains a line titled "Functionalized Net Revenue Requirement" for the
8 production function. Numbers are shown for each class, but unfortunately not for the
9 total.

10 **Q WHAT IS IN THIS LINE?**

11 A This line consists of three components: (1) the revenue requirement for Type 1
12 generation facilities; (2) the revenue requirement for Type 2 generation facilities; and
13 (3) the revenue requirement for "Production Revenues & Purchases." I have extracted
14 the information for Production Revenue & Purchases and it is shown in the following
15 table.

Staff Allocation of Production Function (Revenues) and Purchases (\$/Millions)	
<u>Class</u>	<u>Amount</u>
Residential	(\$194)
SGS	(39)
LGS	18
SPS	68
LPS	81
Lighting	11
TOTAL	<u>(\$ 55)</u>

Source: Staff's workpaper

1 In the table, a negative number represents a credit, or a reduction, in revenue
2 requirement for the class. Overall, the system's total revenues are about \$55 million,
3 but, as indicated above, the Residential class receives about \$194 million of that credit.
4 Staff's approach effectively treats some classes as "sales for resale" entities because
5 Staff's approach effectively creates sale from some customers to others.

6 **Q WHY DO YOU CHARACTERIZE THIS AS A "SALES FOR RESALE"**
7 **PHENOMENON?**

8 A Since none of the customer classes are producing electricity for export from their own
9 facilities, the only possible source would be from a resale of Ameren Missouri's
10 generation resources that have been allocated to the class in some other step of Staff's
11 cost of service study. Also, since so much of Staff's allocation of generation cost
12 responsibility is based on hourly class loads rather than on the basis of peak loads, it
13 is hard to see where the generation capacity required to implement Staff's "sales for
14 resale" would come from.

15 Staff's treatment of sales and purchases is both unprecedented and illogical,
16 and should be rejected, along with its allocation of Type 1 and Type 2 generation
17 facilities.

1 **STAFF'S ALLOCATION OF DISTRIBUTION SYSTEM COSTS**

2 **Q STAFF SPENDS A CONSIDERABLE AMOUNT OF TIME IN THE STAFF REPORT**
3 **COMMENTING ON AMEREN MISSOURI'S RECORDKEEPING AND**
4 **ASSIGNMENTS WITHIN THE DISTRIBUTION FUNCTION. DO YOU HAVE ANY**
5 **COMMENTS ON STAFF'S ISSUES WITH RESPECT TO DISTRIBUTION SYSTEM**
6 **ALLOCATION?**

7 **A**Yes. Staff levels significant criticisms against Ameren Missouri for its recordkeeping
8 and inability to specifically identify costs associated with specific facilities. Staff seems
9 to think that the inability to identify the costs associated with specific distribution lines
10 and other delivery equipment makes Ameren Missouri's studies imprecise and
11 unreliable.

12 **Q WHAT IS YOUR REACTION TO STAFF'S CRITICISMS?**

13 **A**While any set of records probably could be made more precise, the question is whether
14 or not the added degree of precision would add useful or meaningful information and
15 improve the accuracy of cost allocation studies. Knowing the exact cost (and
16 depreciated value) of a specific 34 kV line running from Point A to Point B as compared
17 to the average cost per mile of all 34 kV lines is not particularly meaningful when rates
18 are set on the basis of general categories of customers and voltage level. Customers
19 taking service at 34 kV are allocated a share of the costs of 34 kV and higher voltage
20 equipment. Rates are designed to serve all 34 kV customers as a class, without regard
21 to their specific geographic location, or the age of the facilities specifically providing
22 service. In other words, unless rates were to be set separately for each individual
23 customer, the added information would be of no value.

1 Q AT PAGE 12 STAFF SEEMS TO ARGUE AGAINST THE RECOGNITION OF
2 DISTRIBUTION FACILITIES BY VOLTAGE LEVEL, CLAIMING, AMONG OTHER
3 THINGS, THAT THE BOUNDARIES ARE NOT FINITE. FOR EXAMPLE, STAFF
4 ARGUES THAT SOMETIMES REROUTING POWER OVER A PRIMARY CIRCUIT
5 IN ORDER TO AVOID TRIPPING A TRANSMISSION CIRCUIT MEANS THAT
6 TRANSMISSION CUSTOMERS SHOULD BE ALLOCATED SOME AMOUNT OF
7 PRIMARY DISTRIBUTION COST. DOES THIS EXAMPLE SUPPORT STAFF'S
8 CONTENTION?

9 A No. The fact that there are times when short-term alterations in system configuration
10 make sense in order to maintain service to more customers, is just that, a "short-term"
11 deviation that happens to work because there was spare capacity available at some
12 point and it was useful in preventing the trip of another line. This does not mean that
13 the cost of lower voltage lines should be assigned to customers who take service at
14 higher voltage levels. The event in question would not have been possible had there
15 not been adequate spare capacity in the system. The system is not built for that
16 eventuality, and such short-term and infrequent occurrences should not drive cost
17 allocation.

18 Q DOES STAFF INDICATE THAT IT ALLOCATED SOME OF THE DISTRIBUTION
19 SYSTEM COSTS TO CUSTOMER HOURLY LOADS?

20 A Yes. Staff so states at lines 17-19 on page 14 of its report, and again on page 16 of its
21 report on lines 3-5.

1 **Q IS THIS APPROPRIATE?**

2 A No. Distribution systems have to be in place in order to satisfy the maximum demand
3 placed on them. That requires an allocation based on customer class demands. An
4 allocation based on class energy consumption is completely out of bounds with any
5 acceptable cost allocation principle.

6 **Q WHAT IS YOUR OVERALL ASSESSMENT OF THE LEVEL OF DETAIL BEHIND**
7 **AMEREN MISSOURI'S CLASS COST OF SERVICE STUDY?**

8 A I believe it is generally consistent with the level of detail and the practices of other
9 electric utilities.

10 **Q WHAT IS THE BASIS FOR THAT STATEMENT?**

11 A It is based on 50 years of experience in reviewing class cost of service studies
12 performed by numerous electric utilities in 34 different regulatory jurisdictions.

13 **Q DO YOU HAVE ANY SPECIFIC OBSERVATIONS ABOUT THE RESULTS OF**
14 **STAFF'S ALLOCATION OF DISTRIBUTION COSTS?**

15 A Yes. Looking at Staff's numbers for the allocation of distribution costs to the LPS class,
16 it struck that me that it was disproportionately large. So I compared the allocation of
17 these costs as between Ameren Missouri and Staff. I found that whereas Ameren
18 Missouri allocated approximately 2.5% of such costs to the LPS class, Staff allocated
19 over 9% of such costs to the LPS class. This suggests to me that either Staff has
20 double-counted costs or has simply over-allocated or assigned the amount of costs
21 associated with the distribution system to the LPS class, which uses hardly any of the

1 distribution system. This is clearly a “red flag” and serves as a kind of “sanity check”
2 on Staff’s allocations.

3 **ALLOCATION OF ANY CHANGE IN REVENUE REQUIREMENTS**

4 **Q DO YOU AGREE WITH STAFF’S RECOMMENDED ALLOCATION OF ANY**
5 **CHANGE IN REVENUE REQUIREMENTS?**

6 A No, Staff’s allocation among customer classes is based on Staff’s seriously flawed
7 class cost of service study and should be rejected in its entirety. Instead, any change
8 in class revenue requirements should be allocated in accordance with Schedules
9 MEB-COS-R-1 or MEB-COS-R-2. Specifically, the changes shown on these schedules
10 would be made to accomplish movement toward cost of service, and then any change
11 in revenue requirements would be applied as an equal percent.

12 **RATE STRUCTURES FOR LPS CUSTOMERS**

13 **Q WHERE DOES STAFF ADDRESS RATE DESIGN FOR SCHEDULE LPS?**

14 A Staff has a paragraph on page 6. In this paragraph it admonishes Ameren Missouri as
15 well as retail customers to expect certain changes in rate design to be implemented in
16 this case.

17 While MIEC is not unappreciative of this note of caution from Staff, MIEC would
18 note that the amount of time allowed for customers to consider potential impact and
19 offer counterproposals is completely inadequate. If Staff wishes to explore further
20 refinements to rates applicable to large customers, then such changes should be
21 considered in a separate proceeding, or there should be a collaboration among Staff,
22 Ameren Missouri and interested parties that would take place between now and the
23 next rate case filing. Only by this approach (which is followed by Evergy) will all parties

1 have a fair and reasonable opportunity to consider impacts and be heard on their
2 concerns and solutions.

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

4 **A Yes, it does.**

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AMEREN MISSOURI
Case No. ER-2022-0337

**Class Cost of Service Study Results
and Revenue Adjustments to Move Each Class to Cost of Service
Using MIEC's Modified ECOS at Present Rates**

(Dollars in Thousands)

Line	Rate Class	Base Revenues (1)	Current Rate Base (2)	Adjusted Operating Income (3)	Earned ROR (4)	Indexed ROR (5)	Income @ Equal ROR (6)	Difference in Income (7)	Revenue Change (8)	Percent Change (9)
1	Residential	\$ 1,373,010	\$ 6,347,277	\$ 259,899	4.095%	80	\$ 326,853	\$ 66,954	\$ 89,272	6.5%
2	Small GS	305,323	1,364,967	66,679	4.885%	95	70,289	3,610	4,814	1.6%
3	Large GS/Primary	791,487	3,022,209	203,091	6.720%	130	155,629	(47,462)	(63,283)	-8.0%
4	Large Primary	205,821	668,517	56,276	8.418%	163	34,425	(21,851)	(29,134)	-14.2%
5	Company Owned Lighting	39,011	185,999	11,631	6.253%	121	9,578	(2,053)	(2,737)	-7.0%
6	Customer Owned Lighting	2,933	16,810	65	0.385%	7	866	801	1,068	36.4%
7	Total	\$ 2,717,585	\$ 11,605,779	\$ 597,640	5.150%	100	\$ 597,640	\$ -	\$ -	0.0%

AMEREN MISSOURI
Case No. ER-2022-0337

**Cost of Service Adjustments for
50% Movement Toward Cost of Service
Using Modified ECOS at Present Rates**
(\$ in Millions)

<u>Line</u>	<u>Rate Class</u>	<u>Current Revenues (1)</u>	<u>Move 50% Toward Cost Of Service⁽¹⁾ (2)</u>	<u>Adjusted Current Revenue (3)</u>	<u>Revenue-neutral Percent Change in Current Revenue (4)</u>
1	Residential	\$ 1,373.0	\$ 44.6	\$ 1,417.6	3.3 %
2	Small GS	305.3	2.4	307.7	0.8 %
3	Large GS/Primary	791.5	(31.6)	759.8	(4.0)%
4	Large Primary	205.8	(14.6)	191.3	(7.1)%
5	Company Owned Lighting	39.0	(1.4)	37.6	(3.5)%
6	Customer Owned Lighting	<u>2.9</u>	<u>0.5</u>	<u>3.5</u>	18.2 %
7	Total	\$ 2,717.6	\$ -	\$ 2,717.6	0.0 %

(1) Increase to equal cost of service from column 8 of Schedule MEB-COS-5, times 50%.