

Exhibit No.:  
Issues: Class Cost of Service  
Study  
Witness: William M. Warwick  
Sponsoring Party: Union Electric Company  
Type of Exhibit: Direct Testimony  
Case No.: ER-2011-0028  
Date Testimony Prepared: September 3, 2010

**MISSOURI PUBLIC SERVICE COMMISSION**

**CASE NO. ER-2011-0028**

**DIRECT TESTIMONY**

**OF**

**WILLIAM M. WARWICK**

**ON**

**BEHALF OF**

**UNION ELECTRIC COMPANY  
d/b/a AmerenUE**

**St. Louis, Missouri  
September, 2010**

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**DIRECT TESTIMONY**  
**OF**  
**WILLIAM M. WARWICK**  
**CASE NO. ER-2011-0028**  
**I. INTRODUCTION**

**Q. Please state your name and business address.**

A. William M. Warwick, Union Electric Company d/b/a AmerenUE (“AmerenUE” or “Company”), One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, Missouri.

**Q. What is your position with AmerenUE?**

A. I am Managing Supervisor of Rate Engineering.

**Q. Please describe your educational background and employment experience.**

A. I received a Bachelor of Science degree in Engineering Management from the University of Missouri-Rolla in December 1978.

I was employed at ACF Industries’ Amcar Division-St. Louis Plant from December 1978 to December 1981, as an engineer in the Industrial Engineering Department, responsible for project planning. I began working at Union Electric Company in the Rate Engineering Department in December 1981.

My duties and responsibilities include assignments related to the Company’s gas and electric rates, including participation in regulatory proceedings, rate analysis, the development and interpretation of the Company’s gas and electric tariffs, including rules and regulations, and other rate or regulatory projects as assigned.

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**II. PURPOSE OF TESTIMONY**

**Q. What is the purpose of your direct testimony in this proceeding?**

A. My direct testimony in this proceeding concerns the following:

- (1) Developing a fully allocated embedded customer class cost of service study for the Company's electric operations for the test year, which is the twelve months ending March 31, 2010, with updates for known and measurable changes through February 28, 2011; and
- (2) Disaggregating, or unbundling, the various functional cost components included in the Company's allocated class cost of service study.

**III. CLASS COST OF SERVICE STUDY**

**Q. Please explain the information contained in Schedule WMW-E1 attached to your testimony.**

A. Schedule WMW-E1 contains the results of my customer class cost of service study for the Company's electric operations for the test year ending March 31, 2010. This study is based upon the Company's present rate levels and uses weather normalized sales. An electric cost of service study (revenue requirement) was prepared by Company witness Gary S. Weiss and, as discussed in his direct testimony, provided the total rate base and expense items that formed the starting point for this class cost of service study.

1           **Q.     What is generally meant by the term “cost of service study”?**

2           A.     A cost of service study determines a utility’s aggregate annual revenue  
3 requirement necessary to recover its operating and maintenance expenses and taxes,  
4 depreciation of its plant, and a fair return on the utility’s net investment in property and  
5 plant.

6           **Q.     What information is provided by a class cost of service study?**

7           A.     A class cost of service study determines, as accurately as possible, the cost  
8 of serving each of the Company’s rate classes and then allocates the various costs  
9 identified in the cost of service study to each of those rate classes.

10          **Q.     What rate classes were included in the Company’s class cost of service**  
11 **study?**

12          A.     The Company’s existing residential, small general service, large general  
13 service/small primary service, large primary service, large transmission service and  
14 lighting service classes were allocated their respective portions of the Company’s  
15 operating costs in the class cost of service study. The Company has three active lighting  
16 service classifications: 1) Street & Outdoor Area Lighting – Company-Owned 5(M),  
17 2) Street and Outdoor Area Lighting – Customer-Owned 6(M) and 3) Municipal Street  
18 Lighting – Incandescent 7(M). These lighting service classifications were combined into  
19 a “lighting” class in the class cost of service study. As described in Company witness  
20 Philip B. Difani’s direct testimony, the next step in the development of allocating costs to  
21 the various lighting classifications was to refine the class cost of service study results to  
22 properly apportion the across-the-board increase for the lighting service among the 5(M),  
23 6(M), and 7(M) service classifications.

1           **Q.     What categories of cost did you examine in developing the customer**  
2 **class cost of service study summary included in Schedule WMW-E1 of your**  
3 **testimony?**

4           A.     I conducted a detailed analysis of all elements of investment and expense  
5 associated with the Company's electric operations for the purpose of allocating such costs  
6 to the customer classes served by the Company. As a part of this analysis, total expenses  
7 and investment in property and plant were classified into their customer-related,  
8 energy-related, and demand-related components.

9           **Q.     Please describe the development of the factors used to allocate costs to**  
10 **each customer class.**

11          A.     The allocation factors for each customer class were determined by  
12 calculating the proportionate share of total customer or property units of each class and  
13 the total energy or demand related units of each class, including applicable losses. These  
14 calculations were developed at the various voltage levels on the Company's generation,  
15 transmission and distribution system that are associated with the facilities whose costs are  
16 being allocated.

17          **Q.     How were the allocation factors for the Large Transmission Service**  
18 **(“LTS”) class developed considering the significant load reduction experienced from**  
19 **late January 2009 to date of the only customer under this service classification, as**  
20 **discussed in the testimony of Company witness Steven M. Wills?**

21          A.     Allocation factors were developed for the LTS class assuming that  
22 Noranda Aluminum Inc. (“Noranda”) was at full capacity for the test year period. That  
23 is, Noranda’s actual load research data (Coincident Peak (“CP”) and Non-coincident Peak

1 (“NCP”)) for each month of the test year were replaced with the actual values for those  
2 same variables from 2008, the last year in which Noranda operated at full load. The  
3 system load at the hour of peak was also increased by the difference between the actual  
4 test year Noranda CP and the 2008 Noranda CP. This resulted in both Noranda and  
5 system loads being “normalized” (i.e. adjusted to reflect Noranda’s normal load levels).

6 **Q. After the allocation factors for each class were derived, what was the**  
7 **next step in the study?**

8 A. The next step was to apply these allocation factors to the various  
9 functional components of rate base and operating and maintenance expenses, as  
10 developed, in total, for the Company’s electric operations.

11 **Q. Please describe how those costs and expenses were allocated to the**  
12 **customer classes.**

13 A. The original cost and depreciation reserves of the major functional  
14 components of the Company's electric rate base were allocated to customer classes as  
15 described below. The resulting dollar amounts (in thousands) allocated to each class are  
16 shown in Schedule WMW-E1.

17 (1) Production Plant. Production plant was allocated to each  
18 customer class on the basis of the Four Non-Coincident Peak (“4 NCP”) Average and  
19 Excess Demand allocation factors for each customer class at the Company's generating  
20 stations. Non-coincident peak demand is the customer class’ maximum load at any time  
21 of the study period regardless of the time of occurrence or magnitude of the Company’s  
22 system peak. The four non-coincident peak demands are the average of the customer  
23 class’ four maximum monthly loads. The direct testimony sponsored by AmerenUE

1 Witness Wilbon L. Cooper in this docket describes why the 4 NCP Average and Excess  
2 method is appropriate for the allocation of the electric Production Plant to the various  
3 customer classes.

4 (2) Transmission Plant. Transmission line and substation investment  
5 was allocated to each customer class on the basis of the twelve coincident peak (“12 CP”)  
6 demands of each class at their point of input to the Company's transmission system.  
7 Coincident peak demand is the customer class’ peak load at the time of occurrence of the  
8 Company’s system peak. The twelve coincident peak demands are the customer class’  
9 twelve monthly loads at the time of the Company’s twelve monthly system peaks. Such  
10 12 CP allocation is consistent with the development of the Ameren system transmission  
11 revenue requirement, under the Midwest Independent Transmission System Operator,  
12 Inc.’s (“MISO”) Attachment O Rate Formulae in the Open Access Transmission, Energy  
13 and Operating Reserve Markets Tariff on file at the Federal Energy Regulatory  
14 Commission (“FERC”).

15 (3) Distribution Plant. The Company's Distribution Plant was  
16 allocated to each customer class based upon the results of an analysis of the functions  
17 performed by the facilities in Distribution Plant Accounts 360-369. This analysis  
18 determined the breakdown of each account based on its customer-related and demand-  
19 related components. The demand-related component was further broken down by high  
20 voltage primary, primary voltage and secondary voltage demand-related functions. High  
21 voltage primary is 34.5 kilovolts up to 69 kilovolts, primary distribution voltage is above  
22 600 volts up to 34.5 kilovolts, while secondary distribution voltage is 600 volts or less.



1           The portion of the Distribution Plant accounts assigned to the customer  
2 component was derived using the generally accepted zero intercept method described in  
3 the National Association of Regulatory Utility Commissioners (“NARUC”) Electric  
4 Utility Cost Allocation Manual. This approach to cost assignment is predicated on the  
5 fact that there is a zero or no load component in even the smallest available unit of utility  
6 distribution equipment. The zero intercept method identifies the portion of plant related  
7 to a hypothetical no-load or zero-intercept condition, i.e., the cost of simply making  
8 service available to a customer. The remaining, or demand-related, portion of the  
9 Company's Distribution Plant accounts was split among the high voltage primary,  
10 primary voltage and secondary voltage levels on the basis of a review of the functional  
11 utilization of various equipment and hardware in such accounts. For all distribution  
12 accounts, with the exception of Account 369, Services, the demand-related investment in  
13 each account was allocated to each customer class on the basis of the non-coincident peak  
14 demand of each class at the appropriate high voltage, primary and secondary voltage  
15 levels.

16           The demand-related investment in Account 369, Services, was allocated to each  
17 customer class on the basis of the sum of the maximum demand of all customers in the  
18 class at the secondary level. The maximum individual customer demand was used to  
19 reflect the fact that the maximum demand of individual customers dictates the sizing of  
20 their service facilities.

21           Distribution Account 370, Meters, was allocated to each of the customer classes  
22 by allocation factors which weigh the results of multiplying the current cost of the typical

1 metering arrangement for each customer class by the number of meters used in serving  
2 that class. All metering cost is classified as customer related.

3 Account 371-1, Installation on Customer's Premises Substation equipment, was  
4 allocated to the Primary class on the basis of such customers' historical use of these  
5 facilities.

6 Account 373, Street Lighting & Signal Systems, was directly assigned to the  
7 lighting class.

8 (4) General Plant. The balance in this account was allocated to each  
9 customer class on the basis of the proportion of labor expense allocated to each class.  
10 This "labor ratio" method of allocation is the same as that employed by Mr. Weiss in  
11 arriving at the General Plant and Administrative and General Expense in his electric cost  
12 of service study.

13 (5) Accumulated Reserves for Depreciation. Because such reserves  
14 are functionalized by type of plant, these reserves were allocated on the same basis as the  
15 allocation of the various plant accounts, as described above.

16 (6) Materials & Supplies. This component consists of fuel  
17 inventories and general materials and supplies related to power plants, transmission  
18 facilities and distribution facilities. Fuel inventories and the power plants and  
19 transmission facilities materials are directly related to the generation and transmission of  
20 energy and were therefore allocated on the basis of the energy allocation factor. The  
21 local distribution materials were allocated on the basis of the composite allocation of  
22 Distribution Plant, as previously described.

1                   (7)    Cash Working Capital.       This item is related primarily to  
2 operating expenses and was therefore allocated to each customer class in proportion to  
3 the total operating expenses allocated to each class.

4                   (8)    Customer Advances for Construction and Deposits.   This  
5 component of rate base was assigned to each customer class on the basis of an analysis of  
6 the sources of such deposits in Missouri.

7                   (9)    Total Accumulated Deferred Income Taxes.   This component is  
8 related primarily to investment in property and was therefore allocated to each customer  
9 class on the basis of allocated gross plant.

10           **Q.    How did you allocate the electric test year operating and maintenance**  
11 **expenses to the customer classes?**

12           A.    With very few exceptions, operating and maintenance expenses were  
13 allocated to the customer classes on the same basis as the related investment in plant was  
14 allocated. This type of allocation employs the familiar and widely used "expenses follow  
15 plant" principle of cost allocation. For example, the allocator for Transmission Lines was  
16 used to allocate Transmission Line expenses. The only exceptions to this procedure are  
17 as follows:

18                   (1)    Production Expenses.   This item consists of two categories:  
19 (a) fixed, which includes standard operating crews and nuclear support staff; and  
20 (b) variable, which includes fuel, fuel handling, interchange power costs, and production  
21 plant maintenance expenses. The fixed portion of production expenses was allocated on  
22 the same basis as Production Plant, while the variable portion was allocated using a

1 variable allocator based on the megawatt-hours required at the generator to provide  
2 service to each respective customer class.

3 (2) Customer Accounts Expenses. An analysis of Account 903,  
4 Customer Records & Collection Expenses, indicated that approximately 24% of such  
5 expenses are devoted to credit and collection activities. Therefore, this portion of  
6 Account 903 and all of Account 904, Uncollectible Accounts, were allocated to each  
7 customer class on the basis of the annual level of collection activities applicable to each  
8 customer class. The remaining 76% of Account 903 expense, and other direct Customer  
9 Accounts Expenses, were allocated to each customer class utilizing a weighted billing  
10 and customer accounts administration allocation factor. Account 902, Meter Reading  
11 Expenses, was allocated to each class by weighting the results of applying the monthly  
12 contract meter reading cost per meter to the respective number of meters in each  
13 customer class. Account 901, Supervision, was allocated to each class on the basis of the  
14 composite allocation of all other Customer Accounts Expenses.

15 (3) Customer Service & Sales Expenses. These expenses were  
16 allocated to each customer class using the composite allocation of Customer Accounts  
17 Expenses.

18 (4) Interest on Customer Surety Deposits. These expenses were  
19 allocated to each customer class on the basis of the previously allocated Customer  
20 Advances and Deposits, since advances and deposit accounts are typically representative  
21 of where surety deposits are booked.

22 (5) Administrative & General (“A&G”) Expenses. The Electric  
23 Power Research Institute (“EPRI”) subscription included in the test year A&G expenses

1 is based upon a formula incorporating the Company's kilowatt-hour sales and revenues.  
2 Therefore, this expense was allocated to each customer class on the basis of the  
3 application of this formula to the sales and revenues of each customer class during the  
4 study period.

5 All remaining A&G expenses were allocated to the customer classes on the basis  
6 of the class composite distribution of previously allocated labor expense. As indicated  
7 earlier, this allocation of A&G expenses reflects the same method as that used by Mr.  
8 Weiss in the Company's electric cost of service study.

9 **Q. How did you allocate off-system sales revenues?**

10 A. Off-system sales revenues were allocated to each class using each class'  
11 variable production allocation factor based on the megawatt-hours required at the  
12 generator to provide service to each respective customer class. This allocation is  
13 consistent with the Report and Order of the Missouri Public Service Commission in the  
14 Company's previous electric rate case, Case No. ER-2010-0036.

15 **Q. How did you allocate the test year depreciation expenses?**

16 A. Since depreciation expenses are functionalized and are directly related to  
17 the Company's original cost investment in plant, depreciation expense within each  
18 function was allocated to each customer class on the basis of the previously allocated  
19 original cost production, transmission, distribution and general plant.

20 **Q. How did you allocate the test year real estate and property taxes?**

21 A. Real estate and property tax expenses are directly related to the Company's  
22 original cost investment in plant, so these expenses were allocated to customer classes on

1 the basis of the sum of the previously allocated production, transmission, distribution and  
2 general plant investment.

3 **Q. How did you allocate the test year income taxes?**

4 A. Income tax expense is directly related to the Company's net operating  
5 income as a proportion of its net rate base investment, i.e., rate of return on its net  
6 original cost rate base. As a result, income taxes were allocated to each class on the basis  
7 of the net original cost rate base allocated to each customer class.

8 **Q. How did you allocate the revenue requirement associated with energy  
9 efficiency program costs to the various customer classifications?**

10 A. The program costs were assigned to the classes based on an analysis of  
11 each class' proportionate responsibility of total energy efficiency program costs.

12 **Q. Please identify Schedule WMW-E2.**

13 A. Schedule WMW-E2 was derived from my class cost of service summary,  
14 Schedule WMW-E1. To develop Schedule WMW-E2, I modified the base revenues of  
15 each class in Schedule WMW-E1 to reflect the class revenues necessary for the Company  
16 to realize equalized rates of return from each customer class at the Company's current  
17 level of total Missouri revenues.

18 **Q. Please describe the method used to equalize rates of return for each  
19 customer class, as reflected in your Schedule WMW-E2.**

20 A. The total net original cost rate base of each customer class was multiplied  
21 by the Missouri electric test year return of 8.456% to obtain the required total net  
22 operating income for each class. This net operating income was then added to the  
23 operating expenses for each class to obtain the total operating revenue for each class

1 required for equal class rates of return. The resulting cost of service of each customer  
2 class is set forth on line 6 of Schedule WMW-E2. However, the revenue requirement of  
3 each customer class is as indicated in Mr. Cooper's Schedule WLC-E2.

4 **IV. UNBUNDLING FUNCTIONAL COST COMPONENTS**

5 **Q. What is your second area of responsibility in this case?**

6 A. My second area of responsibility is to desegregate or unbundle the  
7 Company's class revenue requirements in its allocated class cost of service study. These  
8 costs were divided into the following Functionalized Cost Categories:

- 9 1) Customer Related Costs  
10 2) Distribution - Demand Related Costs  
11 3) Transmission - Demand Related Costs  
12 4) Production - Energy Related Costs  
13 5) Production - Demand Related Costs

14 **Q. Please describe the general method used in your analyses for the**  
15 **unbundling of the Company's revenue requirement.**

16 A. This unbundling process entailed a detailed analysis of the various  
17 components of the equalized customer class rates of return study presented in Schedule  
18 WMW-E2 of my testimony. As the Company's various components of cost presented in  
19 Schedule WMW-E1 were allocated to customer classes on a customer-, energy- or  
20 demand-related basis, the unbundling process consisted of extracting these components  
21 of cost and assigning them to the functional cost categories indicated earlier.

22 **Q. In this accounting of the Company's total costs, how did you reconcile**  
23 **total costs with the Company's various sources of revenue?**

1           A.     Because the objective was to unbundle the costs associated with the  
2 Company's base rate revenues, the Company's miscellaneous revenue sources associated  
3 with Off-System and Other revenues were deducted from the unbundled functional cost  
4 categories in a manner reflective of where the costs associated with such services appear  
5 in the Company's accounts. Some examples of Other Company revenues are late  
6 payment charges, returned check charges, meter rentals, substation rentals, facility and  
7 land rentals and disconnect/reconnect charges.

8           **Q.     Following this process of netting the Company's miscellaneous**  
9 **revenues against their supporting costs, were the remaining unbundled costs the**  
10 **amounts which are, in the aggregate, recovered in the Company's base rate**  
11 **revenues?**

12          A.     Yes, the steps I have described equated the Company's base rate revenues  
13 with the costs associated with such revenues. The results of this analysis are contained in  
14 Schedule WMW-E3 of my testimony. As I indicated earlier, this information was used  
15 by Mr. Cooper in the development of the revised rates proposed by the Company in this  
16 case.

17          **Q.     Does this conclude your direct testimony?**

18          A.     Yes, it does.



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

In the Matter of Union Electric Company     )  
d/b/a AmerenUE for Authority to File        )  
Tariffs Increasing Rates for Electric        )                   Case No. ER-2011-0028  
Service Provided to Customers in the        )  
Company's Missouri Service Area.            )

**AFFIDAVIT OF WILLIAM M. WARWICK**

**STATE OF MISSOURI     )**  
  ) **ss**  
**CITY OF ST. LOUIS     )**

William M. Warwick, being first duly sworn on his oath, states:

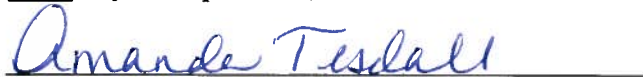
1. My name is William M. Warwick. I work in the City of St. Louis, Missouri, and I am employed by Union Electric Company d/b/a AmerenUE as Managing Supervisor of Rate Engineering.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Union Electric Company d/b/a AmerenUE consisting of 14 pages, Schedules WMW-E1 through WMW-E3, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

  
\_\_\_\_\_  
William M. Warwick

Subscribed and sworn to before me this 3 day of September, 2010.

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

My commission expires:



AmerenUE  
**MISSOURI ELECTRIC OPERATIONS**  
**CLASS COST OF SERVICE ALLOCATION STUDY**

<u>TITLE: SUMMARY CURRENT ROR RESULTS (\$000'S)</u>		<u>MISSOURI</u>	<u>RESIDENTIAL</u>	<u>SMALL GEN SERV</u>	<u>LARGE G.S. / SMALL PRIMARY</u>	<u>LARGE PRIMARY</u>	<u>LARGE TRANS</u>	<u>LIGHTING</u>
1	BASE REVENUE	\$ 2,437,740	\$ 1,094,131	\$ 280,137	\$ 711,918	\$ 181,019	\$ 139,375	\$ 31,160
2	OTHER REVENUE	\$ 71,988	\$ 39,753	\$ 6,841	\$ 16,621	\$ 4,333	\$ 3,808	\$ 632
3	LIGHTING REVENUE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4	SYSTEM, OFF-SYS SALES & DISP OF ALLOW	\$ 389,344	\$ 146,722	\$ 37,697	\$ 122,978	\$ 38,947	\$ 41,027	\$ 1,972
5	RATE REVENUE VARIANCE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6	TOTAL OPERATING REVENUE	\$ 2,899,072	\$ 1,280,607	\$ 324,676	\$ 851,517	\$ 224,299	\$ 184,209	\$ 33,764
7								
8	TOTAL PROD, T&D, CUST, AND A&G EXP	\$ 1,791,698	\$ 779,227	\$ 180,071	\$ 511,553	\$ 155,008	\$ 145,300	\$ 20,538
9	TOTAL DEPR AND AMMORT EXPENSES	\$ 426,931	\$ 228,733	\$ 46,677	\$ 103,579	\$ 23,754	\$ 15,286	\$ 8,903
10	REAL ESTATE AND PROPERTY TAXES	\$ 135,868	\$ 70,713	\$ 15,062	\$ 33,662	\$ 8,150	\$ 5,760	\$ 2,521
11	INCOME TAXES	\$ 208,419	\$ 106,629	\$ 22,350	\$ 53,140	\$ 13,222	\$ 9,731	\$ 3,346
12	PAYROLL TAXES	\$ 23,610	\$ 11,399	\$ 2,441	\$ 6,243	\$ 1,757	\$ 1,349	\$ 422
13	FEDERAL EXCISE TAX	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
14	REVENUE TAXES	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
15								
16	TOTAL OPERATING EXPENSES	\$ 2,586,527	\$ 1,196,701	\$ 266,602	\$ 708,176	\$ 201,892	\$ 177,426	\$ 35,729
17								
18	NET OPERATING INCOME	\$ 312,545	\$ 83,906	\$ 58,074	\$ 143,341	\$ 22,407	\$ 6,783	\$ (1,965)
19								
20	GROSS PLANT IN SERVICE	\$14,123,637	\$ 7,352,563	\$ 1,562,544	\$ 3,505,018	\$ 845,473	\$ 596,896	\$ 261,144
21	RESERVES FOR DEPRECIATION	\$ 5,937,666	\$ 3,112,141	\$ 660,658	\$ 1,452,001	\$ 346,466	\$ 243,881	\$ 122,519
22								
23	NET PLANT IN SERVICE	\$ 8,185,971	\$ 4,240,422	\$ 901,886	\$ 2,053,017	\$ 499,007	\$ 353,014	\$ 138,625
24								
25	MATERIALS & SUPPLIES - FUEL	\$ 371,450	\$ 139,979	\$ 35,965	\$ 117,326	\$ 37,157	\$ 39,142	\$ 1,881
26	MATERIALS & SUPPLIES -LOCAL	\$ 45,574	\$ 28,896	\$ 5,327	\$ 7,875	\$ 1,575	\$ 1	\$ 1,900
27	CASH WORKING CAPITAL	\$ 25,804	\$ 11,223	\$ 2,593	\$ 7,368	\$ 2,232	\$ 2,093	\$ 296
28	CUSTOMER ADVANCES & DEPOSITS	\$ (19,537)	\$ (23)	\$ (16,017)	\$ (3,498)	\$ -	\$ -	\$ -
29	ACCUMULATED DEFERRED INCOME TAXES	\$ (1,799,209)	\$ (936,408)	\$ (199,459)	\$ (445,761)	\$ (107,929)	\$ (76,274)	\$ (33,377)
30								
31	TOTAL NET ORIGINAL COST RATE BASE	\$ 6,810,054	\$ 3,484,089	\$ 730,296	\$ 1,736,328	\$ 432,042	\$ 317,976	\$ 109,324
32								
33	RATE OF RETURN	4.589%	2.408%	7.952%	8.255%	5.186%	2.133%	-1.798%

**AmerenUE**  
**MISSOURI ELECTRIC OPERATIONS**  
**CLASS COST OF SERVICE ALLOCATION STUDY**  
**EQUALIZED CLASS RATES OF RETURN ANALYSIS**

<b>TITLE: SUMMARY EQUAL ROR (\$000's)</b>		<u>MISSOURI</u>	<u>RESIDENTIAL</u>	<u>SMALL GEN SERV</u>	<u>LARGE G.S. / SMALL PRIMARY</u>	<u>LARGE PRIMARY</u>	<u>LARGE TRANS</u>	<u>LIGHTING</u>
1	BASE REVENUE	\$ 2,701,053	\$ 1,304,840	\$ 283,817	\$ 715,401	\$ 195,146	\$ 159,480	\$ 42,370
2	OTHER REVENUE	\$ 71,988	\$ 39,753	\$ 6,841	\$ 16,621	\$ 4,333	\$ 3,808	\$ 632
3	LIGHTING REVENUE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4	SYSTEM, OFF-SYS SALES & DISP OF ALLOW	\$ 389,344	\$ 146,722	\$ 37,697	\$ 122,978	\$ 38,947	\$ 41,027	\$ 1,972
5	RATE REVENUE VARIANCE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6	TOTAL OPERATING REVENUE	\$ 3,162,385	\$ 1,491,316	\$ 328,356	\$ 855,000	\$ 238,425	\$ 204,314	\$ 44,974
7								
8	TOTAL PROD., T&D, CUSTOMER, AND A&G EXP.	\$ 1,791,698	\$ 779,227	\$ 180,071	\$ 511,553	\$ 155,008	\$ 145,300	\$ 20,538
9	TOTAL DEPR. AND AMMOR. EXPENSES	\$ 426,931	\$ 228,733	\$ 46,677	\$ 103,579	\$ 23,754	\$ 15,286	\$ 8,903
10	REAL ESTATE AND PROPERTY TAXES	\$ 135,868	\$ 70,713	\$ 15,062	\$ 33,662	\$ 8,150	\$ 5,760	\$ 2,521
11	INCOME TAXES	\$ 208,419	\$ 106,629	\$ 22,350	\$ 53,140	\$ 13,222	\$ 9,731	\$ 3,346
12	PAYROLL TAXES	\$ 23,610	\$ 11,399	\$ 2,441	\$ 6,243	\$ 1,757	\$ 1,349	\$ 422
13	FEDERAL EXCISE TAX	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
14	REVENUE TAXES	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
15								
16	TOTAL OPERATING EXPENSES	\$ 2,586,527	\$ 1,196,701	\$ 266,602	\$ 708,176	\$ 201,892	\$ 177,426	\$ 35,729
17								
18	NET OPERATING INCOME	\$ 575,858	\$ 294,615	\$ 61,754	\$ 146,824	\$ 36,534	\$ 26,888	\$ 9,244
19								
20	GROSS PLANT IN SERVICE	\$ 14,123,637	\$ 7,352,563	\$ 1,562,544	\$ 3,505,018	\$ 845,473	\$ 596,896	\$ 261,144
21	RESERVES FOR DEPRECIATION	\$ 5,937,666	\$ 3,112,141	\$ 660,658	\$ 1,452,001	\$ 346,466	\$ 243,881	\$ 122,519
22								
23	NET PLANT IN SERVICE	\$ 8,185,971	\$ 4,240,422	\$ 901,886	\$ 2,053,017	\$ 499,007	\$ 353,014	\$ 138,625
24								
25	MATERIALS & SUPPLIES - FUEL	\$ 371,450	\$ 139,979	\$ 35,965	\$ 117,326	\$ 37,157	\$ 39,142	\$ 1,881
26	MATERIALS & SUPPLIES -LOCAL	\$ 45,574	\$ 28,896	\$ 5,327	\$ 7,875	\$ 1,575	\$ 1	\$ 1,900
27	CASH WORKING CAPITAL	\$ 25,804	\$ 11,223	\$ 2,593	\$ 7,368	\$ 2,232	\$ 2,093	\$ 296
28	CUSTOMER ADVANCES & DEPOSITS	\$ (19,537)	\$ (23)	\$ (16,017)	\$ (3,498)	\$ -	\$ -	\$ -
29	ACCUMULATED DEFERRED INCOME TAXES	\$ (1,799,209)	\$ (936,408)	\$ (199,459)	\$ (445,761)	\$ (107,929)	\$ (76,274)	\$ (33,377)
30								
31	TOTAL NET ORIGINAL COST RATE BASE	\$ 6,810,054	\$ 3,484,089	\$ 730,296	\$ 1,736,328	\$ 432,042	\$ 317,976	\$ 109,324
32								
33	RATE OF RETURN	8.456%	8.456%	8.456%	8.456%	8.456%	8.456%	8.456%

AmerenUE  
**MISSOURI ELECTRIC OPERATIONS**  
**CLASS COST OF SERVICE ALLOCATION STUDY**  
**UNBUNDLED ANALYSIS**

**TITLE: CCOS SUMMARY EQUAL ROR - UNBUNDLED (\$000'S)**

	<u>MISSOURI</u>	<u>RESIDENTIAL</u>	<u>SMALL GEN SERV</u>	<u>LARGE G.S. / SMALL PRIMARY</u>	<u>LARGE PRIMARY</u>	<u>LARGE TRANS</u>	<u>LIGHTING</u>
<u>Base Revenues</u>							
Customer	\$ 270,952	\$ 219,679	\$ 32,172	\$ 11,600	\$ 394	\$ 25	\$ 7,082
Production - Demand	\$ 953,823	\$ 445,959	\$ 102,969	\$ 271,342	\$ 68,125	\$ 58,494	\$ 6,935
Production - Energy	\$ 893,325	\$ 336,576	\$ 86,349	\$ 282,269	\$ 89,228	\$ 93,984	\$ 4,918
Transmission - Demand	\$ 91,982	\$ 42,833	\$ 9,073	\$ 25,811	\$ 6,860	\$ 6,974	\$ 431
Distribution - Demand	\$ 490,971	\$ 259,793	\$ 53,253	\$ 124,379	\$ 30,540	\$ 3	\$ 23,003
	\$ 2,701,053	\$ 1,304,840	\$ 283,817	\$ 715,401	\$ 195,146	\$ 159,480	\$ 42,370