EXHIBIT

Exhibit No.:	
Issue(s):	Class Cost of Service/ Rate Design
Witness/Type of Exhibit:	Meisenheimer/Direct
Sponsoring Party:	Public Counsel
Case No.:	ER-2008-0318

DIRECT TESTIMONY

OF

BARBARA A. MEISENHEIMER

Submitted on Behalf of
the Office of the Public Counsel

UNION ELECTRIC COMPANY D/B/A AMERENUE

Case No. ER-2008-0318

September 11, 2008

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 Service Provided to Customers in the Company's Missouri Service Area.	)))))	**Case No. ER-2008-0318**

AFFIDAVIT OF BARBARA A. MEISENHEIMER

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Barbara A. Meisenheimer, of lawful age and being first duly sworn, deposes and states:

1. My name is Barbara A. Meisenheimer. I am a Chief Utility Economist for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my direct testimony.

3. I hereby swear and affirm that my statements contained in the attached affidavit are true and correct to the best of my knowledge and belief.

Barbara A. Meisenheimer

Subscribed and sworn to me this 11th day of September 2008.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

KENDELLE R. SEIDNER
My Commission Expires
February 4, 2011
Cole County
Commission #07004782

Kendelle R. Seidner
Notary Public

My commission expires February 4, 2011.

AmerenUE

ER-2008-0318

**Direct Testimony
of
Barbara Meisenheimer**

Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.

A. Barbara A. Meisenheimer, Chief Utility Economist, Office of the Public Counsel, P. O. 2230, Jefferson City, Missouri 65102. I am also an adjunct instructor for William Woods University.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL AND EMPLOYMENT BACKGROUND.

A. I hold a Bachelor of Science degree in Mathematics from the University of Missouri-Columbia (UMC) and have completed the comprehensive exams for a Ph.D. in Economics from the same institution. My two fields of study are Quantitative Economics and Industrial Organization. My outside field of study is Statistics. I have taught economics courses for the University of Missouri-Columbia, William Woods University, and Lincoln University, mathematics for the University of Missouri-Columbia and statistics for William Woods University.

Q. HAVE YOU TESTIFIED PREVIOUSLY BEFORE THE COMMISSION?

A. Yes, I have testified on numerous issues before the Missouri Public Service Commission. (PSC or Commission).

Q. WHAT IS YOUR PREVIOUS EXPERIENCE IN THE PREPARATION OF CLASS COST OF SERVICE STUDIES?

A. I have prepared and supervised the preparation of cost of service studies on behalf of Public Counsel for over eight years. These include class cost of service studies related to natural gas, water and electric utilities, and services cost studies related to telecommunications carriers.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my direct testimony is to present Public Counsel's production cost allocators. I provided these allocators to OPC witness Ryan Kind for use in OPC Class Cost of Service studies. The first is a traditional method of allocating production costs based on a weighting of average and peak demands. The second offers an alternative production allocator based on Time of Use (TOU), similar to the TOU Demand allocator I filed in KCP&L Case No. ER-2006-0314 and Ameren Case No. ER-2007-0002.

Q. WHICH CUSTOMER CLASSES ARE USED IN DEVELOPING YOUR PRODUCTION ALLOCATORS?

A. Both allocators are designed to apportion costs to a Residential Class (RG), a Small General Service Class (SGS), a blended Large General Service and Small Power Service Class (LGS/SPS), a Large Power Service Class (LPS) and a Large Transmission Class (LTS).

Q. ON WHAT DATA ARE YOUR ALLOCATORS BASED?

A. My allocators are based primarily on data provided by the Company and Staff including data related to investments and class and system peak demands and energy use.

Q. WHAT COSTS ARE INCLUDED IN PRODUCTION PLANT?

A. Production Plant includes the cost of land, structures and equipment used in connection with power generation.

Q. WHAT CONSIDERATIONS ARE IMPORTANT IN DEVELOPING ALLOCATORS TO APPORTION PRODUCTION PLANT COSTS?

A. Both demand and energy characteristics of a system's load are important determinants of production plant costs since production must satisfy both periods of normal use throughout the year and intermittent peak use.

Q. HOW DO YOUR ALLOCATORS REFLECT THESE USE CHARACTERISTICS?

A. One of my production allocators assigns Production Plant according to a composite allocator that has (1) a demand related component and (2) an energy related component. This method reflects peak demand using a 4 coincident peak component which is the average of the four highest system use hours. The method reflects normal use throughout the year using a measure of average energy use. For each customer class I develop a weighted allocator that includes the customer class's share of peak use (4CP) and average energy use. The weighting I used for the average energy component is called the "load factor" which is the proportion of average system use to total system use. One minus the load factor is the proportion of total system use associated with the remaining system peaking capacity so I used this as the weight assigned to peak use.

The alternative allocation method for production costs that I developed is a time of use method which assigns production costs to each hour of the year that the specific production occurs. The method then sums each class's share of hourly investments based on only those hours when the class actually uses the system. This method involves examining the production and demand for each hour of the year so it reflects both peak period use and average use throughout the year.

Q. REGARDING YOUR FIRST ALLOCATION METHOD, THE AVERAGE AND 4CP METHOD (A&4CP), IS A WEIGHTED AVERAGE AND COINCIDENT PEAK (A&CP) METHOD THAT ALLOWS DISCRETION IN SELECTION OF THE NUMBER OF COINCIDENT PEAKS AMONG THE NARUC-RECOGNIZED PRODUCTION CAPACITY COST ALLOCATION METHODS.

A. Yes. Part IV B. of the NARUC Electric Utility Cost Allocation Manual describes methods for developing energy weighted production plant cost allocations. Section 4 of Part IV discusses production cost allocations based on judgmental energy weightings. Page 57-59 of the NARUC Manual specifically recognizes weighted average and coincident peak methods where the coincident peak (CP) may be estimated based on more than one period of peak use. The Manual describes the method as follows:

> Some regulatory commissions, recognizing that energy loads are an important determinant of production plant costs, require the incorporation of judgmentally-established energy weightings into cost studies. One example is the "peak and average demand" allocator derived by adding together each class's contribution to the system peak demand (or to a specific group of system peak demands; e.g., the 12 monthly CPs) and its average demand. The allocator is effectively the average of the two numbers: class CP (however measured) and class average demand. Two variants of this allocation method are shown in Tables 4-14 and 4-15.

The Manual goes on to provide two examples of weighted methods, one based on average demand and a single period of coincident peak use (A&1CP) and another that incorporates average demand and 12 periods of peak use (A&12CP) in developing an allocator. I have included a copy of the relevant pages in Schedule 1 to this testimony.

I used an A&4CP method in calculating the production allocator. The 4CP I used to represent the peak portion of the allocator falls well within the number of peak periods recognized in the NARUC Manual. Also, as I described above, I used a measure of load factor (LF) as the weight assigned to the average portion of the allocator and used 1- LF as the weight assigned to the peak portion of the allocator. This is a common method of assigning weights used in the NARUC Manual.

Q. IS A 4CP REPRESENTATIVE OF THE PEAK DEMAND ON AMERENUE'S SYSTEM?

A. Yes. The 4CP is reasonably representative of the peak demand on AmerenUE's system. As illustrated in Table 1 the 4CP includes periods when demand was at or in excess of 85% of the system's maximum peak.[1]

Table 1

Coincident Peak (CP) @ Generation (Converterd to MWh)

	Residential	SGS	LGS & SPS	LPS	LTS	Lighting	Total	% System Peak
Jan-07	2859	666	1845	526	482	60	6438	75%
Feb-07	3092	624	1818	532	482	60	6608	76%
Mar-07	2402	520	1388	418	477	60	5264	61%
Apr-07	2118	622	1967	555	479	0	5741	66%
May-07	2127	842	2159	603	480	0	6211	72%
Jun-07	3101	882	2267	618	480	0	7347	85%
Jul-07	3438	894	2363	612	482	0	7790	90%
Aug-07	4174	978	2351	670	466	0	8638	100%
Sep-07	2962	976	2276	680	479	0	7373	85%
Oct-07	2417	888	2212	640	479	0	6635	77%
Nov-07	2135	505	1652	544	482	60	5378	62%
Dec-07	2393	620	1923	526	478	13	5954	69%

Q. WHY IS IT REASONABLE TO USE MULTIPLE PEAKS IN DEVELOPING THE MEASURE OF COINCIDENT PEAK USED IN THE PRODUCTION CAPACITY ALLOCATOR?

A. As illustrated in Table 2, a class's relative share of system demand may vary significantly. Using multiple measures of coincident peak reduces the likelihood of relying on an anomalous single peak as the basis of the allocator. In addition, the system is designed to meet a range of system demands and a class's relative share may vary in that range. I believe it is reasonable to include more than simply the highest single peak to reflect the class's relative share of system demand. Allowing for peaks in excess of 85-90% retains the conceptual focus on determining peak demand while also reflecting each class's relative share of variation in system peak demands.

<u>Table 2</u>

Share of Coincident Peak (CP) @ Generation (Converterd to MWh)

	Residential	SGS	LGS & SPS	LPS	LTS
Jun-07	42.21%	12.00%	30.85%	8.41%	6.53%
Jul-07	44.14%	11.48%	30.34%	7.86%	6.19%
Aug-07	48.32%	11.32%	27.22%	7.75%	5.39%
Sep-07	40.17%	13.24%	30.87%	9.22%	6.50%

Q. IS IT APPROPRIATE TO USE AN AVERAGE OF MULTIPLE PEAKS WHEN CALCULATING THE LOAD FACTOR TO USE IN DEVELOPING YOUR PRODUCTION CAPACITY ALLOCATOR?

A. Yes. Since the peak portion of my allocator is developed as an average of the four highest peaks it is consistent to use the same average of the four peaks when developing the load factor.

Q. PLEASE REVIEW YOUR SECOND PRODUCTION COST ALLOCATION METHOD.

A. The Time of Use method assigns production costs to each hour of the year that the specific production occurs. The method then sums each class' share of hourly investments based on only those hours when the class actually uses the system.

Q. DO YOU BELIEVE YOUR TIME OF USE METHOD IS CONSISTENT WITH THE METHOD DESCRIBED BY NARUC IN ITS 1992 ELECTRIC COST MANUAL?

A. Yes it is. The following is a description method from the NARUC manual which is consistent with the method I used to develop the time of use allocation.

> 4. Probability of Dispatch Method
>
> The probability of dispatch (POD) method is primarily a tool for analyzing cost of service by time periods. The method requires analyzing an actual or estimated hourly load curve for the utility and identifying the generating units that would normally be used to serve each hourly load. The annual revenue requirement of each generating unit is divided by the number of hours in the year that it operates, and that "per hour cost" is assigned to each hour that it runs. In allocating production plant costs to classes, the total cost for all units for each hour is allocated to the classes according to the KWH use in each hour. The total production plant cost allocated to each class is then obtained by summing the hourly cost over all hours of the year. These costs may then be recovered via an appropriate combination of demand and energy charges. It must be noted that this method has substantial input data and analysis requirements that

may make it prohibitively expensive for utilities that do not develop and maintain the required data.

Q. WHAT WAS YOUR SOURCE OF INFORMATION FOR THE HOURLY LOAD CURVE AND THE GENERATING UNITS THAT WOULD NORMALLY BE USED TO SERVE EACH HOURLY LOAD?

A. I obtained hourly system load information from the Staff. The Staff uses hourly system load information as an input into the Real Time model in order to determine fuel costs. The Real Time model simulates generation dispatch for each hour of the year including information for each generation plant that is in operation regarding the amount of generation in MW.

Q. HOW DID YOU SPREAD THE INVESTMENT COSTS OF THE GENERATING UNITS THAT WOULD NORMALLY BE USED TO SERVE EACH HOURLY LOAD?

A. I used Staff accounting information on net generation plant investments to determine a cost per MW for each plant. I then spread the plant investment cost to each hour by multiplying the per plant cost per MW by the per plant MW and summing for all plants in operation during the particular hour.

Q. HOW DID YOU THEN ALLOCATE THESE COSTS TO THE CUSTOMER CLASSES?

A. Based on hourly customer load information I apportioned each hour's total production costs to the customer classes based on each class's share of demand for each hour. In the final steps I summed each class's hourly portion of costs to determine the class's share of total costs.

Q. WHAT WAS THE SOURCE OF THE HOURLY CLASS LOADS USED IN THE DEVELOPMENT OF YOUR ALLOCATOR?

A. I used current class load data for weather sensitive customers provided to the Staff by the Company. Unfortunately, the current class load data was not weather normalized so I calculated the Time of Use allocator first with the current data and again with the weather normalized load data that I used in developing my Time of Use allocator in the previous case. I did not find a significant difference in the allocators resulting from the two runs. As shown in Table 3 below, the allocator results were very similar. To be conservative, I have chosen to use the TOU WN allocator that assigns greater proportion of costs to the Residential class.

Table 3

	RES	SGS	LGS	SPS	LPS	LTS
TOU not WN	36.8%	10.2%	21.4%	10.6%	10.7%	10.2%
TOU WN	37.6%	10.0%	21.9%	9.9%	10.5%	10.2%

Q. DO YOU VIEW THE TIME OF USE METHOD AS SUPERIOR TO OTHER PRODUCTION COST ALLOCATION METHODS?

Yes. Since it reflects costs and use for all hours of the year I believe it is superior to methods that allocate the total cost based in large part on usage in only a few peak hours. Allocators that overly focus on use in only a few peak hours unfairly over-allocate costs to the residential and small general service class because the capacity costs actually vary by hour depending on the plants in use. The particular pattern of use by each class over different hours of the year appropriately leads to a difference in overall average cost by class.

Q. HOW MUCH DIFFERENCE DOES THE TIME OF USE METHOD MAKE IN ALLOCATING PRODUCTION COSTS TO CLASSES?

A. It makes a significant difference to allocate production costs by matching production plant use to customer demand on an hourly basis. Table 4 illustrates the difference between my more limited A&4CP allocator and the Time of Use allocator.

Table 4

	RES	SGS	LGS & SPS	LPS	LTS
Ave&4CP Allocator	39.5%	10.7%	31.5%	9.8%	8.6%
TOU WN	37.6%	10.0%	31.7%	10.5%	10.2%

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

4. Judgmental Energy Weightings

Some regulatory commissions, recognizing that energy loads are an important determinant of production plant costs, require the incorporation of judgmentally-established energy weighting into cost studies. One example is the "peak and average demand" allocator derived by adding together each class's contribution to the system peak demand (or to a specified group of system peak demands; e.g., the 12 monthly CPs) and its average demand. The allocator is effectively the average of the two numbers: class CP (however measured) and class average demand. Two variants of this allocation method are shown in Tables 4-14 and 4-15.

TABLE 4-14

CLASS ALLOCATION FACTORS AND ALLOCATED PRODUCTION PLANT REVENUE REQUIREMENT USING THE 1 CP AND AVERAGE DEMAND METHOD

Rate Class	Demand Allocation Factor - 1 CP MW (Percent)	Demand-Related Production Plant Revenue Requirement	Avg. Demand (Total MWH) Allocation Factor	Energy-Related Production Plant Revenue Requirement	Total Class Production Plant Revenue Requirement
DOM	34.84	233,869,251	30.96	120,512,062	354,381,313
LSMP	37.25	250,020,306	33.87	131,822,415	381,842,722
LP	24.63	165,313,703	31.21	121,450,476	286,764,179
AG&P	3.29	22,078,048	3.22	12,545,108	34,623,156
SL	0.00	0	0.74	2,864,631	2,864,631
TOTAL	100.00	671,281,308	100.00	389,194,692	$1,060,476,000

Notes: The portion of the production plant classified as demand-related is calculated by dividing the annual system peak demand by the sum of (a) the annual system peak demand, Table 4-3, column 2, plus (b) the average system demand for the test year, Table 4-10A, column 3. Thus, the percentage classified as demand-related is equal to 13591/(13591+7880), or 63.30 percent. The percentage classified as energy-related is calculated similarly by dividing the average demand by the sum of the system peak demand and the average system demand. For the example, this percentage is 36.70 percent.

Some columns may not add to indicated totals due to rounding.

Schedule 1

TABLE 4-15

CLASS ALLOCATION FACTORS AND ALLOCATED PRODUCTION PLANT REVENUE REQUIREMENT USING THE 12 CP AND AVERAGE DEMAND METHOD

Rate Class	Demand Allocation Factor - 12 CP MW (Percent)	Demand-Related Production Plant Revenue	Average Demand (Total MWH) Allocation Factor	Energy-Related Production Plant Revenue Requirement	Total Class Production Plant Revenue Requirement
DOM	32.09	198,081,400	30.96	137,226,133	335,307,533
LSMP	38.43	237,225,254	33.87	150,105,143	387,330,397
LP	26.71	164,899,110	31.21	138,294,697	303,193,807
AG&P	2.42	14,960,151	3.22	14,285,015	29,245,167
SL	0.35	2,137,164	0.74	3,261,933	5,399,097
TOTAL	100.00	617,303,080	100.00	443,172,920	$1,060,476,000

Notes: The portion of production plant classified as demand-related is calculated by dividing the annual system peak demand by the sum of the 12 monthly system coincident peaks (Table 4-3, column 4) by the sum of that value plus the system average demand (Table 4-10A, column 3). Thus, for example, the percentage classified as demand-related is equal to 10976/(10976+7880), or 58.21 percent. The percentage classified as energy-related is calculated similarly by dividing the average demand by the sum of the average demand and the average of the twelve monthly peak demands. For the example, 41.79 percent of production plant revenue requirements are classified as energy-related.

Another variant of the peak and average demand method bases the production plant cost allocators on the 12 monthly CPs and average demand, with 1/13th of production plant classified as energy-related and allocated on the basis of the classes' KWH use or average demand, and the remaining 12/13ths classified as demand-related. The resulting allocation factors and allocations of revenue responsibility are shown in Table 4-16 for the example data.

TABLE 4-16

CLASS ALLOCATION FACTORS AND ALLOCATED PRODUCTION PLANT REVENUE REQUIREMENT USING THE 12 CP AND 1/13TH WEIGHTED AVERAGE DEMAND METHOD

Rate	Demand Allocation Factor - 12 CP MW (Percent)	Demand-Related Production Plant Revenue Requirement	Average Demand (Total MWH) Allocation Factor	Energy-Related Production Plant Revenue Requirement	Total Class Production Plant Revenue Requirement
DOM	32.09	314,111,612	30.96	25,259,288	339,370,900
LSMP	38.43	376,184,775	33.87	27,629,934	403,814,709
LP	26.71	261,492,120	31.21	25,455,979	286,948,099
AG&P	2.42	23,723,364	3.22	2,629,450	26,352,815
SL	0.35	3,389,052	0.74	600,426	3,989,478
TOTAL	100.00	978,900,923	100.00	81,575,077	$1,060,476,000

Notes: Using this method, 12/13ths (92.31 percent) of production plant revenue requirement is classified as demand-related and allocated using the 12 CP allocation factor, and 1/13th (7.69 percent) is classified as energy-related and allocated on the basis of total energy consumption or average demand.

Some columns may not add to indicated totals due to rounding.

C. Time-Differentiated Embedded Cost of Service Methods

Time-differentiated cost of service methods allocate production plant costs to baseload and peak hours, and perhaps to intermediate hours. These cost of service methods can also be easily used to allocate production plant costs to classes without specifically identifying allocation to time periods. Methods discussed briefly here include production stacking methods, system planning approaches, the base-intermediate-peak method, the LOLP production cost method, and the probability of dispatch method.

1. Production Stacking Methods

Objective: The cost of service analyst can use production stacking methods to determine the amount of production plant costs to classify as energy-related and to determine appropriate cost allocations to on-peak and off-peak periods. The basic