EXHIBIT

Exhibit No.:	307
Issue(s):	Production Allocators
Witness/Type of Exhibit:	Meisenheimer/Direct
Sponsoring Party:	Public Counsel
Case No.:	ER-2010-0036

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-2010-0036

January 6, 2010

OPC Exhibit No. 307
Date 3/26/10 Reporter OF
File No. ER-2010-0036

307

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-2010-0036**

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 6th day of January 2010.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI
SHYLAH C. BROSSIER
My Commission Expires
June 8, 2013
Cole County
Commission #09812742

Shylah C. Brossier
Notary Public

My commission expires June 8th, 2013.

AmerenUE

ER-2010-0036

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. Box 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. 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 peak 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"

> 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.

determining peak demand while also reflecting each class's relative share of variation in system peak demands.

Table 2

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

	Residential	SGS	LGS & SPS	LPS	LTS	Lighting
Jun-08	43.43%	10.90%	30.68%	8.38%	6.61%	0.00%
Jul-08	46.90%	10.58%	28.76%	7.76%	6.00%	0.00%
Aug-08	48.44%	10.40%	27.70%	7.64%	5.82%	0.00%
Sep-08	41.79%	12.43%	30.36%	8.70%	6.73%	0.00%

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

Q. WHAT MODIFICATIONS DID PUBLIC COUNSEL MAKE TO THE STAFF'S INPUTS FOR THE REALTIME MODEL RUN?

A. The Staff's inputs included only aggregate load data. I developed disaggregated customer class load data based on information provided in the Company's workpapers. This modification has no substantive impact on the model results but facilitates a matching between hourly MW generation by plant and hourly demand by customer class. Public Counsel's second modification was to conduct runs of the model using a model function that conducts off-system sales when production is not constrained and the revenue generated from a non-firm off-system sale exceeds the cost of the sale.

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 production and summing for all plants in operation during the particular hour.

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

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

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 4-16

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