

**EXHIBIT**

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**Issue(s):**

**Witness/Type of Exhibit:**

**Sponsoring Party:**

**Case No.:**

Cost of Service  
& Rate Design

Meisenheimer/Direct

Public Counsel

ER-2006-0314

**FILED**

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**DIRECT TESTIMONY**

Missouri Public  
Service Commission

**OF**

**BARBARA A. MEISENHEIMER**

Submitted on Behalf of the Office of the Public Counsel

**KANSAS CITY POWER & LIGHT COMPANY**

CASE NO. ER-2006-0314

August 22, 2006

*CPC* Exhibit No. 206  
Case No(s) ER-2006-0314  
Date 12-16-06 Rptr 45

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

In the Matter of the Application of Kansas )  
City Power & Light Company for )  
Approval to Make Certain Changes in its ) **ER-2006-0314**  
Charges for Electric Service to Begin the )  
Implementation of Its Regulatory Plan )

**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 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 consisting of 13 pages, schedule BAM Direct pages 1-3, and schedule BAM Direct TOU pages 1-2.
3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.

  
**Barbara A. Meisenheimer**

Subscribed and sworn to me this 22nd day of August 2006.



JERENE A. BUCKMAN  
My Commission Expires  
August 10, 2009  
Cole County  
Commission #05754038

  
**Jerene A. Buckman**  
Notary Public

My Commission expires August 10, 2009.

**Kansas City Power & Light  
Class Cost of Service and Rate Design**

**ER-2006-0314**

**Direct Testimony  
of  
Barbara Meisenheimer**

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

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

5   **Q.**    PLEASE SUMMARIZE YOUR EDUCATIONAL AND EMPLOYMENT BACKGROUND.

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

13   **Q.**    HAVE YOU TESTIFIED PREVIOUSLY BEFORE THE COMMISSION?

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

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

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

7   **Q.    WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

8    A.    The purpose of my direct testimony is to present Public Counsel's Class Cost of  
9       Service (CCOS) study results and preliminary inter-class rate design  
10      recommendations. I have prepared two CCOS studies. The first study uses the  
11      same method of allocating energy and demand related costs as I have used in  
12      recent cases before the Commission including the Aquila rate design proceeding  
13      EO-2002-384. The second CCOS study illustrates the results of replacing our  
14      traditional allocators with new allocators based on Time of Use (TOU).

15      The results of the traditional study are provided in Schedule BAM-DIR Page 1.  
16      Illustrative rate design examples associated with the traditional allocators are  
17      provided in Schedule BAM-DIR Page 2. The TOU cost of service study results  
18      are provided in Schedule BAM-DIR TOU Page 1. Corresponding illustrative rate  
19      design examples are provided in Schedule BAM-DIR TOU Page 2. The  
20      illustrative rate design examples are based primarily on the cost developed in  
21      these studies. Other important considerations related to setting just and  
22      reasonable rates are discussed later in this testimony.

23

1    **I.      CLASS COST OF SERVICE STUDY**

2    **Q.      WHAT IS THE MAIN PURPOSE OF PERFORMING A CCOS STUDY?**

3    A.      The primary purpose of a CCOS study is to determine the relative class cost  
4           responsibility for each customer class by allocating costs among the classes based  
5           on principles of cost causation. CCOS study results also provide guidance for  
6           determining how rates (e.g., customer charges) should be designed to collect  
7           revenues from customers within a class, depending on customer usage levels and  
8           patterns of use.

9    **Q.      WHAT IS THE RELATIVE IMPORTANCE OF CCOS STUDY RESULTS IN DEVELOPING**  
10           **RATE DESIGN?**

11   A.      CCOS study results provide the Commission with a general guide in setting the  
12           just and reasonable rate for the provision of service based on costs. In addition,  
13           other factors are also relevant considerations when setting rates including the  
14           value of a service, affordability, rate impact, rate continuity, etc. A determination  
15           as to the particular manner in which the results of a cost of service study and all  
16           the other factors are balanced in setting rates can only be determined on a case-  
17           by-case basis.

18   **Q.      PLEASE OUTLINE THE BASIC ELEMENTS OF PREPARING A CCOS STUDY.**

19   A.      A CCOS Study is designed to functionalize, classify, and allocate costs.  
20           Functionalizing costs involves categorizing accounts by the type of electric utility  
21           function(s) with which each account is associated. The categories of accounts  
22           include Production, Transmission, Distribution, Customer Accounts,  
23           Administrative and General, etc.

1       The next step is to classify costs as customer related, demand related, commodity  
2       related, or "other" costs. Customer related costs vary in relation to the number of  
3       customers. Demand related costs vary with usage during different periods such as  
4       peak and average load periods. Commodity related costs vary with annual energy  
5       consumption. For example, the cost associated with customer records and  
6       collection expense, meter plant, and meter reading expense are considered to be  
7       customer-related because they vary primarily based on the number of customers  
8       served and might occur whether or not the customer uses any electricity.

9       The final step in the CCOS is to develop and apply allocation factors that  
10      apportion a reasonable share of jurisdictional costs to each customer class.  
11      Allocation factors should be developed in a manner that is consistent with the  
12      functionalization and classification of costs described above. For example,  
13      unweighted customer related cost allocation factors are expressed as ratios that  
14      reflect the proportion of customers in a particular class to the total number of  
15      customers that contribute to the causation of the relevant cost. Likewise, demand  
16      related allocators should reflect each class's use during specific time periods and  
17      commodity related allocators should reflect each class's annual consumption. In  
18      simpler terms, if the cost for a particular activity were thought of as a pie, then  
19      allocators would represent the size of the slices of the "cost" pie that each class  
20      would be assigned.

21   **Q.   WHICH CUSTOMER CLASSES ARE USED IN YOUR CCOS STUDIES?**

22   **A.**   For both studies of the KCP&L system, I used a Residential Class (RG), a Small  
23   General Service Class (SGS), a Medium General Service Class (MGS), a Large

1           General Service Class (LGS), a Large Power Service Class (LPS), a Special  
2           Contract Class (SC) and a Lighting Class (Lighting).

3   **Q.    ON WHAT DATA ARE YOUR CCOS STUDIES BASED?**

4   A.   My CCOS studies are based primarily on data provided by the Company and Staff  
5           including data related to investments, expenses and revenues, peak demand,  
6           customer counts and energy use.

7   **Q.    HOW IS INTANGIBLE PLANT ALLOCATED?**

8   A.   Intangible Plant (FERC Account No. 301) pertains to organization cost. It  
9           includes all fees paid to federal or state governments for the privilege of  
10          incorporation along with related expenditures. Generally, it should be allocated to  
11          each customer class according to the benefits each receives from the existence of  
12          this business, or according to the extent to which each class contributes to the  
13          overall cost of conducting the business. In past cases, I have applied a composite  
14          total cost of service allocator to Intangible Plant, however, since the impact is  
15          small I have used a Production 12 NCP A&P in order to narrow the issues the  
16          Commission will need to consider in this proceeding.

17   **Q.    HOW IS PRODUCTION PLANT ALLOCATED?**

18   A.   Production Plant includes the cost of land, structures and equipment used in  
19          connection with power generation. Both demand and energy characteristics of a  
20          system's loads are important determinants of production plant costs. I allocate the  
21          Production Plant according to (1) a demand related component and (2) an energy  
22          related component.

1 The traditional method creates a weighted 12-month non-coincident peak (NCP)  
2 average and peak demand allocator and an energy (kWh) allocator. Schedule  
3 BAM Direct page 3 shows the development of 12-month NCP average in peak  
4 demand allocator. The second allocation method TOU assigns demand related  
5 fixed plant investment and variable energy related costs to each hour. Summing a  
6 class' hourly assigned demand related plant investment and energy related  
7 variable costs results in the TOU based allocators I used in my second cost of  
8 service study provided in Schedule BAM-DIR TOU Page 1.

9 **Q. HOW DID YOU ALLOCATE TRANSMISSION PLANT?**

10 A. Transmission Plant includes the cost of land, structures and equipment used in  
11 connection with transmission operations. Transmission facilities are installed to  
12 provide reliable service throughout the year including periods of scheduled  
13 maintenance. It can also, at times, substitute for generation and can minimize the  
14 cost of generation facilities through the sales or purchases of power. Therefore,  
15 Transmission Plant costs can be equitably allocated on the same basis as the  
16 Production Plant. Accordingly, I chose to use the same 12-month NCP average  
17 and peak allocators in the first study and TOU allocators that I used for  
18 Production Plant to allocate Transmission Plant.

19 **Q. HOW DID YOU ALLOCATE DISTRIBUTION PLANT?**

20 A. Distribution Plant includes the cost of land, structures and equipment used in  
21 connection with distribution operations. Distribution plant equipment reduces  
22 high-voltage energy from the transmission system to lower voltages, delivers it to  
23 the customer and monitors the amounts of energy used by the customer. Many of



1 the distribution costs associated with providing service to electric utility  
2 customers are not directly associated with or reasonable assignable to a particular  
3 class with precision. For example, with the exception of service drops and  
4 meters, most of the facilities between the utility customer's point-of-service and  
5 the distribution substation are shared facilities. Since no portion of such facilities  
6 are directly related to the number of customers, the associated costs are best  
7 classified as demand related, rather than customer related.

8 In the functionalization and allocation of Distribution Plant, my studies reflect  
9 that distribution facilities provide service at two voltage levels: primary and  
10 secondary, and that some large industrial customers may choose to take service at  
11 primary voltages because of their large electrical requirements. Different  
12 allocation factors were used for allocating costs at different levels of the  
13 distribution system. I am seeking additional information from the Company and  
14 may revise the allocation weights used to apportion the primary and secondary  
15 plant costs for FERC Accounts 364-368.

16 **Q. HOW DID YOU ALLOCATE METER RELATED FACILITIES?**

17 A. Meter facilities costs are generally related to each individual customer. New  
18 investment occurs when a new customer is added to the system. Therefore, meter  
19 costs are usually classified as customer related. I allocated meter costs based on  
20 the Company's meter allocator.

21 **Q. HOW DID YOU ALLOCATE SERVICE RELATED FACILITIES?**

22 Service facilities are classified as customer related. The Company conducted a  
23 study of service costs, however, the Company chose not to use the 2005 results. I

1 have used the 2005 results. Since primary customers take service directly at  
2 primary voltages, no cost of service lines were allocated to the Primary class.

3 The functional categories and classifications for Distribution Plant are as follows:

4	360-362 Distribution Substations	Demand at Primary Station
5	364 Poles Towers and Fixtures	Demand at Primary and
6		Customer and Demand at
7		Secondary
8	365 Overhead Conductors & Devices	Demand at Primary and
9		Customer and Demand at
10		Secondary
11	366 Underground Conduit	Demand at Primary and
12		Customer and Demand at
13		Secondary
14	367 Underground Conductors & Devices	Demand at Primary and
15		Customer and Demand at
16		Secondary
17	368 Line Transformers	Transformer Demand
18		
19	369 Services	Services Study Results
20		
21	370 Meters	Meter Study Results
22		

23 **Q. HOW DID YOU ALLOCATE GENERAL PLANT?**

24 A. General Plant includes land, structures and equipment used in support of  
25 Production, Transmission and Distribution Plant. Therefore, it was allocated  
26 using a composite allocator based on previously allocated gross non-general plant.

27 **Q. PLEASE DISCUSS THE METHODS THAT YOU USED TO ALLOCATE EXPENSES.**

28 A. For the expenses that could not be directly assigned, consistent with the principle  
29 that "expenses follow plant", the allocators that were applied to the expenses  
30 accounts were the same as those applied to the Production, Transmission, and  
31 Distribution Plant accounts to which the expenses are related.

1   **Q.    HOW DID YOU ALLOCATE POWER PRODUCTION EXPENSES?**

2    A.    Power Production Expenses were broken down into demand-related and energy-  
3           related production and purchased power costs. The demand-related expenses  
4           were allocated based on the 12-month NCP average and peak allocators in my  
5           traditional study and on the demand related TOU allocator in my second study.  
6           The energy-related expenses were allocated based on kWhs at generation in my  
7           traditional study and on an energy relate TOU allocator in my second study.

8   **Q.    HOW WERE TRANSMISSION EXPENSES ALLOCATED?**

9    A.    Transmission Expenses were allocated according to the "expenses follow plant"  
10          principle. The allocators applied to transmission expenses were the same as those  
11          I applied to transmission plant.

12   **Q.    HOW WERE DISTRIBUTION EXPENSES ALLOCATED?**

13   A.    Distribution Expenses were allocated according to the "expenses follow plant"  
14          principle. The allocators applied to distribution expenses were the same as those I  
15          applied to the plant associated with those expenses. For expenses that are not  
16          associated with any particular category of distribution plant, such as supervision  
17          and engineering, I used an aggregate distribution expense allocator based on the  
18          sum of the primary portion of Accounts 364-368.

19   **Q.    HOW DID YOU ALLOCATE CUSTOMER ACCOUNTS EXPENSES?**

20   A.    I allocated most Account Expense Accounts to all customer classes based on  
21          unweighted customer numbers. I used weighted meter reading allocators for  
22          Meter Reading (Account 902). I used total cost of service to allocate  
23          Uncollectible Accounts (Account 904) consistent with uncollectibles being a

1 normal cost of doing business which is discussed as one position recognized in  
2 the NARUC Electric Cost Allocation manual.

3 **Q. HOW DID YOU ALLOCATE CUSTOMER SERVICE EXPENSES AND SALES EXPENSES?**

4 A. Customer Service Expenses including Accounts 907, 908, 909 and 910 were  
5 allocated to all customers based on a labor related allocator. Customer Sales  
6 Expenses including Accounts 911, 912, 913 and 916 were allocated to all  
7 customer classes based on overall cost of service.

8 **Q. HOW ARE ADMINISTRATIVE AND GENERAL (A & G) EXPENSES ALLOCATED?**

9 A. Property Insurance expense (Account 924) was allocated on the basis of gross  
10 plant. The remaining A & G accounts were allocated on payroll.

11 **Q. HOW DID YOU ALLOCATE PROPERTY TAXES?**

12 A. I allocated property taxes on the basis of allocated total gross plant.

13 **Q. HOW DID YOU ALLOCATE STATE AND FEDERAL INCOME TAXES?**

14 A. These taxes were allocated on the basis of rate base since a utility company's  
15 income taxes will be a function of the size of its rate base, and thus each class  
16 should contribute revenues for income taxes in proportion with the amount of rate  
17 base that is necessary to serve it.

18 **Q. PLEASE DESCRIBE THE RESULTS OF PUBLIC COUNSEL'S CLASS COSS STUDY.**

19 A. Schedule BAM-DIR Page 1 and Schedule BAM-DIR TOU Page 1 show the  
20 results of Public Counsel's Class COS Studies. Since a CCOS study is designed  
21 to determine the relative cost responsibility of customer classes, the results are  
22 based on the assumption that total company revenues remain constant. Line 14 of

1 each schedule shows the current revenue percentage by class. Line 16 of each  
2 schedule shows the change in class revenue percentage to achieve equalized rates  
3 of return. The study results show that the Residential class is from just below to  
4 a few percent above cost of service. The SGS, MGS and to a lesser extent the  
5 LGS class are above cost. The SC, LP and Lighting classes, on the other hand,  
6 are below cost of service.

7 **Q. DID YOU PERFORM ANY ANALYSIS OF THE CUSTOMER-RELATED COSTS THAT ARE**  
8 **ATTRIBUTABLE TO THE TYPICAL RESIDENTIAL CUSTOMER?**

9 A. Yes, I did. I included costs that are related to services, meters, meter installations,  
10 and customer accounts expenses. The costs associated with services, meters, and  
11 meter installations include the return on rate base for the relevant plant accounts,  
12 distribution operation and maintenance expenses associated with services, meters,  
13 and meter installations, plus the depreciation expense, payroll benefits, and  
14 property taxes associated with services, meters, and regulators. Generally, these  
15 costs are used to recommend customer charge changes. I am not recommending  
16 changes to the customer charge in this testimony.

17 **II. RATE DESIGN**

18 **Q. HOW DO YOU RECOMMEND THAT THE COMMISSION ACCOMMODATE FACTORS**  
19 **SUCH AS AFFORDABILITY, RATE IMPACT, AND RATE CONTINUITY IN**  
20 **DETERMINING RATE DESIGN?**

21 A. Generally, I recommend that the Commission adopt a rate design that balances  
22 movement toward cost of service with rate impact and affordability  
23 considerations. To reach this balance, I believe that in cases where the existing

1 revenue structure departures greatly from the class cost of service, the  
2 Commission should impose, at a maximum, class revenue shifts equal to one half  
3 of the "revenue neutral shifts" indicated by Public Counsel's Class Cost of  
4 Service studies. Revenue neutral shifts are shifts that hold overall company  
5 revenue at the existing level but allow for the share attributed to each class to be  
6 adjusted to reflect the cost responsibility of the class. In addition to moving half  
7 way to the revenue neutral shifts, I recommend that if the Commission determines  
8 that an overall increase in revenue requirement is necessary in this case, then no  
9 customer class should receive a net decrease as the combined result of: (1) the  
10 revenue neutral shift that is applied to that class, and (2) the share of the total  
11 revenue increase that is applied to that class. Likewise, if the Commission  
12 determines that an overall decrease in revenue requirement is necessary, then no  
13 customer class should receive a net increase as the combined result of: (1) the  
14 revenue neutral shift that is applied to that class, and (2) the share of the total  
15 revenue decrease that is applied to that class.

16 **Q. HAVE YOU PROVIDED EXAMPLES OF THIS RATE DESIGN METHOD?**

17 **A.** Yes. In Schedule BAM-DIR Page 2 and Schedule BAM-Direct TOU Page 2, I  
18 have illustrated the steps described above. Line 9 shows half the revenue neutral  
19 shifts indicated by my CCOS study. On each schedule, lines 13 to 32 show  
20 examples of the combined impact of spreading among the classes either an  
21 increase or a decrease in revenue requirement and half the revenue neutral shift  
22 indicated by my CCOS studies. Line 26 shows the adjustment that insures that no  
23 class either receives an increase when others are receiving a decrease or receives a  
24 decrease when others receive an increase. This method promotes movement

1           toward cost of service while avoiding undue adverse impacts on any particular  
2           customer class.

3   **Q.   DO YOU ANTICIPATE A NEED TO UPDATE YOUR COST STUDY?**

4   A.   Yes. I understand that the Staff and Company are discussing possible adjustments  
5           to the accounting data that may affect class allocations . If the Staff's data  
6           changes, I will likely file supplemental direct testimony

7   **Q.   DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

8   A.   Yes.

ER-2006-0314

## KCP

## Summary of OPC Class Cost of Service Study Results

		TOTAL	Residential	Small GS	Medium GS	Large GS	LPS	SC - Gateway	Lighting
1	O & M EXPENSES	\$ 329,489,042	\$ 117,847,628	\$ 19,531,781	\$ 36,387,492	\$ 75,136,905	\$ 76,955,992	\$ 177,008	\$ 3,452,237
2	DEPREC. & AMORT. EXPENSE	\$ 51,472,027	\$ 19,520,457	\$ 3,860,979	\$ 5,751,821	\$ 11,033,349	\$ 10,486,285	\$ 26,328	\$ 792,808
3	TAXES	\$ (2,053,956)	\$ (372,336)	\$ (154,892)	\$ (270,987)	\$ (599,448)	\$ (681,720)	\$ (1,359)	\$ 26,786
4	OTHER OPERATING EXPENSE	\$ 113,204,428	\$ 36,657,632	\$ 6,245,284	\$ 13,258,480	\$ 27,735,369	\$ 28,109,837	\$ 67,295	\$ 1,130,531
5	Subtotal - Expenses and Taxes	\$ 492,111,541	\$ 173,653,381	\$ 29,483,152	\$ 55,126,806	\$ 113,306,175	\$ 114,870,395	\$ 269,271	\$ 5,402,362
6	TOTAL RATE BASE	\$ 1,042,994,653	\$ 408,590,203	\$ 70,904,088	\$ 115,517,236	\$ 222,567,714	\$ 210,846,937	\$ 533,357	\$ 14,035,117
7	IMPLICIT RATE OF RETURN	10.68%	10.68%	10.68%	10.68%	10.68%	10.68%	10.68%	10.68%
8	REQUIRED OPERATING INCOME TO EQUALIZE CLASS RATES OF RETURN	\$ 111,421,922	\$ 43,649,223	\$ 7,574,602	\$ 12,340,574	\$ 23,776,654	\$ 22,524,536	\$ 56,978	\$ 1,499,355
9	MISCELLANEOUS REVENUE CREDIT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
10	OTHER REVENUE	\$ 114,178,128	\$ 36,525,807	\$ 6,305,297	\$ 13,356,495	\$ 28,092,228	\$ 28,702,703	\$ 67,582	\$ 1,128,015
11	OFFSETTING REVENUES	\$ 114,178,128	\$ 36,525,807	\$ 6,305,297	\$ 13,356,495	\$ 28,092,228	\$ 28,702,703	\$ 67,582	\$ 1,128,015
12	REQ. OPER. INCOME LESS OFFSETTING REV.	\$ (2,756,206)	\$ 7,123,415	\$ 1,269,305	\$ (1,015,921)	\$ (4,315,575)	\$ (6,178,167)	\$ (10,604)	\$ 371,341
13	CURRENT RATE REVENUE	\$ 489,355,335	\$ 175,973,328	\$ 37,778,777	\$ 64,391,940	\$ 112,105,251	\$ 96,061,235	\$ 186,208	\$ 2,858,595
14	CURRENT REVENUE PERCENTAGES	100.00%	35.96%	7.72%	13.16%	22.91%	19.63%	0.04%	0.58%
15	RATE REVENUE EXCESS OR DEFICIENCY	\$ -	\$ 4,803,468	\$ (7,026,320)	\$ (10,281,055)	\$ (3,114,651)	\$ 12,630,993	\$ 72,459	\$ 2,915,107
16	RATE REVENUE % CHANGE TO EQUALIZE CLASS RATES OF RETURN	0.00%	2.73%	-18.60%	-15.97%	-2.78%	13.15%	38.91%	101.98%
17	REV. % WITH EQUALIZED ROR	100.00%	36.94%	6.28%	11.06%	22.27%	22.21%	0.05%	1.18%



## Summary of OPC Class Cost of Service Study Results

	Total	Residential	Small GS	Med GS	Large GS	LPS	SC - Gateway	Lighting
1 Revenue Neutral Shifts (RNS) to Equalize Class								
2 Rates of Return (ROR)	\$0	\$4,803,468	(\$7,026,320)	(\$10,281,055)	(\$3,114,651)	\$12,630,993	\$72,459	\$2,915,107
3 Percentage Revenue Change to Equalize Class ROR		2.73%	-18.60%	-15.97%	-2.78%	13.15%	38.91%	101.98%
4								
5 Current Class Revenue Percentages		35.96%	7.72%	13.16%	22.91%	19.63%	0.04%	0.58%
6								
7 COS Indicated Class Revenue Percentages	100.00%	36.94%	6.28%	11.06%	22.27%	22.21%	0.05%	1.18%
8								
9 OPC's Recommended Revenue Neutral Shifts	(0)	2,401,734	(3,513,160)	(5,140,528)	(1,557,326)	6,315,497	36,229	1,437,554
10 OPC Recommended Revenue Neutral Shift Percentage		1.36%	-9.30%	-7.93%	-1.39%	6.57%	19.46%	50.99%
11								
12 OPC's Recommended Revenue Percentages	100.00%	36.45%	7.00%	12.11%	22.59%	20.92%	0.05%	0.88%
13								
14 <u>Spread of Possible Rate Change</u>								
15 \$5 Million Rate Reduction	\$ (5,000,000)	\$ (1,822,552)	\$ (350,110)	\$ (605,403)	\$ (1,129,526)	\$ (1,046,037)	\$ (2,273)	\$ (44,100)
16 \$5 Million Rate Increase	\$ 5,000,000	\$ 1,822,552	\$ 350,110	\$ 605,403	\$ 1,129,526	\$ 1,046,037	\$ 2,273	\$ 44,100
17								
18 <u>Combined Impact of Revenue Decrease and OPC's RNS</u>								
19 Combined Impact \$5 Million Decrease and OPC Shifts	\$ (5,000,000)	\$ 379,182	\$ (3,863,270)	\$ (5,745,930)	\$ (2,686,852)	\$ 5,269,460	\$ 33,957	\$ 1,413,453
20 Combined Impact \$5 Million Increase and OPC Shifts	\$ 5,000,000	\$ 4,224,285	\$ (3,163,050)	\$ (4,535,125)	\$ (427,800)	\$ 7,361,533	\$ 38,502	\$ 1,501,654
21								
22 <u>Percentage Change in Class Rate Revenue</u>								
23 Combined Impact \$5 Million Decrease and OPC Shifts	-1.02%	0.32%	-10.23%	-8.92%	-2.40%	5.49%	18.24%	49.45%
24 Combined Impact \$5 Million Increase and OPC Shifts	1.02%	2.40%	-8.37%	-7.04%	-0.38%	7.66%	20.68%	52.53%
25								
26 <u>Adjusted Impact of Revenue Decrease and OPC's RNS</u>								
27 Combined Impact \$5 Million Decrease and OPC Shifts	\$ (5,000,000)	\$ -	\$ (1,570,939)	\$ (2,336,494)	\$ (1,092,567)	\$ -	\$ -	\$ -
28 Combined Impact \$5 Million Increase and OPC Shifts	\$ 5,000,000	\$ 1,609,132	\$ -	\$ -	\$ -	\$ 2,804,185	\$ 14,666	\$ 572,016
29								
30 <u>Adjusted Percentage Change in Class Rate Revenue</u>								
31 Combined Impact \$5 Million Decrease and OPC Shifts	-1.02%	0.00%	-4.16%	-3.63%	-0.97%	0.00%	0.00%	0.60%
32 Combined Impact \$5 Million Increase and OPC Shifts	1.02%	0.91%	0.00%	0.00%	0.00%	2.92%	7.88%	20.01%

Co Reported MO Sys LF = 62.4306%  
From MO DemandFactors Sheet

				NCP Demands											
		Energy incl Losses (MWh)	as % of total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Res MW	@ Gen	2635212	29.26%	481	484	393	326	606	791	880	804	706	376	472	550
SGS MW	@ Gen	484676	5.38%	92	79	73	69	91	108	114	116	100	84	81	84
MGS MW	@ Gen	1051642	11.68%	161	153	158	167	202	227	237	230	206	176	161	158
LGS MW	@ Gen	2293913	25.47%	378	358	328	322	383	406	413	414	391	343	341	373
LPS MW	@ Gen	2452842	27.24%	289	309	316	337	362	378	371	379	352	344	310	309
SPECIAL MW	@ Gen	5287	0.06%	1	1	1	1	1	1	1	1	1	1	1	1
LTG MW	@ Gen	82022	0.91%	19	19	19	19	19	19	19	19	19	19	19	19
SYS MW	@ Gen	9005595	100.00%	1420	1402	1288	1241	1663	1930	2035	1963	1774	1343	1385	1495
				7	8	11	12	5	3	1	2	4	10	9	6

				NCP Demands											
		Energy incl Losses (MWh)	as % of total	Jul	Aug	Jun	Sep	May	Dec	Jan	Feb	Nov	Oct	Mar	Apr
Res MW	@ Gen	2,635,212	29.26%	880	804	791	706	606	550	481	484	472	376	393	326
SGS MW	@ Gen	484,676	5.38%	114	116	108	100	91	84	92	79	81	84	73	69
MGS MW	@ Gen	1,051,642	11.68%	237	230	227	206	202	158	161	153	161	176	156	167
LGS MW	@ Gen	2,293,913	25.47%	413	414	406	391	383	373	378	358	341	343	328	322
LPS MW	@ Gen	2,452,842	27.24%	371	379	378	352	362	309	289	309	310	344	316	337
SPECIAL MW	@ Gen	5,287	0.06%	1	1	1	1	1	1	1	1	1	1	1	1
LTG MW	@ Gen	82,022	0.91%	19	19	19	19	19	19	19	19	19	19	19	19
SYS MW	@ Gen	9,005,595	100.00%	2035	1963	1930	1774	1663	1495	1420	1402	1385	1343	1288	1241
NCP Demands As Percent of Monthly Sum															
Res MW	@ Gen			43.23%	40.97%	40.99%	39.79%	36.45%	36.81%	33.85%	34.50%	34.10%	27.98%	30.54%	26.23%
SGS MW	@ Gen			5.61%	5.90%	5.61%	5.61%	5.45%	5.63%	6.47%	5.61%	5.85%	6.29%	5.68%	5.56%
				11.66%	11.74%	11.76%	11.64%	12.14%	10.60%	11.30%	10.93%	11.58%	13.08%	12.23%	13.44%
LGS MW	@ Gen			20.28%	21.06%	21.02%	22.01%	23.00%	24.96%	26.63%	25.51%	24.64%	25.53%	25.46%	25.98%
LPS MW	@ Gen			18.24%	19.30%	19.59%	19.82%	21.78%	20.67%	20.35%	22.04%	22.36%	25.62%	24.56%	27.18%
SPECIAL MW	@ Gen			0.05%	0.05%	0.05%	0.06%	0.05%	0.07%	0.07%	0.07%	0.07%	0.08%	0.07%	0.07%
LTG MW	@ Gen			0.93%	0.96%	0.98%	1.07%	1.14%	1.27%	1.33%	1.35%	1.37%	1.42%	1.47%	1.52%
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

				CP Demands											
		Month	@ Gen	Jul	Aug	Jun	Sep	May	Dec	Jan	Feb	Nov	Oct	Mar	Apr
SYS MW	@ Gen			1901	1814	1803	1538	1477	1372	1298	1269	1238	1186	1141	1077
Successive Cap Increments				88	10	265	61	105	74	29	31	53	44	64	1077
No of Months Occuring				1	2	3	4	5	6	7	8	9	10	11	12
				88	5	88	15	21	12	4	4	6	4	6	90
Capacity Increments in Month				344	256	251	162	147	126	114	110	106	100	96	90
as % of CP				18.07%	13.47%	13.19%	8.55%	7.74%	6.64%	5.95%	5.77%	5.57%	5.26%	5.03%	4.72%

Allocate shr by Mnthly NCP		P & A Allocator - 1
Sum	37.57%	32.38%
Products	5.74%	5.52%
Products	11.77%	11.71%
	22.89%	24.50%
	20.83%	24.83%
	0.06%	0.06%
	1.14%	1.06%

1 - Formula is: LF \* Energy Share + (1 - LF) \* Demand Share

## Summary of OPC Class Cost of Service Study Results

		TOTAL	Residential	Small GS	Medium GS	Large GS	LPS	SC - Gateway	Lighting
1	O & M EXPENSES	\$ 329,489,042	\$ 115,916,454	\$ 19,358,565	\$ 36,451,631	\$ 75,691,128	\$ 78,791,740	\$ 173,003	\$ 3,106,520
2	DEPREC. & AMORT. EXPENSE	\$ 51,472,027	\$ 18,609,146	\$ 3,815,639	\$ 5,735,266	\$ 11,299,770	\$ 11,232,606	\$ 25,672	\$ 753,927
3	TAXES	\$ (2,053,956)	\$ (291,220)	\$ (150,492)	\$ (269,982)	\$ (623,113)	\$ (749,351)	\$ (1,289)	\$ 31,491
4	OTHER OPERATING EXPENSE	\$ 113,204,428	\$ 33,729,834	\$ 6,099,635	\$ 13,205,269	\$ 28,591,311	\$ 30,507,513	\$ 65,189	\$ 1,005,677
5	Subtotal - Expenses and Taxes	\$ 492,111,541	\$ 167,964,214	\$ 29,123,348	\$ 55,122,184	\$ 114,959,095	\$ 119,782,509	\$ 262,575	\$ 4,897,615
6	TOTAL RATE BASE	\$ 1,042,994,653	\$ 391,740,786	\$ 70,079,588	\$ 115,193,382	\$ 227,495,483	\$ 224,600,346	\$ 521,699	\$ 13,363,369
7	IMPLICIT RATE OF RETURN	10.68%	10.68%	10.68%	10.68%	10.68%	10.68%	10.68%	10.68%
8	REQUIRED OPERATING INCOME TO EQUALIZE CLASS RATES OF RETURN	\$ 111,421,922	\$ 41,849,219	\$ 7,486,522	\$ 12,305,977	\$ 24,303,081	\$ 23,993,797	\$ 55,732	\$ 1,427,593
9	MISCELLANEOUS REVENUE CREDIT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
10	OTHER REVENUE	\$ 114,178,128	\$ 34,295,670	\$ 6,183,438	\$ 13,330,008	\$ 28,742,743	\$ 30,565,019	\$ 65,608	\$ 995,642
11	OFFSETTING REVENUES	\$ 114,178,128	\$ 34,295,670	\$ 6,183,438	\$ 13,330,008	\$ 28,742,743	\$ 30,565,019	\$ 65,608	\$ 995,642
12	REQ. OPER. INCOME LESS OFFSETTING REV.	\$ (2,756,206)	\$ 7,553,548	\$ 1,303,084	\$ (1,024,031)	\$ (4,439,662)	\$ (6,571,222)	\$ (9,875)	\$ 431,951
13	CURRENT RATE REVENUE	\$ 489,355,335	\$ 175,973,328	\$ 37,778,777	\$ 64,391,940	\$ 112,105,251	\$ 96,061,235	\$ 186,208	\$ 2,858,595
14	CURRENT REVENUE PERCENTAGES	100.00%	35.96%	7.72%	13.16%	22.91%	19.63%	0.04%	0.58%
15	RATE REVENUE EXCESS OR DEFICIENCY	\$ -	\$ (455,565)	\$ (7,352,345)	\$ (10,293,787)	\$ (1,585,818)	\$ 17,150,052	\$ 66,491	\$ 2,470,971
16	RATE REVENUE % CHANGE TO EQUALIZE CLASS RATES OF RETURN	0.00%	-0.26%	-19.46%	-15.99%	-1.41%	17.85%	35.71%	86.44%
17	REV. % WITH EQUALIZED ROR	100.00%	35.87%	6.22%	11.05%	22.58%	23.13%	0.05%	1.09%

## Summary of OPC Class Cost of Service Study Results

	Total	Residential	Small GS	Med GS	Large GS	LPS	SC - Gateway	Lighting	
1 Revenue Neutral Shifts (RNS) to Equalize Class									
2 Rates of Return (ROR)	(\$0)	(\$455,565)	(\$7,352,345)	(\$10,293,787)	(\$1,585,818)	\$17,150,052	\$66,491	\$2,470,971	
3 Percentage Revenue Change to Equalize Class ROR		-0.26%	-19.46%	-15.99%	-1.41%	17.83%	35.71%	\$6.44%	
4									
5 Current Class Revenue Percentages		35.96%	7.72%	13.16%	22.91%	19.63%	0.04%	0.58%	
6									
7 COS Indicated Class Revenue Percentages	100.00%	35.87%	6.22%	11.05%	22.58%	23.13%	0.05%	1.09%	
8									
9 OPC's Recommended Revenue Neutral Shifts	(\$0)	(\$237,783)	(\$3,676,172)	(\$5,146,893)	(\$792,909)	\$3,575,026	\$3,246	\$1,235,485	
10 OPC Recommended Revenue Neutral Shift Percentage		-0.13%	-9.73%	-7.99%	-0.71%	3.93%	17.33%	43.22%	
11									
12 OPC's Recommended Revenue Percentages	100.00%	35.91%	6.97%	12.11%	22.75%	21.38%	0.04%	0.84%	
13									
14 <u>Spread of Possible Rate Change</u>									
15 \$5 Million Rate Reduction	\$ (5,000,000)	\$ (1,795,684)	\$ (348,444)	\$ (605,338)	\$ (1,137,337)	\$ (1,069,124)	\$ (2,242)	\$ (41,831)	
16 \$5 Million Rate Increase	\$ 5,000,000	\$ 1,795,684	\$ 348,444	\$ 605,338	\$ 1,137,337	\$ 1,069,124	\$ 2,242	\$ 41,831	
17									
18 <u>Combined Impact of Revenue Decrease and OPC's RNS</u>									
19 Combined Impact \$5 Million Decrease and OPC Shifts	\$ (5,000,000)	\$ (2,023,467)	\$ (4,024,617)	\$ (5,752,231)	\$ (1,930,245)	\$ 7,505,903	\$ 31,003	\$ 1,193,654	
20 Combined Impact \$5 Million Increase and OPC Shifts	\$ 5,000,000	\$ 1,567,902	\$ (3,327,728)	\$ (4,541,556)	\$ 344,428	\$ 9,644,150	\$ 35,488	\$ 1,277,317	
21									
22 <u>Percentage Change in Class Rate Revenue</u>									
23 Combined Impact \$5 Million Decrease and OPC Shifts	-1.02%	-1.15%	-10.65%	-8.93%	-1.72%	7.81%	16.65%	41.76%	
24 Combined Impact \$5 Million Increase and OPC Shifts	1.02%	0.89%	-8.81%	-7.05%	0.31%	10.04%	19.06%	44.63%	
25									
26 <u>Adjusted Impact of Revenue Decrease and OPC's RNS</u>									
27 Combined Impact \$5 Million Decrease and OPC Shifts	\$ (5,000,000)	\$ (736,848)	\$ (1,465,569)	\$ (2,094,682)	\$ (702,901)	\$ -	\$ -	\$ -	#####
28 Combined Impact \$5 Million Increase and OPC Shifts	\$ 5,000,000	\$ 609,164	\$ -	\$ -	\$ 133,813	\$ 3,746,964	\$ 13,788	\$ 496,266	\$5,000,000
29									
30 <u>Adjusted Percentage Change in Class Rate Revenue</u>									
31 Combined Impact \$5 Million Decrease and OPC Shifts	-1.02%	-0.42%	-3.88%	-3.25%	-0.63%	0.00%	0.00%	0.00%	
32 Combined Impact \$5 Million Increase and OPC Shifts	1.02%	0.35%	0.00%	0.00%	0.12%	3.90%	7.40%	17.36%	