

Exhibit No.: Issue(s): Witness/Type of Exhibit: Sponsoring Party: Case No.:

Class Cost of Service Meisenheimer/Direct Public Counsel ER-2004-0570

DIRECT TESTIMONY

OF

BARBARA A. MEISENHEIMER

Submitted on Behalf of the Office of the Public Counsel

FILED DEC 2 8 2004

Missouri Public

THE EMPIRE DISTRICT ELECTRIC COMPANY CASE NO. ER-2004-0570 (Rate Design)

September 27, 2004

Case No(s). E.C. -2000 Date Dot Of Rptr

BEFORE THE PUBLIC SERVICE COMMISSION OF THE STATE OF MISSOURI

In the Matter of the tariff filing of The Empire District Electric Company to implement a general rate increase for retail electric service provided to customers in its Missouri service area.

Case No. ER-2004-0570

AFFIDAVIT OF BARBARA A. MEISENHEIMER

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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 pages 1 through 16 and Schedules 1 through 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 27th day of September 2004.



Bonnie Howard Notary Public

	DIRECT TESTIMONY
	OF
	BARBARA MEISENHEIMER
	CASE NO. ER-2004-0570
	EMPIRE DISTRICT ELECTRIC COMPANY
I.	INTRODUCTION
Q.	PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.
А.	Barbara A. Meisenheimer, Chief Utility Economist, Office of the Public Counsel
	(OPC or Public Counsel), P. O. Box 2230, Jefferson City, Missouri 65102. I am
	also employed as an adjunct Economics Instructor for William Woods University.
Q.	HAVE YOU TESTIFIED PREVIOUSLY IN THIS CASE?
A.	Yes, I filed direct testimony regarding revenue requirement issues on September
	20, 2004.
Q.	WHAT IS YOUR PREVIOUS EXPERIENCE IN THE PREPARATION OF PREPARING
	CLASS COST OF SERVICE STUDIES?
А.	I have prepared or supervised the preparation of Class Cost of Service Studies on
	behalf of Public Counsel for over eight years.
Q.	WHAT IS THE PURPOSE OF YOUR TESTIMONY?
	I. Q. A. Q. A. Q.

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A. The purpose of my direct testimony is to present Public Counsel's Class Cost of
 Service (CCOS) study results and preliminary inter-class class rate design
 recommendations.

II. <u>CLASS COST OF SERVICE STUDY</u>

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

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

12 Q. WHAT IS THE RELATIVE IMPORTANCE OF CCOS STUDY RESULTS IN DEVELOPING 13 RATE DESIGN?

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

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PLEASE OUTLINE THE BASIC ELEMENTS OF THE CCOS STUDY THAT YOU 0. PERFORMED FOR THIS CASE.

A CCOS Study is designed to functionalize, classify, and allocate costs. Α.

Functionalizing costs involves categorizing accounts by the type of electric utility functions with which each account is associated. The categories of accounts include Production, Transmission. Distribution, Customer Accounts, Administrative and General, etc.

The next step is to classify costs as customer related, demand related, commodity related, or "other" costs. Customer related costs vary in relation to the number of customers. Demand related costs vary with usage during different periods such as peak and average load periods. Commodity related costs vary with annual energy consumption. For example, the cost associated with customer records and collection expense, meter plant, and meter reading expense are considered to be 14 customer-related because they vary primarily based on the number of customers 15 served and might occur whether or not the customer uses any electricity.

16 The final step in the CCOS is to develop and apply allocation factors that 17 apportion a reasonable share of jurisdictional costs to each customer class. 18 Allocation factors should be developed in a manner that is consistent with the 19 functionalization and classification of costs described above. For example, 20 customer related cost allocation factors are expressed as ratios that reflect the 21 proportion of customers in a particular class to the total number of customers that 22 contribute to the causation of the relevant cost. Likewise, demand related 23 allocators should reflect each class's use during peak periods and commodity

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related allocators should reflect each class's annual consumption. In simpler terms, if the cost for a particular activity were thought of as a pie, then allocators would represent the size of the slices of "cost" pie that each class would be assigned.

Q. WHICH CUSTOMER CLASSES HAVE YOU USED IN YOUR CCOS STUDY?

A. I used a Residential Class (RG), a Small General Service Class (SGS) composed
of Commercial (CS), Commercial Small Heating (SH) and Feed Mill (PFM), a
Large General Service Class composed of General Power (GP) and Total Electric
Building (TEB), a Large Power Class (LP), a Special Contract Class (i. e.
Praxair), and a Class named "Other" that includes Municipal Street Lighting
(PSL), Private Lighting (PL), Special Lighting (SL), Electric Furnace (EF), and
other miscellaneous service classes.

13 Q. ON WHAT DATA IS YOUR CCOS STUDY BASED?

A. My CCOS study is based on accounting schedules filed by the Staff on September
20, 2004 for the test year ending December 31, 2003 updated through June 30,
2004. My allocation factors were based primarily on information obtained from
the Company. However, I used information from the Staff regarding updated
customer counts for developing updated customer related allocators.

19 Q. HOW WAS INTANGIBLE PLANT ALLOCATED?

A. Intangible Plant (FERC Account No. 301) pertains to organization cost. It
includes all fees paid to federal or state governments for the privilege of

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incorporation along with related expenditures. It should be allocated to each customer class according to the benefits each receives from the existence of this business, or according to the extent to which each class contributes to the overall cost of conducting the business. Therefore, I applied a composite total cost of service allocator to Intangible Plant.

6 Q. HOW WAS PRODUCTION PLANT ALLOCATED?

7 Production Plant includes the cost of land, structures and equipment used in Α. 8 connection with power generation. Both demand and energy characteristics of a 9 system's loads are important determinants of production plant costs. In previous 10 cases, the Commission had accepted the Time of Use (TOU) method as the most 11 reasonable method for allocating the production costs of serving various customer 12 classes. I allocate the Production Plant according to 12-month non-coincident 13 peak (NCP) average and peak allocators that I calculated. It is a reasonably close 14 approximation to the TOU method. The details of the calculation are provided in 15 Schedule BAM RD DIR-1.

16 Q. HOW DID YOU ALLOCATE TRANSMISSION PLANT?

A. Transmission Plant includes the cost of land, structures and equipment used in
connection with transmission operations. Transmission facilities are installed to
provide reliable service throughout the year including periods of scheduled
maintenance. It can also, at times, substitute for generation and can minimize the
cost of generation facilities through the sales or purchase of power. Therefore,
Transmission Plant costs can be equitably allocated on the same basis as the

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Production Plant. Accordingly, I chose to use the same 12-month NCP average and peak allocator that I used for Production Plant to allocate Transmission Plant.

0. HOW DID YOU ALLOCATE DISTRIBUTION PLANT?

4 A. Distribution Plant includes the cost of land, structures and equipment used in 5 connection with distribution operations. Distribution plant equipment reduces high-voltage energy from the transmission system to lower voltages, delivers it to 6 7 the customer and monitors the amounts of energy used by the customer. Many of 8 the distribution costs associated with providing service to electric utility 9 customers are not directly associated with or reasonable assignable to a particular 10class with precision. For example, with the exception of service drops and 11 meters, most of the facilities between the utility customer's point-of-service and 12 the distribution substation are shared facilities. Since, no portion of such facilities 13 are directly related to the number of customers the associated costs are best 14 classified as demand related, rather than customer related. Furthermore, since distribution systems are designed to meet more localized peak demand instead of 15 system-wide peak demand, such costs are best allocated based upon non-16 17 coincident peak demand.

In the functionalization and allocation of Distribution Plant, my study also reflects 19 that distribution facilities provide service at two voltage levels: primary and 20 secondary, and that some large industrial customers may choose to take service at primary voltages because of their large electrical requirements. Different

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allocation factors were used for allocating costs at different levels of the distribution system.

Meter facilities costs are generally related to each individual customer. New investment occurs when a new customer is added to the system. Therefore, meter costs are usually classified as customer related. Since large customers require large meters and some large customers use multiple meters, I allocated the meters account based upon meter numbers weighted by meter cost for different customer classes. Service facilities are also classified as customer related. I use Company data regarding the number of service drops updated with information from the Staff regarding customer counts. Since primary customers take service directly at primary voltages, no cost of service drops were allocated to the Primary class.

12 The functional categories for Distribution Plant are as follows:

360-36	52 Distribution Substations ¹	Demand at Primary Station
364	Poles Towers and Fixtures ²	Demand at Primary
		Demand at Secondary
365	Overhead Conductors & Devices ³	Demand at Primary
		Demand at Secondary
366	Underground Conduit	Demand at Primary
		Demand at Secondary
367	Underground Conductors & Devices	Demand at Primary
		Demand at Secondary
368	Line Transformers	Transformer Demand
369	Services	Weighted Customer Count
370	Meters	Weighted Meter Count
371	Installation on Customer Premises	Direct Assign to Industrial
373	St. Lighting & Signal Systems	Direct Assign to Lighting

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HOW DID YOU ALLOCATE GENERAL PLANT?

¹ A portion could be directly assigned to Praxair. ² A portion could be directly assigned to Praxair.

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1	A.	General Plant includes land, structures and equipment used in support of
2		Production, Transmission and Distribution Plant. Therefore, it was allocated
3		using a composite allocator based on previously allocated net non-general plant.
4	Q.	PLEASE DISCUSS THE METHODS THAT YOU USED TO ALLOCATE EXPENSES.
5	A.	Expenses were directly assigned if possible. For the expenses that could not be
6		directly assigned, consistent with the principle that "expenses follow plant", the
7		allocators that were applied to the expenses accounts were the same as those
8		applied to the Production, Transmission, and Distribution Plant accounts to which
9		the expenses are related.
10	Q.	HOW DID YOU ALLOCATE POWER PRODUCTION EXPENSES?
11	А.	Power Production Expenses were broken down into demand-related and energy-
12		related production and purchased power costs. The demand-related expenses
13		were allocated based on the 12-month NCP average and peak allocators. The
14	, ,	energy-related expenses were allocated based on kWhs at generation.
15	Q.	How were Transmission Expenses allocated?
16	А.	Transmission Expenses were allocated according to the "expenses follow plant"
17		principle. The allocators applied to transmission expenses were the same as those
18		I applied to the plant associated with those expenses.
19	Q.	HOW WERE DISTRIBUTION EXPENSES ALLOCATED?

³ A portion could be directly assigned to Praxair.

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A. Distribution Expenses were allocated according to the "expenses follow plant" principle. The allocators applied to distribution expenses were the same as those I applied to the plant associated with those expenses. For expenses that are not associated with any particular category of distribution plant, such as supervision and engineering, I used an allocator based on the corresponding allocated distribution expenses.

7 Q. HOW DID YOU ALLOCATE CUSTOMER ACCOUNTS EXPENSES?

A. I allocated Customer Records & Collections (Account 903) to all customer classes
based on unweighted customer numbers. I used data from the Company's study to
determine the allocators for Meter Reading (Account 902) and Uncollectible
Accounts (Account 904). The Company data was updated for Staff's updated line
counts.

13 Q. How did you allocate Customer Service Expenses and sales 14 Expenses?

A. Customer Assistance and Advertising Expenses (Account 913) were allocated to
all customer classes based on weighted customer numbers. Other customer
accounts were allocated to all customer classes based on unweighted customer
numbers. Demonstrating & Selling Expenses (Account 912) was allocated to the
industrial customer classes only. Supervision and miscellaneous sales accounts
were allocated to all customer classes based on the corresponding allocated
customer service or sales expenses.

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Q. HOW WERE ADMINISTRATIVE AND GENERAL (A & G) EXPENSES ALLOCATED?

2 Property Insurance expense (Account 924) was allocated on the basis of net plant A. 3 since this expense is linked to the amount of net plant already allocated to each 4 customer class. Maintenance of General Plant (Account 935) was allocated on 5 the basis of gross plant since this expense is linked to the amount of gross plant allocated to each customer class. Injuries and Damages and Employee Pensions 6 7 and Benefits (Accounts 925 and 926) are both payroll related expenses so I 8 allocated them on the basis of the amount of payroll expense that I had previously 9 allocated to each class. Rents (Account 931) were allocated based data from the 10 Company's study. I believe all of the remaining A & G accounts represent 11 expenditures that support the company's overall operation, so I have allocated 12 them based on each class' share of total cost of service.

13 Q. HOW DID YOU ALLOCATE PROPERTY AND PAYROLL TAXES?

14 A. I allocated property taxes on the basis of allocated total net plant and payroll taxes
15 on the basis of allocated payroll expenses.

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

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

PLEASE DESCRIBE THE RESULTS OF PUBLIC COUNSEL'S CLASS COS STUDY.

2 Schedule BAM RD DIR-2.1 shows the results of Public Counsel's Class COS A. 3 Study. Since a Class COS study is designed to determine the relative cost 4 responsibility of customer classes, Schedule BAM RD DJR-2.1 is based on the 5 assumption that total company revenues remain constant. Line 18 of this 6 schedule shows the current rate of return of each aggregated customer class. The 7 result shows that the Residential class and LGS (General Power and TEB) classes 8 are slightly above cost. The SGS (Commercial, Small Heating & Feed Mill) are 9 providing operating revenues well above their cost of service. Special Contract 10 (Praxair), Large Power and Other classes (Electronic Furnace, Misc and Other 11 Lighting) are providing lower rates of return than the system-wide average. Line 12 36 of Schedule BAM RD DIR-2.1 shows the percentage by which rate revenues 13 in each class would have to change in order to make all customer class rates of 14 return equal to the company's overall rate of return. Line 35 of Schedule BAM 15 RD DIR-2.1 shows the revenue shifts that would be needed to equalize class rates 16 of return. This information from lines 18, 35 and 36 of Schedule BAM RD DIR-17 2.1 is summarized below in Table 1.

1 Table 1 – COS Indicated Revenue Neutral Class Revenue Shifts

	TOTAL	Residential	SGS (Commercial, Small Heating & Feed Mill)	LGS (Gen Power & TEB)	Special Contract (Praxair)	Large Power	Other (Elec Furnace, Misc, & Ltg)
Class Rate of Return	9.29%	9.62%	13.16%	9.41%	-5.07%	6.01%	4.94%
Revenue Neutral Shift	(0)	(942,193)	(2,698,808)	(141,308)	799,997	2,447,56 2	534,750
%	0.00%	-0.84%	-8.62%	22%	33.04%	8.00%	12.391%

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III. RATE DESIGN RECOMMENDATIONS

Q. How do you recommend that the Commission accommodate factors such as affordability, rate impact, and rate continuity in determining rate design?

7 Generally, I recommend that the Commission adopt a rate design that balances A. 8 movement toward cost of service with rate impact and affordability 9 considerations. To reach this balance, I believe that in cases where the existing 10 revenue structure departures greatly from the class cost of service, the 11 Commission should impose, at a maximum, class revenue shifts equal to one half of the "revenue neutral shifts" indicated by Public Counsel's class cost of service 12 13 study. Revenue neutral shifts are shifts that hold overall company revenue at the existing level but allow for the share attributed to each class to be adjusted to 14 15 reflect the cost responsibility of the class. In addition to moving half way to the 16 revenue neutral shifts, I recommend that if the Commission determines that an

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1		overall increase in revenue requirement is necessary, then no customer class
2		should receive a net decrease as the combined result of: (1) the revenue neutral
3		shift that is applied to that class, and (2) the share of the total revenue increase
4		that is applied to that class. Likewise, if the Commission determines that an
5		overall decrease in revenue requirement is necessary, then no customer class
6		should receive a net increase as the combined result of: (1) the revenue neutral
7		shift that is applied to that class, and (2) the share of the total revenue decrease
8		that is applied to that class.
9	Q.	WHAT INTERCLASS RATE DESIGN CHANGES IS PUBLIC COUNSEL PROPOSING
10		BASED ON THE REVENUE SHIFTS NEEDED TO EQUALIZE CLASS RATES OF RETURN
11		INDICATED IN TABLE 1?
12	А.	I believe that it would be appropriate that a movement toward the cost of service
13		be implemented. Public Counsel's CCOS study indicated a class revenue
14		requirement decrease for the Residential, SGS and LGS classes and increases for
15		the Large Power, Special Contact and Other classes (PF, Misc & Lighting) class.
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16	Q.	ASSUMING NO CLASS WOULD RECEIVE A NET INCREASE FROM THE COMBINED
17		EFFECT OF REVENUE NEUTRAL SHIFTS AND A CHANGE IN OVERALL REVENUE
18		REQUIREMENT, WHAT REVENUE NEUTRAL SHIFTS DO YOU RECOMMEND?
19	A.	Public Counsel recommends a revenue neutral class revenue shift that moves
20		halfway toward each class's cost of service. These shifts are shown in line 9 of
21		Schedule BAM RD DIR-2.2. For example, Public Counsel's study indicated that,
22		on a revenue neutral basis, the revenues for the residential class would need to
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decrease by \$942,193 to bring its return down to the total system rate of return. However, Public Counsel is recommending that residential revenues be decreased by one-half that amount, or \$471,097.

4 Q. PLEASE DESCRIBE THE INFORMATION CONTAINED IN LINE 13 THROUGH LINE 32 5 OF SCHEDULE BAM RD DIR-2.22 AND EXPLAIN HOW IT WAS CALCULATED.

6 A. In Schedule BAM RD DIR-2.2, lines 13 to 32 show two examples of the 7 combined impact of spreading revenue requirement decrease amounts among the 8 customer classes and the revenue neutral class revenue shifts recommended by 9 Public Counsel. Lines 13 through 32 of the Schedule also illustrate how total 10company revenue requirement decreases are spread to the various customer 11 classes at approximately negative \$6 million and at negative \$3 million. The 12 spread of these total company revenue requirement changes is based on the 13 percentages that appear in line 11.

For each revenue requirement decrease, the combined impact was derived by adding each class' share of the overall revenue requirement decrease to the revenue neutral shifts that Public Counsel has recommended for each class.

17 Q. PLEASE SUMMARIZE PUBLIC COUNSEL'S RATE DESIGN METHODOLOGY FOR THE
18 CLASS REVENUE REQUIREMENTS THAT SHOULD GO ALONG WITH ANY CHANGE IN
19 OVERALL REVENUE REQUIREMENT THAT THE COMMISSION DETERMINES TO BE
20 REASONABLE IN THIS CASE.

A. In this testimony, I have proposed and illustrated the application of a method for
 determining class revenue requirements to accompany any change in the overall

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1		revenue requirement. This method could be utilized to calculate class revenue
2		requirements for any level of overall revenue requirement increase or reduction
3		that might be ultimately decided in this case. Schedule BAM RD DIR-2.2 shows
4		the result of applying Public Counsel's recommended method for determining
5		class revenue requirements at two different levels of revenue requirement increase
6		(negative \$6 million and negative \$3 million). The final results of applying
7		Public Counsel's method appear in lines 26 through 32 of Schedule BAM RD
8		DIR-2.2.
9	Q.	DID YOU PERFORM ANY ANALYSIS OF THE CUSTOMER-RELATED COSTS THAT
10		ARE ATTRIBUTABLE TO THE TYPICAL RESIDENTIAL CUSTOMER?
11	А.	Yes, my analysis showed the customer-related costs are \$11.66. The level of
12		these costs are one of the factors considered in the determination of a customer
13		charge level.
14	Q.	WHAT CATEGORIES OF COSTS ARE INCLUDED IN YOUR CUSTOMER CHARGE
15		ANALYSIS?
16	А.	I have included costs that are related to services, meters, meter installations, and
17		customer accounts expenses. The costs associated with services, meters, and
18		meter installations include the return on rate base for the relevant plant accounts,
19		distribution operation and maintenance expenses associated with services, meters,
20		and meter installations, plus the depreciation expense, payroll benefits, and
21		property taxes associated with services, meters, and regulators.

1 Q. Do you anticipate a need to update your cost study with new 2 Accounting data?

3 A. Yes. While I anticipate no change in methodology, I may need to update my
4 study to incorporate new data as it becomes available.

5 Q. DO YOU PLAN TO MAKE ADDITIONAL RATE DESIGN RECOMMENDATIONS IN THIS 6 PROCEEDING?

- 7 A. Yes. I may make additional recommendations by the delayed rate design
 8 testimony deadline.
- 10 **Q.** DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?
- 11 A. Yes.

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		January	February	March	April	May	June	July	August	September	October	November	December		
MO Ani	inual Energy					Weathe	r Normalized Mor	nthly NCP Dema	ands						
40.47% RG 1,5	70,086,262	470,913	469,478	486,934	354,141	357,315	383,890	424,803	479,206	468,846	276,859	312,278	432,881	4,917,543	
8.14% CB 3	15,869,227	74,919	81,666	74,199	60,782	81,587	95,352	87,960	96.177	92,854	79,397	59,148	71,436	955,477	
2.27% SH 8	88,077,613	23,164	26,092	21,359	15,528	16,307	17,930	18,125	25,898	20,405	15,710	15,260	20,677	236,453	
19.99% GP 77	75,767.869	141,723	142,654	139,363	130,329	158,960	170,558	180,381	185,221	175,704	163,451	156,300	153,759	1,898,403	
0.00% PF	0	1,961	1,904	2,040	2,033	1,863	2,256	2,415	2,290	2,352	2,277	2,115	1,732	25,237	
1.74% Prax 6	67.387.032	8.084	8.084	8,138	8.084	8.098	8.093	8,098	8.074	8.044	8,044	8,039	8,074	96,953	
8.80% TEB 34	41 355 911	82 523	76.192	71.851	59,746	63,630	68.058	66,180	72,888	72,446	63.637	67.374	77.500	842.025	
0.04% PFM	1.383.449	331	305	269	250	220	209	258	325	295	243	340	301	3.347	
17.67% LP 68	85 543 807	97 140	94 293	95 616	98 200	100 868	109 879	114 090	112 246	114,898	100.463	94,488	95,162	1.227.343	
0.02% MS	738 546	81	79	78	79	78	79	78	78	79	78	79	80	947	
0.87% SPL PL LS 3	33.839.009	10.746	9.549	9.316	10.777	12.354	15.604	15.369	12,596	10.932	9,711	9.361	8,841	135.157	
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100.00% Sum 3,8	380,048,725	911,584	910,298	909,162	739,949	801,280	871,908	917,757	994,998	966,856	719,872	724,780	870,442	10,338,885	
		1	2	3	4	5	6	7	8	9	10	11	12		
MO															
From Staff System	56.00%					Me	onthly Percentage	e of Monthly Su	m of NCP Dema	nds					
Factor"															
		51 66%	51 57%	53 56%	47 86%	44 59%	44.03%	46 29%	48 16%	48.49%	38 46%	43.09%	49.73%		
		8 22%	8 97%	8 16%	8 21%	10 18%	10.94%	9.58%	9.67%	9.60%	11.03%	8.16%	8.21%		
		2 54%	2 87%	2 35%	2 10%	2 04%	2.06%	1 97%	2 60%	2 11%	2 18%	2.11%	2.38%		
		15 55%	15.67%	15 33%	17.61%	19.84%	19.56%	19.65%	18 62%	18.17%	22.71%	21.57%	17 66%		
		0.22%	0.21%	0.22%	0.27%	0.23%	0.26%	0.26%	0.23%	0.24%	0.32%	0 29%	0.20%		
		0.22%	0.21%	0.2276	1.09%	1.01%	0.20%	0.88%	0.81%	0.83%	1 12%	1 11%	0.93%		
		0.05%	8 37%	7 90%	9.07%	7.04%	7 81%	7 71%	7 33%	7 49%	8 84%	9.30%	8 90%		
		0.04%	0.07%	0.03%	0.07 %	0.03%	0.02%	0.02%	0.03%	0.03%	0.03%	0.05%	0.03%		
		10.66%	10.0376	10.03%	12 37%	12 50%	10.02 /6	12 429/	11 29%	11 88%	13 96%	13.04%	10.03%		
		10.00 /0	0.00%	0.02%	0.01%	12.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.03%		
		1.10%	1.07%	1.009/	0.0170	1.549/	1.70%	0.01%	1.01/6	1 1 2 9/	1 25%	1 209/	1.00%		
		1, 10 %	1.00%	1.0270	1.40 %	1.04%	1.7976	1.07 %	1.21 70	1.1376	1.5576	1.2376	1.0270		
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		994,996	965,655	917,757	911,584	910,298	909,162	071,908	0/0,442	61220	15160	/24,/00	719,072	9.27	70 0.04
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		004/0	2	0057	4	5	6		0	CDIE	1517	445	50000	10.34	76 19.20
		28142	24549	205/	322	221	6209	209	0045	CI 00	1317	446	28398	0.24	70 U.11
		2.83%	2.47%	0.21%	0.03%	0.02%	0.62%	0.02%	0.87%	0.68%	0.15%	0.04%	6.03%	0.93	% 1.38°
		13.98%	11.15%	8.69%	8.48%	8.45%	8.43%	7.80%	7.78%	6.91%	6.23%	6.07%	6.03%	8.08	% 8.48
														0.03	% 0.03
			_			_		_	=					11.81	% 15.09
Sort Back to Original Order	′ .	<u> </u>	2	3	4	5	6	7		9			12	0.01	% 0.01
 Monthly Shares of Incre Demonstrate 	emental	8.48%	8.45%	8.43%	6.23%	6.91%	7.80%	8.69%	13.98%	11.15%	6.03%	6.07%	7,78%	1.30	% 1.06

Demands

1 The calculation involves ordering the monthly NCP Demands above, forming differences or increments of demand, then dividing those increments by the number of months in which they occur. Then calculating the percentages that the increments represent of the largest sum of NCP demands. The portions (percentages) occurring in each month are added together for each month to obtain the monthly shares of incremental demands.

2 Each class's NCP allocator is the sum of the products of the monthly shares of the incremental demands and the class's monthly percentages of the total CP demands for that month.

3 The NCP peak & average allocator is a weighted average of the annual energy usage fraction and the NCP allocator. It is equal to "Load Factor" * Energy Share + (1 - "Load Factor") * NCP Allocator

OPC CCOS Study Summary

	9/27/2004	TOTAL	Residential	SGS	LGS	Special Contract	Large Power	Other
				(Commercial, Small Heating, FM)	(Gen Power & TEB)	(Praxair)		(El Fumace*, Misc, & Ltg)
	O & M EXPENSES	153,322,527	68,535,956	17,072,479	40,531,481	2,117,321	22,832,579	2,232,711
2	2 DEPREC. & AMORT, EXPENSE	24,317,880	11,061,302	3,659,047	5,980,084	188,728	2,577,364	851,355
2	IAXES	25,070,276	11,928,662	2,960,893	6,399,361	216,789	2,865,723	698,846
5	TOTAL EXPENSES AND TAXES	202,710,683	91,525,920	23,692,419	52,910,927	2,522,838	28,275,667	3,782,912
7	CURRENT RATE REVENUE	244,826,669	112,292,660	31,316,710	63,894,793	2,421,236	30,585,036	4,316,234
8	OFFSETTING REVENUES:	14,244,773	6,510,399	1,623,366	3,721,726	168,286	1,931,247	289,749
C	**Adj to eliminate El Fumace	0	6,514,072	1,624,282	3,723,826	168,381	1,932,336	281,877
9	Reveue Credits	(342,912)	0	0	0	(342,912)	0	0
11	Total Offsetting Revenues	13,901,861	6,514,072	1,624,282	3,723,826	(174,531)	1,932,336	281,877
11	TOTAL CURRENT REVENUE	258.728.530	118.806.732	32,940,992	67.618.619	2.246.705	32.517.372	4,598,111
12 13	CLASS % OF CURRENT REVENUE	100.00%	45.92%	12.73%	26.13%	0.87%	12.57%	1.78%
14 15	OPERATING INCOME	56,017,847	27,280,812	9,248,573	14,707,692	(276,133)	4,241,705	815,199
16 17	TOTAL RATE BASE	602,830,619	283,704,798	70,287,443	156,254,055	5,444,630	70,634,024	16,505,669
18 19	IMPLICIT RATE OF RETURN	9.29%	9.62%	13.16%	9.41%	-5.07%	6.01%	4.94%
· 20 21	OPC RECOMMENDED RATE OF RETURN	8.31%	8.31%	8.31%	8.31%	8.31%	8.31%	8.31%
22	REQUIRED OPERATING INCOME							
23	Equalized (OPC) Rates of Return	50,095,224	23,575,869	5,840,887	12,984,712	452,449	5,869,687	1,371,621
24		252,805,907	115.101.788	29.533.305	65,895,639	2.975.287	34,145,355	5.154.533
25	TOTAL COST OF SERVICE Adj to eliminate El Furnace	252,805,907	115,166,471	29,549,902	65,932,670	2,976,959	34,164,543	5,015,363
26 27	CLASS % of COS	100.00%	45.56%	11.69%	26.08%	1.18%	13.51%	1.98%
28	Allocation of difference between							
29	current, revenue and recommended revenue	(5,922,623)	(2,698,068)	(692,282)	(1,544,641)	(69,743)	(800,391)	(†17,498)
30	MARGIN REVENUE REQUIRED	0	0	D	0	0	0	0
31	to Equalize Class ROR - Revenue Neutral	258,728,530	117,864,539	30,242,184	67,477,310	3,046,702	34,964,934	5,132,861
32							•	
33	COS LESS OFFSETTING REVENUES	244,826,669	111,350,467	28,617,902	63,753,485	3,221,233	33,032,598	4,850,984
34 35	COS INDICATED REVENUE NEUTRAL SHIFT	(0)	(942, 193)	(2,698,808)	(141,308)	799,997	2,447,562	534,750
36	% REVENUE NEUTRAL CLASS SHIFT	0.00%	-0.84%	-8.62%	-0.22%	33.04%	8.00%	12.39%
37	CLASS % OF REVENUE AFTER REVENUE SHIFT	100.00%	45.48%	11.69%	26.04%	1.32%	13.49%	1.98%

OPC Rate Design Summary

	9/27/2004	TOTAL	Residential	SGS (Commercial,Small	LGS	Special Contract	Large Power	Other
				Heating & FM)	(Gen Power & TEB)	(Praxair)	(EF*, Misc, & Ltg)
1	Revenue Neutral Shifts (RNS) to Equalize Class ROR		(942,193)	(2,698,808)	(141,308)	799,997	2,447,562	534,750
2	Percentage Revenue Change to Equalize Class ROR	0.00%	-0.84%	-8.62%	-0.22%	33.04%	8.00%	12.39%
3 5	COS Indicated Class Revenue Percentages	100.00%	45.48%	11.69%	26.04%	1.32%	13.49%	1.98%
6 8	Current Class Revenue Percentages	100.00%	45.92%	12.73%	26.13%	0.87%	12.57%	1.78%
9	OPC's Recommended Revenue Neutral Shifts	(0)	(471,097)	(1,349,404)	(70,654)	399,999	1,223,781	267,375
10	OPC's Recommended Revenue Neutral % Shifts	0.00%	-0.42%	-17.71%	-0.12%	16.52%	4.00%	0.96%
11 12	OPC's Recommended Total Revenue Percentages	100.00%	45.67%	12.24%	26.07%	1.15%	12.99%	1.87%
13	Spread of Revenue Requirement Increases							
14	Approx6M Change In Revenue Requirement	(5,922,623)	(2,705,085)	(724,942)	(1,543,975)	(68,249)	(769,490)	(110,882)
15	Approx3M Change In Revenue Requirement	(2,961,311)	(1,352,542)	(362,471)	(771,988)	(34,124)	(384,745)	(55,441)
16 17	At Current Revenues	0	0	0	0	0	0	0
18	Combined Impact of Revenue Increase and OPC's RNS					004 755	151.001	450 400
19	Approx6M Change In Revenue Requirement	(5,922,623)	(3,176,181)	(2,074,346)	(1,614,629)	331,750	454,291	156,493
20	Approx3M Change In Revenue Requirement	(2,961,311)	(1,823,639)	(1,711,875)	(842,642)	365,874	839,036	211,934
21 22 23	At Current Revenues	(0)	(471,097)	(1,349,404)	(70,654)	399,999	1,223,781	267,375
24 25	COMBINED IMPACT ADJUSTED SO THAT NO CLASS RECEIVES	NET DECREASE						
26	Approx6M Change In Revenue Requirement	(5,922,623)	(2,661,831)	(1,936,504)	(1,321,055)	0	0	(3,233)
27	Percentage Change From Current Revenue	-2.29%	-1.03%	-2.13%	-31.86%	0.00%	0.00%	-0.01%
28 29	Class Percentage Of Total Revenue	100.00%	45.94%	12.26%	26.22%	0.89%	12.86%	1.82%
30	Approx3M Change In Revenue Requirement	(2,961,311)	(1,051,670)	(1,504,993)	(402,026)	0	0	(2,622)
31	Percentage Change From Current Revenue	-1.14%	-0.41%	-1.51%	-8.98%	0.00%	0.00%	-0.01%
32	Class Percentage Of Total Revenue	100.00%	46.04%	12.29%	26.28%	0.88%	12.71%	1.80%

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