Exhibit No.:	
Issue(s):	Class Cost of Service/ Rate Design
Witness/Type of Exhibit:	Meisenheimer/Direct
Sponsoring Party:	Public Counsel
Case No.:	ER-2011-0004

DIRECT TESTIMONY

OF

BARBARA A. MEISENHEIMER

Submitted on Behalf of
the Office of the Public Counsel

Empire District Electric Company

Case No. ER-2011-0004

March 16, 2011

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of The Empire District Electric Company of Joplin, Missouri for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Missouri Service Area of the Company.	))))))	**Case No. ER-2011-0004**

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 16th day of March 2011.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

KENDELLE R. SEIDNER
My Commission Expires
February 4, 2015
Cole County
Commission #11004782

Kendelle R. Seidner
Notary Public

My commission expires February 4, 2015.

Direct Testimony
of
Barbara Meisenheimer

Empire District Electric Company

Class Cost of Service and Rate Design

ER-2011-0004

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. 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. HAVE YOU TESTIFIED PREVIOUSLY IN THIS CASE?

A. No.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my direct testimony is to present Public Counsel's Class Cost of Service (CCOS) studies and position on the issue of rate design for Empire District Electric Company (the Company).

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL AND EMPLOYMENT BACKGROUND.

A. I hold a Bachelor of Science degree in Mathematics from the University of Missouri-Columbia and have completed the qualifying and 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 been with the Office of the Public Counsel since January 1996. I have testified on economic issues and policy issues in the areas of telecommunications, electric, gas, water, and sewer. In rate cases my testimony has addressed class cost of service, rate design, miscellaneous tariff issues, low-income and conservation programs and revenue requirement issues related to the development of class revenues, billing units, low-income program costs and fuel cost recovery. Specific to Empire District Electric, I testified in the Company's four most recent rate cases; Case No. ER-2004-0570, Case No. ER-2006-0315, Case No. ER-2008-0093 and Case No. ER-2010-0130.

Over the past 15 years I have taught courses for the University of Missouri-Columbia, William Woods University, and Lincoln University. I currently teach undergraduate and graduate level economics courses and undergraduate statistics for William Woods University.

Q. WHAT IS YOUR 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 ten years. These include class cost of service studies related to natural gas, water and electric utilities, and cost studies related to telecommunications services.

Q. PLEASE DISCUSS YOUR CCOS STUDIES.

A. I have prepared four CCOS studies for this case. The studies are included as Schedules 1- 4 of this testimony. The studies are identical except with respect to two of the most significant factors in determining the share of costs allocated to customer classes. The first of these factors is the method of allocating production plant. The second factor is the method of allocating distribution plant based on its classification as "customer related" or "demand related".

The two production allocation methods used are (1) a weighted average of energy use and coincident peak demand and (2) a production allocator based on Time of Use (TOU) similar to the TOU allocator I have filed in previous cases. The TOU allocator assigns the investment costs for each production plant to the hours of the year during which each plant is generating electricity. The cost for each hour is then assigned to customer classes in proportion to each class's relative share of hourly demand.

The two distribution plant allocation methods differ in the treatment of distribution plant costs associated with FERC Accounts 364-368. One method treats these costs as partially customer related and partially demand related. The second method treats these costs as only demand related.

In past electric rate cases, I have argued that a Time of Use method is more precise and preferable to other allocation methods which assign a large portion of costs based on customer use characteristics during only a few peak hours. I have also argued that distribution plant costs associated with FERC Accounts 364-368 such as the cost of poles and overhead lines should not be

classified as customer related because those costs are not incurred in direct proportion to the number of customers and are instead primarily related to actually satisfying consumer demand for electricity. While I acknowledge that the Commission has, in the past, rejected my TOU production allocation method and rejected classifying distribution costs as only demand related, these allocations have a significant impact on the total costs assigned to residential and small commercial customers and on the portion of those costs earmarked for recovery through mandatory customer charges.

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 classes based on principles of cost causation. CCOS study results also provide guidance for determining how rates should be designed to collect revenues from customers within a class, depending on customer usage levels and patterns of use.

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

A. CCOS study results provide the Commission with a general guide in setting 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, 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-by-case basis.

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

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

Functionalizing costs involves categorizing accounts by the type of electric utility function(s) 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 meter plant and meter reading expenses are considered to be customer-related because they vary primarily based on the number of customers.

The final step in the CCOS is to develop and apply allocation factors that apportion a reasonable share of jurisdictional costs to each customer class. Allocation factors should be developed in a manner that is consistent with the functionalization and classification of costs described above. For example, unweighted customer related cost allocation factors are expressed as ratios that reflect the proportion of customers in a particular class to the total number of customers that contribute to the causation of the relevant cost. Likewise, demand related allocators should reflect each class's use during specific time periods and commodity 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 the "cost" pie that each class would be assigned.

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

A. The customer classes used in my studies include Residential (RG), Commercial (CB), Small Heating (SH) Feed Mill (PFM), Primary and Secondary General Power (GP), Total Electric Building (TEB), Large Power (LP), Special Contract customers (SC) and lighting customers including Municipal Street Lighting (PSL), Private Lighting (PL) and Special Lighting (SL) and Miscellaneous Service (MS).

Q. ON WHAT DATA ARE YOUR CCOS STUDIES BASED?

A. My CCOS studies are based primarily on accounting, production and customer load data provided by the Public Service Commission Staff (Staff) and the Company including data related to investments, expenses, peak demand, energy use and customer counts.

Q. HOW IS 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 incorporation along with related expenditures. Generally, 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. In this case, I have applied a Class Cost of Service Allocator to Intangible Plant.

Q. HOW IS PRODUCTION PLANT ALLOCATED?

A. Production Plant includes the cost of land, structures and equipment used in connection with power generation. Both demand and energy characteristics of a system's loads are important determinants of production plant costs. One of my production allocators assigns Production Plant according to a composite allocator that weights (1) a demand related component and (2) an energy related component. This method uses 5 coincident peaks to represent the demand related component and average annual energy use to represent the energy related component.

The second production allocation method is a time of use method which assigns demand related fixed plant investments net of depreciation reserve to each hour. The method then sums each class's share of hourly net investments based on only those hours when the class actually used 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, 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 b. 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 used an A&5CP method in calculating the production allocator. The 5CP I used to represent the peak portion of the allocator falls well within the number of peak periods recognized in the NARUC Manual. 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 5CP REPRESENTATIVE OF THE PEAK DEMAND ON THE EMPIRE DISTRICT ELECTRIC SYSTEM?

A. Yes. The 5CP is reasonably representative of the peak demand on Empire's system. As illustrated in Table 1 the 5CP includes periods when demand was at or in excess of 90% of the system's maximum peak.

Table 1

Coincident Peak (CP) @ Generation (Converted to MWh) for Select Customer Classes

	RES	CB	SH	GP	TEB	LP	System Peak	% of System Peak
Jul-09	621	94	25	192	86	139	1241	100%
Aug-09	599	89	21	182	81	141	1195	96%
Sep-09	329	65	16	141	66	102	776	63%
Oct-09	318	62	14	168	63	144	851	69%
Nov-09	364	64	18	190	95	143	950	77%
Dec-09	558	77	28	189	113	137	1183	95%
Jan-10	523	63	23	138	81	104	1005	81%
Feb-10	447	52	21	107	72	81	829	67%
Mar-10	245	65	19	176	75	135	774	62%
Apr-10	268	74	20	216	80	176	913	74%
May-10	497	77	22	211	89	172	1156	93%
Jun-10	464	75	21	228	92	191	1161	94%

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

A. A class's relative share of system demand in any particular peak hour may vary significantly. For example, Table 2 illustrates the variation in relative class demands during the 5 peak periods discussed above.

Table 2

Relative Share of Coincident Peak @ Generation for Select Customer Classes

	RES	CB	SH	GP	TEB	LP
Jul-09	53.28%	8.06%	2.12%	16.47%	7.40%	12%
Aug-09	53.41%	7.94%	1.89%	16.24%	7.19%	13%
Dec-09	50.26%	6.89%	2.50%	17.00%	10.18%	12%
May-10	46.11%	7.15%	2.01%	19.54%	8.26%	16%
Jun-10	42.96%	6.93%	1.90%	21.09%	8.47%	18%

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. 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.

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's 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 and RealTime production modeling inputs from the Staff. The Staff uses the RealTime model in order to determine fuel costs. The RealTime 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 investment cost per MW hour by the MW hours produced by the plant and then 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. 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 commercial service customers because the capacity costs actually vary by hour depending on the plants in use. The particular pattern of use by each class over all 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 3 illustrates the difference between my more limited A&5CP allocator and the Time of Use allocator.

Table 3

Production Plant Allocation

	RES	CB	SH	GP	SC	TEB	PFM	LP	Lighting
A & 5CP	45.3%	7.6%	2.1%	19.4%	1.1%	8.6%	0.0%	15.5%	0.5%
TOU	41.5%	7.8%	2.2%	20.6%	1.3%	8.9%	0.0%	16.8%	0.9%

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 peak periods and periods of scheduled maintenance. Transmission Plant can also, at times, substitute for generation and can minimize the cost of generation facilities through the sale or purchase of power. Transmission Plant costs can be equitably allocated on the same basis as Production Plant or can be allocated based on another method that reasonably represents its shared service throughout the year. I chose to use each class's sum of monthly coincident peaks (12CP) to allocate Transmission Plant.

Q. HOW DID YOU ALLOCATE DISTRIBUTION PLANT?

A. Distribution Plant includes the cost of land, structures and equipment used in connection with distribution operations. Distribution plant equipment reduces high-voltage energy from the transmission system to lower voltages, delivers it to the customer and monitors the amounts of energy used by the customer. Many of the distribution costs associated with providing service to electric utility customers are not directly associated with or reasonably assignable to a particular class with precision. For example, with the exception of service drops and meters, most of the facilities between the utility customer's point-of-service and the distribution substation are shared facilities. Since such facilities are not directly related to the number of customers, the associated costs are best classified as demand related, rather than customer related.

In the functionalization and allocation of Distribution Plant, my studies reflect that distribution facilities provide service at two voltage levels: primary and secondary, and that some large industrial customers may choose to take service at primary or transmission voltages because of their large electrical requirements. Different allocation factors were used for allocating costs at different levels of the distribution system. The Company class cost of service study included allocation weights used to assign the costs in FERC Accounts 364-368 to primary and secondary voltage and to classify portions of those costs as customer and demand related. I used the Company's allocation weights to assign the costs in FERC Accounts 364-368 to primary and secondary voltage. In different versions of my study I use the Company's weights to classify portions of the costs in FERC Accounts 364-368 as customer and demand related. The other versions of my studies classify these costs as purely demand related. Demand related costs are assigned to customer classes based on each class's share of non coincident peak demand. In cases in which costs were classified in the studies as customer related, the costs were allocated based on the number of secondary customers.

Q. HOW DID YOU ALLOCATE METER RELATED FACILITIES?

A. 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. I allocated meter costs based on meter investment by class reported by the Company.

Q. HOW DID YOU ALLOCATE SERVICE RELATED FACILITIES?

A. Service facilities are classified as customer related. I allocated service costs based on service investment by class reported by the Company.

Q. PLEASE SUMMARIZE YOUR TREATMENT OF DISTRIBUTION PLANT COSTS.

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

360-362	Distribution Substations	Demand at Primary Station
364	Poles Towers and Fixtures	Demand at Primary and Secondary and/or Customer Secondary
365	Overhead Conductors & Devices	Demand at Primary and Secondary and/or Customer Secondary
366	Underground Conduit	Demand at Primary and Secondary and/or Customer Secondary
367	Underground Conductors & Devices	Demand at Primary and Secondary and/or Customer Secondary
368	Line Transformers	Demand at Primary and Customer at Secondary
369	Services	Customer
370	Meters	Customer
371	Installations on Premise	Customer
373	Lighting & Signals	Lighting

Q. HOW DID YOU ALLOCATE GENERAL PLANT?

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

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

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

Q. HOW DID YOU ALLOCATE POWER PRODUCTION EXPENSES?

A. Power Production Expenses were broken down into demand-related and energy-related production and purchased power costs. The demand-related expenses were allocated based on the production plant allocators in my studies. The energy-related fuel expenses were allocated based on class kWhs at generation. The RealTime production model I used to prepare my TOU production allocator also identifies purchased power by hour. I assigned the cost of purchased power to classes based on class use in hours when power was purchased in the RealTime model.

Q. HOW WERE TRANSMISSION EXPENSES ALLOCATED?

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

Q. HOW WERE DISTRIBUTION EXPENSES ALLOCATED?

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 aggregate distribution expense allocator based on the sum of distribution expenses assigned to each class.

Q. HOW DID YOU ALLOCATE CUSTOMER ACCOUNTS EXPENSES?

A. I used the Company developed allocators to allocate Meter Reading (Account 902), Customer Records and Collections (Account 903) and Uncollectible Accounts (Account 904). Supervision (Account 901) was allocated on an aggregate allocator based on Account 902 and Account 903.

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

A. Customer Service Expenses including Accounts 907, 908, 909, 910 based on an aggregate allocator based on Account 902 and Account 903. Sales Expenses including Accounts 911 and 912 were allocated based on the Class Cost of Service allocator.

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

A. Property Insurance expense (Account 924) was allocated on the basis of gross plant. Injuries and Damages (Account 925) and Employee Pensions and Benefits (Account 926) were allocated based on labor. The remaining A & G accounts were allocated on based on the Class Cost of Service allocator.

Q. HOW DID YOU ALLOCATE TAXES OTHER THAN INCOME TAXES?

A. Property related, franchise and miscellaneous taxes other than income taxes were allocated based on gross plant. Payroll taxes were allocated based on labor.

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.

Q. HOW DID YOU ALLOCATE REVENUES?

A. The class rate revenues associated with each class were directly assigned to the class. Other revenues were allocated based on directly assigned revenues.

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

A. A CCOS study is designed to determine the relative cost responsibility of customer classes based on the assumption that total company revenues remain constant. Table 4 illustrates Public Counsel's class cost of service study results. The percentages represent the changes in class revenue required to equalize the class rates of return.

Table 4

Class Cost of Service Study Results
Revenue Neutral Shifts

	RES	CB	SH	GP	SC	TEB	PFM	LP	Lighting
TOU Production Allocator with a Demand Related Distribution Allocation	-3.4%	-11.0%	-12.0%	4.5%	42.6%	-11.4%	-34.6%	24.8%	-9.5%
A&5CP Production Allocator with a Demand Related Distribution Allocation	0.2%	-12.1%	-12.9%	1.6%	32.0%	-12.9%	-38.5%	19.8%	-20.5%
TOU Production Allocator with a Customer and Demand Related Distribution Allocation	2.8%	-8.5%	-12.7%	-3.2%	41.6%	-18.0%	-41.8%	16.8%	-15.9%
A&5CP Production Allocator with a Customer and Demand Related Distribution Allocation	6.3%	-9.6%	-13.6%	-6.0%	31.1%	-19.6%	-45.7%	11.7%	-26.8%

The results indicate that the CB, SH, TEB, PFM and Lighting classes would require a significant reduction to equalize class rates of return while the SC and LP classes would require significant increases to equalize the class rates of return. The results for the RES and GP classes indicate that at most a moderate adjustment would be required to equalize class rates of return.

Table 4 emphasizes the significant impact that the choice of production allocator and the classification of distribution plant accounts have on the cost allocations to residential and small commercial customers.

Q. DID YOU PERFORM ANY ANALYSIS OF THE CUSTOMER-RELATED COSTS THAT ARE ATTRIBUTABLE TO THE TYPICAL RESIDENTIAL AND SMALL COMMERCIAL CUSTOMER?

A. Yes, I did. In the CCOS studies that treat the costs in FERC Accounts 364-368 as demand related, the customer charge calculation included costs that are related to services, meters and customer accounts expenses such as the return on rate base for the relevant plant accounts, distribution operation and maintenance expenses associated with services, and meters, plus the depreciation expense, payroll

benefits, and property taxes associated with services, meters, and regulators. My studies indicate that if the costs in FERC Accounts 364-368 are treated as demand related the current customer charges of $12.52 for RES and $17.67 for CB and SH exceed the customer related costs of $10.61 for RES, $15.96 for CB and $15.62 for SH. The Company's allocation of a greater share of distribution costs as customer related results in substantially higher customer charge costs. In addition to raising the basic cost to retain service, high customer charges reduce a customer's ability to control the electric bill by controlling use and are often perceived as unfair.

Q. IS IT LIKELY THAT SOME INFORMATION USED IN YOUR STUDY WILL BE UPDATED AND REVISED AS THIS CASE PROGRESSES?

A. Yes. Based on discussions with Staff I anticipate changes to the accounting data and billing units used in my CCOS studies. I will update my studies accordingly.

Q. WHAT GENERAL RATE DESIGN PRINCIPLES DO YOU RECOMMEND?

A. Generally, Public Counsel recommends that where the existing revenue structure departures greatly from the class cost of service, the Commission should impose, at a maximum, class revenue shifts equal to one half of the "revenue neutral shifts." In addition to moving half way to the revenue neutral shifts, if the Commission determines that an overall increase in revenue requirement is necessary, then no customer class should receive a net decrease as the combined result of: (1) the revenue neutral shift that is applied to that class, and (2) the share of the total revenue increase that is applied to that class. Likewise, if the Commission determines that an overall decrease in revenue requirement is

necessary, then no customer class should receive a net increase as the combined result of: (1) the revenue neutral shift that is applied to that class, and (2) the share of the total revenue decrease that is applied to that class.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.