BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF DELAWARE

IN THE MATTER OF THE APPLICATION OF DELMARVA POWER & LIGHT COMPANY FOR AN INCREASE IN ELECTRIC BASE RATES AND MISCELLANEOUS TARIFF CHANGES (Filed March 22, 2013)	)	**Docket No. 13-115**

Direct Testimony and Exhibits of

Nicholas Phillips, Jr.

On behalf of

The Delaware Energy Users Group

August 16, 2013

BRUBAKER & ASSOCIATES, INC.

Project 9810

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Direct Testimony of Nicholas Phillips, Jr.

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Nicholas Phillips, Jr. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q WHAT IS YOUR OCCUPATION?

A I am a consultant in the field of public utility regulation and Managing Principal of Brubaker & Associates, Inc., energy, economic and regulatory consultants.

Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A This information is included in Appendix A to my testimony.

Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A I am testifying on behalf of The Delaware Energy Users Group ("DEUG"). DEUG represents large volume users of electric energy located in the service territory of Delmarva Power & Light Company ("Delmarva" or "Company").

I. INTRODUCTION AND SUMMARY

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A The purpose of my testimony is to address Delmarva's presented test year ending December 31, 2012 class cost of service study ("CCOSS"), explain how the study should be used, and recommend an appropriate class allocation and rate design of any authorized rate increase.

In order to make my testimony consistent with the revenue levels requested by Delmarva, I have in many instances used its requested numbers for revenues under proposed rates. However, use of those numbers should not be interpreted as an endorsement of them for purposes of determining the total dollar amount of rate change authorized for Delmarva in this proceeding.

Q HOW IS YOUR TESTIMONY ORGANIZED?

A First, I present an overview of cost of service principles and concepts. This is followed by a discussion of the typical classification and allocation of distribution related costs. Next, I present the results of a properly developed cost of service analysis for Delmarva that takes into account cost causation principles. This cost study indicates how individual customer class revenues compare to the costs incurred in providing distribution service to them. This analysis and interpretation is then followed by recommendations with respect to the allocation and rate design of class revenues with class costs.

Q PLEASE SUMMARIZE YOUR RECOMMENDATIONS AND CONCLUSIONS.

A My specific recommendations and conclusions are as follows:

1. Class cost of service is the starting point and most important guideline for establishing the level and design of rates charged to customers.

2. Delmarva's CCOSS comports with generally accepted cost of service study methods. However, the classification and allocation of certain distribution plant accounts in Delmarva's CCOSS should be modified to classify a portion of those costs as customer-related.

3. The primary purpose of the distribution system is to deliver power from the transmission grid to the customer. Certain distribution investments must be made to connect a customer to the system. Therefore, these investments are considered customer-related.

4. Updating Delmarva's CCOSS to reflect a reasonable customer component in the classification and allocation of certain distribution plant costs shows that at current rates, the rates associated with the General Service Secondary and General Service Primary rate classes are above cost of service.

5. The results of the revised CCOSS, which takes into account actual cost utilization principles, should be used to allocate any distribution revenue increase in this proceeding as well as the design of distribution rates. The revised CCOSS supports a lower than system average increase for the General Service Primary rate class.

6. The updated CCOSS identifies a larger percentage of the General Service Primary customer rate class revenue requirement as customer-related and less as demand-related.

7. Company evidence shows that the General Service Transmission ("GST") class would have a rate of return of 28% without the credit for power factor improvement. Since an increase in power factor reduces system costs, that fact should be included in the revenue allocation to Rate GST and it is recommended that Rate GST customers receive no more than one-half of the system average percentage increase granted by the Commission in this proceeding.

II. COST OF SERVICE OVERVIEW

Q WHAT INFORMATION IS CONTAINED IN A CCOSS?

A A CCOSS compares the cost that each customer class imposes on the system to the revenues each class contributes. This relationship is generally presented by comparing the rate of return that a class is providing with the utility's overall jurisdictional rate of return.

For example, when a customer class produces the same rate of return as the total jurisdictional utility rate of return, the customer class is paying revenue to the

utility just sufficient to cover the costs that the utility incurs to serve that class. If a class produces a below-average rate of return, it may be concluded that the revenue provided by the class is insufficient to cover all relevant costs to serve that class. On the other hand, if a class produces a rate of return above the system average, it is not only paying revenues sufficient to cover the cost attributable to it, but in addition, it is paying part of the cost attributable to other classes who produce below system average rates of return.

Q WHY IS A CCOSS OF IMPORTANCE?

A A CCOSS shows the costs that a utility incurs to serve each customer class. It is a widely held principle that costs should be allocated among customer classes on the basis of cost-causation. That principle is perhaps the most universally accepted principle of allocating cost that cannot be directly assigned to a particular customer class. The costs should be allocated to those classes on the basis of cost causation. The results of such studies are used in assigning cost responsibilities to various customer classes in regulatory proceedings.

Q DO YOU SUPPORT THAT PREMISE?

A. Yes. Rates that are based on consistently applied cost causation principles are not only fair and reasonable, but further the cause of stability, conservation and efficiency. When consumers are presented with price signals that convey the consequences of their consumption decisions, i.e., how much energy to consume, at what rate, and when, they tend to take actions which not only minimize their own costs, but those of the utility as well.

Although factors such as simplicity, gradualism, economic development and ease of administration may also be taken into consideration when determining the final spread of the revenue requirement among classes, the fundamental starting point and guideline should be the cost of serving each customer class produced by the CCOSS.

Q HOW IS THE COST OF SERVING EACH CUSTOMER CLASS DETERMINED?

A The appropriate mechanism to determine the cost of serving each customer class is a fully allocated embedded CCOSS. It follows, however, that the objective of cost-based rates cannot be attained unless the CCOSS is developed using cost-causation principles.

Q WHAT ARE THE MAJOR STEPS IN A COST OF SERVICE STUDY?

A The first step in a CCOSS is known as functionalization. This simply refers to the process by which the Company's investments and expenses are reviewed and put into different categories of cost. The primary functions utilized are production, transmission and distribution. Of course, each broad function may have several subcategories to provide for a more refined determination of cost of service.

The second major step is known as classification. In the classification step, the functionalized costs are separated into the categories of demand-related, energy-related, and customer-related costs in order to facilitate the allocation of costs applying the cost-causation principles.

Demand or capacity-related costs are those costs that are incurred by the utility to serve the amount of demand that each customer class places on the system. A traditional example of capacity-related costs is the investment associated with

generating stations, transmission lines, and a portion of the distribution system. Once the utility makes an investment in these facilities, the costs continue to be incurred, irrespective of the number of kilowatthours generated and sold or the number of customers taking service from the utility.

Energy-related costs are those costs that are incurred by the utility to provide the energy required by its customers. Thus, the fuel expense is almost directly proportional to the amount of kilowatthours supplied by the utility system to meet its customers' energy requirements. It should be noted that none of the distribution costs are energy-related.

Customer-related costs are those costs that are incurred to connect customers to the system and are independent of the customer's demand and energy requirements. Primary examples of customer-related costs are investments in meters, services, and the portion of the distribution system that is necessary to connect customers to the system. In addition, such accounting functions as meter reading, bill preparation, and revenue accounting are considered customer-related cost.

The final step in the CCOSS is the <u>allocation</u> of each category of the functionalized and classified costs to the various customer classes using the cost-causation principles. Demand-related costs are allocated on the basis that gives recognition to each class's responsibility for the Company's need to build plant to serve demands imposed on the system. Energy-related costs are allocated on the basis of energy use by each customer class. Since no costs in this case are energy-related, the use of energy allocators is not appropriate. Customer-related costs are allocated based upon the number of customers in each class, weighted to

account for the complexity of servicing the needs of the different classes of customers.

III. COST OF SERVICE AND REVENUE ALLOCATION/RATE DESIGN PRINCIPLES

Q WHY IS IT IMPORTANT TO ADHERE TO COST OF SERVICE PRINCIPLES IN THE REVENUE ALLOCATION/RATE DESIGN PROCESS?

A The basic reasons for using cost of service as the primary factor in the revenue allocation/rate design process are equity, cost causation, appropriate price signals, conservation and revenue stability.

Q HOW IS THE EQUITY PRINCIPLE ACHIEVED BY BASING RATES ON COSTS?

A To the extent practical, when rates are based on cost, each customer pays what it costs the utility to serve the customer, no more and no less. If rates are not based on cost of service, then some customers contribute disproportionately to the utility's revenue requirement and provide contributions to the cost to serve other customers. This is inherently inequitable.

Q HOW DO COST-BASED RATES PROVIDE APPROPRIATE PRICE SIGNALS TO CUSTOMERS?

A Rate design is the step that follows the allocation of costs to classes, so it is important that the proper amounts and types of costs be allocated to the customer classes so that they may ultimately be reflected in the rates.

When the rates are designed so that the energy costs, demand costs, and customer costs are properly reflected in the energy, demand and customer components of the rate schedules, respectively, customers are provided with the

proper incentives to manage their loads appropriately. This, in turn, provides the correct signal to the utility (and other competitive power suppliers) about the need for new investment. When customers impose a certain level of demand on the system, they should pay for the prudent cost that the utility incurs to supply that demand and the energy charge that they pay should reflect the cost of providing that energy.

Q HOW DO COST-BASED RATES FURTHER THE GOAL OF CONSERVATION?

A Conservation occurs when wasteful or inefficient uses of electricity are discouraged or minimized. Only when rates are based on actual costs do customers receive an accurate and appropriate price signal against which to make their consumption decisions. If rates are not based on costs, then customers may be induced to use electricity inefficiently in response to the distorted price signals.

Q PLEASE DISCUSS THE REVENUE STABILITY CONSIDERATION.

A When rates are closely tied to costs, the impact on the utility's earnings due to changes in customer use patterns will be minimized. Rates that are designed to track changes in the level of costs result in revenue changes that mirror cost changes. Thus, cost-based rates provide an important enhancement to a utility's earnings stability, reducing its need to file for rate increases.

From the perspective of the customer, cost-based rates provide a more reliable means of determining future levels of power costs. If rates are based on factors other than the cost to serve, it becomes much more difficult for customers to translate expected utility-wide cost changes, such as expected increases in overall revenue requirements, into changes in the rates charged to particular customer classes and to customers within the class. This situation reduces the attractiveness

of expansion, as well as continued operations, in the utility's service territory because of the limited ability to plan and budget for future power cost.

IV. DELMARVA'S COST OF SERVICE STUDY

Q HAVE YOU REVIEWED THE CCOSS FILED BY DELMARVA IN THIS PROCEEDING?

A Yes. I have reviewed the results of Delmarva's test year electric cost of service study. The test year is based on a 12-month period ending December 31, 2012. The results of the study are identified on Schedule EPT-1 and summarized in Table 1 below.

TABLE 1

Delmarva CCOSS Results at Current ROR Level

Rate Class	Rate of Return (1)	Relative Rate of Return (2)
Residential	4.34%	0.97
Residential Space Heating	2.68%	0.60
Gen. Service Secondary Small	9.38%	2.10
Gen. Service Secondary Large	4.54%	1.02
Gen. Service Primary	1.77%	0.40
Gen. Service Transmission	-4.23%[1]	-0.95
Street Lighting	4.98%	1.12
Total Delaware Retail	4.47%	1.00

[1]The Rate GST per book revenues include a power factor credit. Excluding this credit would increase the Rate GST class ROR to approximately 28%.

Q DO YOU HAVE ANY CONCERNS WITH DELMARVA'S CCOSS?

A Yes, I take exception with the classification and allocation of certain distribution costs as entirely demand-related. Specifically, I object to the classification and allocation

associated with Distribution Plant Accounts: 364 (Poles, Towers and Fixtures); 365 (Overhead Conductors and Devices); 366 (Underground Conduit); and 367 (Underground Conductors and Devices). The costs associated with these accounts should be classified and allocated based on both demands and customer counts.

Q WHY SHOULD THE COSTS ASSOCIATED WITH DISTRIBUTION PLANT ACCOUNTS 364 THROUGH 367 BE CLASSIFIED AND ALLOCATED ON BOTH A DEMAND AND CUSTOMER BASIS AS OPPOSED TO JUST A DEMAND BASIS AS PERFORMED IN DELMARVA'S CCOSS?

A Classifying and allocating the costs associated with Distribution Plant Accounts 364 through 367 entirely on a demand basis is inconsistent with cost-causation and generally accepted costing methodology. The primary purpose of the distribution system is to deliver power from the transmission grid to the customer in various geographical locations with service at different voltage levels. Certain distribution investments must be made just to connect a customer to the system. Also, many equipment manufacturers have only minimum sized equipment available. Safety concerns and construction practices often require minimum sized equipment which is not determined by demand. These investments are properly considered to be customer-related.

Q IS THIS A NEW COST OF SERVICE CONCEPT?

A No. The concept is known as the minimum distribution system ("MDS"), and has been accepted for decades as a valid consideration by numerous state public utility commissions. It has also been presented in the National Association of Regulatory

Utility Commissioners Electrical Utility Cost Allocation Manual ("NARUC Manual") and the Gas Distribution Rate Design Manual published by NARUC.

The central idea behind the MDS concept is that there is a minimum cost incurred by any utility when it extends its primary and secondary distribution systems and connects an additional customer to them. By definition, the MDS system comprises every distribution component necessary to provide service, i.e., meters, services, secondary and primary wires, poles, substations, etc. The cost of the MDS, however, is only that portion of the total distribution cost the utility must incur to provide service to customers. It does not include costs specifically incurred to meet the peak demand of the customers.

Q PLEASE ELABORATE FURTHER ON THE MDS CONCEPT AND THE DISTINCTION BETWEEN CUSTOMER-RELATED COSTS AND DEMAND-RELATED COSTS IN THE CONTEXT OF A CLASS COST OF SERVICE STUDY.

A A certain portion of the cost of the distribution system–poles, wires and transformers–is required just to attach customers to the system in different geographical locations, regardless of their demand or energy requirements. This minimum or "skeleton" distribution system may also be considered as customer-related cost since it depends primarily on the number of customers, rather than on demand or energy usage.

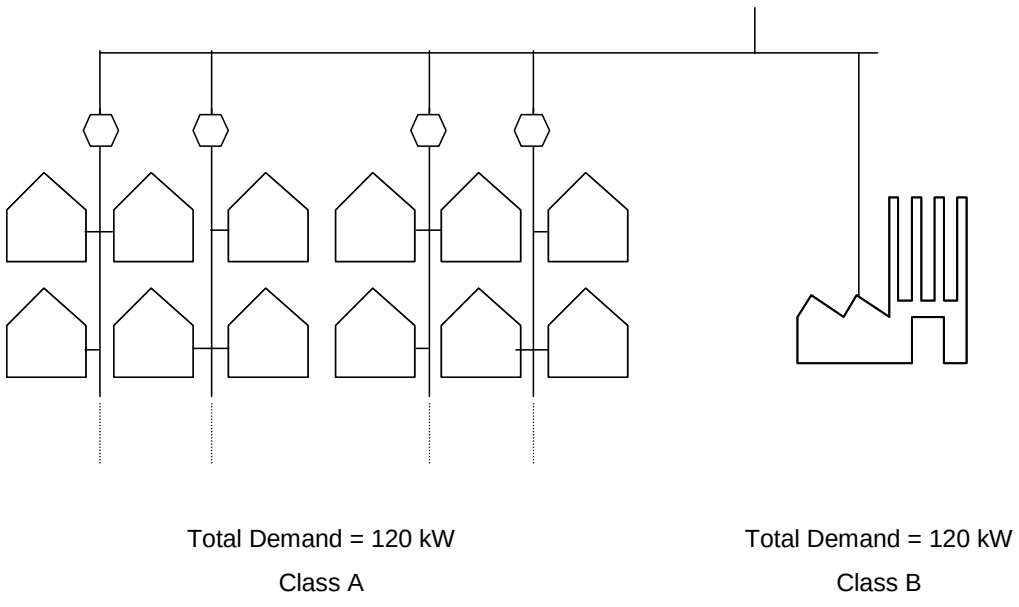
Figure 1, as an example, shows the distribution network for a utility with two customer classes, A and B. The physical distribution network necessary to attach Class A is designed to serve 12 customers, each with a 10-kilowatt load, having a total demand of 120 kW. This is the same total demand as is imposed by Class B, which consists of a single customer. Clearly, a much more extensive distribution

system is required to attach the multitude of small customers (Class A), than to attach the single larger customer (Class B), despite the fact that the total demand of each customer class is the same.

Even though some additional customers can be attached without additional investment in some areas of the system, it is obvious that attaching a large number of customers in different geographical locations requires investment in facilities, not only initially but on a continuing basis as a result of the need for maintenance and repair. Thus, a large part of the distribution system is classified as customer-related in order to recognize this area coverage requirement.

Figure 1

Classification of Distribution Investment



Q IN ADDITION TO THE AREA COVERAGE FACTOR YOU NOTED ABOVE, ARE THERE OTHER REASONS FOR CLASSIFYING PART OF THE DISTRIBUTION SYSTEM AS CUSTOMER-RELATED?

A Yes, there are. Safety and reliability are the best example of these. A properly conducted class cost of service study must consider all cost-causing factors.

Q PLEASE EXPLAIN.

A When distribution engineers design the enhancement, upgrade, or extension of an electric system, they must be constantly aware of the operating parameters of the system. It is in the construction of the distribution system, however, that the *true cause* of many distribution costs is clearly seen. Surprisingly, that cause is frequently *not* demand.

An illustration helps make this point clear. Consider a customer who intends to build a home on a new lot, one that does not already have electrical service. This customer is cost and energy conscious and, thus, chooses to employ as many energy efficiency and conservation techniques and appliances as he can. After considerable research and consultation with experts, the customer calls the utility and advises that he will require service capable of providing a maximum peak demand of 2,000 watts (2 kW).

During the installation of the primary and secondary distribution extension to the customer's home, he notices that the linemen are using conductors, poles, cross-arms, and components identical to those serving the much larger, and less efficient, houses down the street. After more investigation, the customer learns that the distribution extension to his home is capable of carrying far greater demand than his home was designed to use. When he informs the utility of this 'error,' the utility

explains that because of reliability and safety concerns it cannot install wires smaller than a certain size or hang them below a certain height. In short, there are specified minimum standards that the utility must meet that are wholly unrelated to the new home's reduced demand.

This illustration demonstrates that, although utilities design and install distribution equipment to satisfy their customers' need for electricity, there are factors other than electrical demand that force them to incur costs. Safety and reliability are as critical to every phase of design and construction as demand. Further, many equipment manufacturers have only minimum sized equipment available for installation. As one reviews the cost of the distribution system nearest the customer (i.e., that portion from the primary radial lines through the line transformers and secondary system), the cost incurred to comply with safety and reliability standards, as well as minimum sized equipment available, begins to outweigh the cost of meeting electrical demand.

Q CAN YOU CITE ANY AUTHORITATIVE PUBLICATIONS THAT SUPPORT ALLOCATING PART OR ALL OF PLANT ACCOUNTS 364 THROUGH 367 ON THE BASIS OF A CUSTOMER COMPONENT?

A Yes. In 1992, NARUC published the NARUC Manual which states:

> "Distribution Plant Accounts 364 through 370 involve demand and customer costs. The customer component of distribution facilities is that portion of costs which varies with the number of customers. Thus, the number of poles, conductors, transformers, services, and meters are directly related to the number of customers on the utility's system. As shown in Table 6-1, each primary plant account can be separately classified into a demand and customer component. Two methods are used to determine the demand and customer components of distribution facilities. They are, the minimum-size-of-facilities method, and the minimum-intercept cost (zero-intercept or positive-intercept cost, as applicable) of facilities." (NARUC Manual, page 90)

Table 6-1 from the NARUC Manual is included as Figure 2. It shows that Distribution Plant Accounts 364 through 367, which include conductors and support structures, have both a demand component and a customer component.

Figure 2

TABLE 6-1

CLASSIFICATION OF DISTRIBUTION PLANT[1]

FERC Uniform System of Accounts No.	Description	Demand Related	Customer Related
	Distribution Plant[2]		
360	Land & Land Rights	X	X
361	Structures & Improvements	X	X
362	Station Equipment	X	-
363	Storage Battery Equipment	X	-
364	Poles, Towers, & Fixtures	X	X
365	Overhead Conductors & Devices	X	X
366	Underground Conduit	X	X
367	Underground Conductors & Devices	X	X
368	Line Transformers	X	X
369	Services	-	X
370	Meters	-	X
371	Installations on Customer Premises	-	X
372	Leased Property on Customer Premises	-	X
373	Street Lighting & Signal Systems[1]	-	-

[1]Assignment or "exclusive use" costs are assigned directly to the customer class or group which exclusively uses such facilities. The remaining costs are then classified to the respective cost components.

[2]The amounts between classification may vary considerably. A study of the minimum intercept method or other appropriate methods should be made to determine the relationships between the demand and customer components.

Q HAVE UTILITY COMMISSIONS ADOPTED ALLOCATION METHODS FOR CLASSIFYING AND ALLOCATING A PORTION OF DISTRIBUTION PLANT AS CUSTOMER-RELATED?

A Yes. For example, the Connecticut, Colorado, Hawaii, Indiana, Kansas, Maine, Missouri, New York, North Carolina, Oregon, Pennsylvania, Texas and Wisconsin

Commissions have classified a portion of the Distribution Plant Accounts 364 though 367 on a customer- and demand-related basis for cost of service purposes.

Q HAS DELMARVA EVER SUPPORTED THE USE OF A CUSTOMER COMPONENT IN THE CLASSIFICATION AND ALLOCATION OF DISTRIBUTION PLANT ACCOUNTS 364 THROUGH 367?

A Yes. In Docket No. 11-528, as provided in response to DEUG-1-17, Delmarva supported a customer component in Docket No. 92-85. Further, in Delmarva's last electric distribution rate proceeding in Maryland, Case No. 9249, as part of the settlement, Delmarva agreed to provide both a zero intercept and minimum system cost of service study, identifying which portion of their distribution system is customer related. A copy of the Maryland Commission approved Settlement Agreement in Case No. 9249 is attached as Exhibit NP-1.

Q DID DELMARVA PROVIDE THE RESULTS OF A ZERO INTERCEPT AND MINIMUM SYSTEM COST OF SERVICE STUDY IN CASE NO 9249?

A Yes. On December 9, 2011, in Case No. 9249, Delmarva provided the results of its Minimum Distribution System and Zero-Intercept studies. A copy of those studies are attached as Exhibit NP-2. Exhibit NP-3 is a summary of the customer and demand classification results from Delmarva's distribution studies.

Q BASED ON YOUR EXPERIENCE, ARE THESE DISTRIBUTION PLANT CUSTOMER COMPONENT LEVELS CONSISTENT WITH THOSE LEVELS USED BY OTHER UTILITIES WHO CLASSIFY A PORTION OF DISTRIBUTION PLANT ACCOUNTS 364 THROUGH 367 AS CUSTOMER RELATED?

A Yes. In my experience, the customer component used by other utilities who classify a portion of Distribution Plant as customer related is in the range of 30% to 50%.

Q ARE YOU AWARE OF ANY CRITICISMS OF MINIMUM DISTRIBUTION STUDIES RELATED TO THE MINIMUM SYSTEM AND ZERO-INTERCEPT METHODS?

A Yes. The studies provided by the Company cite criticisms of both methods which can also be found in the NARUC Manual. There are two primary criticisms associated with the minimum system method. The first criticism is that the selection of the minimum system is largely subjective and varies with the methods used to size minimum equipment. The second criticism is that even a minimum size distribution system has the capability to carry some load.

There are also two major criticisms associated with the zero-intercept method for determining a minimum distribution system. The first criticism is that the method ignores that there is a weak correlation relating the area and mileage of a distribution system to the number of customers served. The second criticism is that the zero-intercept method requires much more extensive data and an understanding of statistics in order to generate reliable results.

Q WHAT IS YOUR RECOMMENDATION WITH RESPECT TO THE CLASSIFICATION AND ALLOCATION OF DISTRIBUTION PLANT COSTS ASSOCIATED WITH ACCOUNTS 364 THROUGH 367?

A The Commission should use the results of a cost of service study that classifies and allocates a portion of distribution plant costs associated with Accounts 364 through 367 on a customer basis. This approach is consistent with general ratemaking policy objectives, such as customer equity, conservation and revenue stability. This adjusted cost of service study should be used as a guideline in revenue allocation and rate design in this proceeding.

Q DID YOU PREPARE A CCOSS CLASSIFYING AND ALLOCATING A PORTION OF DISTRIBUTION PLANT COSTS ASSOCIATED WITH ACCOUNTS 364 THROUGH 367 ON A CUSTOMER BASIS?

A Yes. In response to PSC-COS-18 Delmarva provided an electronic copy of its distribution CCOSS. I revised Delmarva's CCOSS by classifying the costs associated with Distribution Plant Accounts 364 through 367 utilizing the average customer component from Exhibit NP-3. I utilized the demand allocators proposed by Delmarva and the customer counts from its CCOSS.

Q EARLIER YOU MENTIONED SOME CRITICISMS ASSOCIATED WITH THE METHODS USED TO DETERMINE THE MINIMUM DISTRIBUTION SYSTEM, HOW DID YOU MODIFY YOUR STUDY TO ADDRESS THESE CRITICISMS?

A The study provided by the Company offered recommendations to adjust the demand and customer allocators associated with the distribution system. I used these recommendations as a starting point for the adjustments I made. The

recommendations, both for the minimum size study and for the zero-intercept study, did not suggest making any adjustments to the allocators associated with the primary system and no adjustments were recommended for the demand allocator associated with the secondary system with respect to the zero-intercept method. However, adjustments were recommended for the customer allocation factor associated with the secondary system for both the zero-intercept and minimum size studies, as well as, the demand allocator for the secondary system for the minimum size study.

After I determined the adjusted allocation factors, I then averaged the allocation factors together to combine the results of the minimum size and zero-intercept studies. I performed this blending technique to adjust the studies to account for the subjective estimates used in the individual studies (specifically the subjective assessment of the minimum size system used in the minimum size study, and the estimated data used in the zero-intercept study).

Q WHAT IS THE COST OF SERVICE IMPACT ASSOCIATED WITH CLASSIFYING AND ALLOCATING A PORTION OF DISTRIBUTION PLANT ACCOUNTS 364 THROUGH 367 ON A CUSTOMER BASIS?

A Exhibit NP-4 shows the results of the updated CCOSS, which classifies the costs associated with Distribution Plant Accounts 364 through 367 on the basis of customer and demand. The results of the revised cost of service study show an increase in cost allocation to the Residential customer class. Costs are reduced for the General Service Secondary class and General Service Primary class, while costs for the General Service Transmission class remained virtually unchanged.

Q HOW DO THE RESULTS OF YOUR REVISED CCOSS COMPARE TO THE CCOSS FILED BY DELMARVA?

A The total cost of service by customer class under Delmarva's CCOSS and my revised CCOSS are shown on Exhibit NP-5. The results of the revised CCOSS, which takes into account actual cost utilization principles, should be used to allocate any distribution revenue increase in this proceeding, as well as the design of distribution rates.

While data requirements and certain aspects of developing a customer component may be criticized, using no customer component is clearly wrong and produces erroneous results. A conservative implementation of a customer component is a fair and reasonable approach that should be used in the CCOSS and is also in accord with the NARUC Manual.

V. REVENUE ALLOCATION

Q HAS DELMARVA ALLOCATED ITS REQUESTED LEVEL OF DISTRIBUTION INCREASE IN THIS CASE RECOGNIZING THE RESULTS OF THEIR CCOSS?

A Yes. As shown on Schedule MCS-1, page 1 of 2, from the Direct Testimony of Company witness Marlene Santacecilia, Delmarva's proposed revenue distribution was developed with the intent to move rate classes closer to cost of service. However, in order to ensure that no rate class receives an inordinate level of increase, Delmarva limited the level of increase to any one service classification to 1.5 times the overall distribution percentage increase. As shown on Schedule MCS-1, the Residential Space Heating, General Service Primary and the General Service Transmission rate classes all receive revenue increases above the system average level of increase, while the Residential (non-space heating), Small and Large

General Service Secondary and Street Lighting customer classes receive revenue increases below the system average.

Q HAVE YOU DEVELOPED A RECOMMENDED SPREAD OF THE INCREASE, ASSUMING FULL REVENUE RELIEF FOR THE COMPANY, AND USING YOUR CORRECTED CCOSS?

A Yes. The results are shown on Exhibit NP-6. As shown on Exhibit NP-6, the Residential (Non-Space Heating) rate class, the Small and Large General Service Secondary rate classes along with the General Service Primary and Street Lighting rate classes receive rate increase levels that are below the system average level of increase. The remaining rate classes, Residential Space Heating and General Service Transmission receive rate increases that are above the system average level of increase. However, the Rate GST increase should be limited to no more than one half of the system average percentage increase to reflect the power factor benefit to the system associated with this class.

Q PLEASE EXPLAIN YOUR RECOMMENDATION TO LIMIT THE RATE GST INCREASE TO ONE-HALF OF THE SYSTEM AVERAGE PERCENTAGE INCREASE.

A Rate GST is a unique class of seven customers served at transmission voltage. The GST rate provides for a credit or penalty for a power factor above or below 90%. Customers that increase their power factor above 90% receive a credit of $0.03 per kW of measured demand for every whole percent above 90%. An increase in power factor is desirable and reflects a benefit to the system and generally lowers overall cost to the system. The rate of return of the Rate GST class is a negative 4.23% with

the credit to revenues and 28% without. These customers should not be penalized with a large rate increase for taking action at their own expense in response to a price signal to provide benefit to the system. A fair and reasonable approach is to limit the increase to Rate GST to one-half of the system average percentage increase.

VI. CONCLUSIONS AND RECOMMENDATIONS

Q PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A The Commission should adopt my recommended adjustments to Delmarva's proposed class revenue allocation. My specific recommendations and conclusions are as follows:

1. Class cost of service is the starting point and most important guideline for establishing the level and design of rates charged to customers.

2. Delmarva's CCOSS comports with generally accepted cost of service study methods. However, the classification and allocation of certain distribution plant accounts in Delmarva's CCOSS should be modified to classify a portion of those costs as customer-related.

3. The primary purpose of the distribution system is to deliver power from the transmission grid to the customer. Certain distribution investments must be made to connect a customer to the system. Therefore, these investments are considered customer-related.

4. Updating Delmarva's CCOSS to reflect a reasonable customer component in the classification and allocation of certain distribution plant costs shows that at current rates, the rates associated with the General Service Secondary and General Service Primary rate classes are above cost of service.

5. Delmarva's CCOSS appears to not adequately credit the General Service Transmission customer class for system cost reductions related to power factor improvement while reducing revenues for the power factor component.

6. With the exception of the General Service Transmission class results, the results of the revised CCOSS, which takes into account actual cost utilization principles, should be used to allocate any distribution revenue increase in this proceeding as well as the design of distribution rates. The revised CCOSS supports a lower than system average increase for the General Service Primary rate class. As previously stated, the GST class should be limited to one-half of the system average percentage increase.

7. The updated CCOSS identifies a larger percentage of the General Service Primary customer rate class revenue requirement as customer-related and less as demand-related.

Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A Yes, it does.

Qualifications of Nicholas Phillips, Jr.

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Nicholas Phillips, Jr. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q PLEASE STATE YOUR OCCUPATION.

A I am a consultant in the field of public utility regulation and a Managing Principal with the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

Q PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EMPLOYMENT EXPERIENCE.

A I graduated from Lawrence Institute of Technology in 1968 with a Bachelor of Science Degree in Electrical Engineering. I received a Master's of Business Administration Degree from Wayne State University in 1972. Since that time I have taken many Masters and Ph.D. level courses in the field of Economics at Wayne State University and the University of Missouri.

I was employed by The Detroit Edison Company in June of 1968 in its Professional Development Program. My initial assignments were in the engineering and operations divisions where my responsibilities included the overhead and underground design, construction, operation and specifications for transmission and distribution equipment; budgeting and cost control for operations and capital expenditures; equipment performance under field and laboratory conditions; and

emergency service restoration. I also worked in various districts, planning system expansion and construction based on increased and changing loads.

Since 1973, I have been engaged in the preparation of studies involving revenue requirements based on the cost to serve electric, steam, water and other portions of utility operations.

Other responsibilities have included power plant studies; profitability of various segments of utility operations; administration and recovery of fuel and purchased power costs; sale of utility plant; rate investigations; depreciation accrual rates; economic investigations; the determination of rate base, operating income, rate of return; contract analysis; rate design and revenue requirements in general.

I have held various positions including Supervisor of Cost of Service, Supervisor of Economic studies and Depreciation, Assistant Director of Load Research, and was designated as Manager of various rate cases before the Michigan Public Service Commission and the Federal Energy Regulatory Commission. I was acting as Director of Revenue Requirements when I left Detroit Edison to accept a position at Drazen-Brubaker & Associates, Inc., in May of 1979.

The firm of Drazen-Brubaker & Associates, Inc. was incorporated in 1972 and has assumed the utility rate and economic consulting activities of Drazen Associates, Inc., active since 1937. In April 1995, the firm of Brubaker & Associates, Inc. was formed. It includes most of the former DBA principals and staff.

Our firm has prepared many studies involving original cost and annual depreciation accrual rates relating to electric, steam, gas and water properties, as well as cost of service studies in connection with rate cases and negotiation of contracts for substantial quantities of gas and electricity for industrial use. In these cases, it was necessary to analyze property records, depreciation accrual rates and

reserves, rate base determinations, operating revenues, operating expenses, cost of capital and all other elements relating to cost of service.

In general, we are engaged in valuation and depreciation studies, rate work, feasibility, economic and cost of service studies and the design of rates for utility services. In addition to our main office in St. Louis, the firm also has branch offices in Phoenix, Arizona and Corpus Christi, Texas.

Q WHAT ADDITIONAL EDUCATIONAL, PROFESSIONAL EXPERIENCE AND AFFILIATIONS HAVE YOU HAD?

A I have completed various courses and attended many seminars concerned with rate design, load research, capital recovery, depreciation, and financial evaluation. I have served as an instructor of mathematics of finance at the Detroit College of Business located in Dearborn, Michigan. I have also lectured on rate and revenue requirement topics.

Q HAVE YOU PREVIOUSLY APPEARED BEFORE A REGULATORY COMMISSION?

A Yes. I have appeared before the New Jersey Board of Public Utilities, the Public Service Commissions of Arkansas, Delaware, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, New York, North Carolina, Ohio, Pennsylvania, South Carolina, South Dakota, Virginia, West Virginia, and Wisconsin, the Lansing Board of Water and Light, the District of Columbia, and the Council of the City of New Orleans in numerous proceedings concerning cost of service, rate base, unit costs, pro forma operating income, appropriate class rates of return, adjustments to the income statement, revenue requirements, rate design, integrated resource planning, power plant operations, fuel cost recovery, regulatory issues, rate-making

issues, environmental compliance, avoided costs, cogeneration, cost recovery, economic dispatch, rate of return, demand-side management, regulatory accounting and various other items.

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