Direct Testimony
Jan Kirsch

Before the South Dakota Public Utilities Commission of
the State of South Dakota

In the Matter of the Application of
Black Hills Power, Inc., a South Dakota Corporation

For Authority to Increase Rates
In South Dakota

Docket No. EL12-___

December 17, 2012

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EXHIBITS

None

I. INTRODUCTION & QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Jan Kirsch. My business address is 625 Ninth Street, Rapid City, South Dakota 57701.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Black Hills Utility Holdings, Inc. ("BHUH") as a Senior Rate Analyst for the regulated electric utilities that Black Hills Corporation owns, including Black Hills Power, Inc. ("Black Hills Power" or the "Company"). In that capacity, my current responsibilities include electric rate cases, compliance filings, and tariff interpretations and revisions.

Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I attended Bemidji State University in Minnesota where I earned a Bachelor of Science in Accounting. I received a Master of Business Administration from University of Denver in 1991. I joined Black Hills Corporation as a Rate Analyst in September of 2008 and was promoted to Senior Rate Analyst in September of 2011. Prior to this, I was a Certified Public Accountant with an international accounting firm and then held progressive audit, accounting, and finance positions in the high tech and higher education industries.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my testimony is to provide a proof of test year revenues and billing determinants for Black Hills Power. I will also provide the adjusted test year billing determinants with current and proposed rates. In addition, my testimony describes the jurisdictional and customer class cost of service study for the revenue requirement offered in this case by Ms. Erin Wentz. Finally, I discuss the principles used for rate design and sponsor the customer rate updates to the rate schedule tariffs.

III. BILLING DETERMINANTS

A. Test Year Proof of Revenue and Billing Determinants

Q. PLEASE EXPLAIN THE PURPOSE OF STATEMENT I PAGE 4.

A. The purpose of Statement I Page 4 is to provide a proof of South Dakota revenues based on the billing determinants with existing rates for the test year ended June 30, 2012 by customer classification. This process is necessary to substantiate that the test year billing determinant revenues reconcile to the per book revenues. The rates used to price out test year billing determinants are the same for each month of the test year, except for customers' whose rates were adjusted during the test year. The test year billing determinants take these rate adjustments into account. Black Hills Power's rate schedule revenues are typically classified as customer charge, capacity charge, or energy charge. In addition to these typical billing charges, electric revenue can also be adjusted by the power factor adjustment,

substation ownership discount, rate schedule minimum monthly charges, rate schedule adjustment clauses, and maintenance and facilities charges.

Q. ARE ANY BILLING CHARGES EXCLUDED FROM STATEMENT I PAGE 4.

A. Yes. The revenue shown on Statement I Page 4 does not include sales tax.

Q. PLEASE EXPLAIN HOW THE BILLING DETERMINANTS SHOWN ON STATEMENT I PAGE 4 WERE DERIVED.

A. The billing determinants are compiled by rate identification ("Rate ID") from monthly reports generated from the Company's Customer Information System ("CIS+") billing system and from a download of individual customer billing records from CIS+ in a database format. From these sources, the billing information is calculated for each Rate ID, cross-checked for accuracy, and then grouped by tariff schedule and customer class.

Q. DOES THE CIS+ BILLING SYSTEM ASSIGN ONLY ONE RATE ID FOR EACH TARIFF RATE SCHEDULE?

A. No. There can be multiple Rate IDs within the CIS+ billing system for a specific rate schedule. The Rate IDs are used by the billing system to designate the proper rate component values to apply to the billed usage during the bill calculation process. For example, Black Hills Power has a Private or Public Area Lighting Service tariff provided in Section 3, Sheet Nos. 16-18. However, there are three Rate IDs associated with this tariff schedule. For billing purposes, the Rate ID of "SDA24" designates standard lighting fixtures and are billed the rates provided in

section “a” on Sheet No. 16. Whereas Rate ID “SDB24” designates flood lighting fixtures and are billed the section “b” rates on Sheet No. 16, and Rate ID of “SDC24” designates customer owned fixtures and are billed the section “c” rates on Sheet No. 17.

Q. PLEASE DISCUSS THE FORMAT OF STATEMENT I PAGE 4.

A. This schedule lists separately by each customer class the reconciliation of the per book kWh energy sales and billing revenue from the Company’s general ledger system as compared to the summary of the monthly test year billing determinants kWh energy sales and billing revenues that are developed by Rate ID from the Company’s CIS+ billing system.

Q. DO YOU REACH ANY CONCLUSIONS CONCERNING BILLED REVENUES?

A. Yes. From the analysis of the test year billing determinants, I conclude that billing determinants and billed revenues are accurately reflected in the per-book revenues as presented in the rate case filing.

B. Pro Forma Revenue Adjustments and Billing Determinants

Q. PLEASE EXPLAIN THE PURPOSE OF STATEMENT I PAGE 3.

A. This schedule summarizes the pro forma kWh sales and revenues by customer class and provides a comparison to the per book kWh sales and revenues. The difference between the per book and pro forma kWh sales and revenue represents the net proposed kWh sales and revenues adjustments by customer class.

Q. PLEASE SUMMARIZE THE PROPOSED REVENUE ADJUSTMENTS INCORPORATED IN STATEMENT I PAGE 3.

A. Statement I Page 3 incorporates three revenue adjustments. The first adjustment eliminates one day of February sales for leap year. This adjustment is applied across all customer classes and Rate IDs and results in a reduction of (4,288,307) kWh sales and ($310,758) revenues to the pro forma billing determinants. The second adjustment annualized the test year rate adjustments. This adjustment does not impact pro forma kWh sales but increases revenues in the amount of $190,182 for these customers. Finally, the third adjustment eliminates the base energy revenues for all customer classes. Mr. Chris Kilpatrick's testimony provides a further explanation of the base energy revenue adjustment.

Q. WHY IS AN ADJUSTMENT BEING MADE FOR LEAP YEAR?

A. The rate case test period from July 1, 2011 through June 30, 2012 contains 366 days of revenue due to the leap year rather than a common year of 365 days. Since leap year only occurs once every four years, this is a known and measurable adjustment and reduces kWh sales and revenues for the test period.

Q. HOW WAS THE ADJUSTMENT FOR LEAP YEAR DETERMINED?

A. The February kWh sales for each Rate ID are divided by 29 to determine 1 day of kWh sales. This 1 day of kWh sales is then multiplied by the energy rate to determine the revenue impact. For those customers with a tiered energy charge, the rate in the last tier, or highest usage tier, is used to calculate the revenue impact.

C. Pro Forma Billing Determinants and Proposed Rates

Q. WHAT IS THE PURPOSE OF SCHEDULES I-1 PAGES 1 THROUGH 12?

A. The purpose of these schedules is to provide a proof of revenue based on proposed base rates. These calculations do not include the proposed Energy Cost or Transmission Cost Adjustment rates as described in Mr. Kilpatrick's testimony. However, the previously approved Environmental Improvement Adjustment (Docket No. EL11-001) is now included in base rates with this rate case. In addition, the previously approved Energy Efficiency Solutions Adjustment (Docket No. EL11-002) revenues are included in order to reconcile to the total adjusted South Dakota retail revenues. A filing to update the Energy Efficiency Solutions Adjustment will be made with the South Dakota Public Utilities Commission ("Commission") in April of 2013.

Q. DO YOU REACH ANY CONCLUSIONS REGARDING THE PROPOSED BASE RATES?

A. Yes. When the proposed base rates are applied to the adjusted billing determinants, I conclude that revenues equal the requested sales of electricity retail revenue requirement of approximately $119,114,000.

IV. OVERVIEW OF RATE DESIGN

Q. WHAT STEPS DID THE COMPANY FOLLOW TO DESIGN RATES?

A. After identifying rate design objectives, the first analytical step is to determine the jurisdictional cost of service. The cost of service is also commonly referred to as revenue requirement in rate case filing as offered in Ms. Wentz's testimony. The

purpose of the jurisdictional cost of service is to establish the revenues needed from South Dakota retail customers to recover the Company's costs. The next step is to perform a class cost of service study in order to allocate the costs across rate classes based on cost causation and service type. Finally, based on the results of the jurisdictional and class cost of service studies, revenue targets and rate elements are calculated and then modified where necessary to meet the rate design objectives.

Q. WHAT ARE BLACK HILLS POWER'S RATE DESIGN OBJECTIVES?

A. Black Hills Power's main objectives in this case, and consistent with previous rate cases, are to collect the revenues necessary for the continued operation of the Company, to maintain a reasonable degree of rate continuity, to remain a viable energy supplier, and to have rates which encourage economic use of energy.

Q. ARE BLACK HILLS POWER'S CURRENT RATE DESIGN AND RATE STRUCTURES APPROPRIATE?

A. Yes. Black Hills Power has worked over time to design rates that are easy for customers to understand, have been accepted by customers, and provide for ease of administration. In addition, Black Hills Power's rates are structured to provide appropriate price signals to customers to encourage optimum use of supply sources by promoting desirable load characteristics.

Q. WHAT SCHEDULES SUPPORT BLACK HILLS POWER'S RATE DESIGN STEPS?

A. The jurisdictional cost of service study is provided in Schedule N-1 for the adjusted or pro forma and Statement N for the per book. The class cost of service study is supported by Schedule O-1 for the adjusted or pro forma and Statement O for the per book. Based on the results of the jurisdictional and class cost of service studies, the rate design for each tariff schedule is provided in Schedule I-1 pages 1 through 12.

V. JURISDICTIONAL COST OF SERVICE STUDY

Q. WHAT IS THE PURPOSE OF THE JURISDICTIONAL COST OF SERVICE STUDY?

A. The purpose of the jurisdictional cost of service study is to allocate costs among the various jurisdictions in which Black Hills Power operates, including South Dakota, Wyoming, Montana, and Federal Energy Regulatory Commission ("FERC"). The jurisdictional cost of service establishes the revenues needed from South Dakota retail customers to recover the Company's reasonable return on rate base, as well as operational and maintenance, depreciation, and tax expenses.

Q. PLEASE DESCRIBE THE STEPS INVOLVED IN CONDUCTING A JURISDICTIONAL COST OF SERVICE STUDY.

A. As described more fully in my testimony below, the steps involved in conducting a jurisdictional cost of service study are similar to the class cost of service study. An allocation percentage is used to allocate rate base and costs based on the main

driver of the rate base or expense. For example, production facilities are allocated based on demand since generation is built to handle specific demands of Black Hills Power's customers. This methodology conforms to general cost causation rate making principles. Consistent allocation methodologies are used between the jurisdictional and class cost of service studies whenever possible and appropriate. The FERC jurisdictional investments and costs are primarily directly assigned based on the approved annual formula rate methodology in accordance with Black Hills Power's FERC Joint Open Access Transmission Tariff for the 230 kV Common Use System.

Q. **PLEASE IDENTIFY ANY KEY DIFFERENCES IN ALLOCATION METHODOLOGIES.**

A. The primary difference in allocation methodologies is the production demand allocation. Based on system monitoring meters located throughout the various jurisdictions, Black Hills Power is able to identify the monthly Coincident Peak contributions by jurisdiction. The Sum of the Twelve Monthly Coincident Peak ("12 CP") Method is used to allocate demand related production rate base and expenses in the jurisdictional cost of service study. The 12 CP methodology allocates costs based on the specific jurisdiction's contribution to the 12 monthly maximum system peaks and indicates that the peak loads of all 12 months of the year contribute to the need for potential investments in generation. Black Hills Power believes this is an appropriate allocation methodology for the jurisdictional allocation of demand related production rate base and costs. In prior rate cases,

Black Hills Power used the Single Coincident Peak methodology for allocating production investment and related costs among the jurisdictions.

VI. CLASS COST OF SERVICE STUDY

A. Overview of Class Cost of Service Study

Q. WHAT IS THE PURPOSE OF THE CLASS COST OF SERVICE STUDY?

A. A class cost of service study is performed to determine the revenue requirement for each class of customers. This is accomplished by assigning, or allocating, the detailed components of Black Hills Power's revenue requirement to individual customer classes using allocation factors that reflect the nature of the particular cost component being allocated. Black Hills Power's total cost of service is distributed among the various customer classes in such a manner that the sum of the customer class revenue requirements equals the South Dakota jurisdictional revenue requirement. This type of cost study is generally referred to as a "fully distributed" cost of service study since all company costs that make up the revenue requirement are allocated to customer classes.

Q. WHY ARE COSTS ALLOCATED TO CUSTOMER CLASSES?

A. Costs are allocated to customer classes in order to provide customer class revenue guidelines for rate design purposes. In addition, the cost study results provide information regarding the level of classified component costs per unit (e.g., demand cost per kW or kVA, energy costs per kWh, and customer costs per customer per month) which may be useful in the design of rates.

Q. PLEASE DESCRIBE THE STEPS INVOLVED IN CONDUCTING A CLASS COST OF SERVICE STUDY.

A. There are three steps involved in conducting a class cost of service study - functionalization, classification, and allocation. Functionalization identifies the operational source where the costs are incurred, either directly or indirectly, with respect to the physical process of providing service. For example, the costs of generating units and purchased power (production function) are identified separately from costs associated with transmission lines (transmission function) which are, in turn, segregated from the costs of the distribution system (distribution function).

The next step in conducting a class cost of service study, classification, refers to the separation of costs according to the usage characteristic that drives the cost – e.g., demand, energy and customer-related costs. Demand costs are costs that arise as a result of the rate of power consumption over a short period of time (usually 15 minutes to an hour). Energy costs are those costs that result from the volume of energy supplied over time. Customer costs are costs that vary as a function of the number of system customers.

The final step in conducting a cost of service is allocation. Allocation is the process of using customer class metrics, along with the knowledge that certain costs are incurred exclusively for the benefit of specific identifiable customers, to allocate or assign the specific cost components that have been functionalized and classified to individual customer classes. Customer class information such as

annual energy use, weighted meter costs, and customer counts are employed to calculate class allocation factors.

Q. PLEASE DESCRIBE THE PROCESS OF COST FUNCTIONALIZATION EMPLOYED IN THE CLASS COST OF SERVICE STUDY.

A. After all the individual cost components representing the total revenue requirement have been collected for the cost of service study, the components are separated according to the function or physical service they provide. These functions are:

- Production – costs associated with the production of energy and capacity, including purchased power;
- Transmission – costs associated with the high voltage system that transports the power to load centers;
- Distribution – costs associated with distributing the energy from the transmission system to the end users;
- Customer Service – costs associated with providing service to the customer –e.g., service drops, metering, billing, the customer-related portion of transformers and conductors, and similar costs; and
- Administrative and General – common costs, such as management, buildings, software, support services, and similar indirect costs that are incurred to support the other functions of electric service.

Q. PLEASE DESCRIBE THE PROCESS OF COST CLASSIFICATION EMPLOYED IN THE CLASS COST OF SERVICE STUDY.

A. Cost classification is the process of further categorizing the functionalized costs according to the cost driving characteristic of the utility service being provided. The three principal cost classifications are demand-related costs, energy-related costs and customer-related costs.

Demand-related costs are those fixed costs that are related to the kilowatt ("kW") demand that the customers place on the system at any point in time. These costs vary with the maximum demand imposed on the various components (facilities) of the power system by customers. Energy-related costs are those costs that are related to the kilowatt-hours ("kWh") of energy that the customer utilizes over time. These costs, such as fuel, vary with the overall quantity of energy. Customer-related costs are those costs incurred as a result of the number of customers on the system. These costs, such as meters and billing, are incurred to serve individual customers.

As described later in my testimony, operating and accounting data are used to develop allocation factors that link cost causation factors (demand, energy and customers) to the costs that comprise Black Hills Power's revenue requirement. These allocation factors are calculated as percentages and applied to specific costs and rate base items to derive Black Hills Power's cost of service for each customer class.

Q. ONCE BLACK HILLS POWER'S COSTS OF SERVICE ARE FUNCTIONALIZED AND CLASSIFIED, WHAT IS THE NEXT STEP IN THE PROCESS OF CALCULATING CLASS COST OF SERVICE?

A. After functionalization and classification, class responsibility for each cost is determined using the allocation factors referred to above. Each identifiable element of Black Hills Power's revenue requirement is allocated to each customer class on the basis of imposed demand (using either average and excess ("A&E") or a calculated maximum demand), energy at the generation source (after accounting for line and transformation losses), or number of customers served (weighted by the appropriate weighting factor to recognize differences in types of customers and their impacts upon the system). These allocations are then summarized within the cost of service model.

Q. PLEASE DESCRIBE THE LAYOUT AND OPERATION OF THE CLASS COST OF SERVICE MODELS IN THIS FILING.

A. The cost of service models provided in Statement O - Per Book Retail Electric Cost of Service Study and Schedule O-1 - Adjusted Retail Electric Cost of Service Study are organized as a cost matrix. Each row of the model identifies a particular detailed component of the total Black Hills Power costs to provide service. The columns of the study consist of the allocation of costs to each customer class. The development of the costs of serving each customer class begins with the allocation of revenues, and continues with the allocation of operating expenses, taxes, rate base and the computation of labor and other allocators.

Q. PLEASE DESCRIBE THE OUTPUT OF THE COST OF SERVICE MODELS IN THIS FILING.

A. Page 1 of the class cost of service study summarizes the allocated components of the revenue requirement and presents the rates of return by customer class at present rates. As indicated by this summary, the present rates charged to some classes produce a rate of return for that class that is below the system average rate of return while the present rates charged to other classes produce a higher than system average rate of return. The rates of return at present rates are also shown as ratios of the class return to the system return, which are referred to in the cost of service study as the "Index Rate of Return". An Index Rate of Return of 1.00 means that the class' return is the same as the system return. An Index Rate of Return of less than 1.00 means that the class' return is less than the system return. Conversely, an Index Rate of Return of greater than 1.00 means that the class' return is greater than the system return.

Page 2 of the class cost of service study summarizes the allocated components of revenue requirement and presents the rates of return by customer class at Black Hills Power's requested rate of return of 8.54%. The results summarized on this page set forth the revenue requirements by class needed for each class to pay its respective costs of providing service.

Page 3 of the class cost of service study presents the rates of return by customer class at Black Hills Power's proposed rates. Since Black Hills Power has proposed

rates for each class equal to the class revenue requirement calculated using equalized rates of return, page 3 is consistent with page 2.

Pages 4 through 10 of the class cost of service study set forth in Schedule O-1 provide the allocation of rate base to classes. The allocations of gross plant in service are provided on pages 4 through 6. The allocations of accumulated depreciation are provided on page 7. Additions and deductions to rate base are provided on page 8 along with the summary of rate base by class of service. Pages 9 and 10 include line item detail for the Addition to Rate Base item Cash Working Capital.

Allocated class Operating Revenues are provided on page 11 of Schedule O-1. The allocation of operation and maintenance expense by account is set forth on pages 12 through 15. Page 16 provides the detailed allocation of depreciation expense by account to customer classes. Taxes Other than Income Taxes are allocated to classes on page 17. The components of Income Taxes and the calculation of Income Taxes by customer class are provided on pages 18 and 19 of Schedule O-1. Income Taxes are not directly allocated to customer classes, but the components used to calculate income taxes are allocated to classes instead. These allocated income tax components are then used to calculate the Income Tax liability for each class based upon the allocated tax components.

The remaining pages of the class cost of service study provide the information to develop the allocation factors employed in the cost study. Page 20 details the development of the salaries and wages allocation factors used in the study.

Finally, pages 21 through 35 provide the detailed information used to develop the other allocation factors employed in the class cost of service study. These allocation factors consist of both externally and internally developed allocation factors. Externally developed allocation ratios reflect customer class metrics such as A&E and calculated maximum demands at various voltage levels, energy sales, and as measured at both the generation level and at the meter (*i.e.*, with and without line and transformation losses), and number of customers by voltage level. Externally developed allocation factors are developed outside of the cost of service model and then input into the model. In contrast, internally developed allocation factors are calculated within the cost of service model using previously allocated cost components to derive factors that reflect the combined impacts of multiple cost drivers.

Q. DO YOU HAVE AN OPINION AS TO WHETHER THE COST OF SERVICE STUDY IN THIS FILING IS TRANSPARENT AND VERIFIABLE?

A. Yes, I believe that the cost study is transparent and verifiable. The jurisdictional and class cost of service study submitted in Statement N, Schedule N-1, Statement O, and Schedule O-1 provides complete detail as to each allocation made on an account-by-account basis. In addition, cross-references to supporting schedules are provided on all summary pages. Every calculation made in the model can be readily verified by Commission Staff and other parties to the case. Although the cost of service model used by Black Hills Power in this filing is subject to

protective restrictions since its internal computations are confidential trade secrets of Management Applications Consulting, Inc., Black Hills Power will provide a working model of its licensed cost of service studies to Staff and any intervenors upon execution of the necessary confidentiality agreements.

B. Cost Allocations

Q. PLEASE DESCRIBE YOUR PROPOSED ALLOCATION OF POWER SUPPLY RESOURCES IN THIS CURRENT RATE CASE.

A. In this filing, Black Hills Power proposes the use of the A&E allocation method to allocate power supply capacity costs. The Company believes the A&E allocation is consistent with the approach used for previous rate cases, and reasonably and fairly represents the factors that affect Black Hills Power's demand-related supply costs.

Q. PLEASE DESCRIBE FOR US THE AVERAGE AND EXCESS CAPACITY ALLOCATION METHODOLOGY.

A. The A&E allocation method has two distinct components to its calculations of responsibility for the system peak demand of 334 MW. The system peak demand for the test period occurred on July 19, 2011. First, each customer class is allocated its average kW demand during the test year. Average kW demand is determined by taking the total kilowatt hour sales for the class, plus associated energy losses, divided by the number of hours within the test period. In this case, the number of hours used was 8,760, which is 365 (adjusted for leap year) x 24 hours. The second component of the A&E demand allocation, allocates the

remaining system peak demand (excess demand) not allocated by the sum of the individual class average demands. The excess demand is allocated based upon the relationship of the individual class non-coincident peak demands determined for the test period. The result of this approach is that customer classes with lower load factors are responsible for a greater percentage of the excess demand, whereas customers with higher load factors are responsible for a greater percentage of the average demand. The approach has the tendency to recognize that systems are made up of both base load resources and peaking resources, and that the load factors associated with each class of customer inspires system planners to acquire different mixes of generation resources.

Q. WHY WAS THE AVERAGE AND EXCESS CAPACITY ALLOCATION METHOD SELECTED FOR THIS RATE CASE?

There are a number of allocation methods that analyze the operating and dispatch characteristics of individual supply resources, and that separately allocate these individual supply resources on the basis of when the resources are utilized and what the customer class loads are at specific times. These allocation methods require extensive operating data as well as extensive class load data by hour. Since this operating data is not available for the test year, it was determined that the A&E capacity allocator is an appropriate methodology to use in this rate case.

The A&E capacity allocation method has been used by the Company and approved by the Commission in all of its previous rate case proceedings in South Dakota. Therefore, the results of this method are consistent with past cost

allocation and the rate design provided for in the Company's rate schedules. The A&E allocator is recognized by the National Association of Regulatory Utility Commissioners ("NARUC") as an acceptable capacity allocation methodology in the Electric Utility Cost Allocation Manual. Finally, Black Hills Power's system, with similar summer and winter peaks should use a methodology that recognizes both the need to plan for base load resources and then need to acquire peaking resources. The A&E methodology fits this need.

Q. PLEASE DESCRIBE THE PROPOSED ALLOCATION OF TRANSMISSION COSTS.

A. Over 96% of Black Hills Power's transmission system and related costs are allocated to the FERC jurisdiction for the 230 kV Common Use System that is owned and operated by Black Hills Power, Basin Electric Power Cooperative, and Powder River Energy Corporation. The characteristics of the remaining transmission system, to be first allocated to the state jurisdictions and then South Dakota customers, are more closely related to the distribution system. For example, some of the substation assets that provide step down transformation from transmission voltage to distribution voltage remain to be allocated. Due to the nature of these assets and related costs, the Company proposes to use the Calculated Maximum Demand, or Non Coincident Peak ("NCP"), allocation methodology. This is consistent with the methodology used to allocate certain distribution assets and related costs as provided further in my testimony below.

Q. WHAT IS THE RECOMMENDATION IN THE CURRENT CASE REGARDING THE CLASSIFICATION AND ALLOCATION OF DISTRIBUTION ACCOUNTS 364 THROUGH 368?

A. The Company recommends classifying these distribution accounts as demand and using the NCP allocation methodology. Several approaches were considered when determining the demand and customer classification of these accounts, such as the Minimum-Size Method and the Minimum-Intercept Approach that are provided in NARUC's Electric Utility Cost Allocation Manual. However, the evaluation of these methods on page 95 of the Manual identifies flaws in each of the methods. Due to the potential misclassification or misallocation to customer classes from these shortcomings associated with employing these classification methods, it was determined to classify these accounts as demand. Since local area loads are the major factors in sizing distribution equipment, the customer class non-coincident demand is used to allocate the distribution accounts. This classification and allocation of these distribution accounts is consistent with Black Hills Power's previous rate cases.

Q. DO THE ALLOCATIONS OF DISTRIBUTION PLANT IN THE CLASS COST OF SERVICE STUDY RECOGNIZE DIFFERENCES BETWEEN PRIMARY AND SECONDARY FACILITIES?

A. Yes, as indicated on page 5 of the class cost of service study, Accounts 364 through 367 recognize that some distribution customers are served from the primary voltage system and other distribution customers are served at secondary

voltage. This differentiation by voltage level allows secondary costs to be allocated only to secondary customers.

Q. HOW ARE THE REMAINING DISTRIBUTION PLANT ACCOUNTS ALLOCATED TO CUSTOMER CLASSES?

A. Account 369 - Services includes customer-related costs that are allocated to classes on the basis of weighted class NCP demands. Account 370 - Meters is allocated to classes on the basis of the number of customers weighted by the relative cost of a meter for that class. The remaining plant accounts, Account 371 - Installations on customer premises and Account 373 - Street lighting and signal systems are exclusively used for lighting services of Black Hills Power. Therefore, these accounts are directly assigned to the Lighting class as a whole.

Q. BRIEFLY DESCRIBE THE ALLOCATION OF GENERAL PLANT.

A. General Plant does not readily fall into a demand, energy, or customer classification since general plant reflects indirect common costs necessary to operate a utility system. In performing a cost of service study, Operation and Maintenance ("O&M") expenses for production, transmission, distribution, customer accounting and customer information have already been functionalized, classified and allocated to classes. As a result, the level of wages and salaries recorded in the O&M expense accounts is known and allocation factors are developed using this information. In summary, general plant is allocated on the basis of the prior assignment of distribution wages and salaries by operation and

maintenance expense accounts. This method is recognized by NARUC in its Electric Utility Cost Allocation Manual (page 105).

Q. HOW ARE THE REMAINING RATE BASE ITEMS ALLOCATED TO CLASSES?

A. Accumulated depreciation is allocated to classes based upon the prior allocation of related plant accounts. Additions and deductions from rate base are allocated using the most appropriate allocation factors for the items being assigned. For example, cash working capital is allocated to classes on the basis of an analysis of specific components listed on pages 9 and 10 of the cost study that encompass the leads and lags of expenses; fuel inventory is allocated based upon the allocation of fuel expense; materials and supplies inventory are allocated to classes on the basis of total plant in service; prepayments are allocated on the basis of previously allocated O&M expenses excluding fuel and purchased power; customer advances for construction are allocated based upon a specific assignment; and regulatory assets, regulatory liabilities, and deferred taxes are allocated based on salary and wages, total plant, or customer based on the nature of the specific accounts.

Q. HOW ARE OPERATING REVENUES ALLOCATED?

A. Sales of electricity are recorded by class of service and are, therefore, directly assigned. Account 450 - Forfeited discounts is allocated on the basis of expense Account 904 - Uncollectible accounts. Miscellaneous service revenues are allocated on the basis of distribution plant. Rent from electric property is allocated on the basis of previously allocated transmission and distribution plant in service.

The allocations of operating revenues are set forth on page 11 of the class cost of service study.

Q. PLEASE DESCRIBE THE ALLOCATION OF POWER PRODUCTION EXPENSE AND OTHER POWER SUPPLY EXPENSES.

A. Accounts 501 - Fuel and 547 - Other Power Generation Fuel are eliminated from the revenue requirement as provided in the testimony of Mr. Kilpatrick. All other power production expenses other than those in supervision and engineering accounts are allocated on the basis of the production allocation factor which, as explained above, is calculated on the basis of the A&E allocation methodology. Supervision and engineering accounts are allocated based upon the allocation of the wages and salaries recorded in the related series of accounts. For example, Account 500 - Supervision and Engineering (steam production operation) is allocated on the basis of the allocation of wages and salaries allocated in Accounts 501 through 506; Account 510 - Supervision and Engineering (steam production maintenance) is allocated on the basis of the allocation of wages and salaries allocated in Accounts 511 through 514; Account 546 - Supervision and Engineering (other power generation operation) is allocated on the basis of the allocation of wages and salaries allocated in Accounts 547 through 549; and Account 551 - Supervision and Engineering (other power generation maintenance) is allocated on the basis of the allocation of wages and salaries allocated in accounts 552 through 556. Finally, the energy component of purchased power is removed from the revenue requirement as provided in Mr.

Kilpatrick's testimony while the demand component of purchase power is allocated using the demand-related production allocation factor discussed above.

Q. PLEASE DESCRIBE THE ALLOCATION OF TRANSMISSION EXPENSES.

A. For this cost of service study, the costs recorded in most O&M transmission expense accounts are related to specific property accounts that have already been allocated to the FERC jurisdiction. In addition, the Transmission of Electricity by Others (Account 565) is completely removed for base energy costs as further explained in Mr. Kilpatrick's testimony. For these reasons, all transmission costs except for the Supervision and Engineering accounts (Accounts 560 and 568) are allocated on the basis of total allocated transmission plant. Transmission Supervision and Engineering expenses are allocated on the basis of the sum of the allocation of wages and salaries in the related series of accounts in the same manner as production expenses.

Q. PLEASE DESCRIBE THE ALLOCATION OF DISTRIBUTION EXPENSES.

A. Similar to the transmission plant related O&M expenses, the distribution O&M expenses are allocated based on the distribution plant allocator. For example, overhead line operation expense and maintenance expense are allocated on the basis of the allocation of overhead lines; street light related expenses are allocated on the basis of the allocation of street lights; transformer maintenance expenses are allocated on the basis of the allocation of transformers; and so forth. Similarly,

distribution supervision and engineering expenses are allocated on the basis of the summed allocation of the wage and salary components among the allocated series of expense accounts. Accounts 581 - Load Dispatching, 588 – Miscellaneous Operation Expenses, 589 - Rents, and 598 - Miscellaneous Maintenance Expense are allocated on the basis of total distribution plant.

Q. PLEASE DESCRIBE THE ALLOCATION OF CUSTOMER ACCOUNTS EXPENSES AND CUSTOMER SERVICE EXPENSES.

A. These accounts are customer-related accounts that are allocated on the basis of number of bills or number of customers. Account 904 - Uncollectible accounts are allocated on the basis of customer account write-offs during the test period. Supervision expenses are allocated based upon the allocated wages and salaries of the related series of accounts.

Q. PLEASE DESCRIBE THE ALLOCATION OF ADMINISTRATIVE AND GENERAL ("A&G") EXPENSES.

A. A large portion of A&G activities support the functions and activities carried out by Black Hills Power employees. Therefore, many A&G expense accounts are allocated on the basis of allocated wages and salaries for all other accounts. Property insurance is allocated on the basis of total plant in service. Regulatory commission expense is allocated on claimed revenues. Rents and Maintenance of General Plant are allocated on General Plant.

Q. PLEASE DESCRIBE THE ALLOCATION OF DEPRECIATION EXPENSE.

A. In a manner similar to accumulated depreciation, depreciation expense by account is allocated on the basis of the related plant. This provides an allocation for depreciation expense consistent with the associated plant in service.

Q. PLEASE DESCRIBE THE ALLOCATION OF TAXES OTHER THAN INCOME TAXES.

A. Taxes other than income taxes are allocated based upon the most appropriate allocation. For example, FICA and federal and state unemployment taxes are allocated on the basis of total allocated wages and salaries. The South Dakota Public Utilities Commission Gross Receipts Tax Fund assessment is allocated on the basis of claimed revenues, and property taxes are allocated on the basis of the total plant in service.

Q. PLEASE DESCRIBE THE ALLOCATION OF INCOME TAXES.

A. As previously stated, income taxes are not directly allocated to customer classes. Instead, the components used to calculate income taxes are allocated to classes. These allocated income tax components are then used to calculate the income tax liability for each class based upon the allocated tax components. The detailed computation of federal income taxes are set forth on pages 18 and 19 of the cost of service study provided in Schedule O-1.

C. Results of Study

Q. PLEASE SUMMARIZE THE RESULTS OF THE CLASS COST OF SERVICE STUDY.

A. The table below summarizes the present and proposed retail revenues and rate of returns from pages 1 through 3 of the Schedule O-1 cost of service study.

	Total South Dakota	Residential	General Service	General Service Large/ Industrial	Lighting
Present Revenues	$138,312,473	$53,312,255	$45,882,578	$37,250,844	$1,866795
Present Rate of Return	6.50%	6.61%	6.35%	6.47%	8.38%
Proposed Revenues	$152,058,298	$58,077,613	$51,283,819	$40,816,005	$1,880,861
Proposed Rate of Return	8.54%	8.54%	8.54%	8.54%	8.54%
Proposed Increase ($)	$13,754,826	$4,765,358	$5,401,241	$3,565,161	$14,066
Proposed Increase (%)	9.94%	8.94%	11.77%	9.57%	0.75%

As the results of the class cost of service study indicate, moving the current class rates of return produced at Black Hills Power's present rates to the system return of 8.54% would require increases to base rates for all customer classes. In order for each class to produce the system rate of return of 8.54%, this requires increases to Residential rates by 8.94%, General Service rates by 11.77%, General Service Large/Industrial Contract rates by 9.57%, and Lighting Service rates by 0.75%.

Q. WHAT CONCLUSIONS HAVE YOU REACHED REGARDING THE RESULTS OF THE COST OF SERVICE STUDY?

A. The methods and procedures applied in the jurisdictional and class cost of service studies are consistent with traditional rate making principles employed by the electric utility industry and Black Hills Power. In addition, the results of these cost of service studies fairly and reasonably reflect the costs to serve the various customer classes for Black Hills Power and the results provide a sound basis for designing just and reasonable rates for each of its customer classes.

VII. PROPOSED RATES

Q. ARE THE RESULTS OF THE CLASS COST OF SERVICE STUDY USED TO DETERMINE RATES FOR EACH OF THE CUSTOMER CLASSES?

A. Yes. Rates are designed to recover the revenue requirement assigned to each customer class as determined in the class cost of service study. Therefore, the percentage rate increases are different for each of the customer classes.

Q. HOW ARE THE PERCENTAGE INCREASES APPLIED TO THE CUSTOMER'S RATES?

A. Generally, increases were applied across all rates. Some of the customer charges are rounded to the closest 5 or 10 cents. In addition, for some customer classes, the percentage increase is assigned more to the demand charge, if the class cost of service study supported such charge, rather than the energy charge in order to incent customers to achieve higher load factors. Finally, since the base energy component of rates is moved to the Energy Cost Adjustment, as proposed in Mr.

Kilpatrick's testimony, the energy based rates show a reduction as compared to the current effective energy based rates in the respective tariff schedules.

Q. HAVE YOU PROPOSED ANY NEW RATE SCHEDULES IN THIS FILING?

A. No. At this time, Black Hills Power does not propose any new rate schedules.

VIII. TARIFFS

Q. DO YOU PREPARE TARIFF SCHEDULES TO REFLECT THE NEW RATES?

A. Yes. The tariff schedules are updated to reflect the new rates provided in Schedule I-1 Pages 1 through 12 and are included in Section 2 of Volume 1 of the Application.

IX. CONCLUSION

Q. DO THE COST OF SERVICE STUDY AND RATE DESIGN RESULT IN JUST AND REASONABLE RATES?

A. Yes. The cost of service study provides a straight forward application and process for Black Hills Power's requested increase in base rates. The increase requested for each rate class results in just and reasonable rates for all Black Hills Power customers.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.