BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA
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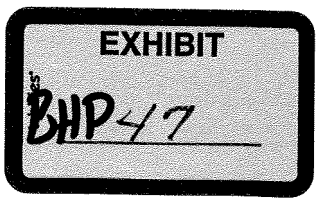
APPLICATION OF BLACK HILLS POWER INC. FOR AN INCREASE IN ELECTRIC RATES	)))	**DOCKET NO. EL09-_____**

PREPARED DIRECT TESTIMONY OF

MICHAEL J. MCFADDEN

Filed: September 29, 2009



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DIRECT TESTIMONY OF MICHAEL J. MCFADDEN

I. INTRODUCTION AND QUALIFICATIONS

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

A. My name is Michael J. McFadden and I am the president of McFadden Consulting Group, Inc. ("McFadden Consulting"). My business address is 625 S. York Street, Denver, Colorado 80209.

Q. PLEASE PROVIDE A SUMMARY OF YOUR QUALIFICATIONS AND EXPERIENCE.

A. A copy of my resume is attached hereto as Exhibit MJM-1.

Q. WAS THIS TESTIMONY PREPARED BY YOU OR UNDER YOUR DIRECT SUPERVISION?

A. Yes.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS MATTER?

A. McFadden Consulting Group, Inc. ("McFadden Consulting") was retained by Lynn, Jackson, Shultz & Lebrun, P.C., which represents Black Hills Power, Inc. ("Black Hills Power" or "Company") in the Company's filing in this matter. McFadden Consulting was specifically retained to review and help prepare the

Company's proposed cost of service and rate design studies. The purpose of my testimony is to sponsor Black Hills Power's cost of service and rate design studies, and is divided into the following sections:

- Provide overview of the cost of service & rate design process
- Provide the billing determinants used in the cost of service & rate design studies, i.e,, customers, demand, energy deliveries
- Compare and discuss the changes in customers, demand, and energy deliveries from those used in the last rate case
- Present cost of service analysis
- Present rate structure
- Compare current & proposed rates

The overall purpose of this testimony is to present the observations, findings, conclusions, and recommendations pertaining to my review and evaluation.

Q. BEFORE YOU ADDRESS SPECIFIC ISSUES, AREAS RELATED TO THE BILLING DETERMINANTS, CLASS COST OF SERVICE, AND RATE DESIGN, DO YOU HAVE ANY GENERAL OBSERVATIONS ABOUT THE GOALS OF THE RATE MAKING PROCESS.

A. When a utility makes a rate filing with a regulatory commission, it generally provides an opportunity to explore different approaches in determination and design of rates. However, in this case, as discussed by the Company's previous witnesses, the driving force behind the Company's filing is to reflect its investment in Wygen III in its rates. Changes in cost of service and rate design

generally pits groups of customers against each other. From a financial perspective, the most critical concern is establishing the total revenue requirements needed for the company to continue to provide safe and reliable service at just and reasonable rates. While determining how much each class should contribute to total revenue requirements is also critical, it is more critical to the various customer classes than it is to the Company.

For these reasons, the Company decided the best course of action was to follow past practices that have been approved by the South Dakota Public Utilities Commission (the "Commission") in previous rate proceedings. The class cost of service and the rate design studies were prepared following this overall philosophy.

III. OVERVIEW OF COST OF SERVICE & RATE DESIGN

Q. PLEASE PROVIDE AN OVERVIEW OF A COST OF SERVICE AND RATE DESIGN ANALYSIS.

A. I believe it is important to discuss cost of service and rate design from a more global view in order to provide a frame of reference for the Commission.

Generally, establishing rates requires three steps, which include:

- Establishing revenue requirements
- Identifying the cost of providing service for each customer class
- Designing the rates for each customer class

Exhibit MJM-2 contains a graphic representation of the revenue requirements, cost of service, and rate design process. Establishing revenue requirements focuses on determining the level of revenue necessary to permit the

utility to recover its cost of providing service to its customers. Some also call this cost of service or total cost of service. The appropriate level of the Company's revenue requirements has been addressed in the testimony of Christopher J. Kilpatrick. I will address the cost of service and rate design aspects of the Company's filing.

The purpose of a cost of service study is to identify the costs associated with providing service to each customer class. The fundamental, underlying principle of any cost of service study is the concept of cost causation, which requires that customers be assigned costs that they cause the utility to incur. Customers cause the costs to be incurred by using the products and services offered by the utility.

Initially, if a cost can be specifically identified as being incurred to provide service to specific customer classes, they are directly assigned to that customer or customer class. Normally, the vast majority of costs cannot be specifically assigned to a customer class.

Costs not identified as being related to a specific customer class, must be allocated to the classes based on a fair and reasonable cost driver. A cost driver is defined as a factor that can be identified as causing changes in a cost. The term cost of service study is used throughout this testimony to refer to this process, although some also call this the cost allocation, or the allocated cost of service.

A key factor in preparing a cost of service study is determining the appropriate customer classes to which costs should be allocated. This is critical because any time customers are grouped together there will be cross subsidies.

Most utilities will attempt to group customers of similar load characteristics together, however, there will still be differences amongst the customers within the class. Additionally, grouping the customers in a class can result in each customer being treated as an average customer for that class. Without proper cost of service and rate design, customers with more favorable usage patterns will effectively subsidize customers with less favorable usage patterns.

By definition, costs that cannot be directly attributed to a specific customer or customer class need to be allocated. The question that is usually at the center of controversy in a cost of service study is what cost driver fairly allocates costs to the various customer classes. Generally, the controversy focuses on the allocation of fixed costs.

Rate design entails establishing an appropriate rate structure for a specific customer class. In many instances the rate structure will be influenced by technological considerations. For example, in most instances, residential customers do not have demand meters and therefore do not have a demand component to their rate structure. In other cases, usage might not be measured, such as private area lights, in which case the utility may charge a flat rate per month based on an assumed usage.

Q. PLEASE EXPLAIN WHY ALLOCATING FIXED COSTS IS GENERALLY THE MOST CONTROVERSIAL ASPECT OF A COST OF SERVICE STUDY.

A. The vast majority of a utility's non-fuel related costs are fixed. Fixed costs are defined as costs that do not vary with throughput or deliveries. For the 12 months

ended June 30, 2009, the Company's per books Operating & Maintenance Expenses ("O&M") totaled approximately $162.8 million dollars. Approximately $108.9 million relates to fuel costs, purchased power, transmission of power by others, and similar costs that are recovered through the Company's Energy Cost Adjustment ("ECA"). The remaining O&M costs of $53.9 million are non-fuel related costs, of which, the overwhelming majority, if not all, are fixed costs. Some may be variable, but from a practical standpoint they are so minimal, they have very little impact on the cost of service. Therefore, the method of allocating fixed costs to the various customer classes has a significant impact on the rates.

Q. WHAT IS THE BASIS FOR ALLOCATING THE VAST MAJORITY OF COSTS IN A COST OF SERVICE STUDY?

A. At one end of the spectrum, all fixed costs could be allocated based on the demand placed on the system by the various customer classes. Proponents of this methodology generally argue that the system is designed, constructed, and operated to meet customers' requirements and therefore costs should be allocated based on the demand they place on the system.

At the other end of the spectrum, all fixed costs could be allocated based on energy deliveries. Proponents of this methodology generally argue that deliveries recognize the actual usage of the system by the various customer classes and are a more accurate cost allocator.

Another allocator that is commonly used in a cost of service analysis is the number of customers or meters. Normally, number of customers or meters is used

to allocate costs that can be directly attributable to specific customers. Historically, this has been limited to meters and services.

These three factors, i.e., number of customers or meters, demand, and energy deliveries, are the basis for allocating the vast majority of costs in a cost of service study.

Q. PLEASE ADDRESS THE ISSUES PERTAINING TO EACH OF THE THREE MAJOR ALLOCATION FACTORS.

A. There are issues pertaining to the determination and application of each of the three major allocators. I will address the number of customers or meters first, then demand, and finally deliveries.

The purpose of the customers or meters cost allocator is to allocate costs for which the number of customers is the cost driver. It is common for the terms customers, meters, accounts, and bills to be used interchangeably. However, there is a difference between each of these. Generally, a customer is an individual or organization that receives service from the utility. However, some customers may have multiple meters at one location or may have multiple locations with multiple meters. Depending on the practices of the utility, such customers may have one account with multiple meters. Some may receive one bill for all the meters at one location or may receive one bill for several different accounts. Some utilities, including Black Hills Power, (General Service-Large Optional Combined Account Billing rate GLC) may summarize multiple bills for customers that have multiple meters and/or accounts. Historically, the cost allocated on the number of meters has been a relatively small portion of a utility's total cost.

The second major cost allocator is referred to as demand. Demand is defined as the energy requirements of the customers. In its simplest form, demand means all the customers' energy requirements. However, in the context of a cost of service study, demand generally relates to the peak demands placed on the system by customers. Black Hills Power measures demand in fifteen-minute increments. Peak demands would be the energy used during the fifteen minute period of maximum use. This is a common time period used for measuring peak demands in the electric utility industry. It is important to note that maximum demand during a fifteen minute period can be measured on a daily, a monthly, annual, or any other time frame that may be appropriate.

Another issue pertaining to the demand allocator is whether the demand should be determined on a coincidental basis or a non-coincidental basis. Coincidental demand is typically defined as the sum of all customers' usage coincidental with the total system peak demand. Non-coincidental demand is the sum of all customers' peak demand regardless of when it occurs. Demands measured on a non-coincidental basis, will generally be higher than the total demands measured on the coincidental basis. That is, the sum of the non-coincidental peak demand for all customers will exceed the total system peak demand.

The final cost allocator is based on deliveries. Energy deliveries are used to allocate costs for which deliveries to customers is the cost driver. Generally, annual energy deliveries are used to allocate costs. Normally, the starting point for determining annual energy deliveries is the measured deliveries as contained

in the utility's billing system. Similar to the use of demand as a cost allocator, the main controversy with the use of annual throughput as a cost allocator is what portion of the fixed costs should be allocated using annual throughput.

Q. PLEASE DESCRIBE THE FINAL STEP IN ESTABLISHING RATES FOR EACH CUSTOMER CLASS.

A. The final step in the ratemaking process is designing the actual rates. The rates for service for each customer class should be based on the cost of service as developed in the previous task. The structure of the rates, i.e., customer charge, demand charge, and/or energy charge, generally depends on the availability of information related to the customer class' usage. For example, regular residential customers usually do not have meters capable of measuring peak usage, while larger commercial and industrial customers always have such meters. Since residential customers peak usage is not measured, incorporating a demand component into the residential customer rates is problematic.

Additionally, other non-cost factors may affect rate structure. Such non-cost factors include revenue stability, rate continuity, simplicity, customer acceptance, administration, and ability to yield the total revenue requirement.

IV. CUSTOMERS, DEMAND, AND ENERGY DELIVERIES

Q. PLEASE EXPLAIN THE SIGNIFICANCE OF DEMAND AND ENERGY DELIVERIES IN A COST OF SERVICE ANALYSIS.

A. The relationship between the three cost allocation factors (customers/meters, demand, and energy deliveries) directly affects the costs allocated to each customer class. For example, in most utilities, the residential customer class

generally has significantly more customers than commercial or industrial classes. Therefore, costs allocated based on meters significantly increases the residential customers' costs, and therefore, their rates.

Conversely, commercial and industrial customers tend to have significantly higher usage per customer. Therefore, costs allocated based on energy deliveries increases the commercial and industrial customers' costs, and their rates.

Q. PLEASE DISCUSS THE BILLING DETERMINANTS USED IN THIS FILING.

A. The billing determinants for each rate schedule are contained in Schedule I-1. Page 1 summarizes the billing determinants for the various customer classes. Pages 2 through 11 contain the billing determinants for each rate schedule. It is important to note that in this Application, the Large General Service and Industrial classes have been combined in accordance with paragraph 9 of the Confidential Settlement Agreement that was part of the Settlement Stipulation approved by the Commission in the Company's most recent rate filing, Docket No. EL06-019.

Exhibit MJM-3 summarizes the billing units by customer class as contained in Schedule I-1 for the test period. Exhibit MJM-3 also contains the consolidated billing determinants as required in the Settlement Stipulation as approved by the Commission in Docket No. EL06-019.

Overall, the kWh delivered increased 43,990,567 kWh from the December 31, 2005 test period to the June 30, 2009 test period, which equates to a 3.13%

increase. However, each customer class experienced different changes. The number of residential customers increased 4.82%, yet the kWh energy delivered increased 9.87%.

The Small General Service customer class experienced an increase in customers of 13.47% but the kWh energy delivered increased only 9.68%. The demand kW increased 8.09%.

The Large General Service & Industrial Customer Class lost 6 customers, which is a decrease of 3.54% since the last rate proceeding. Likewise, the kWh energy delivered to the Large General Service & Industrial Customer Class declined by 37,845,399 or 6.84%. The demand kVA declined by 39,232.9 or 2.95%.

The number of units in the Lighting Customer Class increased. A lighting unit is defined as a lighting fixture. A customer may have multiple lighting fixtures. Additionally, a customer may have multiple lighting bills, depending on the number of locations that receive service from the Company.

These billing determinants are used for developing the class cost of service as discussed below.

V. CLASS COST OF SERVICE STUDY

Q. PLEASE DESCRIBE BLACK HILLS POWER'S CLASS COST OF SERVICE STUDY.

A. The first step is to determine the South Dakota jurisdictional cost of service. A jurisdictional cost of service is required for any utility that has customers in different regulatory jurisdictions. Each jurisdiction has different customers that

usually have different load characteristics and utilize different facilities. Therefore, jurisdictional cost of service determines the cost of service by each of the jurisdictions based on the customers and facilities in that jurisdiction. Costs that are used to serve customers in different jurisdictions are allocated. Black Hills Power has used the Single Coincident Peak Method in this Application to allocate costs to the various jurisdictions it serves. The Single Coincident Peak Method is a common cost allocation method used in the electric utility industry, and it is the same method used by Black Hills in its previous rate filing in Docket No. EL06-019.

Once the cost of service for South Dakota jurisdictional customers is determined, the class cost of service determines the costs for each of the different customer classes.

Q. WHAT ALLOCATION METHOD DID BLACK HILLS USE IN THE CLASS COST OF SERVICE STUDY?

A. Black Hills uses the Average and Excess Method for the class cost of service study for several reasons. The Average and Excess Method considers customer's peak and energy requirements in allocating costs to customer classes. It is a commonly used allocation method in the electric utility industry.

Black Hills has used the Average and Excess Method in previous rate filings. Additionally, using the Average and Excess Method in this rate filing will provide continuity in the costs allocated to various customer classes.

Q. HOW IS THE AVERAGE AND EXCESS METHOD USED IN THE CLASS COST OF SERVICE STUDY?

A. As stated earlier, number of customers or meters, demand, and energy delivered are the basis for allocating the vast majority of costs in a cost of service study. Allocating costs to various customer classes based on the classes' number of customers or meters, demand, and energy delivered reflects the unique operating characteristics of each class. For example, the residential class typically has the most customers but kWh used per customer is the lowest of the customer classes. As shown on Exhibit MJM-3 during the test period, there were 51,700 residential customers that used 507,596,791 kWh, which means an average residential customer used 9,818 kWh per year. An average Small General Service customer used 33,646 kWh per year and an average Large General Service & Industrial customer used 268,567 kWh per year.

Each cost category is reviewed to determine the cost driver. A cost driver is a factor or activity that "drives" a cost upward or downward. For example, if number of customers is considered the cost driver, then costs are allocated based on the number of customers in each customer class. The cost of reading a customer's meter may be considered a customer related cost because the total costs are driven by the number of meters. Each meter must be read, regardless of the energy deliveries to that customer. This is an example of the cost causation concept.

Statement O and Schedule O-1 contain Black Hills Power's class cost of service study. Statement O reflects the per books costs and Schedule O-1 reflects the adjusted costs.

Referring to Schedule O-1, page 1 contains the various cost allocators used in the study. There are 39 cost allocators. Page 2 shows the percentage of costs that would be allocated to each Customer Class, for that allocator. In other words, if a cost is based on energy it would allocate 35.07% of the costs to the Residential class, 28.50% to the Small General Service class, and 35.46% to the Large General Service & Industrial class. However, if a cost is allocated based on number of customers, the Residential class would received 81.03% of the cost, the Small General Service class would receive 18.24% of the cost, and the Large General Service & Industrial class would receive 0.43% of the cost.

In the class cost of service each cost by function and type is reviewed and the appropriate cost allocator identified. Pages 3 through 11 of Schedule O-1 shows each of the costs, the cost allocator used, and the allocated cost for each of the customer classes.

Q. WHAT WERE THE RESULTS OF THE CLASS COST OF SERVICE STUDY?

A. The results of the class cost of service study are contained on the bottom of page 11. The base revenue deficiency for the Residential Service is $12,613,194, which equates to a base rate increase of 28.56%. The Small General Service has a base revenue deficiency of $10,240,168, which equates to a base rate increase of 28.56%. The base revenue deficiency for the Large General Service & Industrial class is $11,507,249, which equates to a base rate increase of 37.82%. The class cost of service study indicates the Lighting class is deficient by $213,755, which equates to a base rate increase of 12.66%.

VI. RATE DESIGN

Q. DOES BLACK HILLS PROPOSE TO INCREASE THE RATES FOR EACH OF THESE CLASSES BY THE PERCENTAGE INDICATED IN THE CLASS COST OF SERVICE STUDY?

A. No. The Company proposes to apply the additional revenue requirement to each rate class and each rate component equally. The Company believes applying the increase "across the board" to each rate component for each rate class is more equitable. This across the board increase maintains rate continuity and all customers will experience the same increase in their power costs.

A comparison of the current and proposed rates for each rate schedule is contained in Schedule I-1, pages 2 through 11. In Schedule I-1 the proposed rates were obtained by applying the percentage increase to each component for the vast majority of the rates. However, there are some exceptions.

Q. PLEASE EXPLAIN THE EXCEPTIONS.

A. Rate Schedule R (Regular Residential) provides for a Customer Charge of $8.00 per customer per month. However, residential customers in Ellsworth Military Housing currently have a discounted Customer Charge of $6.00 per customer per month. The Ellsworth Military housing is reverting to the developer and military personnel are no longer residing at these premises. As the units sell, service to them will be provided under the Residential rate schedule. Schedule I-2 page 3 indicates there will be an increase in the Customer charge for Ellsworth Military Housing of 78.9%. In reality, no customers will receive this increase. Customers purchasing the properties will be served under the Residential rate schedule.

The same situation applies to Small General Service under General Service Rate Schedule GS. General Service customers in Ellsworth Military Housing receive a discounted Customer Charge. As these accounts transfer to new ownership, the discounted Customer Charge will not long apply.

The only other exception applies to the Industrial Contract customers in the Large General Service and Industrial customer class. Pursuant to the Exhibit A of the Settlement Stipulation approved by the Commission in Docket No. EL06-019, these customers were raised by a specified percentage on January 1, 2009. The rates effective January 1, 2009 were increased by the across the board percentage. The comparison of current and proposed rates as contained on page 10 of Schedule I-1 compares their actual rates for the test period and therefore it appears their rates increased by a different percentage. In reality, their rates increased by the same percentage as all other rate classes.

Q. BASED ON YOUR REVIEW OF THE COMPANY'S COST OF SERVICE AND RATE DESIGN STUDIES, WHAT IS YOUR RECOMMENDATION?

A. In conclusion, I agree with the Company's rate design methodology. An across the board increase is reasonable. Rates should be implemented as shown in the tariff pages included with this Application.

Q. DOES THIS CONCLUDE YOUR TESTIMONY IN THIS MATTER?

A. Yes.