

**BEFORE THE SOUTH DAKOTA  
PUBLIC UTILITIES COMMISSION**

**APPLICATION OF BLACK HILLS POWER, )  
INC. d/b/a BLACK HILLS ENERGY FOR )  
APPROVAL OF ITS 2016 ) Docket EL16-\_\_\_\_\_  
ENVIRONMENTAL IMPROVEMENT )  
ADJUSTMENT )**

Black Hills Power, Inc. d/b/a Black Hills Energy (“Black Hills Power” or the “Company”), a South Dakota corporation, respectfully requests an order from the South Dakota Public Utilities Commission (“Commission”) approving an Environmental Improvement Adjustment (“EIA”) to its electric rates, to become effective on June 1, 2016.

South Dakota Codified Laws §§ 49-34A-97 through 100, authorize the Commission to approve a tariff mechanism for automatic annual adjustment of charges for jurisdictional costs of environmental improvements to its existing electric generation facilities, as such facilities are defined under South Dakota Law. SDCL § 49-34A-97, defines qualifying environmental improvements as any requirements under the Clean Air Act, the Clean Water Act, or any other federal law or rule, or any state law or rule implementing a federal law or rule, or voluntary environmental measures designed to protect the environment. The Commission approved the establishment of the EIA tariff for Black Hills Power in Docket EL11-001. Per the approved tariff, Black Hills Power is required to make an annual rate filing by February 15th each year.

Through this Application, the Company seeks approval of its proposal for the annual true-up of EIA revenue requirement from April 15, 2015, through May 31, 2016, as approved in Docket EL15-008, and the forecasted recovery of EIA revenue requirement associated with eligible environmental improvements from June 1, 2016, through May 31, 2017.

On May 26, 2015, in Docket EL12-062, the Commission approved the Company’s Phase In Plan Rate rider balance and method to refund the balancing account. The method to refund included a one-time bill credit with the remaining balancing account amount to be credited or charged to the EIA. In accordance with Element 7 of the Settlement Stipulation entered in Docket EL15-008, the remaining Phase In Plan Rate (“PIPR”) balancing account amounts are incorporated in this filing and reflected on Exhibit 6 and Exhibit 4, Schedule 4-6.

**ANNUAL RATE ADJUSTMENT APPLICATION REQUIREMENTS**

The Company offers the following supporting information in accordance with SDCL § 49-34A-99:

- (1) A description of and context for the costs and expenses of environmental improvements included for recovery:**

In Docket EL15-008, the Commission approved the recovery of revenue requirements associated with the Wyodak Mercury Control Project and Wygen III CO and O2 Grid Installation project. In this filing, the Company requests three additional environmental improvements be included for recovery as discussed below.

#### Neil Simpson II ESP Upgrade Project

Black Hills Power owns and operates the Neil Simpson II (“NSII”) power plant located at the Gillette Energy Complex near Gillette, Wyoming. NSII commenced service in 1995, and is an air cooled coal plant with an 80 megawatt net generating capacity.

The Electrostatic Precipitator (“ESP”) uses an electrical charge to filter and collect particulate from the flue gas. The NSII ESP is comprised of primarily original hardware including the original transformer-rectifiers (“TRs”) which provide the high voltage power required to remove the particulate. The NSII ESP is also equipped with dated controls including the original rapper controls and TR controls that are around 15 years old. In the current condition, the ESP is generally able to meet the permit opacity requirements during normal, steady state operation, but is not able to consistently meet these requirements during startup/shutdown and other upset conditions.

The Title V Permit, issued by the Wyoming Department of Environmental Quality, provides measures to ensure compliance with emission requirements. Emissions associated with startup/shutdown events and malfunctions or emergency situations are included and reported in the emission calculations. Since the ESP does not perform in a manner to consistently meet the requirements during startup and shut down events, Black Hills Power determined this project was necessary to improve particulate collection efficiencies during startup.

The project will upgrade NSII with more advanced ESP technologies including TRs and system controls to increase collection efficiencies and performance. The upgraded TRs use modern 3 phase or single phase high frequency technologies to allow a higher average power input into the ESP allowing for more efficient removal. The modern controls allow for multiple modes of operation to optimize ESP performance during specific situations such as startup. These improvements are required to reduce the risk of opacity excursions during plant startup and other upset conditions.

#### Gillette Energy Complex Compressed Air System Upgrade Project

The compressed air system is a shared asset at the Gillette Energy Complex in that the system supplies the required compressed air to four coal-fired power plants. Black Hills Power has an ownership share in two of the four coal-fired power plants, NSII and Wygen III.

Compressed air quality is important to the reliable operation of the plants. Demand for compressed air capacity is increasing in large part due to environmental compliance measures required to maintain compliance with the Environmental Protection Agency (“EPA”) Utility MACT rule and the Wyoming Department of Environmental Quality air

quality permit. Currently, a large rental compressor is utilized to meet the increasing compressed air requirements and would be removed when the project is complete. This project includes the addition of two new large compressors and other system upsizing improvements to supply the required compressed air capacity for new environmental systems, two of which are described below.

Wygen III is required to meet SO<sub>2</sub> emissions limits per the Wyoming Air Quality Permit CT-4517A. Wygen III utilizes a spray dry absorber (“SDA”) which introduces a slurry mixture comprised of fly ash and lime into the flue gas stream to scrub out the SO<sub>2</sub>. During normal operation, a rotary atomizer is used to properly introduce this slurry to the flue gas. During atomizer failures and other upset conditions the slurry flow is shut off and the plant is not able to maintain SO<sub>2</sub> below its permit limit. The Dual Fluid Nozzle (“DFN”) was installed on Wygen III to maintain compliance with permit limits during atomizer failures and other upset conditions. In these situations, the DFN requires up to 1,700 SCFM compressed air to atomize and deliver the slurry to the flue gas until the atomizer operation can be restored. This project more than doubled the plant compressed air requirement during operation.

The mercury control projects at Wygen III and NSII (discussed below) are required to comply with the mercury removal component of the EPA’s MATS rule. These projects use sorbent injection into the flue gas to absorb and capture mercury. The storage and handling of these sorbents has required upgrades to existing silos along with the addition of new silos. Both the upgraded and the new silos require additional compressed air of approximately 130 SCFM to fluidize the sorbent allowing it to flow through the silo.

#### Amended Silicates Silo Projects

Black Hills Power owns the NSII power plant and a fifty-two percent interest in the Wygen III power plant located at the Gillette Energy Complex near Gillette, Wyoming. Montana Dakota Utilities owns twenty five percent and the City of Gillette owns twenty three percent of Wygen III. Both units are operated by Black Hills Power and are air cooled, coal fired plants with NSII rated at 80 megawatt net generating capacity and Wygen III at 100 megawatt net generating capacity.

The EPA Mercury Air Toxicity Standards (“MATS”) rule placed emission limits for mercury, acid gases and particulate matter on all coal fired plants. In order to meet the required mercury reduction, larger silo storage space and additional equipment are necessary to inject Amended Silicates and/or Powder Activated Carbon (“PAC”) at higher feed rates. The sorbent injection system is designed to inject product into the flue gas at the air preheater outlet ductwork where the mercury is absorbed, removed and captured from the flue gas prior to release into the atmosphere. The required injection rates needed to achieve the desired mercury removal rates is verified through testing at the stacks. This project is necessary to meet all requirements of the current MATS rule and the Wyoming Department of Environmental Quality air quality permit.

Two additional injection silos will be constructed, consisting of one silo to support north units and one for south units. The silos will be capable of unloading, handling, feeding and injecting multiple sorbent materials including Amended Silicates and PAC in conjunction

with our current system that utilizes Amended Silicates. These agents can be used alone or in conjunction with one another to meet environmental mercury compliance limits of MATS rules and eliminate current product feed issues, hopper plugging, product storage capacity and reduce risk of an environmental excursion.

**(2) A schedule for implementation of applicable projects:**

The Gillette Energy Complex Air Compressor Upgrade Project, Amended Silicates Silo Projects, and NSII ESP Upgrade Project are expected to be in service by June 1, 2016, December 31, 2016, and April 30, 2017, respectively.

**(3) The public utility's costs and expenses for these projects:**

Exhibit 4 reflects the costs, expenses, and recoveries for eligible environmental improvements from April 15, 2015, through May 31, 2016, and the forecasted costs and expenses from June 1, 2016, through May 31, 2017. In addition to the costs and expenses associated with the two environmental improvements approved in Docket EL15-008, the estimated capital costs associated with the three new eligible projects are provided below:

- NSII ESP Upgrade Project - \$1,314,100;
- Gillette Energy Complex Compressed Air System Upgrade Project – total estimated cost of \$1,834,660, and Black Hills Power's ownership share is approximately \$701,460; and
- Amended Silicates Silo Project North Units – total estimated cost of \$1,816,280, and Black Hills Power's ownership share is approximately \$506,786.
- Amended Silicates Silo Project South Units – total estimated cost of \$1,944,035, and Black Hills Power's ownership share is approximately \$972,017.

Project costs include an allowance for funds used during construction instead of a current return on construction work in progress.

**(4) Calculations to establish that the rate adjustment is consistent with the terms of the tariff established in SDCL 49-34A-98:**

The calculation for the EIA rate for the period of June 1, 2016, through May 31, 2017, is provided on Exhibit 4, Schedule 4-1. The forecasted EIA revenue requirement from June 1, 2016, through May 31, 2017, as supported on Schedule 4-3, is allocated to the customer classes based on production capacity allocators used in Black Hills Power's most recent general rate case, Docket EL14-026. Next, the customer class revenue requirements are combined with the annual balancing account as shown on Schedule 4-2. The adjusted revenue requirements by customer class are then divided by the forecasted kWh sales for the period of June 2016 through May 2017 to determine the EIA rate by customer class as listed on page 5 of this Application.

Schedule 4-4 calculates the estimated total rate base amount for the EIA from June 1, 2016, through May 31, 2017. The rate base calculation includes Plant in Service, less

Accumulated Depreciation and Accumulated Deferred Income Taxes. The Company proposes to apply the overall rate of return incorporated in its most recent rate case, Docket EL14-026. Schedule 4-5 supports the estimated operating expenses and taxes associated with the environmental improvements from June 1, 2016 through May 31, 2017. The operating expenses include depreciation expense and the assessed Commission filing fee.

The actual EIA revenue requirement from April 15, 2015, through May 31, 2016, and allocation by customer class is provided on Exhibit 4, Schedule 4-7 and Schedule 4-6, respectively. In accordance with the Settlement Stipulation in Docket EL15-008, the rate of return approved in the most recent rate case, Docket EL14-026, was applied to the investments. The resulting revenue requirement by customer class is credited or charged with the remaining PIPR balancing account amount, as approved in Docket EL15-008.

Schedule 4-8 supports the rate base calculation and Schedule 4-9 supports the operating expenses and taxes from April 15, 2015, through May 31, 2016. Rate base has been updated to reflect actual project in-service dates, project capital costs and the utilization of bonus depreciation. The Wygen III CO and O<sub>2</sub> Grid Install project was placed in service on December 31, 2015, and the actual project cost was not finalized at the time of the filing. The Company will supplement this filing with actual capital costs for the Wygen III CO and O<sub>2</sub> Grid Install project prior to the Commission's decision. The depreciation expense and federal income tax associated with the environmental improvements were updated based on project costs and in-service dates.

### **EIA PROPOSED RATE**

The Company proposes to implement the following rates per kWh to be effective June 1, 2016:

Residential	\$0.00019/kWh
Small General Service	\$0.00023/kWh
Large General Service and Industrial	\$0.00017/kWh
Lighting	\$0.00012/kWh

The EIA rates are set forth in the EIA tariff sheet contained in Exhibits 2 and 3, attached hereto. The Company proposes to submit the revised Cost Adjustment Summary tariff sheet, Section No. 3C, Sheet No. 11, as a compliance filing after the Commission issues its decision in this docket.

Approximately 68,000 South Dakota retail customers are affected by the EIA rate change. The annual net increase in the cost of service is approximately \$117,000. The average bill impact for a typical residential electric customer using 650 kWh is approximately 0.05%.

### **NOTICE**

The Company plans to provide notice to customers regarding the EIA rate through a bill message with the first bill for service under the proposed rate in accordance with South Dakota Administrative Rule 20:10:13:19. A customer notice will be displayed in the Black Hills Power

South Dakota district offices and has been attached as Exhibit 5. The Company will work with Commission Staff to determine if there are any suggestions to modify the notice to customers.

## **EXHIBITS**

The following exhibits are provided in support of this Application and incorporated through this reference:

<u>Exhibit 1</u>	Report of Tariff Change
<u>Exhibit 2</u>	Legislative Format of Tariffs
<u>Exhibit 3</u>	Clean Format of Tariffs
<u>Exhibit 4</u>	Environmental Improvement Adjustment Calculation
<u>Exhibit 5</u>	Customer Notice
<u>Exhibit 6</u>	Phase In Plan Rate Balancing Account Credit/Charge

## **COMPANY CONTACTS**

Copies of all notices, other correspondence and all inquiries concerning this Application should be sent to:

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## CONCLUSION

WHEREFORE, Black Hills Power respectfully requests that the Commission enter an order effective June 1, 2016, approving the adjustment to the Company's electric rates set forth in this Application and the proposed tariffs.

Dated this 16<sup>th</sup> day of February, 2016.

BLACK HILLS POWER

By:   
Jon Thurber  
Manager, Regulatory Services

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

\* \* \* \* \*

**STATE OF SOUTH DAKOTA     )**  
**COUNTY OF PENNINGTON    )**     **SS:**

I, Jon Thurber, being duly sworn, do hereby depose and say that I am Manager, Regulatory Services for Black Hills Power, Inc. d/b/a Black Hills Energy, Applicant in the foregoing Application; that I have read such Application; and that the facts set forth therein are true and correct to the best of my knowledge, information, and belief.

  
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Jon Thurber  
Manager, Regulatory Services

Subscribed and sworn to before me this 16<sup>th</sup> day of February, 2016.

(SEAL)



  
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Notary Public  
my commission expires:  
9/14/2021