

Direct Testimony and Exhibits
Thomas M. Ohlmacher

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. EL09-___

September 29, 2009

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Exhibits

Exhibit TMO – 1	Coal Supply Agreement between Black Hills Power and Wyodak Resources
Exhibit TMO – 2	Aerial Map for the Neil Simpson Energy Complex showing the location of Wygen III

I. INTRODUCTION AND QUALIFICATIONS

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. Thomas M. Ohlmacher. My business address is 350 Indiana Street, Suite 400,
3 Golden, Colorado 80401.

4 **Q. WHAT IS YOUR EMPLOYMENT POSITION NOW WITH BLACK**
5 **HILLS CORPORATION?**

6 A. I am President and Chief Operating Officer of Black Hills Non-regulated
7 Holdings, LLC, a wholesale energy subsidiary of Black Hills Corporation (Black
8 Hills Corporation).

9 **Q. WHAT IS YOUR EDUCATIONAL, TRAINING AND EMPLOYMENT**
10 **BACKGROUND?**

11 A. I graduated from the South Dakota School of Mines and Technology in 1974 with
12 a Bachelor of Science degree in Chemistry. Since graduating from the School of
13 Mines, I have been employed by Black Hills Corporation and its subsidiaries
14 including Black Hills Power, Inc. (Black Hills Power) in numerous positions.

15 **Q. WHAT WERE THOSE POSITIONS?**

16 A. From 1974 to 1976, I served as a results engineer for Black Hills Power's plants.
17 My primary responsibilities involved water treatment facilities for all of Black
18 Hills Power's generation plants, and control and instrumentation and plant
19 efficiency monitoring. From 1977 to 1978, I was the plant maintenance supervisor
20 at the Kirk Plant near Lead, South Dakota. I was promoted to the position of Plant
21 Manager of the Kirk Plant in 1978 and kept that position until 1986. As plant

1 manager I oversaw all power plant activities, staffing, budgeting, training, fuel
2 management, and planning capital and maintenance budgets. From 1987 to 1990,
3 I was assigned to the position of Manager of Planning for Black Hills Power. My
4 responsibilities included resource and transmission planning which involved the
5 evaluation of life extension and re-powering options for existing plants,
6 coordinating the transmission planning for Black Hills Power, and organizing the
7 joint transmission planning group between Basin Electric Power Cooperative
8 (Basin Electric) and Black Hills Power. I assisted in preparing annual utility
9 resource plans for capacity and energy requirements, and preparation of load
10 forecasts. From 1990 to 1992, I served as the Director of Electric Operations and
11 Engineering. My responsibilities included coordinating transmission planning for
12 the transmission system and assisting the efforts and resources to support the
13 distribution planning. I also was responsible for overseeing and managing the
14 electric operations dispatch and outage restoration department, referred to as
15 System Control. In 1992 when the resource planning studies supported the
16 construction of an 80 megawatt (MW) coal-fired plant, I assumed the role as
17 Project Manger for the Neil Simpson II coal-fired power plant. During this period
18 I also assumed the responsibilities of directing all of the generation of Black Hills
19 Power. As the Project Manager, I coordinated all the permitting, engineering,
20 capital forecasting and construction management for the Neil Simpson II project.

1 I also assumed responsibility for coordinating and developing the staffing plans
2 for the Black Hills Corporation generation department. From 1994 through 2000,
3 I was Vice President of Power Supply with duties that included all resource
4 management and electric marketing for Black Hills Power. From November 2001
5 to the present, I have been the President and Chief Operating Officer of Black
6 Hills Energy and its successor organization, Black Hills Non-regulated Holdings,
7 LLC where my responsibilities include management of: the Wyodak Mine owned
8 by Wyodak Resources Development Corporation (Wyodak Resources); Black
9 Hills Corporation's oil and gas exploration and production company; the Black
10 Hills Corporation's energy marketing company; Black Hills Corporation's
11 independent power company; and the retail power generation and marketing
12 departments. I also coordinated the development of the 2007 Integrated Resource
13 Plan for Black Hills Power.

14 **II. PURPOSE OF TESTIMONY**

15 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

16 A. The purpose of my testimony is to discuss the fuel supply arrangements for
17 Wygen III. Next, I describe why Wygen III is the resource of choice for Black
18 Hills Power. I conclude my testimony with a discussion of Black Hills Power's
19 strategy to optimize revenues related to Wygen III through the pursuit of
20 wholesale opportunities.

1 **III. FUEL SUPPLY ARRANGEMENTS**

2 **Q. PLEASE DESCRIBE THE SOURCE OF FUEL FOR THE WYGEN III**
3 **PLANT.**

4 A. Coal for the Wygen III facility will be supplied by the Wyodak Mine under a coal
5 supply agreement between Wyodak Resources, a wholly-owned Black Hills
6 Corporation subsidiary, and Black Hills Power. This coal supply agreement is
7 included with my testimony as attached Exhibit TMO - 1. This coal supply
8 agreement mirrors the coal supply agreement between Wyodak and Montana
9 Dakota Utilities Co. (MDU) regarding Wygen III. The site for Wygen III is
10 adjacent to the Wyodak Mine and near the Neil Simpson Energy Complex (aka
11 Wyodak Energy Complex) and the Wyodak plant as shown on the attached
12 Exhibit TMO - 2. Wygen III is thus a mine-mouth facility and will utilize existing
13 coal storage and have a coal conveyor shared with Wygen II to deliver coal
14 directly from the Wyodak Mine. Wygen III will use natural gas as a start-up fuel
15 which is delivered to the site from existing facilities.

16 **Q. DOES WYODAK RESOURCES OPERATE AS A CORPORATION**
17 **SEPARATE FROM BLACK HILLS POWER?**

18 A. Yes. Wyodak Resources is engaged in the coal mining business, and has no utility
19 operations. It has its own board of directors, officers, employees, and operating
20 management and keeps books of accounting separate from all other Black Hills
21 Corporation subsidiaries, including Black Hills Power.

1 **Q. PLEASE DESCRIBE THE OPERATIONS OF WYODAK RESOURCES.**

2 A. Wyodak Resources was formed by Black Hills Corporation in 1956 for the
3 purpose of engaging in the coal mining business, and shortly after that acquired
4 the Wyodak Mine. Prior to the acquisition, the mine was operated by Wyodak
5 Coal Company, a subsidiary of Homestake Mining Company of California
6 (Homestake). Homestake did not have any federal coal under lease but did own
7 some coal reserves, which were leased to Black Hills Corporation in return for a
8 royalty payment. Since 1956, Wyodak Resources has greatly expanded its
9 operations and has acquired federal coal leases. Most of the original Homestake-
10 owned coal reserves have been mined and the remaining reserves were
11 subsequently purchased by Wyodak Resources from Homestake. Wyodak
12 Resources is the sole supplier of coal for all Black Hills Power coal-fired power
13 plants. Wyodak Resources' major coal supply contract is a 35-year, all-
14 requirements contract for supplying coal to the 362 MW Wyodak power plant,
15 commencing with that plant's commercial operation in 1978. Black Hills Power
16 owns 20 percent of the Wyodak Plant, and PacifiCorp owns the remainder.
17 Therefore, 20 percent of sales are in effect to Black Hills Power and the remainder
18 to PacifiCorp. It is economically impractical to ship coal by rail to Black Hills
19 Power's two plants (Ben French and Osage) located away from the Wyodak Mine
20 site; therefore, Wyodak Resources utilizes a truck load-out facility so that coal
21 hauling trucks can be efficiently loaded and dispatched to these two plants.

1 Wyodak Resources has also made additional sales to various industrial users in
2 Black Hills Power's service area.

3 **Q. WHAT IS THE TOTAL ANNUAL COAL PRODUCTION OF WYODAK**
4 **RESOURCES AT THIS TIME?**

5 A. Annual production is approximately six million tons of coal depending on power
6 plant maintenance schedules. The annual production will increase to 6.6 million
7 tons when Wygen III is operational. The Wyodak Mine has adequate coal
8 reserves to supply coal over the expected operating life of Wygen III.

9 **Q. WHAT ARE THE BENEFITS OF LOCATING THE WYGEN III POWER**
10 **PLANT AT THE MOUTH OF THE WYODAK MINE?**

11 A. Locating the power plant at the mouth of the Wyodak Mine provides several
12 benefits to Black Hills Power and its customers. First, it eliminates almost all
13 transportation costs for the coal. At Neil Simpson Energy Complex, coal is
14 removed from the mine and placed on conveyor belts which run from the mouth of
15 the mine to the power plant, avoiding all costs associated with loading the coal
16 into trucks or train cars, transporting the coal and unloading the coal. Second, the
17 Coal Supply Agreement between Wyodak Resources and Black Hills Power
18 provides a stable price for the coal, relieving Black Hills Power from much of the
19 risk associated with purchasing coal on the market. Finally, the Coal Supply
20 Agreement provides a mechanism by which Black Hills Power can obtain a blend
21 of coal that is appropriate for the boiler design. Without the ability to control the
22 blend of the coal, Black Hills Power would have had two options: (i) to install

1 additional emissions scrubbers, referred to as “wet-scrubbers,” which could have
2 added between \$7-15 million to the cost of Wygen III, or (ii) pay the coal supplier
3 a premium price to obtain the optimal coal blend. In contrast, Wygen III is able to
4 obtain its preferred blend coal at no additional charge.

5 **Q. WHAT PRICING METHODOLOGY WILL BE UTILIZED TO**
6 **DETERMINE BLACK HILLS POWER’S COAL COSTS FOR THE**
7 **WYGEN III POWER PLANT?**

8 A. A responsibility of Black Hills Corporation’s Accounting Department is to make
9 what is referred to as a “Statement R” calculation each year. That calculation
10 helps determine the coal price that Wyodak Resources charges to Black Hills
11 Power. We refer to the calculation as “Statement R” because it has historically
12 corresponded to the Statement in the rate case application that details the coal
13 price calculation. This methodology is long-standing. In addition to Black Hills
14 Power, it has been accepted for pricing coal transactions with Cheyenne Light,
15 Fuel and Power, Municipal Energy Agency of Nebraska and Montana-Dakota
16 Utilities. It has most recently been presented to, and approved by, the Commission
17 in Docket No. EL06-019 for the price Black Hills Power pays for its coal
18 requirements from Wyodak Resources. Under this methodology, Black Hills
19 Power’s coal costs are determined by calculating the amount that allows Wyodak
20 Resources to recover its cost of service related to the coal sales to Black Hills
21 Power, plus a return on investment. That return is the average interest rate for
22 new, long-term A-rated utility bonds issued during the calendar year for which the

1 calculation is being made, plus four hundred basis points. This is a cost-of-service
2 type methodology. Black Hills Power's coal costs will be based on this same
3 "Statement R" pricing methodology which has been incorporated into the coal
4 supply agreements. The Wyoming Public Service Commission endorses this
5 pricing methodology, as it did most recently in Docket No. 20002-ER-95-48, and
6 it was also accepted in the Cheyenne Light cases in Wyoming in 2007 and in
7 September 2009.

8 **Q. HAS A STATEMENT R CALCULATION BEEN PREPARED FOR BLACK**
9 **HILLS POWER?**

10 A. Yes, accounting staff under the direction of the Black Hills Corporation's Vice
11 President and Controller has forecast the coal price for Black Hills Power which is
12 provided as Statement R of the rate application. The forecast price is \$12.09 per
13 ton delivered to the plant, or \$0.756 per MMbtu. For comparison purposes, the
14 current cost of natural gas is \$3.65 per MMbtu.

15 **IV. WYGEN III IS THE RESOURCE OF CHOICE**

16 **Q. PLEASE EXPLAIN THE RETAIL LOAD OBLIGATIONS OF BLACK**
17 **HILLS POWER.**

18 A. The electric loads of Black Hills Power continue to grow. As explained in the
19 testimony of Jacqueline Sargent, in addition to generation resources required to
20 serve the peak demand, a minimum reserve margin of 15 percent is carried so that
21 Black Hills Power can reliably serve its customers and maintain its obligations to
22 the interconnected electric system. Black Hills Power's forecasted 2010 peak,

1 including losses, is 353 MW. After consideration of a 15 percent minimum
2 reserve margin, Black Hills Power must plan and acquire resources to meet at least
3 a 406 MW power supply requirement.

4 **Q. WHY IS WYGEN III BEING BUILT?**

5 A. As discussed in the testimony of Jill Tietjen, the 2007 Integrated Resource Plan
6 (IRP) demonstrated that additional generation resources were needed to meet the
7 future needs of Black Hills Power's retail customers and that a resource was
8 required in 2010. Ms. Tietjen worked closely with the Black Hills Power staff and
9 Global Energy Decisions (GED) to conduct the 2007 IRP. Black Hills Power staff
10 made determinations of the model inputs, GED conducted the modeling, and both
11 Black Hills Power staff and Ms. Tietjen reviewed and validated the results. The
12 IRP demonstrated that Wygen III was the 2010 resource that most economically
13 and reliably meets those needs. The Board of Directors passed a board resolution
14 that allowed construction to begin on Wygen III. Actual construction of Wygen
15 III could not commence until Black Hills Power received a Certificate of Public
16 Convenience and Necessity (CPCN) for the unit from the Wyoming Public
17 Service Commission. The analysis and results of the 2007 IRP were among the
18 factors upon which the Wyoming Public Service Commission based its decision to
19 issue a CPCN in March 2008 allowing Black Hills Power to construct Wygen III.
20 At the time of receipt of the CPCN, the air permit was already in hand. Wygen III
21 is being built to meet the retail load obligations of Black Hills Power.

1 **Q. IS THE WYGEN III UNIT SIMILAR TO OTHER UNITS IN THE BLACK**
2 **HILLS CORPORATION FLEET?**

3 A. Yes. As referenced in the testimony of Mark Lux, the Wygen III unit is similar to
4 units that Black Hills Corporation has familiarity with in both construction and
5 operation. These units include the Neil Simpson II unit, Wygen I and Wygen II.
6 All of these units are located in the same complex as the Wygen III unit in the
7 Gillette, Wyoming area at the mine mouth. The Corporation has been operating
8 one or more of these units for almost 15 years.

9 **Q. PLEASE DISCUSS THE STEPS BLACK HILLS POWER IS TAKING**
10 **WITH REGARD TO THE POSSIBLE IMPLEMENTATION OF A**
11 **CARBON TAX AT THE FEDERAL LEVEL.**

12 A. The Corporation is closely monitoring the process in the U.S. Congress and
13 discussing the potential impacts of proposed bills with our representatives and
14 senators. We have been studying the cost impacts, including any equipment
15 modifications that might be necessary, for many years. Our analyses of resource
16 alternatives have included sensitivity analysis of potential levels of a carbon tax
17 since the early 1990s. In addition, we have been in discussions with research arms
18 of universities in or near our service territories and are participating in projects
19 that look at alternative methods of carbon capture.

1 **Q. PLEASE DESCRIBE HOW THE IMPLEMENTATION OF A CARBON**
2 **TAX WOULD AFFECT THE COMPANY'S OPERATION OF WYGEN III.**

3 A. As discussed in the testimony of Jill Tietjen, even if costs associated with a carbon
4 tax are assumed to be higher than the costs that would result from legislation
5 recently passed by the U.S. House of Representatives, Wygen III remains the
6 resource of choice for the Black Hills Power customers.

7 **Q. PLEASE EXPLAIN THE COST OF WYGEN III VERSUS THE MARKET**
8 **PRICE FOR CONSTRUCTION OF NEW GENERATION.**

9 A. At or near the time that Wygen III started construction, commodities and materials
10 were experiencing price escalation due to worldwide growth and the associated
11 demand for steel, cement, labor and other materials. Cost adders due to existing
12 and impending environmental regulations needed to be considered. We believe
13 that we have successfully addressed all of these factors as we built Wygen III.
14 The cost for this coal plant compares favorably with other coal plants built in the
15 region. In addition, Montana-Dakota Utilities has purchased an ownership share
16 in the plant, demonstrating Wygen III's strong market position.

17 **Q. PLEASE DESCRIBE THE COST IMPACTS OF COMMODITIES AND**
18 **MATERIALS.**

19 A. There are numerous risks associated with power plant construction including, but
20 not limited to, equipment availability, increasing costs of materials, shortages of
21 equipment, and availability and costs of labor. In recent years, there were
22 significant increases in the prices of basic commodities. Steel, cement, copper,

1 and oil reached almost unprecedented price levels. The increasing costs of these
2 raw materials translate into significant price increases in equipment such as boilers
3 and turbines as well as decreased availability. As described in the testimony of
4 Mark Lux, we were monitoring the cost situation and were able to secure prices
5 and delivery for key contracts early for Wygen III.

6 **Q. PLEASE DESCRIBE THE LABOR SITUATION REGARDING WYGEN**
7 **III.**

8 A. Labor costs have increased. As detailed in the testimony of Mark Lux, the
9 demand for key subcontractors was exceeding the supply of those subcontractors.
10 The Corporation had the advantage, however, of relationships with key
11 subcontractors who had worked on Wygen II. Fixed price contracts were obtained
12 from several key subcontractors and local trade contractors were used whenever
13 possible.

14 **Q. PLEASE PROVIDE AN OVERVIEW OF THE COSTS MODELED FOR**
15 **WYGEN III AND THE PROJECTED COSTS ANTICIPATED BY**
16 **PROJECT COMPLETION.**

17 A. Page 30 of the 2007 IRP, Exhibit JST-2, shows that the capital cost for new coal-
18 fired power plants (including Wygen III) was modeled as \$2,320/kW in 2006
19 dollars. Using the assumed 3% annual inflation rate as described on page 9 of
20 Exhibit JST-2, the capital cost for a 2010 coal-fired power plant is \$2,611/kW.
21 For a 95 MW facility, this translates into \$248 million; and \$261 million for a 100
22 MW facility. The current estimated total cost of construction for Wygen III,

1 which will be a 100 MW facility, is approximately \$247 million, including
2 Allowance for Funds Used During Construction (AFUDC). (See the testimony of
3 Mark Lux.)

4 **V. WHOLESALE OPPORTUNITIES**

5 **Q. PLEASE DESCRIBE THE WHOLESALE OPPORTUNITIES OF BLACK**
6 **HILLS POWER.**

7 A. For many years, Black Hills Power has served the load of the Montana-Dakota
8 Utilities' (MDU) customers in Sheridan, Wyoming; the baseload requirement of
9 the City of Gillette, Wyoming; and customers of the Municipal Energy Authority
10 of Nebraska (MEAN). Over the years, each of these wholesale customers has
11 expressed an interest in purchasing either an ownership share or a unit contingent
12 agreement related to the commercial operation date of Wygen III.

13 **Q. HOW DOES BLACK HILLS POWER SERVE THE MDU CUSTOMERS**
14 **LOCATED IN SHERIDAN, WYOMING?**

15 A. As discussed in the testimony of Jacqueline Sargent, the customers of MDU in
16 Sheridan, Wyoming are currently served by a power purchase agreement (PPA).
17 The forecast of peak demand and energy associated with that load is performed by
18 MDU and provided to Black Hills Power. The forecast used for the 2007 IRP is
19 found on Table 7, page 16 of that document (Exhibit JST-2). Through their on-
20 going relationship with Black Hills Power, MDU had obtained a legally
21 enforceable right to buy into a Black Hills Corporation resource. Discussions had
22 been ongoing with MDU as to resource and price for an ownership option. Those

1 discussions were concluded with the result that MDU has purchased 25 percent
2 (which was the threshold level for the option and was established in relationship to
3 their load) of Wygen III. With this ownership share, the MDU peak demand and
4 energy served by Black Hills Power will be reduced from the levels shown on
5 Table 7 of the IRP proportionately to the ownership share in Wygen III.

6 **Q. PLEASE DESCRIBE THE STATUS OF BLACK HILLS POWER'S**
7 **NEGOTIATIONS WITH THE CITY OF GILLETTE.**

8 A. Currently, the City of Gillette, Wyoming procures power to supply its electricity
9 needs from Black Hills Power and from MEAN. Black Hills Power presently
10 provides 23 megawatts of base load resource to the City of Gillette pursuant to a
11 Power Purchase Agreement. The parties are negotiating to convert this Power
12 Purchase Agreement to a cost of service or similar arrangement. Therefore, the
13 assumption of this Application is that only 52 percent of Wygen III will be
14 included in the cost of model for the customers of Black Hills Power.

15 **Q. PLEASE DESCRIBE THE POWER SALES AGREEMENT WITH MEAN.**

16 A. Black Hills Power currently has a sale agreement with MEAN for 20 MW and as
17 discussed in the testimony of Jacqueline Sargent has successfully negotiated a
18 contract extension. Under the extension, 20 MW of unit contingent power will be
19 sold to MEAN, one-half contingent upon Neil Simpson II and one-half contingent
20 upon Wygen III. An additional contract has also been executed for 10 MW to be
21 sold to MEAN for a term of five years, also unit contingent from these two
22 generating units.

1 **Q. PLEASE DESCRIBE THE BENEFITS TO BLACK HILLS POWER**
2 **CUSTOMERS FROM THESE TRANSACTIONS.**

3 A. Black Hills Power customers benefit because generation is built to meet their
4 current and future load obligations. In addition, the existing power sales
5 arrangements of Black Hills Power are converted to ownership shares that provide
6 defined capital recovery over the life of the generation facilities. The Wygen III
7 facility is the resource selected that over the long-term provides the most
8 economical source of power for the Black Hills Power customers. In the early
9 years of operation of Wygen III there may be energy available because Black Hills
10 Power is growing its resources to have electricity available as its customer loads
11 grow. Building this facility and bringing it on line on schedule and under budget
12 allows Black Hills Power to make power sales agreements with partners in the
13 market including MEAN, and to address near-term regional supply issues. Over
14 the long term, this resource will be available to economically meet the electricity
15 needs of the Black Hills Power customers. It was and is the right decision to build
16 Wygen III for commercial operation in 2010. Wygen III meets the needs of the
17 Black Hills Power customers as expected loads grow and units are retired.

18 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS ABOUT THE CHOICE**
19 **OF WYGEN III AS A 2010 RESOURCE FOR BLACK HILLS POWER**
20 **CUSTOMERS.**

21 A. It was the right decision in 2008 for Black Hills Power to construct Wygen III to
22 meet the long-term resource needs of the Black Hills Power customers and it is the

1 right decision in 2010. There is no new information that I see to indicate that the
2 choice should have been other than to build Wygen III. Wygen III will be built
3 ahead of schedule and under budget to provide a reliable, economical long-term
4 supply of electrical production to Black Hills Power customers. We have
5 experience in operating units similar to Wygen III. We have a reliable and
6 available fuel supply located at the mine-mouth such that transportation costs are
7 not an issue. We are closely monitoring the carbon tax legislation as it makes its
8 way through the U.S. Congress. In addition, the level of interest evidenced by
9 other utilities in near-by or neighboring service territories in having an ownership
10 share in Wygen III demonstrates to us that our selection of Wygen III as the 2010
11 resource is cost effective and reasonable.

12 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

13 **A. Yes.**