

Direct Testimony
Mark Lux

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. EL14-____

March 31, 2014

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Exhibits

None

1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. WHAT IS YOUR NAME AND BUSINESS ADDRESS?**

3 A. My name is Mark Lux. My business address is 625 Ninth Street, P.O. Box 1400,
4 Rapid City, South Dakota, 57701.

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

6 A. I am currently employed by Black Hills Service Company (“Service Company”), a
7 wholly-owned subsidiary of Black Hills Corporation (“BHC”), as Vice President
8 and General Manager, Regulated and Non-Regulated Generation. In that role, I
9 am responsible for the operation and construction of the electrical power
10 generation and coal mining assets owned by BHC subsidiaries, including Black
11 Hills Power, Inc. (“Black Hills Power” or the “Company”).

12 **Q. ON WHOSE BEHALF ARE YOU APPEARING IN THIS APPLICATION?**

13 A. I am appearing on behalf of Black Hills Power.

14 **Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE.**

15 A. I received a Bachelor of Science degree with honors in Mechanical Engineering
16 from the South Dakota School of Mines and Technology in 1987. I have more
17 than 25 years of experience working in the mining and electrical power industry,
18 in both nuclear and fossil fuel power generation, including operating experience
19 and power plant construction experience. I have been and continue to be involved
20 in the development, engineering, construction and commissioning of the natural
21 gas-fired Cheyenne Prairie Generating Station (“CPGS”), as well as the other
22 natural gas and coal-fired power plants owned by subsidiaries of BHC.

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

2 A. The purpose of my testimony is to discuss CPGS, and the construction, operation
3 and maintenance costs for CPGS. In addition, I discuss the other major capital
4 plant investments of Black Hills Power that are included in this rate case. I
5 provide the revised definition of major maintenance that has been adopted by
6 Black Hills Power. I discuss the decommissioning of three of Black Hills Power's
7 coal-fired generation facilities: Neil Simpson I, Osage, and Ben French. I discuss
8 common assets at the Neil Simpson Complex. Lastly, I provide information
9 regarding the Neil Simpson employee work force.

10 **II. CPGS OVERVIEW**

11 **Q. PLEASE DESCRIBE CPGS.**

12 A. CPGS is an electric generating plant that will provide a total of 132 MW. CPGS is
13 located on the southeast side of the City of Cheyenne, Wyoming. The power plant
14 includes: a gas-fired combustion turbine generator (37 MW), a combined cycle
15 generator (95 MW), a natural gas supply pipeline, an electric transmission line,
16 ancillary equipment, land and buildings, and a substation. CPGS has adequate and
17 efficient water supply, an abundant natural gas supply, and access to available
18 electric transmission.

1 **Q. HAS THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION**
2 **(“COMMISSION”) HAD AN OPPORTUNITY TO CONSIDER ANY**
3 **FILINGS RELATED TO CPGS?**

4 A. Yes. Black Hills Power filed an Application for the Phase In of Rates Regarding
5 CPGS Construction Financing Costs with the Commission on December 17, 2012,
6 Docket No. EL12-062. On September 19, 2013, the Commission approved the
7 phase in plan rate for CPGS pursuant to a Decision and Order Granting Joint
8 Motions for Approval of Settlement Agreement and Settlement Stipulation.

9 **Q. DID THE WYOMING PUBLIC SERVICE COMMISSION APPROVE A**
10 **CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR**
11 **CPGS?**

12 A. Yes. Black Hills Power and its sister utility Cheyenne Light, Fuel and Power
13 Company (“Cheyenne Light”) filed a Joint Application for a Certificate of Public
14 Convenience and Necessity (“CPCN”) on November 1, 2011, which was approved
15 by the Wyoming Public Service Commission by a Memorandum Decision dated
16 January 8, 2013, in Docket Nos. 20002-81-EA-11 and 20003-113-EA-11 (Record
17 No. 13007) (“CPCN Docket”).

18 **Q. PLEASE DESCRIBE YOUR ROLE IN THE CPGS PROJECT.**

19 A. I am responsible for supporting the overall project development and management
20 of the construction of the CPGS power plant. In that role, I oversee the
21 preparation of plans and specifications, oversee the competitive bid process,
22 manage the selection and sourcing of equipment, and manage the construction

1 project. I also supported the process by which the air permit and the industrial
2 siting permit were obtained. In addition, I supported the efforts to obtain the
3 CPCN from the Wyoming Public Service Commission.

4 **Q. WHAT ARE THE MAJOR COMPONENTS OF CPGS?**

5 A. There are five major components of CPGS, as follows:

- 6 1. A combined cycle (95 MW) jointly owned by Cheyenne Light (42%) and
7 Black Hills Power (58%) that includes two combustion turbine generators,
8 two heat recovery steam generators and one steam turbine generator.
- 9 2. One natural gas-fired combustion turbine generator (37 MW) to be wholly
10 owned by Cheyenne Light.
- 11 3. Ancillary equipment, land and buildings, a substation, and other such assets
12 jointly owned by Cheyenne Light (58%) and Black Hills Power (42%).
- 13 4. A 10.5 mile long, high pressure natural gas supply pipeline owned by
14 Cheyenne Light.
- 15 5. An electric transmission line, owned by Cheyenne Light, interconnecting
16 the combined cycle and the combustion turbine generator to Cheyenne
17 Light's existing 115 kV transmission system.

18 **Q. PLEASE DESCRIBE THE CPGS GAS PIPELINE.**

19 A. Black Hills Power and Cheyenne Light are constructing a 12 inch diameter high
20 pressure natural gas transmission pipeline ("CPGS Pipeline"). It is approximately
21 ten and one-half miles in length. It will connect CPGS to the Southern Star
22 Central Gas Pipeline ("Southern Star"). It originates at an interconnection with

1 Southern Star at a point just north of the Wyoming – Colorado State line and east
2 of Highway 85.

3 Black Hills Power will have 42% of the CPGS Pipeline capacity. Cheyenne Light
4 will have the remaining 58% of the CPGS Pipeline capacity. Cheyenne Light’s
5 natural gas utility will own, operate and maintain the CPGS Pipeline. The
6 testimony of Kent Kopetzky provides further information regarding the pipeline
7 transportation capacity and natural gas supply for CPGS. The testimony of Chris
8 Kilpatrick addresses allocation of the costs for the CPGS Pipeline.

9 **Q. PLEASE DESCRIBE HOW CPGS WILL INTERCONNECT WITH**
10 **CHEYENNE LIGHT’S 115 kV TRANSMISSION SYSTEM.**

11 A. CPGS will interconnect to Cheyenne Light’s 115 kV transmission system at a new
12 115 kV substation located at the project site. The 115 kV substation is being
13 constructed to initially accommodate a double circuit 115 kV transmission line and
14 two 115/13.8 kV GSU transformers.

15 **III. CPGS COST OF CONSTRUCTION**

16 **Q. IS THERE A PRICE CAP FOR THE CONSTRUCTION COSTS FOR**
17 **CPGS?**

18 A. Pursuant to a settlement between Black Hills Power, Cheyenne Light, and the
19 Wyoming Office of Consumer Advocate in the CPCN Docket, a price cap of \$222
20 million dollars was established for CPGS.

1 **Q. DO YOU ANTICIPATE THAT THE ACTUAL CONSTRUCTION COST**
2 **OF CPGS WILL BE AT OR BELOW THE PRICE CAP OF \$222**
3 **MILLION?**

4 A. Yes.

5 **Q. PLEASE DISCUSS THE COST OF THE CPGS PIPELINE.**

6 A. Cheyenne Light has contracted with a third party to build the CPGS Pipeline and
7 the Southern Star interconnection, at a cost of approximately \$9 million. For
8 information regarding allocation of costs, please see the testimony of Christopher
9 Kilpatrick.

10 **Q. HOW CONFIDENT ARE YOU IN THE ABOVE CONSTRUCTION COST**
11 **ESTIMATES?**

12 A. I am very confident in these estimates because nearly all of the contracts entered
13 into for the construction of the CPGS plant are fixed price contracts. In addition, I
14 am confident in the anticipated costs because of our experience in constructing
15 other power plants owned by Black Hills Power and other subsidiaries of BHC.

16 **Q. ARE THERE ANY SPARE PARTS FOR CPGS?**

17 A. Yes. There is \$1,029,000 in spare parts allocated to Black Hills Power and
18 included in the Revenue Requirement Model. See Schedule F-4 of Section 4 for a
19 complete listing.

1 **Q. WHY DOES THE COMPANY NEED AN INVENTORY OF SPARE PARTS**
2 **FOR CPGS?**

3 A. The spare parts are based on the critical need of CPGS to have these items on
4 hand, in accordance with prudent utility practice, thereby reducing the amount of
5 lost production time. The amount of spare parts set forth in Schedule F-4 of
6 Section 4 is appropriate, based on my experience and falls within the industry
7 standard of two percent of the total investment capital.

8 **Q. WHO HAS MANAGED THE CONSTRUCTION OF THE CPGS POWER**
9 **PLANT?**

10 A. Black Hills Power and Cheyenne Light have used an owners' self-build approach
11 regarding the management of the construction of CPGS, rather than contracting
12 with a third party to engineer, procure, and construct the facility.

13 **Q. DESCRIBE THE PROCESS BY WHICH THE COMPANY SECURED**
14 **CONTRACTS FOR THE CONSTRUCTION OF CPGS.**

15 A. At the time the Company was preparing for the construction of CPGS, the United
16 States economy was just starting to recover from a recession. As a result, the
17 Company believed that it was in a position to favorably negotiate the price of the
18 significant components. The Company determined that it was important to secure
19 fixed priced contracts for all direct costs that were based on competitive bid
20 pricing. To obtain the benefits of competitive bidding in light of the recession, the
21 Company began by securing fixed price contracts from some key vendors and
22 subcontractors. Locking in these key contracts at this early stage allowed the

1 Company to insure that the construction process could proceed in a timely manner
2 with secured but reasonably priced resources. After these key contracts were
3 secured, the remainder of the project was secured through competitively bid fixed
4 price contracts.

5 In summary, the CPGS project strategy involved securing key contracts early to
6 establish a reliable schedule and reduce price risk, and then subsequently securing
7 competitively bid fixed priced contracts for the remainder of the project.

8 **Q. EXPLAIN HOW THE COMPETITIVE BID PROCESS WORKED.**

9 A. The Company hired Kuljian as the engineer of record for CPGS. Kuljian prepared
10 the specifications for the plant. After the Company reviewed and approved these
11 specifications, Kuljian prepared requests for proposals that were submitted to
12 various potential vendors. Kuljian reviewed the bid proposals submitted by the
13 vendors and made recommendations to the Company. The Company also
14 reviewed the bid proposals and ultimately accepted the successful bid proposals.

15 **Q. WERE ALL SUCCESSFUL BIDDERS REQUIRED TO PROVIDE**
16 **SECURITY FOR THEIR PERFORMANCE?**

17 A. Yes, all successful bidders for major construction and major process equipment
18 were required to provide security for their performance.

1 **IV. STATUS OF CPGS CONSTRUCTION**

2 **Q. PLEASE GENERALLY DESCRIBE THE CURRENT STATUS AND**
3 **EXPECTED COMPLETION OF THE CONSTRUCTION OF CPGS.**

4 A. At this time, construction is on schedule. Black Hills Power anticipates that
5 construction of CPGS will be complete and the plant will be operational by
6 October 1, 2014. All of the major project equipment has been delivered to the
7 CPGS site. In general terms, as of mid-March, 2014, the construction phase was
8 approximately 64% complete and the total project (which includes engineering,
9 procurement, construction and commissioning) was considered to be
10 approximately 85% complete.

11 **V. OPERATIONS AND MAINTENANCE COSTS FOR CPGS.**

12 **Q. WHAT ARE THE ESTIMATED ANNUAL OPERATING AND**
13 **MAINTENANCE COSTS FOR CPGS AND HOW DID YOU ARRIVE AT**
14 **THIS FORECAST?**

15 A. Black Hills Power estimates its total annual operation and maintenance costs for
16 CPGS to be approximately \$2.78 million. The forecast was done at the Federal
17 Energy Regulatory Commission (“FERC”) account level and is included as
18 Schedule H-15 of Section 4. This forecast utilizes the historical and budget
19 information for an existing combined cycle and similar projects that are also
20 operated by Service Company, with appropriate adjustments for labor, various
21 consumables, and other costs.

1 **Q. WHAT EXPENSES ARE INCLUDED IN THE OPERATIONS AND**
2 **MAINTENANCE COST FIGURE?**

3 A. The estimated total annual operation and maintenance costs for CPGS includes
4 primarily: i) the cost of labor to operate the plant; ii) the consumables; and iii)
5 maintenance and repairs. The estimate does not include the cost of the fuel for the
6 CPGS plant.

7 **Q. HOW DID THE COMPANY ESTIMATE THE COST OF LABOR TO**
8 **OPERATE THE PLANT?**

9 A. The estimated cost of labor to operate the plant is a function of how much CPGS
10 will run. It is expected that CPGS will need to be staffed twenty four hours per
11 day, and seven days per week. Accordingly, CPGS will have eighteen full time
12 equivalent employees.

13 **VI. CPGS PLANT OPERATIONS**

14 **Q. WHO WILL OPERATE CPGS?**

15 A. Service Company will be responsible for the operation of CPGS.

16 **Q. WHAT ARE THE ADVANTAGES OF THE COMBINED CYCLE UNIT**
17 **THAT IS PART OF CPGS?**

18 A. A combined cycle unit, which is an intermediate resource, provides a number of
19 advantages and benefits to Black Hills Power and Cheyenne Light. Specifically, i)
20 it operates at a lower heat rate than a combustion turbine generator; ii) it lowers
21 environmental emissions; iii) it reduces utility exposure to future environmental
22 mandates or taxes; iv) it reduces reliance on the energy markets; v) it creates

1 diversification of the generation resource mix for both Black Hills Power and
2 Cheyenne Light; and vi) it can provide economical system and wind regulation.

3 **Q. PLEASE EXPLAIN THE AIR QUALITY CONTROLS EMPLOYED AT**
4 **CPGS.**

5 A. CP GS employs state of the art air quality control technology. Once CP GS
6 commences operation, it will likely be the cleanest operating power plant in
7 Wyoming and one of the cleanest operating natural gas-fired plants in the nation.
8 To the best of my knowledge, this is the first power project where this vendor of
9 the natural gas turbines guaranteed the CO₂ emission performance of the
10 combustion turbines.

11 **VII. OTHER CAPITAL PLANT INVESTMENTS**

12 **Q. HAS BLACK HILLS POWER MADE CAPITAL INVESTMENTS OTHER**
13 **THAN CP GS?**

14 A. Yes. Black Hills Power has made a number of capital investments in its existing
15 generation facilities which are listed in Schedule D-10 of Section 4 and are
16 expected to be in service on or before September 30, 2014.

17 **Q. PLEASE DESCRIBE THE MAJOR PLANT CAPITAL INVESTMENTS**
18 **BLACK HILLS POWER IS INCLUDING IN THIS RATE CASE.**

19 A. There are several categories of major capital investments to existing generation
20 that are included in this rate case. The categories, associated approximate costs,
21 and more specific examples are as follows:

- 1 1. \$0.3 million allocated to Safety and Security Projects. Within this category
2 are projects including the purchase of a man lift crane to ensure that
3 elevated security areas at the Neil Simpson Complex have access for
4 operations and maintenance to perform work, and alteration of the main
5 entrance to the Neil Simpson Complex to provide a means to safely and
6 securely manage the access point to the property.
- 7 2. \$2.1 million allocated to Control Systems projects. The majority of the
8 projects that fall within this category relate to efforts that were undertaken
9 to address obsolete controls for production equipment.
- 10 3. \$6 million allocated to Environmental Projects. Examples of projects
11 contained within this category are installation of an enclosure around the
12 Wygen III reagent preparation area to allow for increased personal safety
13 and equipment reliability, end of life replacement of a catalyst removal
14 system for Wygen III, addition of a hydrated lime injection system for early
15 removal of SO₂ upon firing Wygen III, installation of a new air quality
16 control system to meet the Environmental Protection Agency (“EPA”)
17 MATS rules at Wyodak, and conversion of the Neil Simpson II startup fuel
18 from fuel oil to natural gas to improve emission performance.
- 19 4. \$3.5 million allocated to Equipment Reliability projects that individually
20 exceed \$100,000 in costs. Included in this category are projects involving
21 replacement of boiler water wall tubes due to fireside corrosion inherent
22 with low NO_x burner characteristics, the addition of a portable conveyor for

1 the coal handling system to provide a redundant or back-up should the
2 existing system fail, and replacement of the furnace water wall panel on
3 Wygen III to address fire side corrosion.

4 5. \$1.1 million allocated to Regulation Requirements. Examples of projects
5 included in this category are installation of a buffer around the Wygen II
6 and III storm water pond to satisfy a state mandate for facilities located near
7 wetlands, extending the concrete apron around the areas of ash haulers, and
8 installation of a dust control containment system to satisfy a new OSHA
9 dust standard.

10 6. \$0.4 million allocated to Facilities. Included within this category are
11 HVAC upgrades at the Neil Simpson Complex and procurement of a large
12 forklift for inventory maintenance support at the Neil Simpson Complex.

13 **Q. PLEASE BRIEFLY DESCRIBE YOUR INVOLVEMENT WITH THE**
14 **AFOREMENTIONED PROJECTS.**

15 A. My responsibility includes project approvals to ensure projects are prudent and
16 cost effective.

17 **Q. WERE THESE CAPITAL INVESTMENTS PRUDENTLY**
18 **UNDERTAKEN?**

19 A. Yes. The capital investments are necessary to continue to provide safe and
20 reliable service to Black Hills Power's customers.

1 **VIII. DEFINITION OF MAJOR MAINTENANCE**

2 **Q. PLEASE DEFINE MAJOR MAINTENANCE.**

3 A. Any time Black Hills Power opens its turbine generators the associated work is
4 considered major maintenance.

5 **Q. PLEASE DESCRIBE HOW MAJOR MAINTENANCE HAS**
6 **HISTORICALLY BEEN ADDRESSED BY BLACK HILLS POWER.**

7 A. Historically, Black Hills Power has scheduled major maintenance work for its
8 coal-fired generation units on an eight year cycle.

9 **Q. DOES BLACK HILLS POWER PLAN TO ALTER ITS MAJOR**
10 **MAINTENANCE CYCLE FREQUENCY?**

11 A. Yes. Black Hills Power plans to perform major maintenance work every four
12 years.

13 **Q. WILL THE SAME MAJOR MAINTENANCE CYCLE FREQUENCY**
14 **APPLY TO THE CPGS GENERATION UNITS?**

15 A. No. Black Hills Power's coal-fired generation units are run consistently and
16 therefore a major maintenance schedule is easily determined. Conversely, the
17 combined cycle unit located at CPGS is an intermediate generation unit. Because
18 run time for the combined cycle is undetermined, major maintenance will be
19 scheduled to occur when the unit has exceeded the recommended amount of run
20 time hours.

1 **Q. WILL THE CHANGE IN THE MAJOR MAINTENANCE SCHEDULE**
2 **RESULT IN INCREASED COSTS TO CUSTOMERS?**

3 A. No, the change in schedule for major maintenance activities will not increase costs
4 to customers. The allocation of major maintenance costs is discussed in more
5 detail in the testimony of Chris Kilpatrick.

6 **IX. DECOMMISSIONING**

7 **Q. PLEASE GENERALLY DESCRIBE BLACK HILLS POWER'S NEIL**
8 **SIMPSON I, OSAGE, AND BEN FRENCH COAL-FIRED GENERATION**
9 **FACILITIES.**

10 A. Neil Simpson I (21.8 MW) is located in Campbell County, Wyoming and has been
11 in service since 1969. Osage (three boilers with a total of 34.5 MW) is located in
12 Weston County, Wyoming. The last of the three boilers located at this facility
13 was placed in service in 1952. Ben French (25 MW) is located in Pennington
14 County, South Dakota, and has been in service since 1960. Each of these three
15 facilities includes a coal-fired boiler with a capacity of 25 MW or less.

16 **Q. HAS THE EPA ADOPTED REGULATIONS THAT IMPACT NEIL**
17 **SIMPSON I, OSAGE, AND BEN FRENCH?**

18 A. Yes, the EPA issued the National Emission Standards for Hazardous Air
19 Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers
20 ("Area Source Rules"). The Area Source Rules are designed to reduce emissions
21 of hazardous air pollutants from various small boilers, to include coal-fired units
22 of 25 MW or less.

1 **Q. WHAT ARE THE IMPLICATIONS OF THE AREA SOURCE RULES?**

2 A. The rules implement: (1) new emission requirements for mercury and carbon
3 monoxide; (2) work practice standards addressing startup and shutdown and
4 energy assessments; (3) operating restrictions defining mercury sorbent injection
5 rates and coal quality; (4) continuous monitoring; and (5) compliance testing. The
6 deadline for compliance with the Area Source Rules is March 21, 2014. In order
7 for Black Hills Power to comply with the Area Source rules, it is required to
8 either: (1) retrofit these three affected facilities with expensive new environmental
9 controls; or (2) retire Neil Simpson I, Osage, and Ben French.

10 **Q. HAS BLACK HILLS POWER MADE A DETERMINATION REGARDING**
11 **COMPLIANCE WITH THE AREA SOURCE RULES?**

12 A. Yes. As a result of the costs involved to retrofit these units, the need for life
13 extension upgrades if the units were to continue to operate, and the likelihood of
14 additional future EPA regulations that would affect the continued operation of
15 these facilities; Black Hills Power concluded that the most cost effective plan for
16 EPA compliance is to retire Neil Simpson I, Osage, and Ben French no later than
17 March 21, 2014.

18 **Q. PLEASE DESCRIBE YOUR ROLE IN THE DECOMMISSIONING OF**
19 **NEIL SIMPSON I, OSAGE, AND BEN FRENCH.**

20 A. I am responsible for supporting the overall project development and management
21 of the decommissioning of these facilities. In this role, I oversee preparations of

1 plans and specifications, the competitive bid process, selection of the
2 decommissioning contractor, and management of the decommissioning process.

3 **Q. HOW HAS BLACK HILLS POWER PREPARED FOR THE**
4 **DECOMMISSIONING OF THESE FACILITIES?**

5 A. Black Hills Power retained Environmental Resources Management (“ERM”) to
6 conduct Environmental Site Assessments (“ESA”) at all three facilities. Based
7 upon the data obtained during the site visits, review of publicly available
8 information sources, and interviews with persons familiar with the sites, ERM
9 identified the environmental conditions that need to be addressed through
10 abatement or removal.

11 The Company also retained Black & Veatch, a global engineering, consulting, and
12 construction company, to consult on preparation of the Request for Proposal
13 (“RFP”) for the decommissioning work and the overall decommissioning process.

14 An RFP was issued in March of 2013. In response, vendors submitted proposals
15 through a competitive bidding process. Black Hills Power subsequently selected
16 Independence Excavating, LLC (“IX”) to decommission these facilities, as it had
17 submitted the lowest cost proposal that met the technical specification of the RFP.

18 **Q. WHAT ARE THE FORECASTED COSTS ASSOCIATED WITH**
19 **DECOMMISSIONING THESE FACILITIES?**

20 A. The following table provides a summary of estimated decommissioning costs by
21 plant:

<u>Generation Unit</u>	<u>Demolition & Abatement Bid</u>	<u>Salvage Value Credit</u>	<u>RFP Lump Sum Bid</u>	<u>Environmental Assessments / Other Costs</u>	<u>Total Decommissioning Budget</u>
Osage	3,296,300	(573,000)	2,723,300	1,228,436	\$ 3,951,736
Neil Simpson I	2,315,000	(420,000)	1,895,000	1,080,413	\$ 2,975,413
Ben French	2,709,000	(420,000)	2,289,000	1,670,606	\$ 3,959,606

1 **Q. PLEASE EXPLAIN WHAT IS INCLUDED IN THE COLUMN ENTITLED**
2 **ENVIRONMENTAL ASSESSMENTS / OTHER COSTS.**

3 A. The Environmental Assessments / Other Costs column above includes the cost of
4 performing the individual ESA at each of the three facilities. This section includes
5 the cost of retaining the professionals to conduct the assessments as well as costs
6 associated with well closure, waste disposal, asbestos abatement and bonding.
7 Two ESAs were conducted to research and analyze any potential liabilities from
8 an environmental impact perspective. Additionally, this category of costs includes
9 site management during decommissioning, and indirect costs such as insurance
10 and permits required throughout the decommissioning progress.

11 **Q. HOW CONFIDENT IS BLACK HILLS POWER IN THE FORECASTED**
12 **DECOMMISSIONING COSTS?**

13 A. Black Hills Power is very confident in these costs because the decommissioning
14 contract is a fixed price contract.

15 **Q. PLEASE DISCUSS THE DECOMMISSIONING SCHEDULE.**

16 A. Decommissioning efforts at the Osage facility are scheduled to begin in August of
17 2014, with a target date for completion of April of 2015. Decommissioning

1 efforts at the Neil Simpson I facility are scheduled to begin in November of 2014
2 and estimated to be completed in June of 2015. Finally, decommissioning efforts
3 at the Ben French facility are scheduled to begin in January of 2015 and estimated
4 to conclude in September of 2015.

5 **X. THE NEIL SIMPSON COMPLEX AND ASSOCIATED**

6 **COMMON ASSETS**

7 **Q. WHAT FACILITIES ARE LOCATED AT THE NEIL SIMPSON**
8 **COMPLEX?**

9 A. The following generation facilities are located in Gillette, Wyoming at the Neil
10 Simpson Complex: Wygen III, Neil Simpson II, Wyodak, and the Neil Simpson
11 CT.

12 **Q. WHAT PERCENTAGE OF OWNERSHIP DOES BLACK HILLS POWER**
13 **HAVE IN EACH OF THESE FACILITIES?**

14 A. Black Hills Power owns 52% of Wygen III, 100% of Neil Simpson II, 20% of
15 Wyodak, and 100% of the Neil Simpson CT.

16 **Q. PLEASE DESCRIBE THE COAL STOCKPILE ITEM AT THE NEIL**
17 **SIMPSON COMPLEX (“NEIL SIMPSON COMPLEX”) LISTED ON**
18 **SCHEDULE F-1, LINE 31.**

19 A. The coal plants at the Neil Simpson Complex are directly adjacent to the Wyodak
20 Mine. The coal is crushed in a secondary crusher building and then this mine-
21 mouth coal is fed through a single conveyor belt system. This system is
22 maintained and operates very reliably. However, the reliance on a single non-

1 redundant source of coal to these facilities is a risk to the plant operations. This
2 risk has been evaluated and based on the potential for interruption of the supply of
3 coal to all the coal plants at the Neil Simpson Complex, the single secondary
4 crusher building and conveyor belt system is identified as a significant risk.
5 Although the Company has limited coal storage available, an event causing major
6 damage to the coal supply system could prevent the operation of all the power
7 plants at the Neil Simpson Complex and pose risk to the ability to adequately
8 supply power to customers. Therefore, the decision was made to stockpile coal at
9 the Neil Simpson Complex.

10 **Q. IS THE NEIL SIMPSON COMPLEX COAL STOCKPILE ADJUSTMENT**
11 **PRUDENT AND NECESSARY?**

12 A. Yes, the back-up coal supply system project and adding a coal stock pile to
13 inventory is prudent to ensure reliable power supply to customers.

14 **Q. HAS BLACK HILLS POWER MADE OTHER INVESTMENTS IN THE**
15 **COMMON ASSETS AT THE NEIL SIMPSON COMPLEX?**

16 A. Yes. The post test year Neil Simpson Complex common asset additions are set
17 forth on Schedule D-10, lines 26-40, 44. The Neil Simpson Complex Shared
18 Facilities adjustment has been updated to reflect these additions on Schedule H-10.

1 **XI. LABOR FORCE**

2 **Q. ONCE OPERATIONS ARE COMPLETELY SUSPENDED AT NEIL**
3 **SIMPSON I, WILL BLACK HILLS POWER REALIZE A DECREASE IN**
4 **LABOR FORCE?**

5 A. No. There are currently eight full time equivalent employees allocated to Neil
6 Simpson I. These employees have been retained by Black Hills Power as part of
7 its strategic workforce planning efforts. As operations at Neil Simpson I moved
8 toward suspension, these employees assigned part of their time to the common
9 Neil Simpson Complex facilities and also direct charged specific entities such as
10 Cheyenne Light and Black Hills Wyoming. Once suspension of operations is
11 complete, these employees will be transitioned to fill eight open positions at the
12 Neil Simpson Complex.

13 **Q. DOES THE RETENTION OF THE NEIL SIMPSON I EMPLOYEES**
14 **ELIMINATE THE NEED TO INCLUDE GENERATION EMPLOYEES IN**
15 **BLACK HILLS POWER'S FUTURETRACK WORKFORCE**
16 **DEVELOPMENT PROGRAM?**

17 A. No. The retention of the Neil Simpson I employees merely addresses open
18 positions that exist today. A need will still exist to hire and train individuals to fill
19 positions that will be left vacant following future retirements. As a consequence,
20 there are a number of generation positions included in Black Hills Power's
21 FutureTrack Workforce Development Program.

1 **Q. WHAT GENERATION POSITIONS ARE INCLUDED IN BLACK HILLS**
2 **POWER'S FUTURETRACK WORKFORCE DEVELOPMENT**
3 **PROGRAM?**

4 A. Instrument technicians, plant unit operators, and plant maintenance operators are
5 the three generation positions that are included in the Program.

6 **Q. PLEASE EXPLAIN WHY THESE POSITIONS ARE INCLUDED.**

7 A. In the next eight years, Black Hills Power expects 7 instrument technicians, 4
8 plant maintenance operators, and 14 unit operators to retire. Based upon the
9 Company's experience, it takes approximately 3 years to train an instrument
10 technician and 1.5 years to train a plant maintenance operator to the level
11 necessary for him/her to work independently and be considered as a candidate for
12 a plant unit operator. Plant maintenance operators provide the pool of available
13 candidates for unit operator positions. Once employed as a unit operator, it takes
14 an additional 1.5 years before this category of employee is able to work
15 independently. Due to the lengthy training periods and the shortage of skilled
16 candidates, these three generation positions are included in the Black Hills
17 Power's FutureTrack Workforce Development Program.

18 **Q. HOW PRODUCTIVE ARE THE INDIVIDUALS WHO ARE TRAINING**
19 **FOR THESE POSITIONS?**

20 A. Based upon the Company's experience, an instrument technician is approximately
21 50 percent productive after 2 years of training, and able to work independently
22 after 3 years of training; a plant maintenance operator is approximately 50 percent

1 productive after 1 year of training, and able to work independently after 18 months
2 of training; and a fully trained plant maintenance operator is approximately 50
3 percent productive as a unit operator after 1 year and able to work independently
4 after 1.5 years of training. Jennifer Landis discusses how these productivity
5 metrics are applied to determine what percentage of a particular position is
6 charged to the Black Hills Power's FutureTrack Workforce Development Program
7 regulatory asset.

8 **XII. CONCLUSION**

9 **Q. PLEASE EVALUATE BLACK HILLS POWER'S GENERATION**
10 **RESOURCES.**

11 A. Once CPGS is in-service, Black Hills Power will have a balanced portfolio of
12 geographically diverse modern coal and gas-fired generation that represents one of
13 the newest fleets of generation resources in the United States. Black Hills Power's
14 generation resources should provide its customers with reliable and economical
15 energy for a very long period of time.

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

17 A. Yes, it does.