

**BEFORE THE  
SOUTH DAKOTA PUBLIC UTILITIES COMMISSION**

**DIRECT TESTIMONY OF**

**WILLIAM E. AVERA**

**On Behalf of Black Hills Power, Inc.**

**Docket No. EL09-\_\_\_\_\_**

**September 29, 2009**

**DIRECT TESTIMONY OF WILLIAM E. AVERA**

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**DIRECT TESTIMONY OF WILLIAM E. AVERA  
ON BEHALF OF BLACK HILLS POWER, INC.**

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**I. INTRODUCTION**

1 **Q. Please state your name and business address.**

2 A. William E. Avera, 3907 Red River, Austin, Texas, 78751.

3 **Q. In what capacity are you employed?**

4 A. I am the President of FINCAP, Inc., a firm providing financial, economic, and policy  
5 consulting services to business and government.

**A. Qualifications**

6 **Q. Please describe your qualifications and experience.**

7 A. I received a B.A. degree with a major in economics from Emory University. After serving  
8 in the U.S. Navy, I entered the doctoral program in economics at the University of North  
9 Carolina at Chapel Hill. Upon receiving my Ph.D., I joined the faculty at the University of  
10 North Carolina and taught finance in the Graduate School of Business. I subsequently  
11 accepted a position at the University of Texas at Austin where I taught courses in financial  
12 management and investment analysis. I then went to work for International Paper  
13 Company in New York City as Manager of Financial Education, a position in which I had  
14 responsibility for all corporate education programs in finance, accounting, and economics.

15 In 1977, I joined the staff of the Public Utility Commission of Texas ("PUCT") as  
16 Director of the Economic Research Division. During my tenure at the PUCT, I managed a  
17 division responsible for financial analysis, cost allocation and rate design, economic and

1 financial research, and data processing systems, and I testified in cases on a variety of  
2 financial and economic issues. Since leaving the PUCT, I have been engaged as a  
3 consultant. I have participated in a wide range of assignments involving utility-related  
4 matters on behalf of utilities, industrial customers, municipalities, and regulatory  
5 commissions. I have previously testified before the Federal Energy Regulatory  
6 Commission (“FERC”), as well as the Federal Communications Commission, the Surface  
7 Transportation Board (and its predecessor, the Interstate Commerce Commission), the  
8 Canadian Radio-Television and Telecommunications Commission, and regulatory agencies,  
9 courts, and legislative committees in 42 states, including the South Dakota Public Utilities  
10 Commission (“SDPUC” or the “Commission”).

11 In 1995, I was appointed by the PUCT to the Synchronous Interconnection  
12 Committee to advise the Texas legislature on the costs and benefits of connecting Texas to  
13 the national electric transmission grid. In addition, I served as an outside director of  
14 Georgia System Operations Corporation, the system operator for electric cooperatives in  
15 Georgia.

16 I have served as Lecturer in the Finance Department at the University of Texas at  
17 Austin and taught in the evening graduate program at St. Edward’s University for twenty  
18 years. In addition, I have lectured on economic and regulatory topics in programs  
19 sponsored by universities and industry groups. I have taught in hundreds of educational  
20 programs for financial analysts in programs sponsored by the Association for Investment  
21 Management and Research, the Financial Analysts Review, and local financial analysts  
22 societies. These programs have been presented in Asia, Europe, and North America,  
23 including the Financial Analysts Seminar at Northwestern University. I hold the Chartered

1 Financial Analyst (CFA<sup>®</sup>) designation and have served as Vice President for Membership of  
2 the Financial Management Association. I have also served on the Board of Directors of the  
3 North Carolina Society of Financial Analysts. I was elected Vice Chairman of the National  
4 Association of Regulatory Commissioners (“NARUC”) Subcommittee on Economics and  
5 appointed to NARUC’s Technical Subcommittee on the National Energy Act. I have also  
6 served as an officer of various other professional organizations and societies. A resume  
7 containing the details of my experience and qualifications is attached as Exhibit WEA-1.

### **B. Overview**

8 **Q. What is the purpose of your testimony?**

9 A. The purpose of my testimony is to present to the SDPUC my independent assessment of the  
10 fair rate of return on equity (“ROE”) for the jurisdictional electric utility operations of  
11 Black Hills Power, Inc. (“Black Hills Power” or “the Company”). In addition, I also  
12 examined the reasonableness of Black Hills Power’s requested capital structure, considering  
13 both the specific risks faced by Black Hills Power and other industry guidelines.

14 **Q. Please summarize the basis of your knowledge and conclusions concerning the issues**  
15 **to which you are testifying in this case.**

16 A. To prepare my testimony, I used information from a variety of sources that would normally  
17 be relied upon by a person in my capacity. In connection with the present filing, I  
18 considered and relied upon corporate disclosures and management discussions, publicly  
19 available financial reports and filings, and other published information relating to Black  
20 Hills Power and its parent company, Black Hills Corporation (“Black Hills Corp.”). I also  
21 reviewed information relating generally to capital market conditions and specifically to  
22 investor perceptions, requirements, and expectations for electric utilities. These sources,

1 coupled with my experience in the fields of finance and utility regulation, have given me a  
2 working knowledge of investors' requirements for Black Hills Power as it competes to  
3 attract capital, and they form the basis of my analyses and conclusions.

4 **Q. What is the role of the return on equity in setting a utility's rates?**

5 A. The ROE compensates equity investors for the use of their capital to finance the plant and  
6 equipment necessary to provide utility service. Investors commit capital only if they expect  
7 to earn a return on their investment commensurate with returns available from alternative  
8 investments with comparable risks. To be consistent with sound regulatory economics and  
9 the standards set forth by the United States Supreme Court in the *Bluefield*<sup>1</sup> and *Hope*<sup>2</sup>  
10 cases, a utility's allowed return on equity should be sufficient to (1) fairly compensate the  
11 utility's investors, (2) enable the utility to offer a return adequate to attract new capital on  
12 reasonable terms, and (3) maintain the utility's financial integrity.

13 **Q. How is your testimony organized?**

14 A. I first reviewed the operations and finances of Black Hills Power and the general conditions  
15 in the electric utility industry and the capital markets. With this as a background, I  
16 conducted various well-accepted quantitative analyses to estimate the current cost of equity,  
17 including alternative applications of the discounted cash flow ("DCF") model and the  
18 Capital Asset Pricing Model ("CAPM"), as well as reference to expected earned rates of  
19 return for utilities. Based on the cost of equity estimates indicated by my analyses, Black  
20 Hills Power's ROE was evaluated taking into account the specific risks and potential  
21 challenges for its jurisdictional electric utility operations in South Dakota. From the cost of

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<sup>1</sup> *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n*, 262 U.S. 679 (1923).

<sup>2</sup> *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

1 equity range indicated by my analyses, a fair rate of return on equity was selected taking  
2 into account the economic requirements and specific risks and potential challenges for  
3 Black Hills Power, as well as other factors (*e.g.*, flotation costs) that are properly considered  
4 in setting a fair rate of return on equity for the Company's jurisdictional electric utility  
5 operations in South Dakota.

### C. Summary of Conclusions

6 **Q. What are your findings regarding the fair rate of return on equity for Black Hills**  
7 **Power?**

8 A. Based on the results of my analyses and the economic requirements necessary to support  
9 continuous access to capital, I recommend that Black Hills Power be authorized a fair rate  
10 of return on equity in the range 11.5 to 12.5 percent. The bases for my conclusion are  
11 summarized below:

- 12 • In order to reflect the risks and prospects associated with Black Hills Power's  
13 jurisdictional utility operations, my analyses focused on a proxy group of sixteen  
14 other utilities with comparable investment risks. Consistent with the fact that  
15 utilities must compete for capital with firms outside their own industry, I also  
16 referenced a proxy group of comparable risk companies in the non-utility sector of  
17 the economy;
- 18 • Because investors' required return on equity is unobservable and no single method  
19 should be viewed in isolation, I applied both the DCF and CAPM methods, as well  
20 as the expected earnings approach, to estimate a fair ROE for Black Hills Power:
  - 21 ○ After eliminating low- and high-end outliers, my DCF analyses implied cost  
22 of common equity estimates ranging from 10.7 percent to 11.6 percent for  
23 the proxy group of utilities and 11.5 percent to 13.4 percent for the group of  
24 non-utility companies;
  - 25 ○ Application of the CAPM approach using forward-looking data that best  
26 reflect the underlying assumptions of this approach implied a cost of  
27 common equity of 11.4 percent for the utility proxy group and 11.6 percent  
28 for the firms in the non-utility proxy group;
  - 29 ○ My evaluation of earned rates of return expected for utilities suggested a cost  
30 of common equity in the range of 10.5 to 11.5 percent;

- 1           ○ Based on these results, I concluded that the cost of equity for the proxy  
2           groups of utilities and non-utility companies is in the 11.0 percent to 12.5  
3           percent range;
- 4           ○ While this range does not incorporate an explicit adjustment to account for  
5           the impact of common equity flotation costs or the greater investment risks  
6           implied by the Company's relative size and low bond rating, these are  
7           legitimate considerations in evaluating a fair ROE for Black Hills Power;  
8           Therefore the reasonable range for the fair ROE to Black Hills Power is in  
9           the 11.5 to 12.5% range.
- 10          ○ As reflected in the testimony of Anthony S. Cleberg, Black Hill's Power has  
11          chosen a fair ROE of 11.5% at the lower end of the reasonable range to  
12          minimize customer impact during these challenging economic times. In my  
13          professional opinion, 11.5% represents a reasonable rate of return on  
14          common equity for Black Hills Power.

15   **Q.    What other evidence did you consider in evaluating your ROE recommendation in this**  
16   **case?**

17   A.    My recommendation was reinforced by the following findings:

- 18          ○ The turmoil in financial markets has increased sensitivity to risk and  
19          highlighted the importance of maintaining financial integrity to  
20          accommodate potential uncertainties;
- 21          ○ Given Black Hills Power's present credit standing, an inadequate rate of  
22          return authorized in this proceeding would further pressure the Company's  
23          financial flexibility and credit ratings;
- 24          ○ Sensitivity to regulatory uncertainties has increased dramatically and  
25          investors recognize that constructive regulation is a key ingredient in  
26          supporting utility credit standing and financial integrity; and,
- 27          ○ Providing Black Hills Power with the opportunity to earn a return that  
28          reflects these realities is an essential ingredient to support the Company's  
29          financial position, which ultimately benefits customers by ensuring reliable  
30          service at lower long-run costs.

31                Since the 1930s, there has not been a time when the financial markets and economy  
32    have experienced such a degree of challenge and uncertainty. Especially for a utility with  
33    an obligation to provide reliable service, investors' increased reticence to supply additional  
34    capital during times of crisis highlights the necessity of preserving the flexibility necessary



1 to overcome periods of adverse economic and capital market conditions. In turn, the need  
2 for supportive regulation and an adequate ROE may never have been greater.

3 **Q. What is your conclusion as to the reasonableness of Black Hills Power's capital**  
4 **structure?**

5 A. Based on my evaluation, I concluded that a common equity ratio of 52 percent represents a  
6 reasonable capitalization for Black Hills Power. This conclusion was based on the  
7 following findings:

- 8 • The common equity ratio implied by Black Hills Power's capital structure is  
9 consistent with the capitalizations maintained by the proxy group of electric utilities  
10 based on data at year-end 2008 and near-term expectations;
- 11 • The additional uncertainties associated with Black Hills Power's relatively small  
12 size warrant a more conservative financial posture; and,
- 13 • The requested capitalization reflects the need to support the credit standing and  
14 financial flexibility of Black Hills Power as the Company seeks to fund system  
15 investments and meet the requirements of customers.

## II. FUNDAMENTAL ANALYSES

16 **Q. What is the purpose of this section?**

17 A. As a predicate to subsequent quantitative analyses, this section briefly reviews the  
18 operations and finances of Black Hills Power. In addition, it examines the risks and  
19 prospects for the electric utility industry and conditions in the capital markets and the  
20 general economy. An understanding of the fundamental factors driving the risks and  
21 prospects of electric utilities is essential in developing an informed opinion of investors'  
22 expectations and requirements that are the basis of a fair rate of return.

**A. Black Hills Power, Inc.**

1 **Q. Briefly describe Black Hills Power.**

2 A. A wholly owned subsidiary of Black Hills Corp., the Company is primarily engaged in the  
3 generation, transmission, and distribution of electric power to approximately 66,000  
4 customers within a 9,300 square mile area in western South Dakota, northeastern Wyoming,  
5 and Southeastern Montana. Approximately 91 percent of Black Hills Power's retail electric  
6 revenues in 2008 were generated in South Dakota. During the most recent fiscal year,  
7 Black Hills Power's energy deliveries totaled approximately 3.4 million megawatt hours  
8 ("mWh"). The Company's revenue mix was comprised of 20 percent residential, 25  
9 percent commercial, and 9 percent industrial sales revenue, with 11 percent from contract  
10 wholesale, 27 percent wholesale off-system, and 8 percent municipal and other. As of  
11 December 31, 2008, Black Hills Power had total assets of approximately \$667 million, with  
12 operating revenues for the year totaling approximately \$233 million.

13 Black Hills Power's existing generating units, located in South Dakota and  
14 Wyoming, provide total generating capacity of approximately 434 megawatts ("MW"), with  
15 coal-fired capacity accounting for approximately 50 percent of company-owned facilities  
16 and natural gas and oil-fired plants making up 39 percent. In addition to its own generating  
17 capacity, Black Hills Power also relies on power purchased under long-term contracts to  
18 meet approximately 11 percent of its total capacity requirements.

19 Black Hills Power's transmission and distribution facilities consist of approximately  
20 497 pole miles of high voltage lines and 2,834 miles of lower voltage lines. In addition,  
21 Black Hills Power is 35 percent owner of an AC-DC-AC transmission tie that provides an  
22 interconnection between the Western and Eastern transmission grids with a total transfer

1 capacity of 400 MW. In connection with certain wholesale sales, Black Hills Power also  
2 has firm transmission access to deliver power on specific segments of PacifiCorp's  
3 transmission system. The Company's retail electric operations are subject to the  
4 jurisdiction of the SDPUC, the Montana Public Service Commission, and the Wyoming  
5 Public Service Commission.

6 **Q. How do fluctuations in fuel and purchased power costs affect Black Hills Power's**  
7 **rates?**

8 A. In South Dakota, Black Hills Power recovers power supply costs through an electricity cost  
9 adjustment process ("ECA") that was approved by the SDPUC in December 2006. Under  
10 this process, transmission and steam plant fuel adjustment clauses will either pass along or  
11 give credits back to South Dakota customers based on actual costs incurred on a yearly  
12 basis. Meanwhile, a conditional energy cost adjustment relates to purchased power and  
13 natural gas used to generate electricity. These costs are subject to \$2.0 million and \$1.0  
14 million cost bands where Black Hills Power absorbs the first \$2.0 million of increased costs  
15 or retains the first \$1.0 million in savings. Beyond these thresholds, costs or refunds begin  
16 to be passed on to South Dakota customers through annual calendar-year filings.

17 **Q. Where does Black Hills Power obtain the capital used to finance its investment in**  
18 **electric utility plant?**

19 A. As a wholly-owned subsidiary of Black Hills Corp., the Company obtains common equity  
20 capital solely from its parent, whose common stock is publicly traded on the New York  
21 Stock Exchange. In addition to capital supplied by Black Hills Corp., the Company also  
22 issues debt securities directly under its own name.

1 **Q. What credit ratings have been assigned to Black Hills Power?**

2 A. Black Hills has been assigned a corporate credit rating of “BBB-” by Standard & Poor’s  
3 Corporation (“S&P”), which represents the lowest rung on the ladder of the investment  
4 grade scale. Moody’s Investor Services, Inc. (“Moody’s”) has established an issuer credit  
5 rating of “Baa2” for the Company, while Fitch Ratings Ltd. (“Fitch”) has assigned an issuer  
6 default rating of “BBB” to Black Hills Power. Credit rating on Black Hills Power’s first  
7 mortgage bonds are “BBB”, “Baa1”, and “A-” by S&P, Moody’s, and Fitch, respectively.

### **B. Risks for Black Hills Power**

8 **Q. How have investors’ risk perceptions for the utility industry evolved?**

9 A. Implementation of structural change and related events caused investors to rethink their  
10 assessment of the relative risks associated with the utility industry. The past decade  
11 witnessed steady erosion in credit quality throughout the utility industry, both as a result of  
12 revised perceptions of the risks in the industry and the weakened finances of the utilities  
13 themselves. S&P recently reported that the majority of the companies in the utility sector  
14 now fall in the triple-B rating category,<sup>3</sup> and concluded:

15 Credit markets are tight. Liquidity is constrained. And construction, labor,  
16 and material costs are soaring. As if that weren’t enough, the U.S. electric  
17 utility sector also faces aging infrastructure, declining capacity margins, and  
18 increasing environmental compliance requirements.<sup>4</sup>

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<sup>3</sup> Standard & Poor’s Corporation, "Ratings Roundup: Ratings Trend Turns Negative During First Quarter Of 2009 For U.S. Electric Utilities," (Apr. 14, 2009).

<sup>4</sup> Standard & Poor’s Corporation, “Recovery Mechanisms Help Smooth Electric Utility Cash Flow And Support Ratings,” *RatingsDirect* (Mar. 9, 2009).

1 Similarly, Fitch concluded that the short- and long-term outlook for investor-owned electric  
2 utilities is negative,<sup>5</sup> while Moody’s observed, “Material negative bias appears to be  
3 developing over the intermediate and longer term due to rapidly rising business and  
4 operating risks.”<sup>6</sup>

5 **Q. Does Black Hills Power anticipate the need for additional capital going forward?**

6 A. Most definitely. Black Hills Power will require capital investment to meet customer  
7 growth, provide for necessary maintenance and replacements of its utility infrastructure, as  
8 well as fund new investment in electric generation, transmission and distribution facilities.  
9 Black Hills Power anticipates significant capital requirements, including expenditures for  
10 construction of the Wygen III coal-fired generating facility, which was approved for  
11 construction in 2008. The expected cost of construction for Wygen III is approximately  
12 \$247 million. Support for Black Hills Power’s financial integrity and flexibility will be  
13 instrumental in attracting the capital necessary to fund these projects in an effective manner.

14 **Q. Is the potential for energy market volatility an ongoing concern for investors?**

15 A. Yes. In recent years utilities and their customers have had to contend with dramatic  
16 fluctuations in energy costs due to ongoing price volatility in the spot markets, and  
17 investors recognize the prospect of further turmoil in energy markets. Moody’s has warned  
18 investors of ongoing exposure to “extremely volatile” energy commodity costs, including

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<sup>5</sup> Fitch Ratings, Ltd., “U.S. Utilities, Power and Gas 2009 Outlook,” *Global Power North America Special Report* (Dec. 22, 2008).

<sup>6</sup> Moody’s Investors Service, “U.S. Electric Utility Sector,” *Industry Outlook* (Jan. 2008).

1 purchased power prices, which are heavily influenced by fuel costs,<sup>7</sup> and Fitch noted that  
2 rapidly rising energy costs created vulnerability in the utility industry.<sup>8</sup>

3 For example, while coal has historically provided relative stability with respect to  
4 fuel costs, prices for Central and Northern Appalachia coal spiked from approximately \$45  
5 per ton in June 2007 to over \$140 per ton in September 2008, before falling back into the  
6 \$50 to \$70 range currently.<sup>9</sup> While expectations for significantly lower power prices reflect  
7 weaker fundamentals affecting current load and fuel prices, investors recognize the  
8 potential that such trends could quickly reverse. Indeed, Fitch highlighted the challenges  
9 that such dramatic fluctuations in commodity prices can have for utilities and their investors  
10 and recently noted that this uncertainty “is likely to persist in the future.”<sup>10</sup> The rapid rise  
11 in electricity costs that can result from higher wholesale energy prices has heightened  
12 investor concerns over the implications for regulatory uncertainty. S&P noted that, while  
13 timely cost recovery was paramount to maintaining credit quality in the electric utility  
14 sector, an “environment of rising customer tariffs, coupled with a sluggish economy,  
15 portend a difficult regulatory environment in coming years.”<sup>11</sup>

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<sup>7</sup> Moody’s Investors Service, “Storm Clouds Gathering on the Horizon for the North American Electric Utility Sector,” *Special Comment* at 6 (Aug. 2007).

<sup>8</sup> Fitch Ratings Ltd., “Staying Afloat: Downstream Liquidity in the Energy and Power Sectors,” *Oil & Gas / Global Power Special Report* (June 16, 2008).

<sup>9</sup> Energy Information Administration, *Coal News and Markets* (Jun. 20 & Sep. 26, 2008, Apr. 13, 2009).

<sup>10</sup> Fitch Ratings, Ltd., “U.S. Utilities, Power and Gas 2009 Outlook,” *Global Power North American Special Report* (Dec. 22, 2008).

<sup>11</sup> Standard & Poor’s Corporation, “Top 10 U.S. Electric Utility Credit Issues For 2008 And Beyond,” *RatingsDirect* (Jan. 28, 2008).

1 **Q. Doesn't the ECA protect Black Hills Power from exposure to fluctuations in power**  
2 **supply costs?**

3 A. To a limited extent, yes. But while approval of the ECA was a positive step and supportive  
4 of the Company's financial integrity, it does not apply to 100 percent of power costs. As  
5 S&P observed:

6 Standard & Poor's notes that fuel adjustment clauses have become much  
7 more common in the utility industry, and several jurisdictions have recently  
8 reinstated previously abolished fuel clauses, but not all are created equal.<sup>12</sup>

9 Moreover, even for utilities with energy cost adjustment mechanisms in place, there can be  
10 a significant lag between the time the utility actually incurs the expenditure and when it is  
11 recovered from ratepayers. As a result, the ECA does not insulate Black Hills Power from  
12 the need to finance significant deferred power production and supply costs. Indeed, despite  
13 the significant investment of resources to manage power supply procurement, investors are  
14 aware that the best that Black Hills Power can do is to recover its actual costs.

15 **Q. What other financial pressures impact investors' risk assessment of Black Hills**  
16 **Power?**

17 A. Investors are aware of the financial and regulatory pressures faced by utilities associated  
18 with rising costs and the need to undertake significant capital investments. As Moody's  
19 observed:

20 [P]ressures are building. Utilities are facing rising operating costs and  
21 infrastructure investment needs that are prompting them to seek more-  
22 frequent requests for rate relief. Meanwhile, as energy (and other  
23 commodity) costs rise, so does the risk of a consumer backlash over electric

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<sup>12</sup> Standard & Poor's Corporation, "Recovery Mechanisms Help Smooth Electric Utility Cash Flow And Support Ratings," *RatingsDirect* (Mar. 9, 2009).

1 rates that could prompt legislative intervention or a more contentious  
2 atmosphere between utilities and their regulators.<sup>13</sup>

3 Similarly, S&P noted that “heavy construction programs,” along with rising operating and  
4 maintenance costs and volatile fuel costs, were a significant challenge to the utility  
5 industry.<sup>14</sup> Fitch recently echoed this assessment, concluding:

6 Continued access to capital at reasonable rates in 2009 remains uncertain at a  
7 time when many utility holding groups have historically high capital  
8 investment programs and will require ongoing access to reasonably priced  
9 capital in order to fund new investment and refinance maturing debt.<sup>15</sup>

10 As noted earlier, investors anticipate that Black Hills Power will undertake significant  
11 electric utility capital expenditures. While providing the infrastructure necessary to meet  
12 the energy needs of customers is certainly desirable, it imposes additional financial  
13 responsibilities on the Company.

14 **Q. Are environmental considerations also affecting investors’ evaluation of electric**  
15 **utilities, including Black Hills Power?**

16 A. Yes. Utilities are confronting increased environmental pressures that could impose  
17 significant uncertainties and costs. In early 2007 S&P cited environmental mandates,  
18 including emissions, conservation, and renewable resources, as one of the top ten credit  
19 issues facing U.S. utilities.<sup>16</sup> Similarly, Moody’s noted that “the prospect for new  
20 environmental emission legislation – particularly concerning carbon dioxide – represents

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<sup>13</sup> Moody’s Investors Service, “U.S. Investor-Owned Electric Utilities: Six-Month Industry Update,” *Industry Outlook* (July 2008).

<sup>14</sup> Standard & Poor’s Corporation, “Ratings Roundup: Utility Sector Experienced Equal Number Of Upgrades And Downgrades During Second Quarter Of 2008,” *RatingsDirect* (Jul. 22, 2008).

<sup>15</sup> Fitch Ratings Ltd., “U.S. Utilities, Power and Gas 2009 Outlook,” *Global Power North America Special Report* (Dec. 22, 2008).

<sup>16</sup> Standard & Poor’s Corporation, “Top Ten Credit Issues Facing U.S. Utilities,” *RatingsDirect* (Jan. 29, 2007).



1 the biggest emerging issue for electric utilities,”<sup>17</sup> while Fitch recently observed that “the  
2 structure, timing and implementation is still uncertain.”<sup>18</sup>

3 At the national level, the Obama administration has taken a far more active stance  
4 towards energy and environmental policy. It has endorsed the American Clean Energy and  
5 Security Act of 2009 (“ACES”), passed by the House of Representatives on June 26, 2009.  
6 In addition to creating a comprehensive, economy-wide cap-and-trade regulatory  
7 framework, ACES would reduce carbon emissions 17 percent by 2020 compared to 2005  
8 levels and require electric utilities to meet 20 percent of their electricity needs from  
9 renewable sources by 2020.<sup>19</sup> As S&P concluded, “the Obama administration's energy  
10 priorities and policies may drive future credit quality beyond 2009.”<sup>20</sup> Compliance with  
11 these evolving standards will mean significant capital expenditures, especially for utilities  
12 like Black Hills Power that depend significantly on coal-fired generation.

### C. Impact of Capital Market Conditions

13 **Q. What are the implications of recent capital market conditions?**

14 A. The financial and real estate crisis that began during the third quarter of 2008 led to  
15 unprecedented price fluctuations in the capital markets as investors dramatically revised  
16 their risk perceptions and required returns. As a result of investors’ trepidation to commit  
17 capital, stock prices declined sharply while the yields on bonds experienced a dramatic  
18 increase.

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<sup>17</sup> Moody’s Investors Service, “U.S. Investor-Owned Electric Utilities,” *Industry Outlook* (Jan. 2009).

<sup>18</sup> Fitch Ratings, Ltd., “U.S. Utilities, Power and Gas 2009 Outlook,” *Global Power North America Special Report* (Dec. 22, 2008).

<sup>19</sup> South Dakota has adopted a renewable portfolio objective that encourages utilities to obtain at least 10 percent of their retail electricity supply from renewable energy sources by 2015.

[<sup>20</sup>] Standard & Poor’s Corporation, “Industry Report Card,” *RatingsDirect* (Dec. 19, 2008).

1           With respect to utilities specifically, as of June 30, 2009, the Dow Jones Utility  
2           Average stock index was approximately 30 percent below the level of a year earlier. This  
3           sell-off in common stocks and the increase in utility bond yields reflect the fact that the  
4           utility industry was not immune to the impact of financial market turmoil and the ongoing  
5           economic downturn. As the Edison Electric Institute (“EEI”) noted in a letter to  
6           Congressional representatives at the outset of the financial crisis, capital market  
7           uncertainties have serious implications for utilities and their customers:

8                     In the wake of the continuing upheaval on Wall Street, capital markets are all  
9                     but immobilized, and short-term borrowing costs to utilities have already  
10                    increased substantially. If the financial crisis is not resolved quickly, financial  
11                    pressures on utilities will intensify sharply, resulting in higher costs to our  
12                    customers and, ultimately, could compromise service reliability.<sup>21</sup>

13           Similarly, an October 1, 2008, *Wall Street Journal* report confirmed that utilities had been  
14           forced to delay borrowing or pursue more costly alternatives to raise funds.<sup>22</sup>

15           An October 2008 report on the implications of credit market upheaval for utilities  
16           noted that even high-quality companies “now have to pay an unusually high risk premium  
17           over Treasuries.”<sup>23</sup> S&P concluded in a December 2008 review of the electric utility  
18           industry that “the abnormally low interest rate environment of the 2000’s ... is a distant  
19           memory.”<sup>24</sup> Meanwhile, a Managing Director with Fitch observed that “significantly  
20           higher regulated returns will be required to attract equity capital.”<sup>25</sup> In December 2008,  
21           Fitch confirmed “sharp repricing of and aversion to risk in the investment community,” and

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<sup>21</sup> *Letter to House of Representatives*, Thomas R. Kuhn, President, Edison Electric Institute (Sep. 24, 2008).

<sup>22</sup> Smith, Rebecca, “Corporate News: Utilities’ Plans Hit by Credit Markets,” *Wall Street Journal* at B4 (Oct. 1, 2008).

<sup>23</sup> *Rudden’s Energy Strategy Report* (Oct. 1, 2008).

<sup>24</sup> Standard & Poor’s Corporation, “Industry Report Card: U.S. Electric Utility Credit Quality Remains Strong Amid Continuing Economic Downturn,” *RatingsDirect* (Dec. 19, 2008).

<sup>25</sup> Fitch Ratings Ltd., “EEI 2008 Wrap-Up: Cost of Capital Rising,” *Global Power North America Special Report* (Nov. 17, 2008).

1 noted that the disruptions in financial markets and the fundamental shift in investors' risk  
2 perceptions has increased the cost of capital for utilities:

3 While credit is available to investment-grade issuers in the utilities, power and  
4 gas sectors, it is more expensive, particularly when viewed against the easy  
5 money environment which prevailed for most of this decade.<sup>26</sup>

6 Fitch concluded, "The sharp increase in the cost of equity capital is a negative credit  
7 development."<sup>27</sup>

8 **Q. What do these events imply with respect to the ROE for utilities such as Black Hills**  
9 **Power?**

10 A. No one knows the future of our complex global economy. We know that the financial crisis  
11 that began in 2008 had been building for a long time, but few predicted that the economy  
12 would fall as rapidly as it has, or that corporate bond yields would rise as rapidly as they  
13 did. While conditions in the economy and capital markets appear to have stabilized,  
14 investors are apt to react swiftly and negatively to any future signs of trouble in the  
15 financial system or economy. Given the importance of reliable electric power for customers  
16 and the economy, it would be unwise to ignore investors' increased sensitivity to risk in  
17 evaluating the Company's ROE.

### III. CAPITAL MARKET ESTIMATES

18 **Q. What is the purpose of this section?**

19 A. In this section, I develop capital market estimates of the cost of common equity. First, I  
20 address the concept of the cost of common equity, along with the risk-return tradeoff

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<sup>26</sup> Fitch Ratings Ltd., "U.S. Utilities, Power and Gas 2009 Outlook," *Global Power North America Special Report* (Dec. 22, 2008).

<sup>27</sup> *Id.*

1 principle fundamental to capital markets. Next, I describe DCF and CAPM analyses  
2 conducted to estimate the cost of common equity for benchmark groups of comparable risk  
3 firms and evaluate expected earned rates of return for utilities. Finally, I examine flotation  
4 costs, which are properly considered in evaluating a fair rate of return on equity.

#### A. Economic Standards

5 **Q. What role does the return on common equity play in a utility's rates?**

6 A. The return on common equity is the cost of inducing and retaining investment in the  
7 utility's physical plant and assets. This investment is necessary to finance the asset base  
8 needed to provide utility service. Competition for investor funds is intense and investors  
9 are free to invest their funds wherever they choose. Investors will commit money to a  
10 particular investment only if they expect it to produce a return commensurate with those  
11 from other investments with comparable risks.

12 **Q. What fundamental economic principle underlies the cost of equity concept?**

13 A. The fundamental economic principle underlying the cost of equity concept is the notion that  
14 investors are risk averse. In capital markets where relatively risk-free assets are available  
15 (*e.g.*, U.S. Treasury securities), investors can be induced to hold riskier assets only if they  
16 are offered a premium, or additional return, above the rate of return on a risk-free asset.  
17 Because all assets compete with each other for investor funds, riskier assets must yield a  
18 higher expected rate of return than safer assets to induce investors to invest and hold them.

19 Given this risk-return tradeoff, the required rate of return ( $k$ ) from an asset ( $i$ ) can  
20 generally be expressed as:

1 
$$k_i = R_f + RP_i$$

2 where:  $R_f$  = Risk-free rate of return, and  
3  $RP_i$  = Risk premium required to hold riskier asset i.

4 Thus, the required rate of return for a particular asset at any time is a function of: (1) the  
5 yield on risk-free assets, and (2) the asset's relative risk, with investors demanding  
6 correspondingly larger risk premiums for bearing greater risk.

7 **Q. Is there evidence that the risk-return tradeoff principle actually operates in the capital**  
8 **markets?**

9 A. Yes. The risk-return tradeoff can be readily documented in segments of the capital markets  
10 where required rates of return can be directly inferred from market data and where  
11 generally accepted measures of risk exist. Bond yields, for example, reflect investors'  
12 expected rates of return, and bond ratings measure the risk of individual bond issues. The  
13 observed yields on government securities, which are considered free of default risk, and  
14 bonds of various rating categories demonstrate that the risk-return tradeoff does, in fact,  
15 exist in the capital markets.

16 **Q. Does the risk-return tradeoff observed with fixed income securities extend to common**  
17 **stocks and other assets?**

18 A. It is generally accepted that the risk-return tradeoff evidenced with long-term debt extends  
19 to all assets. Documenting the risk-return tradeoff for assets other than fixed income  
20 securities, however, is complicated by two factors. First, there is no standard measure of  
21 risk applicable to all assets. Second, for most assets – including common stock – required  
22 rates of return cannot be directly observed. Yet there is every reason to believe that  
23 investors exhibit risk aversion in deciding whether or not to hold common stocks and other  
24 assets, just as when choosing among fixed-income securities.

1 **Q. Is this risk-return tradeoff limited to differences between firms?**

2 A. No. The risk-return tradeoff principle applies not only to investments in different firms, but  
3 also to different securities issued by the same firm. The securities issued by a utility vary  
4 considerably in risk because they have different characteristics and priorities. Long-term  
5 debt is senior among all capital in its claim on a utility's net revenues and is, therefore, the  
6 least risky. The last investors in line are common shareholders. They receive only the net  
7 revenues, if any, remaining after all other claimants have been paid. As a result, the rate of  
8 return that investors require from a utility's common stock, the most junior and riskiest of  
9 its securities, must be considerably higher than the yield offered by the utility's senior, long-  
10 term debt.

11 **Q. What does the above discussion imply with respect to estimating the cost of common**  
12 **equity for a utility?**

13 A. Although the cost of common equity cannot be observed directly, it is a function of the  
14 returns available from other investment alternatives and the risks to which the equity capital  
15 is exposed. Because it is not readily observable, the cost of common equity for a particular  
16 utility must be estimated by analyzing information about capital market conditions  
17 generally, assessing the relative risks of the company specifically, and employing various  
18 quantitative methods that focus on investors' required rates of return. These various  
19 quantitative methods typically attempt to infer investors' required rates of return from stock  
20 prices, interest rates, or other capital market data.

1 **Q. Did you rely on a single method to estimate the cost of common equity for Black Hills**  
2 **Power?**

3 A. No. In my opinion, no single method or model should be relied on by itself to determine a  
4 utility's cost of common equity because no single approach can be regarded as definitive.  
5 For example, a publication of the Society of Utility and Financial Analysts (formerly the  
6 National Society of Rate of Return Analysts), concluded that:

7 Each model requires the exercise of judgment as to the reasonableness of the  
8 underlying assumptions of the methodology and on the reasonableness of the  
9 proxies used to validate the theory. Each model has its own way of  
10 examining investor behavior, its own premises, and its own set of  
11 simplifications of reality. Each method proceeds from different fundamental  
12 premises, most of which cannot be validated empirically. Investors clearly  
13 do not subscribe to any singular method, nor does the stock price reflect the  
14 application of any one single method by investors.<sup>28</sup>

15 Therefore, I used both the DCF and CAPM methods to estimate the cost of common equity.  
16 In addition, I also evaluated a fair ROE using an earnings approach based on investors'  
17 current expectations in the capital markets. In my opinion, comparing estimates produced  
18 by one method with those produced by other approaches ensures that the estimates of the  
19 cost of common equity pass fundamental tests of reasonableness and economic logic.

20 **Q. Does the fact that there are different accepted methods to estimate the cost of common**  
21 **equity, each based on certain assumptions, imply that determining the ROE is**  
22 **subjective?**

23 A. Absolutely not. The alternative approaches that I have applied to estimate the cost of  
24 common equity have considerable theoretical and practical support, and the body of  
25 knowledge on the topic of cost of capital attests to the significance of developing cost of

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<sup>28</sup> Parcell, David C., "The Cost of Capital – A Practitioner's Guide," *Society of Utility and Regulatory Financial Analysts* at Part 2, p. 4 (1997).

1 Wcapital estimates that work in the real world of financial markets. For example, the  
2 reality that investors require compensation for bearing the risk of putting their money in  
3 common stock is a fundamental tenet of the theory and practice of finance. While  
4 assumptions and judgment underlie these methods to estimate the cost of common equity,  
5 this does not imply that they are subjective or that the cost of common equity is  
6 unknowable.

7 Each method of estimating the cost of common equity is based on empirical  
8 evidence and accepted applications. While experts may disagree on particular nuances and  
9 details of their application, the reliability of these methods is confirmed by their use  
10 throughout the regulatory arena as well as in the worlds of investment management and  
11 corporate finance. The fact that alternative methods may give somewhat different results,  
12 or that different experts may come to different estimates using these methods, does not  
13 mean the methods are subjective or unreliable. It means simply that interpreting the results  
14 of these methods requires care and practical judgment.

### **B. Comparable Risk Proxy Groups**

15 **Q. How did you implement these quantitative methods to estimate the cost of common**  
16 **equity for Black Hills Power?**

17 A. Application of the DCF model and other quantitative methods to estimate the cost of  
18 common equity requires observable capital market data, such as stock prices. Moreover,  
19 even for a firm with publicly traded stock, the cost of common equity can only be  
20 estimated. As a result, applying quantitative models using observable market data only  
21 produces an estimate that inherently includes some degree of observation error. Thus, the  
22 accepted approach to increase confidence in the results is to apply the DCF model and other



1 quantitative methods to a proxy group of publicly traded companies that investors regard as  
2 risk-comparable.

3 **Q. What specific proxy group of utilities did you rely on for your analysis?**

4 A. In order to reflect the risks and prospects associated with Black Hills Power’s jurisdictional  
5 utility operations, my DCF analyses focused on a reference group of other utilities  
6 composed of those companies classified by The Value Line Investment Survey (“Value  
7 Line”) as electric utilities with: (1) an S&P corporate credit rating of “BBB” or “BBB-”,<sup>29</sup>  
8 (2) an S&P Stock Quality Ranking of “B”, and (3) a Value Line Safety Rank of “2” or “3”.  
9 In addition, I excluded two firms that otherwise would have been in the proxy group, but  
10 are not appropriate for inclusion because they did not pay common dividends (El Paso  
11 Electric Company) or are in the process of a major divestiture (Constellation Energy Group,  
12 Inc.). These criteria resulted in a proxy group composed of sixteen companies, which I will  
13 refer to as the “Utility Proxy Group.”

14 **Q. What other proxy group did you consider in evaluating a fair ROE for Black Hills  
15 Power?**

16 A. Under the regulatory standards established by *Hope* and *Bluefield*, the salient criterion in  
17 establishing a meaningful benchmark to evaluate a fair rate of return is relative risk, not the  
18 particular business activity or degree of regulation. As noted in *Regulatory Finance:  
19 Utilities’ Cost of Capital*, “It should be emphasized that the definition of a comparable risk  
20 class of companies does not entail similarity of operation, product lines, or environmental  
21 conditions, but rather similarity of experienced business risk and financial risk.”<sup>30</sup> Utilities

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<sup>29</sup> As discussed subsequently, the average credit rating for the Utility Proxy Group is “BBB”.

<sup>30</sup> Morin, Roger A., “Regulatory Finance: Utilities’ Cost of Capital,” *Public Utilities Reports, Inc.* at 58 (1994).

1 must compete for capital, not just against firms in their own industry, but with other  
2 investment opportunities of comparable risk. With regulation taking the place of  
3 competitive market forces, required returns for utilities should be in line with those of non-  
4 utility firms of comparable risk operating under the constraints of free competition.  
5 Consistent with this accepted regulatory standard, I also applied the DCF model to a  
6 reference group of comparable risk companies in the non-utility sectors of the economy. I  
7 refer to this group as the “Non-Utility Proxy Group”.

8 **Q. What criteria did you apply to develop the Non-Utility Proxy Group?**

9 A. My comparable risk proxy group was composed of those U.S. companies followed by Value  
10 Line that: 1) pay common dividends; 2) have a Safety Rank of “1”; 3) have investment  
11 grade credit ratings from S&P, and 4) have an S&P Stock Quality Ranking of “B” or higher.  
12 In addition, I also included only those firms with published earnings per share (“EPS”)  
13 growth projections from at least two of the following sources: Value Line, Thomson I/B/E/S  
14 (“IBES”), First Call Corporation (“First Call”), and Zacks Investment Research  
15 (“Zacks”).<sup>31</sup>

16 **Q. Do these criteria provide objective evidence to evaluate investors’ risk perceptions?**

17 A. Yes. Credit ratings are assigned by independent rating agencies for the purpose of  
18 providing investors with a broad assessment of the creditworthiness of a firm. Ratings  
19 generally extend from triple-A (the highest) to D (in default). Other symbols (*e.g.*, “A+”)  
20 are used to show relative standing within a category. Because the rating agencies’  
21 evaluation includes virtually all of the factors normally considered important in assessing a  
22 firm’s relative credit standing, corporate credit ratings provide a broad, objective measure

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<sup>31</sup> Thomson Reuters separately compiles and publishes consensus securities analyst growth rates under the IBES and First Call brands.

1 of overall investment risk that is readily available to investors. Widely cited in the  
2 investment community and referenced by investors, credit ratings are also frequently used  
3 as a primary risk indicator in establishing proxy groups to estimate the cost of common  
4 equity.

5 While credit ratings provide the most widely referenced benchmark for investment  
6 risks, other quality rankings published by investment advisory services also provide relative  
7 assessments of risks that are considered by investors in forming their expectations for  
8 common stocks. S&P's Quality Ranking, which has been published since 1956, is designed  
9 to capture the long-term growth and stability of a company's earnings and dividends. The  
10 Quality Ranking system for solvent firms is based on letter classifications from "A+"  
11 (highest) to "C" (lowest).

12 Value Line's primary risk indicator is its Safety Rank, which ranges from "1"  
13 (Safest) to "5" (Riskiest). This overall risk measure is intended to capture the total risk of a  
14 stock, and incorporates elements of stock price stability and financial strength. Given that  
15 Value Line is perhaps the most widely available source of investment advisory information,  
16 its Safety Rank provides useful guidance regarding the risk perceptions of investors. These  
17 objective, published indicators incorporate consideration of a broad spectrum of risks,  
18 including financial and business position, relative size, and exposure to firm-specific  
19 factors.

20 **Q. How do the overall risks of your proxy groups compare with Black Hills Power?**

21 A. Table WEA-1 below compares the Utility Proxy Group and Non-Utility Proxy Group with  
22 Black Hills Power across four key indicia of investment risk. Because the Company does

1 not have publicly traded common stock, the S&P Quality Ranking, the Value Line Safety  
2 Rank, and beta shown reflect those published for its parent, Black Hills Corp.:

3 **TABLE WEA-1**  
4 **COMPARISON OF RISK INDICATORS**

<b><u>Proxy Group</u></b>	<b><u>S&amp;P</u></b>		<b><u>Value Line</u></b>	
	<b><u>Credit Rating</u></b>	<b><u>Quality Ranking</u></b>	<b><u>Safety Rank</u></b>	<b><u>Beta</u></b>
Utility	BBB	B	3	0.77
Non-Utility	A+	A-	1	0.80
Black Hills Power	BBB-	B	3	0.80

5 **Q. Do these comparisons indicate that investors would view the firms in your proxy**  
6 **groups as risk-comparable to the Company?**

7 A. Yes. As discussed earlier, Black Hills Power is assigned a corporate credit rating of “BBB-  
8 ” by S&P, which falls below the average corporate credit rating for the Utility Proxy Group.  
9 Meanwhile, the average S&P Quality Ranking and Value Line Safety Rank for the Utility  
10 Proxy Group are identical to the values assigned to the Company’s parent, while the  
11 average beta value for the Utility Proxy Group suggests slightly less risk than investors  
12 would associate with Black Hills Corp. Considered together, a comparison of these  
13 objective measures, which consider of a broad spectrum of risks, including financial and  
14 business position, relative size, and exposure to firm-specific factors, indicates that  
15 investors would likely conclude that the overall investment risks for Black Hills Power are  
16 comparable to, or greater than, those of the firms in the Utility Proxy Group.

17 The Non-Utility Proxy Group’s average risk measures also suggest less risk than for  
18 Black Hills Power. While any differences in investment risk attributable to regulation  
19 should already be reflected in these objective measures, my analyses conservatively focus  
20 on a lower-risk group of non-utility firms.

### C. Discounted Cash Flow Analyses

1 **Q. How is the DCF model used to estimate the cost of common equity?**

2 A. DCF models attempt to replicate the market valuation process that sets the price investors  
3 are willing to pay for a share of a company's stock. The model rests on the assumption that  
4 investors evaluate the risks and expected rates of return from all securities in the capital  
5 markets. Given these expectations, the price of each stock is adjusted by the market until  
6 investors are adequately compensated for the risks they bear. Therefore, we can look to the  
7 market to determine what investors believe a share of common stock is worth. By  
8 estimating the cash flows investors expect to receive from the stock in the way of future  
9 dividends and capital gains, we can calculate their required rate of return. In other words,  
10 the cash flows that investors expect from a stock are estimated, and given its current market  
11 price, we can "back-into" the discount rate, or cost of common equity, that investors  
12 implicitly used in bidding the stock to that price. Notationally, the general form of the DCF  
13 model is as follows:

14 
$$P_0 = \frac{D_1}{(1+k_e)^1} + \frac{D_2}{(1+k_e)^2} + \dots + \frac{D_t}{(1+k_e)^t} + \frac{P_t}{(1+k_e)^t}$$

15 where:  $P_0$  = Current price per share;  
16  $P_t$  = Expected future price per share in period t;  
17  $D_t$  = Expected dividend per share in period t;  
18  $k_e$  = Cost of common equity.

19 That is, the cost of common equity is the discount rate that will equate the current price of a  
20 share of stock with the present value of all expected cash flows from the stock.

1 **Q. What form of the DCF model is customarily used to estimate the cost of common**  
2 **equity in rate cases?**

3 A. Rather than developing annual estimates of cash flows into perpetuity, the DCF model can  
4 be simplified to a “constant growth” form:<sup>32</sup>

5 
$$P_0 = \frac{D_1}{k_e - g}$$

6 where:  $g$  = Investors’ long-term growth expectations.

7 The cost of common equity ( $k_e$ ) can be isolated by rearranging terms within the equation:

8 
$$k_e = \frac{D_1}{P_0} + g$$

9 This constant growth form of the DCF model recognizes that the rate of return to  
10 stockholders consists of two parts: 1) dividend yield ( $D_1/P_0$ ); and, 2) growth ( $g$ ). In other  
11 words, investors expect to receive a portion of their total return in the form of current  
12 dividends and the remainder through price appreciation.

13 **Q. What form of the DCF model did you use?**

14 A. I applied the constant growth DCF model to estimate the cost of common equity for Black  
15 Hills Power, which is the form of the model most commonly relied on to establish the cost  
16 of common equity for traditional regulated utilities and the method most often referenced  
17 by regulators.

---

<sup>32</sup> The constant growth DCF model is dependent on a number of strict assumptions, which in practice are never met. These include a constant growth rate for both dividends and earnings; a stable dividend payout ratio; the discount rate exceeds the growth rate; a constant growth rate for book value and price; a constant earned rate of return on book value; no sales of stock at a price above or below book value; a constant price-earnings ratio; a constant discount rate (*i.e.*, no changes in risk or interest rate levels and a flat yield curve); and all of the above extend to infinity.

1 **Q. How is the constant growth form of the DCF model typically used to estimate the cost**  
2 **of common equity?**

3 A. The first step in implementing the constant growth DCF model is to determine the expected  
4 dividend yield ( $D_1/P_0$ ) for the firm in question. This is usually calculated based on an  
5 estimate of dividends to be paid in the coming year divided by the current price of the  
6 stock. The second, and more controversial, step is to estimate investors' long-term growth  
7 expectations ( $g$ ) for the firm. The final step is to sum the firm's dividend yield and  
8 estimated growth rate to arrive at an estimate of its cost of common equity.

9 **Q. How was the dividend yield for the Utility Proxy Group determined?**

10 A. Estimates of dividends to be paid by each of these utilities over the next twelve months,  
11 obtained from Value Line, served as  $D_1$ . This annual dividend was then divided by the  
12 corresponding stock price for each utility to arrive at the expected dividend yield. The  
13 expected dividends, stock prices, and resulting dividend yields for the firms in the utility  
14 proxy group are presented on Exhibit WEA-2. As shown there, dividend yields for the  
15 firms in the Utility Proxy Group ranged from 2.3 percent to 7.7 percent.

16 **Q. What is the next step in applying the constant growth DCF model?**

17 A. The next step is to evaluate long-term growth expectations, or " $g$ ", for the firm in question.  
18 In constant growth DCF theory, earnings, dividends, book value, and market price are all  
19 assumed to grow in lockstep, and the growth horizon of the DCF model is infinite. But  
20 implementation of the DCF model is more than just a theoretical exercise; it is an attempt to  
21 replicate the mechanism investors used to arrive at observable stock prices. A wide variety  
22 of techniques can be used to derive growth rates, but the only " $g$ " that matters in applying  
23 the DCF model is the value that investors expect.

1 **Q. Are historical growth rates likely to be representative of investors' expectations for**  
2 **utilities?**

3 A. No. If past trends in earnings, dividends, and book value are to be representative of  
4 investors' expectations for the future, then the historical conditions giving rise to these  
5 growth rates should be expected to continue. That is clearly not the case for utilities, where  
6 structural and industry changes have led to declining dividends, earnings pressure, and, in  
7 many cases, significant write-offs. While these conditions serve to depress historical  
8 growth measures, they are not representative of long-term expectations for the utility  
9 industry.

10 **Q. What are investors most likely to consider in developing their long-term growth**  
11 **expectations?**

12 A. While the DCF model is technically concerned with growth in dividend cash flows,  
13 implementation of this DCF model is solely concerned with replicating the forward-looking  
14 evaluation of real-world investors. In the case of utilities, dividend growth rates are not  
15 likely to provide a meaningful guide to investors' current growth expectations. This is  
16 because utilities have significantly altered their dividend policies in response to more  
17 accentuated business risks in the industry, with the payout ratio for electric utilities falling  
18 from approximately 80 percent historically to on the order of 60 percent.<sup>33</sup> As a result of  
19 this trend towards a more conservative payout ratio, dividend growth in the utility industry  
20 has remained largely stagnant as utilities conserve financial resources to provide a hedge  
21 against heightened uncertainties.

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<sup>33</sup> The Value Line Investment Survey (Sep. 15, 1995 at 161, Dec. 26, 2008 at 687).



1           As payout ratios for firms in the utility industry trended downward, investors' focus  
2           has increasingly shifted from dividends to earnings as a measure of long-term growth.  
3           Future trends in earnings, which provide the source for future dividends and ultimately  
4           support share prices, play a pivotal role in determining investors' long-term growth  
5           expectations. The importance of earnings in evaluating investors' expectations and  
6           requirements is well accepted in the investment community. As noted in *Finding Reality in*  
7           *Reported Earnings* published by the Association for Investment Management and Research:

8                     [E]arnings, presumably, are the basis for the investment benefits that we all  
9                     seek. "Healthy earnings equal healthy investment benefits" seems a logical  
10                    equation, but earnings are also a scorecard by which we compare companies,  
11                    a filter through which we assess management, and a crystal ball in which we  
12                    try to foretell future performance.<sup>34</sup>

13           Value Line's near-term projections and its Timeliness Rank, which is the principal  
14           investment rating assigned to each individual stock, are also based primarily on various  
15           quantitative analyses of earnings. As Value Line explained:

16                    The future earnings rank accounts for 65% in the determination of relative  
17                    price change in the future; the other two variables (current earnings rank and  
18                    current price rank) explain 35%.<sup>35</sup>

19           The fact that investment advisory services focus primarily on growth in earnings  
20           indicates that the investment community regards this as a superior indicator of future long-  
21           term growth. Indeed, "A Study of Financial Analysts: Practice and Theory," published in  
22           the *Financial Analysts Journal*, reported the results of a survey conducted to determine

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<sup>34</sup> Association for Investment Management and Research, "Finding Reality in Reported Earnings: An Overview" at 1 (Dec. 4, 1996).

<sup>35</sup> The Value Line Investment Survey, *Subscriber's Guide* at 53.

1 what analytical techniques investment analysts actually use.<sup>36</sup> Respondents were asked to  
2 rank the relative importance of earnings, dividends, cash flow, and book value in analyzing  
3 securities. Of the 297 analysts that responded, only 3 ranked dividends first while 276  
4 ranked it last. The article concluded:

5 Earnings and cash flow are considered far more important than book value  
6 and dividends.<sup>37</sup>

7 More recently, the *Financial Analysts Journal* reported the results of a study of the  
8 relationship between valuations based on alternative multiples and actual market prices,  
9 which concluded, “In all cases studied, earnings dominated operating cash flows and  
10 dividends.”<sup>38</sup>

11 **Q. Do the growth rate projections of security analysts consider historical trends?**

12 A. Yes. Professional security analysts study historical trends extensively in developing their  
13 projections of future earnings. Hence, to the extent there is any useful information in  
14 historical patterns, that information is incorporated into analysts’ growth forecasts.

15 **Q. What are security analysts currently projecting in the way of growth for the firms in  
16 the Utility Proxy Group?**

17 A. The earnings growth projections for each of the firms in the Utility Proxy Group reported  
18 by Value Line, IBES, First Call, and Zacks are displayed on Exhibit WEA-2.

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<sup>36</sup> Block, Stanley B., “A Study of Financial Analysts: Practice and Theory”, *Financial Analysts Journal* (July/August 1999).

<sup>37</sup> *Id.* at 88.

<sup>38</sup> Liu, Jing, Nissim, Doron, & Thomas, Jacob, “Is Cash Flow King in Valuations?,” *Financial Analysts Journal*, Vol. 63, No. 2 at 56 (March/April 2007).

1 **Q. Some argue that analysts' assessments of growth rates are biased. Do you believe**  
2 **these projections are inappropriate for estimating investors' required return using the**  
3 **DCF model?**

4 A. No. In applying the DCF model to estimate the cost of common equity, the only relevant  
5 growth rate is the forward-looking expectations of investors that are captured in current  
6 stock prices. Investors, just like securities analysts and others in the investment community,  
7 do not know how the future will actually turn out. They can only make investment  
8 decisions based on their best estimate of what the future holds in the way of long-term  
9 growth for a particular stock, and securities prices are constantly adjusting to reflect their  
10 assessment of available information.

11 Any claims that analysts' estimates are not relied upon by investors are illogical  
12 given the reality of a competitive market for investment advice. If financial analysts'  
13 forecasts do not add value to investors' decision making, then it is irrational for investors to  
14 pay for these estimates. Similarly, those financial analysts who fail to provide reliable  
15 forecasts will lose out in competitive markets relative to those analysts whose forecasts  
16 investors find more credible. The reality that analyst estimates are routinely referenced in  
17 the financial media and in investment advisory publications (e.g., Value Line) implies that  
18 investors use them as a basis for their expectations.

19 The continued success of investment services such as Thompson Reuters and Value  
20 Line, and the fact that projected growth rates from such sources are widely referenced,  
21 provides strong evidence that investors give considerable weight to analysts' earnings  
22 projections in forming their expectations for future growth. While the projections of  
23 securities analysts may be proven optimistic or pessimistic in hindsight, this is irrelevant in

1 assessing the expected growth that investors have incorporated into current stock prices,  
2 and any bias in analysts' forecasts – whether pessimistic or optimistic – is irrelevant if  
3 investors share analysts' views. Earnings growth projections of security analysts provide  
4 the most frequently referenced guide to investors' views and are widely accepted in  
5 applying the DCF model. As explained in *Regulatory Finance: Utilities' Cost of Capital*:

6 Because of the dominance of institutional investors and their influence on  
7 individual investors, analysts' forecasts of long-run growth rates provide a  
8 sound basis for estimating required returns. Financial analysts also exert a  
9 strong influence on the expectations of many investors who do not possess  
10 the resources to make their own forecasts, that is, they are a cause of  $g$   
11 [growth]. ... Published studies in the academic literature demonstrate that  
12 growth forecasts made by securities analysts represent an appropriate source  
13 of DCF growth rates, are reasonable indicators of investor expectations and  
14 are more accurate than forecasts based on historical growth.<sup>39</sup>

15 **Q. How else are investors' expectations of future long-term growth prospects often**  
16 **estimated when applying the constant growth DCF model?**

17 A. In constant growth theory, growth in book equity will be equal to the product of the  
18 earnings retention ratio (one minus the dividend payout ratio) and the earned rate of return  
19 on book equity. Furthermore, if the earned rate of return and the payout ratio are constant  
20 over time, growth in earnings and dividends will be equal to growth in book value. Despite  
21 the fact that these conditions are seldom, if ever, met in practice, this “sustainable growth”  
22 approach may provide a rough guide for evaluating a firm's growth prospects and is  
23 frequently proposed in regulatory proceedings.

24 Accordingly, while I believe that analysts' forecasts provide a superior and more  
25 direct guide to investors' growth expectations, I have included the “sustainable growth”  
26 approach for completeness. The sustainable growth rate is calculated by the formula,

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<sup>39</sup> Morin, Roger A., “Regulatory Finance: Utilities' Cost of Capital,” *Public Utilities Reports, Inc.* at 154 (1994).

1  $g = br+sv$ , where “b” is the expected retention ratio, “r” is the expected earned return on  
2 equity, “s” is the percent of common equity expected to be issued annually as new common  
3 stock, and “v” is the equity accretion rate.

4 **Q. What is the purpose of the “sv” term?**

5 A. Under DCF theory, the “sv” factor is a component of the growth rate designed to capture  
6 the impact of issuing new common stock at a price above, or below, book value. When a  
7 company’s stock price is greater than its book value per share, the per-share contribution in  
8 excess of book value associated with new stock issues will accrue to the current  
9 shareholders. This increase to the book value of existing shareholders leads to higher  
10 expected earnings and dividends, with the “sv” factor incorporating this additional growth  
11 component.

12 **Q. What growth rate does the earnings retention method suggest for the Utility Proxy**  
13 **Group?**

14 A. The sustainable, “br+sv” growth rates for each firm in the Utility Proxy Group are  
15 summarized on Exhibit WEA-2, with the underlying details being presented on Exhibit  
16 WEA-3. For each firm, the expected retention ratio (b) was calculated based on Value  
17 Line’s projected dividends and earnings per share. Likewise, each firm’s expected earned  
18 rate of return (r) was computed by dividing projected earnings per share by projected net  
19 book value. Because Value Line reports end-of-year book values, an adjustment factor was  
20 incorporated to compute an average rate of return over the year, consistent with the theory  
21 underlying this approach to estimating investors’ growth expectations. Meanwhile, the  
22 percent of common equity expected to be issued annually as new common stock (s) was  
23 equal to the product of the projected market-to-book ratio and growth in common shares

1 outstanding, while the equity accretion rate ( $v$ ) was computed as 1 minus the inverse of the  
2 projected market-to-book ratio.

3 **Q. What cost of common equity estimates were implied for the Utility Proxy Group using**  
4 **the DCF model?**

5 A. After combining the dividend yields and respective growth projections for each utility, the  
6 resulting cost of common equity estimates are shown on Exhibit WEA-2.

7 **Q. In evaluating the results of the constant growth DCF model, is it appropriate to**  
8 **eliminate estimates that are extreme low or high outliers?**

9 A. Yes. In applying quantitative methods to estimate the cost of equity, it is essential that the  
10 resulting values pass fundamental tests of reasonableness and economic logic. Accordingly,  
11 DCF estimates that are implausibly low or high should be eliminated when evaluating the  
12 results of this method.

13 **Q. How did you evaluate DCF estimates at the low end of the range?**

14 A. It is a basic economic principle that investors can be induced to hold more risky assets only  
15 if they expect to earn a return to compensate them for their risk bearing. As a result, the  
16 rate of return that investors require from a utility's common stock, the most junior and  
17 riskiest of its securities, must be considerably higher than the yield offered by senior, long-  
18 term debt. Consistent with this principle, the DCF results for the Utility Proxy Group must  
19 be adjusted to eliminate estimates that are determined to be extreme low outliers when  
20 compared against the yields available to investors from less risky utility bonds.

21 **Q. Have similar tests been applied by regulators?**

22 A. Yes. FERC has noted that adjustments are justified where applications of the DCF  
23 approach produce illogical results. FERC evaluates DCF results against observable yields

1 on long-term public utility debt and has recognized that it is appropriate to eliminate  
2 estimates that do not sufficiently exceed this threshold. In a 2002 opinion establishing its  
3 current precedent for determining ROEs for electric utilities, for example, FERC noted:

4 An adjustment to this data is appropriate in the case of PG&E’s low-end  
5 return of 8.42 percent, which is comparable to the average Moody’s “A”  
6 grade public utility bond yield of 8.06 percent, for October 1999. Because  
7 investors cannot be expected to purchase stock if debt, which has less risk  
8 than stock, yields essentially the same return, this low-end return cannot be  
9 considered reliable in this case.<sup>40</sup>

10 More recently, in its March 27, 2009 decision in *Pioneer*, FERC concluded that it would  
11 exclude low-end ROEs “within about 100 basis points above the cost of debt.”<sup>41</sup>

12 **Q. What does this test of logic imply with respect to the DCF results for the Utility Proxy**  
13 **Group?**

14 A. The average corporate credit rating associated with the firms in the Utility Proxy Group is  
15 “BBB”. Companies rated “BBB-”, “BBB”, and “BBB+” are all considered part of the  
16 triple-B rating category, with Moody’s monthly yields on triple-B bonds averaging  
17 approximately 6.9 percent in July 2009.<sup>42</sup> As highlighted on Exhibit WEA-2, three of the  
18 individual equity estimates for the firms in the Utility Proxy Group fell below utility bond  
19 yields, while two values exceeded this threshold by 100 basis points or less.<sup>43</sup> In light of  
20 the risk-return tradeoff principle and the test applied in *Pioneer*, it is inconceivable that  
21 investors are not requiring a substantially higher rate of return for holding common stock,  
22 which is the riskiest of a utility’s securities. As a result, consistent with the test of

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<sup>40</sup> *Southern California Edison Company*, 92 FERC ¶ 61,070 (2000) at p. 22.

<sup>41</sup> *Pioneer Transmission, LLC*, 126 FERC ¶ 61,281 at P 94 (2009) (“*Pioneer*”).

<sup>42</sup> Moody’s Investors Service, [www.credittrends.com](http://www.credittrends.com).

<sup>43</sup> As highlighted on Exhibit WEA-2, these DCF estimates ranged from 4.7 percent to 7.4 percent.

1 economic logic applied by FERC, these values provide little guidance as to the returns  
2 investors require from utility common stocks and should be excluded.

3 **Q. Do you also recommend excluding estimates at the high end of the range of DCF**  
4 **results?**

5 A. Yes. The upper end of the cost of common equity range produced by the DCF analysis  
6 presented in Exhibit WEA-2 was set by an estimate of 24.6 percent for CenterPoint Energy,  
7 Inc. In addition to this extreme outlier, I determined that, when compared with the balance  
8 of the remaining estimates, two other DCF estimates should also be excluded in evaluating  
9 the results of the DCF model for the Utility Proxy Group. This is also consistent with the  
10 precedent adopted by FERC, which has established that estimates found to be “extreme  
11 outliers” should be disregarded in interpreting the results of the DCF model.<sup>44</sup>

12 **Q. What cost of common equity estimates are implied by your DCF results for the Utility**  
13 **Proxy Group?**

14 A. As shown on Exhibit WEA-2 and summarized in Table WEA-2, below, after eliminating  
15 illogical low- and high-end values, application of the constant growth DCF model resulted  
16 in cost of common equity estimates ranging from 10.7 percent to 11.6 percent:

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<sup>44</sup> See, e.g., *ISO New England, Inc.*, 109 FERC ¶ 61,147 at P 205 (2004).



**TABLE WEA-2  
DCF RESULTS –UTILITY PROXY GROUP**

<u>Growth Rate</u>	<u>Average Cost of Equity</u>
Value Line	11.2%
IBES	11.5%
First Call	11.5%
Zacks	11.6%
br+sv	10.7%

1 **Q. What were the results of your DCF analysis for the Non-Utility Proxy Group?**

2 A. I applied the DCF model to the Non-Utility Proxy Group in exactly the same manner  
3 described earlier for the Utility Proxy Group. The results of my DCF analysis for the Non-  
4 Utility Proxy Group are presented in Exhibit WEA-4, with the sustainable, “br+sv” growth  
5 rates being developed on Exhibit WEA-5. As shown on Exhibit WEA-4 and summarized in  
6 Table WEA-3, below, after eliminating illogical low- and high-end values, application of  
7 the constant growth DCF model resulted in cost of common equity estimates generally  
8 trending toward 12.8 percent:

**TABLE WEA-3  
DCF RESULTS – NON-UTILITY PROXY GROUP**

<u>Growth Rate</u>	<u>Average Cost of Equity</u>
Value Line	11.5%
IBES	12.8%
First Call	12.8%
Zacks	13.4%
br+sv	12.8%

9 As discussed earlier, reference to the Non-Utility Proxy Group is consistent with  
10 established regulatory principles. Required returns for utilities should be in line with those  
11 of non-utility firms of comparable risk operating under the constraints of free competition.

#### D. Capital Asset Pricing Model

1 **Q. Please describe the CAPM.**

2 A. The CAPM is a theory of market equilibrium that measures risk using the beta coefficient.  
3 Assuming investors are fully diversified, the relevant risk of an individual asset (*e.g.*,  
4 common stock) is its volatility relative to the market as a whole, with beta reflecting the  
5 tendency of a stock's price to follow changes in the market. The CAPM is mathematically  
6 expressed as:

$$7 \quad R_j = R_f + \beta_j(R_m - R_f)$$

8 where:  $R_j$  = required rate of return for stock j;  
9  $R_f$  = risk-free rate;  
10  $R_m$  = expected return on the market portfolio; and,  
11  $\beta_j$  = beta, or systematic risk, for stock j.

12 Like the DCF model, the CAPM is an *ex-ante*, or forward-looking model based on  
13 expectations of the future. As a result, in order to produce a meaningful estimate of  
14 investors' required rate of return, the CAPM must be applied using estimates that reflect the  
15 expectations of actual investors in the market, not with backward-looking, historical data.

16 **Q. How did you apply the CAPM to estimate the cost of common equity?**

17 A. Application of the CAPM to the Utility Proxy Group based on a forward-looking estimate  
18 for investors' required rate of return from common stocks is presented on Exhibit WEA-6.  
19 In order to capture the expectations of today's investors in current capital markets, the  
20 expected market rate of return was estimated by conducting a DCF analysis on the dividend  
21 paying firms in the S&P 500.

22 The dividend yield for each firm was obtained from Value Line, with the growth rate  
23 being equal to the average of the earnings growth projections for each firm published by  
24 Value Line, IBES, First Call, and Zacks, with each firm's dividend yield and growth rate

1 being weighted by its proportionate share of total market value. Based on the weighted  
2 average of the projections for the 347 individual firms, current estimates imply an average  
3 growth rate over the next five years of 9.1 percent. Combining this average growth rate  
4 with a dividend yield of 4.4 percent results in a current cost of common equity estimate for  
5 the market as a whole of approximately 13.5 percent. Subtracting a 4.5 percent risk-free  
6 rate based on the average yield on 20-year Treasury bonds for July 2009 produced a market  
7 equity risk premium of 9.0 percent.

8 **Q. What was the source of the beta values you used to apply the CAPM?**

9 A. I relied on the beta values reported by Value Line, which in my experience is the most  
10 widely referenced source for beta in regulatory proceedings. As noted in *Regulatory*  
11 *Finance: Utilities' Cost of Capital*:

12 Value Line betas are computed on a theoretically sound basis using a  
13 broadly-based market index, and they are adjusted for the regression  
14 tendency of betas to converge to 1.00. . . . Value Line is the largest and most  
15 widely circulated independent investment advisory service, and exerts  
16 influence on a large number of institutional and individual investors and on  
17 the expectations of these investors.<sup>45</sup>

18 As shown on Exhibit WEA-6, multiplying the 9.0 percent market risk premium by the  
19 respective Value Line betas for the firms in the Utility Proxy Group, and then adding the  
20 resulting risk premiums to the average long-term Treasury bond yield, results in an average  
21 indicated cost of common equity of 11.4 percent.

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<sup>45</sup> Morin, Roger A., "Regulatory Finance: Utilities' Cost of Capital," *Public Utilities Reports* at 65 (1994).

1 **Q. What cost of common equity was indicated for the Non-Utility Proxy Group based on**  
2 **this forward-looking application of the CAPM?**

3 A. As shown on Exhibit WEA-7, applying the forward-looking CAPM approach to the firms  
4 in the Non-Utility Proxy Group results in an average implied cost of common equity of 11.6  
5 percent.

6 **Q. Do you have any observations regarding these CAPM results?**

7 A. Yes. Applying the CAPM is complicated by the impact of the recent capital market turmoil  
8 and recession on investors' risk perceptions and required returns. The CAPM cost of  
9 common equity estimate is calibrated from investors' required risk premium between  
10 Treasury bonds and common stocks. In response to heightened uncertainties, investors  
11 have sought a safe haven in Treasury bonds and this "flight to safety" has caused the yield  
12 spreads for corporate debt to rise significantly. Economic logic would suggest that  
13 investors' required risk premium for common stocks over Treasury bonds has also  
14 increased. Thus, recent capital market conditions may cause CAPM cost of common equity  
15 estimates to understate investors' required returns for common stocks, particularly when  
16 historical data are used to calculate the market risk premium. While my application of the  
17 CAPM makes every effort to incorporate investors' forward-looking expectations, the full  
18 effect of the "flight to safety" may not be captured in my market risk premium estimate.  
19 One other obvious limitation of CAPM estimates is that beta values are customarily  
20 calculated based solely on historical data and may not accurately reflect investor's forward-  
21 looking rate of return requirements, particularly during periods of heightened uncertainty.

1 **Q. Did your CAPM analysis rely on either geometric or arithmetic means in arriving at**  
2 **an equity risk premium?**

3 A. No. Reference to arithmetic or geometric mean risk premiums is associated with  
4 applications of the CAPM that depend on historical data. In order to derive an estimate of  
5 the market equity risk premium under this approach, historical average returns on Treasury  
6 bonds are typically subtracted from those for common stocks. These average rates of return  
7 based on backward-looking data for historical time periods can be derived using both  
8 arithmetic and geometric means.

9 As discussed above, however, my application of the CAPM was a purely forward-  
10 looking approach, which is consistent with the underlying assumptions of this method and  
11 the standards underlying a determination of a fair rate of return. Because I looked directly  
12 at investors' current expectations in the capital markets – and not at historical rates of return  
13 – my CAPM analysis did not need to reference either the arithmetic or geometric mean of  
14 historical rates of return.

15 **Q. Are there selected academic studies or other sources that might measure an equity risk**  
16 **premium that is less than what is indicated based on investors' current expectations**  
17 **for the stocks in the S&P 500?**

18 A. There are a plethora of studies that examine what investors have actually realized in terms  
19 of equity returns versus stocks. Similarly, there are articles suggesting what investors  
20 should expect based on “building blocks” or other techniques. Further, there are surveys of  
21 corporate executives and others about what they expect the return differential to be over  
22 various horizons. Finally, there are projections that the managers of utility pension funds  
23 use for actuarial purposes.

1           None of these values is comparable to the risk premium as I have applied it in my  
2 forward-looking CAPM analysis, which is based not on some generic notion of the equity  
3 risk premium, but is derived from contemporaneous projections for individual stocks in the  
4 S&P 500. Average realized risk premiums computed over some selected time period may  
5 be an accurate representation of what was actually earned in the past, but they don't answer  
6 the question as to what risk premium investors were actually expecting to earn on a  
7 forward-looking basis during these same time periods. Similarly, calculations of the equity  
8 risk premium developed at a point in history – whether based on actual returns in prior  
9 periods or contemporaneous projections – are not the same as the forward-looking  
10 expectations of today's investors, which are premised on an entirely different set of capital  
11 market and economic expectations.

12           The purpose of my analysis was to determine an allowed return that would meet the  
13 regulatory requirement of allowing Black Hills Power to attract capital and maintain its  
14 financial integrity. The most appropriate benchmark for a meaningful forward-looking  
15 estimate of the return investors require from the Company is what investors are currently  
16 requiring for other investments with which Black Hills Power must compete for capital.  
17 The risk premium used in my CAPM is derived from current market data and is forward-  
18 looking in the sense of using the projected earnings estimates used by investors. It does not  
19 depend on analysis of past historical data on risk premiums nor does it purport to identify  
20 what investors will actually realize in the future, or what they should reasonably expect  
21 over the long-term. Rather it is an estimate of what investors currently require when they  
22 allocate their capital to competing investments. These current forward-looking required

1 returns are the touchstone of whether an authorized ROE can meet the economic standards  
2 of capital attraction and maintaining financial integrity.

3 **Q. Why is this key distinction especially important in today's capital markets?**

4 A. Applying the CAPM using a historical risk premium, however determined, incorrectly  
5 assumes that investors' assessment of the relative risk differences, and their required risk  
6 premium, between Treasury bonds and common stocks is constant and equal to some  
7 historical average. At no time in recent history has the fallacy of this assumption been  
8 demonstrated more concretely. As a result, historical CAPM approaches fail to reflect the  
9 view of real-world investors in today's capital markets and violate the standards underlying  
10 a fair rate of return, which is predicated on the opportunity to earn a return commensurate  
11 with other investments of comparable risk.

**E. Expected Earnings Approach**

12 **Q. What other analyses did you conduct to estimate the cost of common equity?**

13 A. As I noted earlier, I also evaluated the cost of common equity using the expected earnings  
14 method. Reference to rates of return available from alternative investments of comparable  
15 risk can provide an important benchmark in assessing the return necessary to assure  
16 confidence in the financial integrity of a firm and its ability to attract capital. This expected  
17 earnings approach is consistent with the economic underpinnings for a fair rate of return  
18 established by the U.S. Supreme Court in *Bluefield* and *Hope*. Moreover, it avoids the  
19 complexities and limitations of capital market methods and instead focuses on the returns  
20 earned on book equity, which are readily available to investors.

1 **Q. What rates of return on equity are indicated for utilities based on the expected**  
2 **earnings approach?**

3 A. Value Line reports that its analysts anticipate an average rate of return on common equity  
4 for the electric utility industry of 10.5 percent in 2009, 11.0 percent in 2010, and 11.5  
5 percent over its 2012-2014 forecast horizon.<sup>46</sup> Meanwhile, for the firms in the Utility  
6 Proxy Group specifically, the returns on common equity projected by Value Line over its  
7 three-to-five year forecast horizon are shown on Exhibit WEA-8. Consistent with the  
8 rationale underlying the development of the br+sv growth rates, these year-end values were  
9 converted to average returns using the same adjustment factor discussed earlier and  
10 developed on Exhibit WEA-3. As shown on Exhibit WEA-8, Value Line's projections for  
11 the Utility Proxy Group suggested an average ROE of 10.6 percent.

#### **F. Flotation Costs**

12 **Q. What other considerations are relevant in determining the ROE for Black Hills**  
13 **Power?**

14 A. The common equity used to finance the investment in utility assets is provided from either  
15 the sale of stock in the capital markets or from retained earnings not paid out as dividends.  
16 When equity is raised through the sale of common stock, there are costs associated with  
17 "floating" the new equity securities. These flotation costs include services such as legal,  
18 accounting, and printing, as well as the fees and discounts paid to compensate brokers for  
19 selling the stock to the public. Also, some argue that the "market pressure" from the  
20 additional supply of common stock and other market factors may further reduce the amount  
21 of funds that a utility nets when it issues common equity.

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<sup>46</sup> The Value Line Investment Survey at 687 (June 26, 2009).



1 **Q. Is there an established mechanism for a utility to recognize equity issuance costs?**

2 A. No. While debt flotation costs are recorded on the books of the utility, amortized over the  
3 life of the issue, and thus increase the effective cost of debt capital, there is no similar  
4 accounting treatment to ensure that equity flotation costs are recorded and ultimately  
5 recognized. Alternatively, no rate of return is authorized on flotation costs necessarily  
6 incurred to obtain a portion of the equity capital used to finance plant. In other words, equity  
7 flotation costs are not included in a utility's rate base because neither that portion of the gross  
8 proceeds from the sale of common stock used to pay flotation costs is available to invest in  
9 plant and equipment, nor are flotation costs capitalized as an intangible asset. Unless some  
10 provision is made to recognize these issuance costs, a utility's revenue requirements will not  
11 fully reflect all of the costs incurred for the use of investors' funds. Because there is no  
12 accounting convention to accumulate the flotation costs associated with equity issues, they  
13 must be accounted for indirectly, with an upward adjustment to the cost of common equity  
14 being the most logical mechanism.

15 **Q. What is the magnitude of the adjustment to the "bare bones" cost of common equity to**  
16 **account for issuance costs?**

17 A. While there are a number of ways in which a flotation cost adjustment can be calculated,  
18 one of the most common methods used to account for flotation costs in regulatory  
19 proceedings is to apply an average flotation-cost percentage to a utility's dividend yield.  
20 Based on a review of the finance literature, *Regulatory Finance: Utilities' Cost of Capital*  
21 concluded:

1 The flotation cost allowance requires an estimated adjustment to the return  
2 on equity of approximately 5% to 10%, depending on the size and risk of the  
3 issue.<sup>47</sup>

4 Alternatively, a study of data from Morgan Stanley regarding issuance costs associated with  
5 utility common stock issuances suggests an average flotation cost percentage of 3.6  
6 percent.<sup>48</sup>

7 Issuance costs are a legitimate consideration in setting the return on equity for a  
8 utility, and applying these expense percentages to a representative dividend yield for a  
9 utility of 5.3 percent implies a flotation cost adjustment on the order of 19 to 53 basis  
10 points. While my recommendation does not include an adjustment for flotation costs, this  
11 is a legitimate consideration that should be considered in established an ROE for Black  
12 Hills Power in this case.

#### IV. RETURN ON EQUITY FOR BLACK HILLS POWER

13 **Q. What is the purpose of this section?**

14 A. This section addresses the economic requirements for Black Hills Power's fair ROE. It  
15 discusses the regulatory policy reasons for avoiding a return on equity that is not sufficient  
16 to maintain the Company's financial integrity and ability to attract capital, and evaluates the  
17 reasonableness of Black Hills Power's requested capital structure. Finally, this section  
18 presents my conclusions regarding a fair ROE range.

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<sup>47</sup> Roger A. Morin, "Regulatory Finance: Utilities' Cost of Capital," *Public Utilities Reports* (1994) at 166.

<sup>48</sup> Application of Yankee Gas Services Company for a Rate Increase, DPUC Docket No. 04-06-01, Direct Testimony of George J. Eckenroth (Jul. 2, 2004) at Exhibit GJE-11.1. Updating the results presented by Mr. Eckenroth through April 2005 also resulted in an average flotation cost percentage of 3.6%.

## A. Implications for Financial Integrity

1 **Q. Why is it important to allow Black Hills Power an adequate ROE?**

2 A. Given the importance of the utility industry to the economy and society, it is essential to  
3 maintain reliable and economical service to all consumers. While the Company remains  
4 committed to providing reliable electric service, a utility's ability to fulfill its mandate can  
5 be compromised if it lacks the necessary financial wherewithal or is unable to earn a return  
6 sufficient to attract capital.

7 As documented earlier, the major rating agencies have warned of exposure to  
8 uncertainties associated with political and regulatory developments, especially in view of  
9 the pressures associated with ongoing capital expenditure requirements, uncertain  
10 environmental compliance costs, and the potential for continued energy price volatility.  
11 Investors understand just how swiftly unforeseen circumstances can lead to deterioration in  
12 a utility's financial condition, and stakeholders have discovered first hand how difficult and  
13 complex it can be to remedy the situation after the fact.

14 While providing the infrastructure necessary to enhance the power system and meet  
15 the energy needs of customers is certainly desirable, it imposes additional financial  
16 responsibilities on Black Hills Power. For a utility with an obligation to provide reliable  
17 service, investors' increased reticence to supply additional capital during times of crisis  
18 highlights the necessity of preserving the flexibility necessary to overcome periods of  
19 adverse capital market conditions. These considerations heighten the importance of  
20 allowing Black Hills Power an adequate ROE.

1 **Q. What role does regulation play in ensuring that Black Hills Power has access to capital**  
2 **under reasonable terms and on a sustainable basis?**

3 A. Considering investors' heightened awareness of the risks associated with the utility industry  
4 and the damage that results when a utility's financial flexibility is compromised, the  
5 continuation of supportive regulation remains crucial to the Company's access to capital.  
6 Investors recognize that regulation has its own risks, and that constructive regulation is a  
7 key ingredient in supporting utility credit ratings and financial integrity, particularly during  
8 times of adverse conditions. Fitch noted that:

9 Regulatory risk remains a recurring theme for this year's outlook, as the  
10 pressure of a weak economic backdrop could result in political push-back to  
11 rate increase requests.<sup>49</sup>

12 The report went on to conclude, "Fitch is concerned that the recent rapid escalation in the  
13 cost of capital will not be reflected on a timely basis in utility rates."<sup>50</sup>

14 Moody's has also emphasized the need for regulatory support "in an era of broadly  
15 rising costs," noting that as cost pressures have escalated for electric utilities, so too has the  
16 importance of timely recovery through the regulatory process and the risks associated with  
17 regulatory lag.<sup>51</sup> S&P concluded "the quality of regulation is at the forefront of our  
18 analysis of utility creditworthiness."<sup>52</sup>

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<sup>49</sup> Fitch Ratings Ltd., "U.S. Utilities, Power and Gas 2009 Outlook," *Global Power North America Special Report* (Dec. 22, 2008).

<sup>50</sup> *Id.*

<sup>51</sup> Moody's Investors Service, "Regulatory Pressures Increase For U.S. Electric Utilities," *Special Comment* (March 2007).

<sup>52</sup> Standard & Poor's Corporation, "Assessing U.S. Utility Regulatory Environments," *RatingsDirect* (Nov. 7, 2008).

1 **Q. What are the implications of Black Hills Power’s relative credit standing, given the**  
2 **current climate in the capital markets and the challenges faced by the Company?**

3 A. As documented earlier, the current environment poses significant challenges with respect to  
4 a utility’s ability to raise capital on reasonable terms. In a recent report by S&P ranking  
5 U.S. regulated utilities from strongest to weakest, Black Hills Power was ranked 156 out of  
6 the total 176 companies with investment grade credit ratings.<sup>53</sup> In other words, according  
7 to S&P only 20 companies in the utility industry with investment grade ratings have a credit  
8 profile weaker than Black Hills Power. Fitch recently observed that in current credit  
9 markets, “‘flight to quality’ is selective within the [utility] sector, favoring companies at  
10 higher rating levels.”<sup>54</sup> Because of Black Hills Power’s weaker overall credit standing,  
11 there is little backstop in the event of a prolonged and/or worsening crisis and reduced  
12 flexibility to respond to other challenges, such as increased capital outlays or renewed  
13 energy market volatility.

14 Strengthening Black Hills Power’s financial integrity is imperative to ensure the  
15 capability to maintain existing ratings while confronting potential challenges. As the  
16 Chairman of the New York State Public Service Commission noted in his role as  
17 spokesman for the National Association of Regulatory Utility Commissioners:

18 While there is a large difference between A and BBB, there is an even  
19 brighter line between Investment Grade (BBB-/Baa3 bond ratings by  
20 S&P/Moody’s, and higher) and non-Investment Grade (Junk) (BB+/Ba1 and  
21 lower). The cost of issuing non-investment grade debt, assuming the market  
22 is receptive to it, has in some cases been hundreds of basis points over the  
23 yield on investment grade securities. To me this suggests that you do not

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<sup>53</sup> Standard & Poor’s Corporation, “Issuer Ranking: U.S. Regulated Electric Utilities, Strongest To Weakest,” *RatingsDirect* (Aug. 4, 2009).

<sup>54</sup> Fitch Ratings Ltd., “U.S. Utilities, Power and Gas 2009 Outlook,” *Global Power North America Special Report* (Dec. 22, 2008).

1 want to be rated at the lower end of the BBB range because an unexpected  
2 shock could move you outside the investment grade range.<sup>55</sup>

3 As a result, the stakes associated with an inadequate rate of return are increased  
4 dramatically and the need for supportive regulation and an adequate ROE may never have  
5 been greater.

6 **Q. Do customers benefit by enhancing the utility's financial flexibility?**

7 A. Yes. Providing a return on fair value that is both commensurate with those available from  
8 investments of corresponding risk and sufficient to maintain Black Hills Power's ability to  
9 attract capital, even under duress, is consistent with the economic requirements embodied in  
10 the U.S. Supreme Court's *Bluefield* and *Hope* decisions; but it is also in customers' best  
11 interests. Ultimately, it is customers and the service area economy that enjoy the benefits  
12 that come from ensuring that the utility has the financial wherewithal to take whatever  
13 actions are required to ensure a reliable energy supply. By the same token, customers also  
14 bear a significant burden when the ability of the utility to attract capital is impaired and  
15 service quality is compromised.

16 **Q. Would investors consider Black Hills Power's relative size in their assessment of the  
17 Company's risks and prospects?**

18 A. Yes. A firm's relative size has important implications for investors in their evaluation of  
19 alternative investments, and it is well established that smaller firms are more risky than  
20 larger firms. With a market capitalization of less than \$1.0 billion, Black Hills Corp. is one

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<sup>55</sup> Brown, George, "Credit and Capital Issues Affecting the Electric Power Industry," *Federal Energy Regulatory Commission Technical Conference* (Jan. 13, 2009).

1 of the smallest publicly traded electric utilities followed by Value Line, which have an  
2 average capitalization of approximately \$6.5 billion.<sup>56</sup>

3 The magnitude of the size disparity between Black Hills Power and other firms in  
4 the utility industry has important practical implications with respect to the risks faced by  
5 investors. All else being equal, it is well accepted that smaller firms are more risky than  
6 their larger counterparts, due in part to their relative lack of diversification and lower  
7 financial resiliency.<sup>57</sup> These greater risks imply a higher required rate of return, and there  
8 is ample empirical evidence that investors in smaller firms realize higher rates of return  
9 than in larger firms.<sup>58</sup> Common sense and accepted financial doctrine hold that investors  
10 require higher returns from smaller companies, and unless that compensation is provided in  
11 the rate of return allowed for a utility, the legal tests embodied in the *Hope* and *Bluefield*  
12 cases cannot be met.

## B. Capital Structure

13 **Q. Is an evaluation of the capital structure maintained by a utility relevant in assessing its**  
14 **return on equity?**

15 A. Yes. Other things equal, a higher debt ratio, or lower common equity ratio, translates into  
16 increased financial risk for all investors. A greater amount of debt means more investors  
17 have a senior claim on available cash flow, thereby reducing the certainty that each will  
18 receive his contractual payments. This increases the risks to which lenders are exposed,

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<sup>56</sup> [www.valueline.com](http://www.valueline.com) (Retrieved Aug. 25, 2009).

<sup>57</sup> It is well established in the financial literature that smaller firms are more risky than larger firms. See, e.g., Eugene F. Fama and Kenneth R. French, "The Cross-Section of Expected Stock Returns", *The Journal of Finance* (June 1992); George E. Pinches, J. Clay Singleton, and Ali Jahankhani, "Fixed Coverage as a Determinant of Electric Utility Bond Ratings", *Financial Management* (Summer 1978).

<sup>58</sup> See for example Rolf W. Banz, "The Relationship Between Return and Market Value of Common Stocks", *Journal of Financial Economics* (September 1981) at 16.

1 and they require correspondingly higher rates of interest. From common shareholders'  
2 standpoint, a higher debt ratio means that there are proportionately more investors ahead of  
3 them, thereby increasing the uncertainty as to the amount of cash flow, if any, that will  
4 remain.

5 **Q. What common equity ratio is implicit in Black Hills Power's requested capital**  
6 **structure?**

7 A. The Company's capital structure is presented in the testimony of Anthony S. Cleberg. As  
8 summarized there, common equity as a percent of the capital sources used to compute the  
9 overall rate of return for Black Hills Power was 52 percent.

10 **Q. How can the Company's requested capital structures be evaluated?**

11 A. It is generally accepted that the norms established by comparable firms provide one valid  
12 benchmark against which to evaluate the reasonableness of a utility's capital structure. The  
13 capital structure maintained by other electric utilities should reflect their collective efforts  
14 to finance themselves so as to minimize capital costs while preserving their financial  
15 integrity and ability to attract capital. Moreover, these industry capital structures should  
16 also incorporate the requirements of investors (both debt and equity), as well as the  
17 influence of regulators.

18 **Q. What was the average capitalization maintained by the Utility Proxy Group?**

19 A. As shown on Exhibit WEA-9, for the sixteen firms in the Utility Proxy Group, common  
20 equity ratios at December 31, 2008 ranged between 26.5 percent and 67.6 percent and  
21 averaged 45.1 percent of long-term capital.



1 **Q. What capitalization is representative for the Utility Proxy Group going forward?**

2 A. As shown on Exhibit WEA-9, Value Line expects an average common equity ratio for the  
3 Utility Proxy Group of 46.7 percent for its three-to-five year forecast horizon.

4 **Q. What implication does the increasing risk of the utility industry have for the capital  
5 structure maintained by Black Hills Power?**

6 A. As discussed earlier, utilities are facing energy market volatility, rising cost structures, the  
7 need to finance significant capital investment plans, uncertainties over accommodating  
8 future environmental mandates, and ongoing regulatory risks. Coupled with the ongoing  
9 turmoil in capital markets, these considerations warrant a stronger balance sheet to deal  
10 with an increasingly uncertain environment. A more conservative financial profile, in the  
11 form of a higher common equity ratio, is consistent with increasing uncertainties and the  
12 need to maintain the continuous access to capital that is required to fund operations and  
13 necessary system investment, even during times of adverse capital market conditions.

14 Moody's has warned investors of the risks associated with debt leverage and fixed  
15 obligations and advised utilities not to squander the opportunity to strengthen the balance  
16 sheet as a buffer against future uncertainties.<sup>59</sup> Moody's noted that, "maintaining unfettered  
17 access to capital markets will be crucial," and cited the importance of forestalling future  
18 downgrades by bolstering utility balance sheets.<sup>60</sup> As Moody's concluded:

19 Our concerns are clearly growing, but we believe utilities have adequate  
20 time to adjust and revise their corporate finance policies and strengthen

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<sup>59</sup> Moody's Investors Service, "Storm Clouds Gathering on the Horizon for the North American Electric Utility Sector," *Special Comment* (Aug. 2007); "U.S. Electric Utility Sector," *Industry Outlook* (Jan. 2008).

<sup>60</sup> Moody's Investors Service, "U.S. Investor-Owned Electric Utilities," *Industry Outlook* (Jan. 2009).

1 balance sheets, thereby improving their ability to manage volatility and  
2 address uncertainty.<sup>61</sup>

3 Moody's affirmed that because of its significant investment plans, the utility industry "will  
4 need to attract a significant amount of new equity capital in order to maintain existing  
5 ratings."<sup>62</sup> This is particularly the case for Black Hills Power, which faces the prospect of  
6 financing significant capital expenditures in a potentially turbulent market. Given Black  
7 Hills Power's low credit rating, small size, and capital expenditure, an equity ratio higher  
8 than the proxy group average is reasonable and necessary.

9 **Q. What does this evidence suggest with respect to Black Hills Power's proposed capital  
10 structure?**

11 A. Based on my evaluation, I concluded that Black Hills Power's requested capital structure  
12 represents a reasonable mix of capital sources from which to calculate the Company's  
13 overall rate of return. While industry averages provide one benchmark for comparison,  
14 each firm must select its capitalization based on the risks and prospects it faces, as well its  
15 specific needs to access the capital markets. A public utility with an obligation to serve  
16 must maintain ready access to capital so that it can meet the service requirements of its  
17 customers. The need for access becomes even more important when the company has large  
18 capital requirements over a period of years, and financing must be continuously available,  
19 even during unfavorable capital market conditions.

20 Black Hills Power's proposed capital structure is consistent with industry  
21 benchmarks and reflects the Company's ongoing efforts to maintain its credit standing and

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<sup>61</sup> *Id.*

<sup>62</sup> Moody's Investors Service, "U.S. Investor-Owned Electric Utilities: Six-Month Industry Update," *Industry Outlook* (July 2008).

1 support access to capital on reasonable terms. The reasonableness of Black Hills Power’s  
2 requested capital structure is reinforced by the ongoing uncertainties associated with the  
3 electric power industry, the need to accommodate the additional risks associated the  
4 Company’s relatively small size, and the importance of supporting continued high levels of  
5 investment in system improvements, even during times of adverse industry or market  
6 conditions.

### C. Return on Equity Range Recommendation

7 **Q. Please summarize the results of your analyses.**

8 A. Reflecting the fact that investors’ required return on equity is unobservable and no single  
9 method should be viewed in isolation, I used both the DCF and CAPM methods and  
10 referenced expected earned rates of return for utilities. In order to reflect the risks and  
11 prospects associated with the Black Hills Power’s jurisdictional utility operations, my  
12 analyses focused on a proxy group of sixteen other utilities with comparable investment  
13 risks. Consistent with the fact that utilities must compete for capital with firms outside their  
14 own industry, I also referenced a proxy group of comparable risk companies in the non-  
15 utility sectors of the economy.

16 My application of the constant growth DCF model considered four alternative  
17 growth measures based on projected earnings growth, as well as the sustainable, “br+sv”  
18 for each firm in the respective proxy groups. In addition, I evaluated the reasonableness of  
19 the resulting DCF estimates and eliminated low- and high-end outliers that failed to meet  
20 threshold tests of economic logic. My CAPM analyses were based on forward-looking data  
21 that best reflects the underlying assumptions of this approach. The cost of common equity

1 estimates produced by the various capital market oriented analyses described in my  
2 testimony are summarized in Table WEA-4, below:

**TABLE WEA-4  
SUMMARY OF QUANTITATIVE RESULTS**

<u>DCF</u>	<u>Utility</u>	<u>Non-Utility</u>
Value Line	11.2%	11.5%
IBES	11.5%	12.8%
First Call	11.5%	12.8%
Zacks	11.6%	13.4%
br+sv	10.7%	12.8%
<u>CAPM</u>	11.4%	11.6%
<u>Expected Earnings</u>		
Electric Utilities - 2009	10.5%	
Electric Utilities - 2010	11.0%	
Electric Utilities - 2012-14	11.5%	
Utility Proxy Group	10.6%	

3 Based on my assessment of the relative strengths and weaknesses inherent in each method,  
4 and conservatively giving less emphasis to the upper- and lower-most boundaries of the  
5 range of results, I concluded that the cost of common equity indicated by my analyses is in  
6 the 11.0 percent to 12.5 percent range.

7 **Q. What then is your conclusion as to a fair rate of return on equity range for Black Hills**  
8 **Power?**

9 A. Considering capital market expectations, the potential exposures faced by Black Hills  
10 Power, and the economic requirements necessary to maintain financial integrity and support  
11 additional capital investment even under adverse circumstances, it is my opinion that a  
12 range of 11.5 to 12.5 percent, represents a fair and reasonable ROE for Black Hills Power.

1           In addition, uncertainties associated with jurisdictional operations – including  
2 renewed focus on regulatory uncertainties and exposure to potential energy market  
3 volatility and energy procurement – are clearly evident to investors. Combined with Black  
4 Hills Power’s relatively small size, these factors imply a level of investment risk and  
5 required return that exceeds that of the proxy groups used to estimate the cost of equity.  
6 Coupled with the need to provide an ROE that supports Black Hills Power’s credit standing  
7 while funding necessary system investments, these considerations indicate that an ROE in  
8 the range of 11.5 to 12.5 percent is reasonable. The 11.5 percent ROE chosen by Mr.  
9 Cleberg is at the bottom of this range and represents a reasonable compromise between the  
10 need the provide Black Hills Power with an adequate return to compensate investors,  
11 maintain financial integrity, and attract capital. The cost of providing the Company an  
12 adequate return is small relative to the potential benefits that a strong utility can have in  
13 providing reliable service. Considering investors’ heightened awareness of the risks  
14 associated with the utility industry and the damage that results when a utility’s financial  
15 flexibility is compromised, supportive regulation is crucial.

16 **Q. Does this conclude your pre-filed direct testimony?**

17 A. Yes.

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