

**BEFORE THE
SOUTH DAKOTA PUBLIC UTILITIES COMMISSION**

DIRECT TESTIMONY OF

WILLIAM E. AVERA

On Behalf of Black Hills Power, Inc.

Docket No. EL14-_____

March 31, 2014

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I. INTRODUCTION

1 **Q1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A1. My name is William E. Avera and my business address is 3907 Red River, Austin,
3 Texas, 78751.

4 **Q2. IN WHAT CAPACITY ARE YOU EMPLOYED?**

5 A2. I am the President of FINCAP, Inc., a firm providing financial, economic, and
6 policy consulting services to business and government.

A. Qualifications

7 **Q3. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.**

8 A3. I received a B.A. degree with a major in economics from Emory University. After
9 serving in the U.S. Navy, I entered the doctoral program in economics at the
10 University of North Carolina at Chapel Hill. Upon receiving my Ph.D., I joined
11 the faculty at the University of North Carolina and taught finance in the Graduate
12 School of Business. I subsequently accepted a position at the University of Texas
13 at Austin where I taught courses in financial management and investment
14 analysis. I then went to work for International Paper Company in New York City
15 as Manager of Financial Education, a position in which I had responsibility for all
16 corporate education programs in finance, accounting, and economics.

17 In 1977, I joined the staff of the Public Utility Commission of Texas
18 ("PUCT") as Director of the Economic Research Division. During my tenure at
19 the PUCT, I managed a division responsible for financial analysis, cost allocation
20 and rate design, economic and financial research, and data processing systems,
21 and I testified in cases on a variety of financial and economic issues. Since
22 leaving the PUCT, I have been engaged as a consultant. I have participated in a

1 wide range of assignments involving utility-related matters on behalf of utilities,
2 industrial customers, municipalities, and regulatory commissions. I have
3 previously testified before the Federal Energy Regulatory Commission (“FERC”),
4 as well as the Federal Communications Commission, the Surface Transportation
5 Board (and its predecessor, the Interstate Commerce Commission), the Canadian
6 Radio-Television and Telecommunications Commission, and regulatory agencies,
7 courts, and legislative committees in over 40 states, including the South Dakota
8 Public Utilities Commission (“SDPUC” or “Commission”)

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

14 I have served as Lecturer in the Finance Department at the University of
15 Texas at Austin and taught in the evening graduate program at St. Edward’s
16 University for twenty years. In addition, I have lectured on economic and
17 regulatory topics in programs sponsored by universities and industry groups. I
18 have taught in hundreds of educational programs for financial analysts in
19 programs sponsored by the Association for Investment Management and
20 Research, the Financial Analysts Review, and local financial analysts societies.
21 These programs have been presented in Asia, Europe, and North America,
22 including the Financial Analysts Seminar at Northwestern University. I hold the
23 Chartered Financial Analyst (CFA®) designation and have served as Vice
24 President for Membership of the Financial Management Association. I have also
25 served on the Board of Directors of the North Carolina Society of Financial
26 Analysts. I was elected Vice Chairman of the National Association of Regulatory

1 Commissioners (“NARUC”) Subcommittee on Economics and appointed to
2 NARUC’s Technical Subcommittee on the National Energy Act. I have also
3 served as an officer of various other professional organizations and societies. A
4 resume containing the details of my experience and qualifications is attached as
5 Exhibit WEA-1.

B. Overview

6 **Q4. FOR WHOM ARE YOU TESTIFYING IN THIS CASE?**

7 A4. I am testifying on behalf of Black Hills Power, Inc. (“Black Hills Power” or “the
8 Company”).

9 **Q5. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

10 A5. The purpose of my testimony is to present to the SDPUC my independent
11 assessment of the fair rate of return on equity (“ROE”) that Black Hills Power
12 should be authorized to earn on its investment in providing electric utility service.
13 In addition, I also examined the reasonableness of Black Hills Power’s requested
14 capital structure, considering both the specific risks faced by the Company and
15 other industry guidelines.

16 **Q6. PLEASE SUMMARIZE THE INFORMATION AND MATERIALS YOU**
17 **RELIED ON TO SUPPORT THE OPINIONS AND CONCLUSIONS**
18 **CONTAINED IN YOUR TESTIMONY.**

19 A6. To prepare my testimony, I used information from a variety of sources that would
20 normally be relied upon by a person in my capacity. In connection with the
21 present filing, I considered and relied upon corporate disclosures, publicly
22 available financial reports and filings, and other published information relating to
23 Black Hills Power. I also reviewed information relating generally to capital
24 market conditions and specifically to investor perceptions, requirements, and

1 expectations for utilities. These sources, coupled with my experience in the fields
2 of finance and utility regulation, have given me a working knowledge of the
3 issues relevant to investors' required return for Black Hills Power, and they form
4 the basis of my analyses and conclusions.

5 **Q7. HOW IS YOUR TESTIMONY ORGANIZED?**

6 A7. After first summarizing my conclusions and recommendations, I briefly reviewed
7 the operations and finances of Black Hills Power. I then examined current
8 conditions in the capital markets and their implications in evaluating a fair ROE
9 for Black Hills Power. With this as a background, I conducted well-accepted
10 quantitative analyses to estimate the current cost of equity for a reference group of
11 comparable-risk electric utilities. These included the discounted cash flow
12 ("DCF") model, the empirical form of Capital Asset Pricing Model ("ECAPM"),
13 and an equity risk premium approach based on allowed ROEs for electric utilities,
14 which are all methods that are commonly relied on in regulatory proceedings.
15 Based on the cost of equity estimates indicated by my analyses, a fair ROE for
16 Black Hills Power's electric utility operations was evaluated taking into account
17 the Company's specific risks and requirements for financial strength that provides
18 benefits to customers, as well as flotation costs, which are properly considered in
19 setting a fair rate of return on equity.

20 Finally, I tested my recommended ROE for Black Hills Power based on
21 the results of alternative ROE benchmarks, including reference to applications of
22 the traditional Capital Asset Pricing Model ("CAPM") and expected rates of
23 return for electric utilities. Further, I corroborated my utility quantitative analyses
24 by applying the DCF model to a group of extremely low risk non-utility firms.

1 **Q8. WHAT IS THE ROLE OF THE ROE IN SETTING UTILITY RATES?**

2 A8. The ROE compensates common equity investors for the use of their capital to
3 finance the plant and equipment necessary to provide utility service. Investors
4 commit capital only if they expect to earn a return on their investment
5 commensurate with returns available from alternative investments with
6 comparable risks. To be consistent with sound regulatory economics and the
7 standards set forth by the Supreme Court in the Bluefield¹ and Hope² cases, a
8 utility's allowed ROE should be sufficient to: (1) fairly compensate investors for
9 capital invested in the utility, (2) enable the utility to offer a return adequate to
10 attract new capital on reasonable terms, and (3) maintain the utility's financial
11 integrity.

II. RETURN ON EQUITY FOR BLACK HILLS POWER

12 **Q9. WHAT IS THE PURPOSE OF THIS SECTION?**

13 A9. This section presents my conclusions regarding the fair ROE applicable to Black
14 Hills Power's electric utility operations. This section also discusses the
15 relationship between ROE and preservation of a utility's financial integrity and
16 the ability to attract capital.

17 **Q10. WHAT ROLE DOES THE SDPUC PLAY IN SAVING CUSTOMERS
18 MONEY THROUGH SUPPORTING INVESTOR CONFIDENCE?**

19 A10. Regulatory signals are a major driver of investors' risk assessment for utilities.
20 Security analysts study commission orders and regulatory policy statements to
21 advise investors where to put their money. If the Commission's actions instill
22 confidence that the regulatory environment is supportive, investors make capital

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

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

1 available to South Dakota's utilities on more reasonable terms. When investors
2 are confident that a utility has reasonable and balanced regulation, they will make
3 funds available even in times of turmoil in the financial markets. When Black
4 Hills Power can negotiate from a position of financial strength it will get a better
5 deal for its customers.

6 **Q11. WHAT IS YOUR CONCLUSION REGARDING THE 10.25% ROE**
7 **REQUESTED BY BLACK HILLS POWER FOR ITS ELECTRIC**
8 **UTILITY OPERATIONS?**

9 A11. Based on my evaluation of the adjusted cost of equity ranges and estimates
10 presented on page 1 of Exhibit WEA-2, I conclude that the 10.25% ROE
11 requested by the Company is fair and reasonable, and should be approved.

12 Black Hills Power's relatively weaker credit standing and small size imply
13 a level of investment risk and required return that exceeds that of the proxy group
14 used to estimate the cost of equity. As discussed in the testimony of Mr. Brian
15 Iverson, however, Black Hills Power is requesting an ROE of 10.25% in this case.
16 Because the Company's requested ROE falls below the midpoint of my
17 recommended range, it represents a reasonable compromise between balancing
18 the impact on customers and the need to provide Black Hills Power with a return
19 that is adequate to compensate investors, maintain financial integrity, and attract
20 capital.

21 **Q12. PLEASE SUMMARIZE THE RESULTS OF THE QUANTITATIVE**
22 **ANALYSES ON WHICH YOUR CONCLUSIONS WERE BASED.**

23 A12. The cost of common equity estimates produced by the DCF, ECAPM, and risk
24 premium analyses described subsequently are presented on page 1 of Exhibit
25 WEA-2. My evaluation of these results indicates that the 10.25% ROE requested
26 for Black Hills Power's electric utility operations represents a reasonable estimate

1 of investors' required rate of return. The bases for my conclusion are summarized
2 below:

- 3 • In order to reflect the risks and prospects associated with Black Hills
4 Power's jurisdictional utility operations, my analyses focused on a proxy
5 group of 27 other utilities with comparable investment risks;
- 6 • Based on my evaluation of the strengths and weaknesses of the DCF,
7 ECAPM, and risk premium methods, I concluded that a fair ROE for the
8 proxy group of utilities is in the 9.82% to 11.22% range:
 - 9 ▪ In evaluating the results of the DCF model, I considered the
10 relative merits of the alternative growth rates, giving little
11 weight to the internal, "br+sv" growth measures;
 - 12 ▪ The forward-looking ECAPM estimates suggested an ROE in
13 the range of 10.8% to 11.8%;
 - 14 ▪ The utility risk premium approach implies an ROE estimate on
15 the order of 10.3% to 11.2%;
 - 16 ▪ Taken together, and giving little weight to extremes at the high
17 and low ends of the range, these results indicated that the "bare
18 bones cost of equity," that is, the cost of equity before flotation
19 costs, falls within a range of 9.7% to 11.1%;
 - 20 ▪ Adding a flotation cost adjustment of 14 basis points to this
21 bare bones cost of equity range resulted in an ROE range for
22 the proxy group of 9.84% to 11.24%.
- 23 • These results indicate that the 10.25% ROE requested by Black Hills
24 Power is reasonable and should be approved:
 - 25 ▪ An ROE of 10.25% falls below the 10.54% midpoint of the
26 proxy group range;
 - 27 ▪ An ROE from above the midpoint of the range is supported by
28 the fact that current bond yields are anomalous, and result in
29 DCF values that are understated;
 - 30 ▪ Widespread expectations for higher interest rates emphasize
31 the implication of considering the impact of projected bond

1 yields in evaluating the results of the ECAPM and risk
2 premium methods;

3 ▪ Apart from the expected upward trend in capital costs, a cost of
4 equity of 10.25% is consistent with the need to support
5 financial integrity and fund capital investment even under
6 adverse circumstances.

7 **Q13. DOES AN ROE OF 10.25% REPRESENT A REASONABLE COST FOR**
8 **BLACK HILLS POWER'S CUSTOMERS TO PAY?**

9 A13. Yes. Investors have many options vying for their money. They make investment
10 capital available to Black Hills Power only if the expected returns justify the risk.
11 Customers will enjoy reliable and efficient service so long as investors are willing
12 to make the capital investments necessary to maintain and improve Black Hills
13 Power's utility system. Providing an adequate return to investors is a necessary
14 cost to ensure that capital is available to Black Hills Power now and in the future.
15 If regulatory decisions increase risk or limit returns to levels that are insufficient
16 to justify the risk, investors will look elsewhere to invest capital.

17 Apart from the results of the quantitative methods described above, it is
18 crucial to recognize the importance of maintaining a strong financial position so
19 that Black Hills Power remains prepared to respond to unforeseen events that may
20 materialize in the future. While this imperative is reinforced by current capital
21 market conditions, it extends well beyond the financial markets and includes the
22 Company's ability to absorb potential shocks associated with unexpected events.
23 Recent challenges in the capital markets and ongoing economic uncertainties
24 highlight the benefits of bolstering Black Hills Power's financial standing to
25 ensure that the Company can attract the capital needed to secure reliable service at
26 a lower cost for customers. Changing course from the path of financial strength
27 would be extremely shortsighted, especially considering that a combination of

1 events could adversely impact Black Hills Power's ability to serve customers if its
2 current financial strength were not maintained.

3 **Q14. WHAT DID THE RESULTS OF ALTERNATIVE ROE BENCHMARKS**
4 **INDICATE WITH RESPECT TO YOUR EVALUATION?**

5 A14. The results of alternative ROE benchmarks, which are presented on page 2 of
6 Exhibit WEA-2, confirm the conclusion that the 10.25% ROE requested for Black
7 Hills Power is reasonable:

- 8 • Applying the traditional CAPM approach implied a current cost of equity
9 on the order of 10.3% to 11.3%;
- 10 • Expected returns for electric utilities suggested an ROE range of 9.7% to
11 10.5%, excluding any adjustment for flotation costs;
- 12 • DCF estimates for an extremely low-risk group of non-utility firms
13 resulted in an ROE range of 11.1% to 11.6%.

14 These tests of reasonableness confirm that a 10.25% ROE falls in the
15 lower end of the reasonable range to maintain Black Hills Power's financial
16 integrity, provides a return commensurate with investments of comparable risk,
17 and supports the Company's ability to attract capital.

III. FUNDAMENTAL ANALYSES

18 **Q15. WHAT IS THE PURPOSE OF THIS SECTION?**

19 A15. As a predicate to subsequent quantitative analyses, this section briefly reviews the
20 operations and finances of Black Hills Power. In addition, it examines conditions
21 in the capital markets and the general economy. An understanding of the
22 fundamental factors driving the risks and prospects of utilities is essential in
23 developing an informed opinion of investors' expectations and requirements that
24 are the basis of a fair ROE.

A. Black Hills Power

1 **Q16. BRIEFLY DESCRIBE BLACK HILLS POWER.**

2 A16. Black Hills Power is primarily engaged in the generation, transmission, and
3 distribution of electric power to approximately 68,000 customers within a 9,300
4 square mile area in western South Dakota, northeastern Wyoming, and Southern
5 Montana. During 2013, Black Hills Power's energy deliveries totaled
6 approximately 3.2 million megawatt hours ("mWh"). The Company's revenue
7 mix was comprised of 28% residential, 35% commercial, and 12% industrial sales
8 revenue, with 10% from contract wholesale, 13% wholesale off-system, and 2%
9 municipal. As of December 31, 2013, Black Hills Power had total assets of
10 approximately \$901.2 million, with operating revenues for the most recent fiscal
11 year totaling approximately \$254.0 million.

12 As of October 1, 2014, Black Hills Power's generating units, located in
13 South Dakota and Wyoming, will provide total generating capacity of
14 approximately 445 megawatts ("MW"), with coal-fired capacity accounting for
15 approximately 49 percent of company-owned facilities and natural gas and oil-
16 fired plants making up 51 percent.

17 Black Hills Power's transmission and distribution facilities consist of
18 approximately 1,090 miles of high voltage lines and 2,550 miles of lower voltage
19 lines. In addition, Black Hills Power is 35% owner of an AC-DC-AC
20 transmission tie that provides an interconnection between the Western and Eastern
21 transmission grids with a total transfer capacity of 400 MW. In connection with
22 certain wholesale sales, Black Hills Power also has firm transmission access to
23 deliver power on specific segments of PacifiCorp's transmission system. The
24 Company's retail electric operations are subject to the jurisdiction of the SDPUC,

1 the Montana Public Service Commission, and the Wyoming Public Service
2 Commission.

3 **Q17. WHERE DOES BLACK HILLS POWER OBTAIN THE CAPITAL USED**
4 **TO FINANCE ITS INVESTMENT IN UTILITY PLANT?**

5 A17. As a wholly-owned subsidiary of Black Hills Corporation (“BHC”), the Company
6 obtains common equity capital solely from its parent, whose common stock is
7 publicly traded on the New York Stock Exchange. In addition to common equity,
8 Black Hills Power has access to long-term debt financing by issuing bonds in its
9 own name, or through debt capital allocated to the Company from BHC.

10 **Q18. WHAT CREDIT RATINGS HAVE BEEN ASSIGNED TO BLACK HILLS**
11 **POWER?**

12 A18. Black Hills Power has been assigned a corporate credit rating of “BBB” by
13 Standard & Poor’s Corporation (“S&P”), an issuer credit rating of “A3” by
14 Moody’s Investor Services, Inc. (“Moody’s”), and an issuer default rating of
15 “BBB” by Fitch Ratings Ltd. (“Fitch”).³

16 **Q19. DOES THE COMPANY ANTICIPATE THE NEED FOR ADDITIONAL**
17 **CAPITAL GOING FORWARD?**

18 A19. Yes. Black Hills Power will require capital investment to provide for necessary
19 maintenance and replacements of its utility infrastructure, as well as to fund new
20 investment in electric generation, transmission and distribution facilities. Support
21 for the Company’s financial integrity and flexibility will be instrumental in
22 attracting the capital required to meet these fund needs in an effective manner.

³ These corporate and/or issuer ratings are distinct from the senior secured debt ratings reported in Mr. Iverson’s testimony (p. 5), and reflect the overall risk profile of the firm as a whole rather than the specific risks of a particular debt issue.

B. Outlook for Capital Costs

1 **Q20. DO CURRENT CAPITAL MARKET CONDITIONS PROVIDE A**
2 **REPRESENTATIVE BASIS ON WHICH TO EVALUATE A FAIR ROE?**

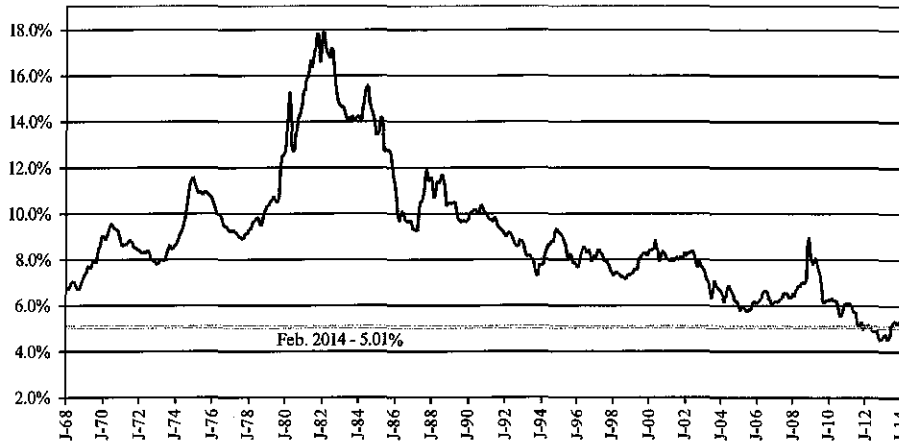
3 A20. No. Current capital market conditions reflect the legacy of the Great Recession,
4 and are not representative of what investors expect in the future. Investors have
5 had to contend with a level of economic uncertainty and capital market volatility
6 that has been unprecedented in recent history. The ongoing potential for renewed
7 turmoil in the capital markets has been seen repeatedly, with common stock prices
8 exhibiting the dramatic volatility that is indicative of heightened sensitivity to
9 risk. In response to heightened uncertainties in recent years, investors have
10 repeatedly sought a safe haven in U.S. government bonds. As a result of this
11 “flight to safety,” Treasury bond yields have been pushed significantly lower in
12 the face of political, economic, and capital market risks. In addition, the Federal
13 Reserve has implemented measures designed to push interest rates to historically
14 low levels in an effort to stimulate the economy and bolster employment and
15 investor confidence in the face of heightened economic risk.

16 **Q21. HOW DO CURRENT YIELDS ON PUBLIC UTILITY BONDS COMPARE**
17 **WITH WHAT INVESTORS HAVE EXPERIENCED IN THE PAST?**

18 A21. Despite recent increases, the yields on utility bonds remain near their lowest
19 levels in modern history. Figure WEA-1, below, compares the February 2014
20 average yield on long-term, triple-B rated utility bonds with those prevailing since
21 1968:

1
2

FIGURE WEA-1
BBB UTILITY BOND YIELDS – CURRENT VS. HISTORICAL



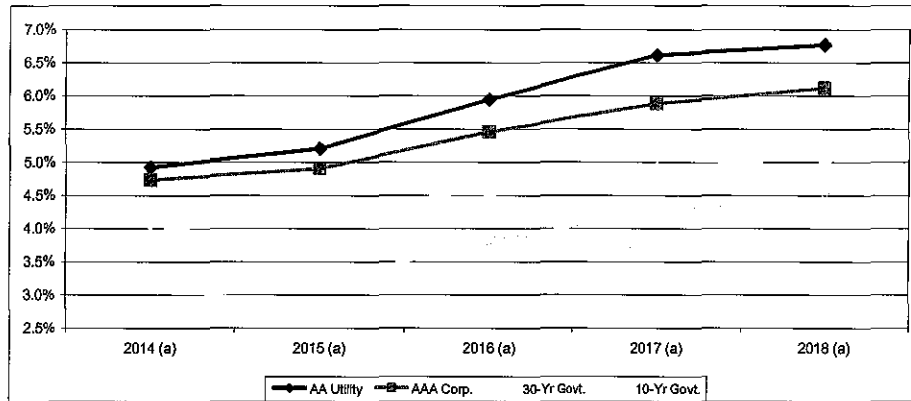
3 As illustrated above, prevailing capital market conditions, as reflected in the
4 yields on triple-B utility bonds, are an anomaly when compared with historical
5 experience.

6 **Q22. ARE THESE VERY LOW INTEREST RATES EXPECTED TO**
7 **CONTINUE?**

8 A22. No. Investors do not anticipate that these low interest rates will continue into the
9 future. It is widely anticipated that as the economy stabilizes and resumes a more
10 robust pattern of growth, long-term capital costs will increase significantly from
11 present levels. Figure WEA-2 below compares current interest rates on 30-year
12 Treasury bonds, triple-A rated corporate bonds, and double-A rated utility bonds
13 with near-term projections from the Value Line Investment Survey (“Value
14 Line”), IHS Global Insight, Blue Chip Financial Forecasts (“Blue Chip”), and the
15 Energy Information Administration (“EIA”):

1
2

FIGURE WEA-2 INTEREST RATE TRENDS



(a) Value Line Investment Survey, Forecast for the U.S. Economy (Feb. 21, 2014)
IHS Global Insight, U.S. Economic Outlook at 25 (Nov. 2013)
Energy Information Administration, Annual Energy Outlook 2014, Early Release (Dec. 16, 2013)
Blue Chip Financial Forecasts, Vol. 32, No. 12 (Dec. 1, 2013)

3 These forecasting services are highly regarded and widely referenced, with
4 the Federal Energy Regulatory Commission (“FERC”) incorporating forecasts
5 from IHS Global Insight and the EIA in its preferred DCF model for natural gas
6 pipelines. As evidenced above, there is a clear consensus in the investment
7 community that the cost of long-term capital will be significantly higher over
8 2014-2018 than it is currently.

9 **Q23. DO RECENT ACTIONS OF THE FEDERAL RESERVE SUPPORT THE**
10 **CONTENTION THAT CURRENT LOW INTEREST RATES WILL**
11 **CONTINUE INDEFINITELY?**

12 **A23.** No. While the Federal Reserve continues to express support for maintaining
13 highly accommodative monetary policy and an exceptionally low target range for
14 the federal funds rate, it has also acted to steadily pare back its \$85 billion-a-

1 month bond-buying program.⁴ The Federal Reserve's decision to begin tapering
2 its asset purchases was based on improving conditions for employment and the
3 economy. Reductions in the Federal Reserve's bond buying program should ease
4 downward pressure on long-term interest rates, with The Wall Street Journal
5 observing that:

6 The Fed's decision to begin trimming its \$85 billion monthly
7 bond-buying program is widely expected to result in higher
8 medium-term and long-term market interest rates. That means
9 many borrowers, from home buyers to businesses, will be paying
10 higher rates in the near future.⁵

11 While the Federal Reserve's tapering announcements have moderated
12 uncertainties over just when, and to what degree, the stimulus program would be
13 altered, investors continue to face ongoing uncertainties over future moves. The
14 International Monetary Fund noted that, "A lack of Fed clarity could cause a
15 major spike in borrowing costs that could cause severe damage to the U.S.
16 recovery and send destructive shockwaves around the global economy," adding
17 that, "A smooth and gradual upward shift in the yield curve might be difficult to
18 engineer, and there could be periods of higher volatility when longer yields jump
19 sharply—as recent events suggest."⁶ Similarly, the Wall Street Journal noted
20 investors' "hypersensitivity to Fed interest rate decisions," and expectations that
21 higher interest rates "may come a bit sooner and be a touch more aggressive than
22 expected."⁷

⁴ *Press Release*, Board of Governors of the Federal Reserve System (Dec. 18, 2013, Jan. 29, 2014, Mar. 19, 2014).

⁵ Hilsenrath, Jon, "Fed Dials Back Bond Buying, Keeps a Wary Eye on Growth," *The Wall Street Journal* at A1 (Dec. 19, 2013).

⁶ Talley, Ian, "IMF Urges 'Improved' U.S. Fed Policy Transparency as It Mulls Easy Money Exit," *The Wall Street Journal* (July 26, 2013).

⁷ Jon Hilsenrath and Victoria McGrane, "Yellen Debut Rattles Markets," *Wall Street Journal* (Mar. 19, 2014).

1 These developments highlight concerns for investors and support
2 expectations for higher interest rates as the economy and labor markets continue
3 to recover. With the Federal Reserve continuing to evaluate additional tapering of
4 its bond-buying program, ongoing concerns over political stalemate in
5 Washington, and continued economic weakness in the Eurozone, and political and
6 economic unrest in Ukraine and emerging markets, the potential for significant
7 volatility and higher capital costs is clearly evident to investors. To address the
8 reality of current capital markets, it is imperative that the SDPUC consider near-
9 term forecasts for public utility bond yields when evaluating the reasonableness of
10 cost of equity estimates and a fair ROE for Black Hills Power.

11 **Q24. WHAT DO THESE EVENTS IMPLY WITH RESPECT TO THE ROE**
12 **FOR BLACK HILLS POWER MORE GENERALLY?**

13 A24. Current capital market conditions continue to reflect the impact of unprecedented
14 policy measures taken in response to recent dislocations in the economy and
15 financial markets and ongoing economic and political risks. As a result, current
16 capital costs are not representative of what is likely to prevail over the near-term
17 future. This conclusion is supported by comparisons of current conditions to the
18 historical record and independent forecasts. As demonstrated earlier, recognized
19 economic forecasting services project that long-term capital costs will increase
20 from present levels. To address the reality of current capital markets, my
21 testimony expressly considers near-term forecasts for public utility bond yields in
22 assessing the reasonableness of individual cost of equity estimates and in
23 evaluating a fair ROE for Black Hills Power from within the range of
24 reasonableness. As discussed below, this result is supported by economic studies
25 that show that equity risk premiums are higher when interest rates are at very low
26 levels.

IV. COMPARABLE RISK PROXY GROUP

1 **Q25. HOW DID YOU IMPLEMENT QUANTITATIVE METHODS TO**
2 **ESTIMATE THE COST OF COMMON EQUITY FOR BLACK HILLS**
3 **POWER?**

4 A25. Application of quantitative methods to estimate the cost of common equity
5 requires observable capital market data, such as stock prices. Moreover, even for
6 a firm with publicly traded stock, the cost of common equity can only be
7 estimated. As a result, applying quantitative models using observable market data
8 only produces an estimate that inherently includes some degree of observation
9 error. Thus, the accepted approach to increase confidence in the results is to apply
10 quantitative methods such as the DCF and ECAPM to a proxy group of publicly
11 traded companies that investors regard as risk-comparable.

12 **Q26. WHAT SPECIFIC PROXY GROUP OF UTILITIES DID YOU RELY ON**
13 **FOR YOUR ANALYSIS?**

14 A26. In order to reflect the risks and prospects associated with Black Hills Power's
15 jurisdictional electric utility operations, my analyses focused on a reference group
16 of other utilities composed of those companies included in Value Line's electric
17 utility industry groups with:

- 18 1. Corporate credit ratings from Standard & Poor's Corporation ("S&P")
19 of "BBB-", "BBB", or "BBB+";
- 20 2. Value Line Safety Rank of "2" or "3",
- 21 3. No involvement in a major merger or acquisition; and,
- 22 4. No recent cuts in dividend payments.

23 These criteria resulted in a proxy group composed of 27 companies, which I refer
24 to as the "Electric Group."

1 **Q27. HOW DID YOU EVALUATE THE RISKS OF THE ELECTRIC GROUP**
2 **RELATIVE TO BLACK HILLS POWER?**

3 A27. My evaluation of relative risk considered four objective, published benchmarks
4 that are widely relied on in the investment community. Credit ratings are assigned
5 by independent rating agencies for the purpose of providing investors with a
6 broad assessment of the creditworthiness of a firm. Ratings generally extend
7 from triple-A (the highest) to D (in default). Other symbols (*e.g.*, "+" or "-") are
8 used to show relative standing within a category. Because the rating agencies'
9 evaluation includes virtually all of the factors normally considered important in
10 assessing a firm's relative credit standing, corporate credit ratings provide a
11 broad, objective measure of overall investment risk that is readily available to
12 investors. Widely cited in the investment community and referenced by investors,
13 credit ratings are also frequently used as a primary risk indicator in establishing
14 proxy groups to estimate the cost of common equity.

15 While credit ratings provide the most widely referenced benchmark for
16 investment risks, other quality rankings published by investment advisory services
17 also provide relative assessments of risks that are considered by investors in
18 forming their expectations for common stocks. Value Line's primary risk
19 indicator is its Safety Rank, which ranges from "1" (Safest) to "5" (Riskiest).
20 This overall risk measure is intended to capture the total risk of a stock, and
21 incorporates elements of stock price stability and financial strength. Given that
22 Value Line is perhaps the most widely available source of investment advisory
23 information, its Safety Rank provides useful guidance regarding the risk
24 perceptions of investors.

25 The Financial Strength Rating is designed as a guide to overall financial
26 strength and creditworthiness, with the key inputs including financial leverage,

1 business volatility measures, and company size. Value Line's Financial Strength
2 Ratings range from "A++" (strongest) down to "C" (weakest) in nine steps.
3 These objective, published indicators incorporate consideration of a broad
4 spectrum of risks, including financial and business position, relative size, and
5 exposure to firm-specific factors.

6 Finally, beta measures a utility's stock price volatility relative to the
7 market as a whole, and reflects the tendency of a stock's price to follow changes
8 in the market. A stock that tends to respond less to market movements has a beta
9 less than 1.00, while stocks that tend to move more than the market have betas
10 greater than 1.00. Beta is the only relevant measure of investment risk under
11 modern capital market theory, and is widely cited in academics and in the
12 investment industry as a guide to investors' risk perceptions. Moreover, in my
13 experience Value Line is the most widely referenced source for beta in regulatory
14 proceedings. As noted in *New Regulatory Finance*:

15 Value Line is the largest and most widely circulated independent
16 investment advisory service, and influences the expectations of a
17 large number of institutional and individual investors. ... Value
18 Line betas are computed on a theoretically sound basis using a
19 broadly based market index, and they are adjusted for the
20 regression tendency of betas to converge to 1.00.⁸

21 **Q28. HOW DO THE OVERALL RISKS OF YOUR PROXY GROUP**
22 **COMPARE TO BLACK HILLS POWER?**

23 A28. Table WEA-1 compares the Electric Group with Black Hills Power across the
24 four key indicia of investment risk discussed above. Because Black Hills Power
25 has no publicly traded common stock, the Value Line risk measures shown reflect
26 those published for its parent, BHC:

⁸ Morin, Roger A., "New Regulatory Finance," *Public Utilities Reports* at 71 (2006).

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

	S&P Credit Rating	Value Line		
		Safety Rank	Financial Strength	Beta
Electric Group	BBB	2	B++	0.76
Black Hills Power	BBB	3	B+	0.90

3 **Q29. WHAT DOES THIS COMPARISON INDICATE REGARDING**
4 **INVESTORS' ASSESSMENT OF THE RELATIVE RISKS ASSOCIATED**
5 **WITH YOUR ELECTRIC GROUP?**

6 A29. As shown above, the "BBB" rating corresponding to the Company is identical to
7 the average corporate credit rating for the Electric Group. Meanwhile, the
8 average Value Line Financial Strength Rating, Safety Rank, and beta associated
9 with Black Hills Power all suggests more risk than for the Electric Group.
10 Considered together, this comparison of objective measures, which incorporate a
11 broad spectrum of risks, including financial and business position, relative size,
12 and exposure to company specific factors, indicates that investors would likely
13 conclude that the overall investment risks for Black Hills Power are somewhat
14 greater than those of the firms in the Electric Group.

15 **Q30. IS AN EVALUATION OF THE CAPITAL STRUCTURE MAINTAINED**
16 **BY A UTILITY RELEVANT IN ASSESSING ITS RETURN ON EQUITY?**

17 A30. Yes. Other things equal, a higher debt ratio, or lower common equity ratio,
18 translates into increased financial risk for all investors. A greater amount of debt
19 means more investors have a senior claim on available cash flow, thereby
20 reducing the certainty that each will receive his contractual payments. This
21 increases the risks to which lenders are exposed, and they require correspondingly
22 higher rates of interest. From common shareholders' standpoint, a higher debt

1 ratio means that there are proportionately more investors ahead of them, thereby
2 increasing the uncertainty as to the amount of cash flow, if any, that will remain.

3 **Q31. WHAT COMMON EQUITY RATIO IS USED IN BLACK HILLS**
4 **POWER'S CAPITAL STRUCTURE?**

5 A31. As summarized in the testimony of Mr. Brian Iverson, Black Hills Power is
6 proposing a common equity ratio of 53.32%.

7 **Q32. HOW DOES THIS COMPARE TO THE AVERAGE CAPITALIZATION**
8 **MAINTAINED BY THE ELECTRIC GROUP?**

9 A32. As shown on Exhibit WEA-3, common equity ratios for the individual firms in
10 the Electric Group ranged from a low of 31.3% to a high of 70.2% at year-end
11 2013, and averaged 49.4%. Meanwhile, Value Line's three-to-five year forecast
12 indicates an average common equity ratio of 49.0% for the Electric Group, with
13 the individual equity ratios ranging from 38.0% to 58.0%.

14 **Q33. WHAT OTHER FACTORS DO INVESTORS CONSIDER IN THEIR**
15 **ASSESSMENT OF A COMPANY'S CAPITAL STRUCTURE?**

16 A33. Utilities are facing significant capital investment plans, uncertainties over
17 accommodating future environmental mandates, and ongoing regulatory risks.
18 Coupled with the potential for turmoil in capital markets, these considerations
19 warrant a stronger balance sheet to deal with an increasingly uncertain
20 environment. A more conservative financial profile, in the form of a higher
21 common equity ratio, is consistent with increasing uncertainties and the need to
22 maintain the continuous access to capital that is required to fund operations and
23 necessary system investment, even during times of adverse capital market
24 conditions. In addition, depending on their specific attributes, contractual
25 agreements or other obligations that require the utility to make specified payments
26 may be treated as debt in evaluating the Company's financial risk.

1 **Q34. WHAT DOES THIS EVIDENCE SUGGEST WITH RESPECT TO THE**
2 **COMPANY'S PROPOSED CAPITAL STRUCTURE?**

3 A34. Based on my evaluation, I concluded that Black Hills Power's requested capital
4 structure falls within the range for the proxy group and represents a reasonable
5 mix of capital sources from which to calculate the Company's overall rate of
6 return. While industry averages provide one benchmark for comparison, each
7 firm must select its capitalization based on the risks and prospects it faces, as well
8 its specific needs to access the capital markets. A public utility with an obligation
9 to serve must maintain ready access to capital so that it can meet the service
10 requirements of its customers. The need for access becomes even more important
11 when the company has large capital requirements over a period of years, and
12 financing must be continuously available, even during unfavorable capital market
13 conditions.

14 Black Hills Power's proposed capital structure is consistent with the range
15 of industry benchmarks and reflects the Company's ongoing efforts to strengthen
16 its credit standing and support access to capital on reasonable terms. The
17 reasonableness of Black Hills Power's requested capital structure is reinforced by
18 the ongoing uncertainties associated with the utility industry, the need to
19 accommodate the additional risks associated the Company's relatively small size,
20 and the importance of supporting continued investment in system improvements,
21 even during times of adverse industry or market conditions.

V. CAPITAL MARKET ESTIMATES

22 **Q35. WHAT IS THE PURPOSE OF THIS SECTION?**

23 A35. This section presents capital market estimates of the cost of equity. First, I
24 address the concept of the cost of common equity, along with the risk-return

1 tradeoff principle fundamental to capital markets. Next, I describe DCF, ECAPM,
2 and risk premium analyses conducted to estimate the cost of common equity for
3 the proxy group of comparable risk firms. Finally, I examine flotation costs,
4 which are properly considered in evaluating a fair ROE.

A. Economic Standards

5 **Q36. WHAT ROLE DOES THE ROE PLAY IN A UTILITY'S RATES?**

6 A36. The ROE is the cost of inducing and retaining common equity investment in the
7 utility's physical plant and assets. This investment is necessary to finance the
8 asset base needed to provide utility service. Competition for investor funds is
9 intense and investors are free to invest their funds wherever they choose.
10 Investors will commit money to a particular investment only if they expect it to
11 produce a return commensurate with those from other investments with
12 comparable risks.

13 **Q37. WHAT FUNDAMENTAL ECONOMIC PRINCIPLE UNDERLIES THE**
14 **COST OF EQUITY CONCEPT?**

15 A37. The fundamental economic principle underlying the cost of equity concept is the
16 notion that investors are risk averse. In capital markets where relatively risk-free
17 assets are available (*e.g.*, U.S. Treasury securities), investors can be induced to
18 hold riskier assets only if they are offered a premium, or additional return, above
19 the rate of return on a risk-free asset. Because all assets compete with each other
20 for investor funds, riskier assets must yield a higher expected rate of return than
21 safer assets to induce investors to invest and hold them.

22 Given this risk-return tradeoff, the required rate of return (k) from an asset
23 (i) can 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:
5 (1) the yield on risk-free assets, and (2) the asset's relative risk, with investors
6 demanding correspondingly larger risk premiums for bearing greater risk.

7 **Q38. IS THERE EVIDENCE THAT THE RISK-RETURN TRADEOFF**
8 **PRINCIPLE ACTUALLY OPERATES IN THE CAPITAL MARKETS?**

9 A38. Yes. The risk-return tradeoff can be readily documented in segments of the
10 capital markets where required rates of return can be directly inferred from market
11 data and where generally accepted measures of risk exist. Bond yields, for
12 example, reflect investors' expected rates of return, and bond ratings measure the
13 risk of individual bond issues. Comparing the observed yields on government
14 securities, which are considered free of default risk, to the yields on bonds of
15 various rating categories demonstrates that the risk-return tradeoff does, in fact,
16 exist.

17 **Q39. DOES THE RISK-RETURN TRADEOFF OBSERVED WITH FIXED**
18 **INCOME SECURITIES EXTEND TO COMMON STOCKS AND OTHER**
19 **ASSETS?**

20 A39. Yes. It is widely accepted that the risk-return tradeoff evidenced with long-term
21 debt extends to all assets. Documenting the risk-return tradeoff for assets other
22 than fixed income securities, however, is complicated by two factors. First, there
23 is no standard measure of risk applicable to all assets. Second, for most assets –
24 including common stock – required rates of return cannot be directly observed.
25 Yet there is every reason to believe that investors exhibit risk aversion in deciding

1 whether or not to hold common stocks and other assets, just as when choosing
2 among fixed-income securities.

3 **Q40. IS THIS RISK-RETURN TRADEOFF LIMITED TO DIFFERENCES**
4 **BETWEEN FIRMS?**

5 A40. No. The risk-return tradeoff principle applies not only to investments in different
6 firms, but also to different securities issued by the same firm. The securities
7 issued by a utility vary considerably in risk because they have different
8 characteristics and priorities. Long-term debt is senior among all capital in its
9 claim on a utility's net revenues and is, therefore, the least risky. The last
10 investors in line are common shareholders. They receive only the net revenues, if
11 any, remaining after all other claimants have been paid. As a result, the rate of
12 return that investors require from a utility's common stock, the most junior and
13 riskiest of its securities, must be considerably higher than the yield offered by the
14 utility's senior, long-term debt.

15 **Q41. DOES THE FACT THAT BLACK HILLS POWER IS A SUBSIDIARY OF**
16 **BHC IN ANY WAY ALTER THESE FUNDAMENTAL STANDARDS**
17 **UNDERLYING A FAIR ROE?**

18 A41. No. While Black Hills Power has no publicly traded common stock and BHC is
19 its only shareholder, this does not change the standards governing the
20 determination of a fair ROE for the Company. Ultimately, the common equity
21 that is required to support Black Hills Power's utility operations must be raised in
22 the capital markets, where investors consider the Company's ability to offer a rate
23 of return that is competitive with other risk-comparable alternatives. As noted
24 above, Black Hills Power must compete with other investment opportunities and
25 unless there is a reasonable expectation that the Company can earn a return that is
26 commensurate with its underlying risks, capital will be allocated elsewhere, Black

1 Hills Power's financial integrity will be weakened, and investors will demand an
2 even higher rate of return. The Company's ability to offer a reasonable return on
3 investment is a necessary ingredient in ensuring that customers continue to enjoy
4 economical rates and reliable service.

5 **Q42. WHAT DOES THE ABOVE DISCUSSION IMPLY WITH RESPECT TO**
6 **ESTIMATING THE COST OF COMMON EQUITY FOR A UTILITY?**

7 A42. Although the cost of common equity cannot be observed directly, it is a function
8 of the returns available from other investment alternatives and the risks to which
9 the equity capital is exposed. Because it is not readily observable, the cost of
10 common equity for a particular utility must be estimated by analyzing information
11 about capital market conditions generally, assessing the relative risks of the
12 company specifically, and employing various quantitative methods that focus on
13 investors' required rates of return. These various quantitative methods typically
14 attempt to infer investors' required rates of return from stock prices, interest rates,
15 or other capital market data.

B. Discounted Cash Flow Analyses

16 **Q43. HOW IS THE DCF MODEL USED TO ESTIMATE THE COST OF**
17 **COMMON EQUITY?**

18 A43. DCF models attempt to replicate the market valuation process that sets the price
19 investors are willing to pay for a share of a company's stock. The model rests on
20 the assumption that investors evaluate the risks and expected rates of return from
21 all securities in the capital markets. Given these expectations, the price of each
22 stock is adjusted by the market until investors are adequately compensated for the
23 risks they bear. Therefore, we can look to the market to determine what investors
24 believe a share of common stock is worth. By estimating the cash flows investors

1 expect to receive from the stock in the way of future dividends and capital gains,
2 we can calculate their required rate of return. In other words, the cash flows that
3 investors expect from a stock are estimated, and given its current market price, we
4 can “back-into” the discount rate, or cost of common equity, that investors
5 implicitly used in bidding the stock to that price. The formula for the general
6 form of the DCF model is as follows:

$$7 \quad P_0 = \frac{D_1}{(1+k_e)^1} + \frac{D_2}{(1+k_e)^2} + \dots + \frac{D_t}{(1+k_e)^t} + \frac{P_t}{(1+k_e)^t}$$

8 where: P_0 = Current price per share;
9 P_t = Expected future price per share in period t;
10 D_t = Expected dividend per share in period t;
11 k_e = Cost of common equity.

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

15 **Q44. WHAT FORM OF THE DCF MODEL IS CUSTOMARILY USED TO**
16 **ESTIMATE THE COST OF COMMON EQUITY IN RATE CASES?**

17 **A44.** Rather than developing annual estimates of cash flows into perpetuity, the DCF
18 model can be simplified to a “constant growth” form:⁹

$$19 \quad P_0 = \frac{D_1}{k_e - g}$$

⁹ 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. Nevertheless, the DCF method provides a workable and practical approach to estimate investors’ required return that is widely referenced in utility ratemaking.

1 where: g = Investors' long-term growth expectations.

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

$$4 \qquad k_e = \frac{D_1}{P_0} + g$$

5 This constant growth form of the DCF model recognizes that the rate of return to
6 stockholders consists of two parts: 1) dividend yield (D_1/P_0); and, 2) growth (g).
7 In other words, investors expect to receive a portion of their total return in the
8 form of current dividends and the remainder through the capital gains associated
9 with price appreciation over the investors' holding period.

10 **Q45. WHAT FORM OF THE DCF MODEL DID YOU USE?**

11 A45. I applied the constant growth DCF model to estimate the cost of common equity
12 for Black Hills Power, which is the form of the model most commonly relied on
13 to establish the cost of common equity for traditional regulated utilities and the
14 method most often referenced by regulators.

15 **Q46. HOW IS THE CONSTANT GROWTH FORM OF THE DCF MODEL**
16 **TYPICALLY USED TO ESTIMATE THE COST OF COMMON EQUITY?**

17 A46. The first step in implementing the constant growth DCF model is to determine the
18 expected dividend yield (D_1/P_0) for the firm in question. This is usually
19 calculated based on an estimate of dividends to be paid in the coming year divided
20 by the current price of the stock. The second step is to estimate investors' long-
21 term growth expectations (g) for the firm. The final step is to sum the firm's
22 dividend yield and estimated growth rate to arrive at an estimate of its cost of
23 common equity.

1 **Q47. HOW DID YOU DETERMINE THE DIVIDEND YIELD FOR THE**
2 **ELECTRIC GROUP?**

3 A47. For D_1 , I used estimates of dividends to be paid by each of these utilities over the
4 next 12 months, obtained from Value Line. This annual dividend was then
5 divided by a 30-day average stock price for each utility to arrive at the expected
6 dividend yield. The expected dividends, stock prices, and resulting dividend
7 yields for the firms in the Electric Group are presented on Exhibit WEA-4. As
8 shown on page 1, dividend yields for the firms in the Electric Group ranged from
9 2.9% to 5.6%.

10 **Q48. WHAT IS THE NEXT STEP IN APPLYING THE CONSTANT GROWTH**
11 **DCF MODEL?**

12 A48. The next step is to evaluate long-term growth expectations, or "g", for the firm in
13 question. In constant growth DCF theory, earnings, dividends, book value, and
14 market price are all assumed to grow in lockstep, and the growth horizon of the
15 DCF model is infinite. But implementation of the DCF model is more than just a
16 theoretical exercise; it is an attempt to replicate the mechanism investors used to
17 arrive at observable stock prices. A wide variety of techniques can be used to
18 derive growth rates, but the only "g" that matters in applying the DCF model is
19 the value that investors expect.

20 **Q49. ARE HISTORICAL GROWTH RATES LIKELY TO BE**
21 **REPRESENTATIVE OF INVESTORS' EXPECTATIONS FOR**
22 **UTILITIES?**

23 A49. No. If past trends in earnings, dividends, and book value are to be representative
24 of investors' expectations for the future, then the historical conditions giving rise
25 to these growth rates should be expected to continue. That is clearly not the case
26 for utilities, where structural and industry changes have led to declining growth in

1 dividends, earnings pressure, and, in many cases, significant write-offs. While
2 these conditions serve to distort historical growth measures, they are neither
3 representative of long-term growth for the utility industry nor the expectations
4 that investors have incorporated into current market prices. As a result, historical
5 growth measures for utilities do not currently meet the requirements of the DCF
6 model.

7 **Q50. WHAT ARE INVESTORS MOST LIKELY TO CONSIDER IN**
8 **DEVELOPING THEIR LONG-TERM GROWTH EXPECTATIONS?**

9 A50. Implementation of the DCF model is solely concerned with replicating the
10 forward-looking evaluation of real-world investors. In the case of utilities,
11 dividend growth rates are not likely to provide a meaningful guide to investors'
12 current growth expectations. This is because utilities have significantly altered
13 their dividend policies in response to more accentuated business risks in the
14 industry, with the payout ratio for electric utilities falling significantly. As a result
15 of this trend towards a more conservative payout ratio, dividend growth in the
16 utility industry has remained largely stagnant as utilities conserve financial
17 resources to provide a hedge against heightened uncertainties.

18 As payout ratios for firms in the utility industry trended downward,
19 investors' focus has increasingly shifted from dividends to earnings as a measure
20 of long-term growth. Future trends in earnings per share ("EPS"), which provide
21 the source for future dividends and ultimately support share prices, play a pivotal
22 role in determining investors' long-term growth expectations. The importance of
23 earnings in evaluating investors' expectations and requirements is well accepted
24 in the investment community, and surveys of analytical techniques relied on by
25 professional analysts indicate that growth in earnings is far more influential than
26 trends in dividends per share ("DPS"). Apart from Value Line, investment

1 advisory services do not generally publish comprehensive DPS growth
2 projections, and this scarcity of dividend growth rates relative to the abundance of
3 earnings forecasts attests to their relative influence. The fact that securities
4 analysts focus on EPS growth, and that dividend growth rates are not routinely
5 published, indicates that projected EPS growth rates are likely to provide a
6 superior indicator of the future long-term growth expected by investors.

7 **Q51. DO THE GROWTH RATE PROJECTIONS OF SECURITY ANALYSTS**
8 **CONSIDER HISTORICAL TRENDS?**

9 A51. Yes. Professional security analysts study historical trends extensively in
10 developing their projections of future earnings. Hence, to the extent there is any
11 useful information in historical patterns, that information is incorporated into
12 analysts' growth forecasts.

13 **Q52. DID PROFESSOR MYRON J. GORDON, WHO ORIGINATED THE DCF**
14 **APPROACH, RECOGNIZE THE PIVOTAL ROLE THAT EARNINGS**
15 **PLAY IN FORMING INVESTORS' EXPECTATIONS?**

16 A52. Yes. Dr. Gordon specifically recognized that "it is the growth that investors
17 expect that should be used" in applying the DCF model and he concluded:

18 A number of considerations suggest that investors may, in fact, use
19 earnings growth as a measure of expected future growth."¹⁰

¹⁰ Gordon, Myron J., "The Cost of Capital to a Public Utility," *MSU Public Utilities Studies* at 89 (1974).

1 **Q53. WHAT ARE SECURITY ANALYSTS CURRENTLY PROJECTING IN**
2 **THE WAY OF GROWTH FOR THE FIRMS IN THE ELECTRIC**
3 **GROUP?**

4 A53. The earnings growth projections for each of the firms in the Electric Group
5 reported by Value Line, Thomson Reuters ("IBES"), Zacks Investment Research
6 ("Zacks"), and Reuters are displayed on page 2 of Exhibit WEA-4.¹¹

7 **Q54. SOME ARGUE THAT ANALYSTS' ASSESSMENTS OF GROWTH**
8 **RATES ARE BIASED. DO YOU BELIEVE THESE PROJECTIONS ARE**
9 **APPROPRIATE FOR ESTIMATING INVESTORS' REQUIRED RETURN**
10 **USING THE DCF MODEL?**

11 A54. Yes. In applying the DCF model to estimate the cost of common equity, the only
12 relevant growth rate is the forward-looking expectations of investors that are
13 captured in current stock prices. Investors, just like securities analysts and others
14 in the investment community, do not know how the future will actually turn out.
15 They can only make investment decisions based on their best estimate of what the
16 future holds in the way of long-term growth for a particular stock, and securities
17 prices are constantly adjusting to reflect their assessment of available information.

18 Any claims that analysts' estimates are not relied upon by investors are
19 illogical given the reality of a competitive market for investment advice. If
20 financial analysts' forecasts do not add value to investors' decision making, then
21 it is irrational for investors to pay for these estimates. Similarly, those financial
22 analysts who fail to provide reliable forecasts will lose out in competitive markets
23 relative to those analysts whose forecasts investors find more credible. The
24 reality that analyst estimates are routinely referenced in the financial media and in

¹¹ Formerly I/B/E/S International, Inc., IBES growth rates are now compiled and published by Thomson Reuters.

1 investment advisory publications (e.g., Value Line) implies that investors use
2 them as a basis for their expectations.

3 The continued success of investment services such as Thompson Reuters
4 and Value Line, and the fact that projected growth rates from such sources are
5 widely referenced, provides strong evidence that investors give considerable
6 weight to analysts' earnings projections in forming their expectations for future
7 growth. While the projections of securities analysts may be proven optimistic or
8 pessimistic in hindsight, this is irrelevant in assessing the expected growth that
9 investors have incorporated into current stock prices, and any bias in analysts'
10 forecasts – whether pessimistic or optimistic – is irrelevant if investors share
11 analysts' views. Earnings growth projections of security analysts provide the
12 most frequently referenced guide to investors' views and are widely accepted in
13 applying the DCF model. As explained in *New Regulatory Finance*:

14 Because of the dominance of institutional investors and their
15 influence on individual investors, analysts' forecasts of long-run
16 growth rates provide a sound basis for estimating required returns.
17 Financial analysts exert a strong influence on the expectations of
18 many investors who do not possess the resources to make their
19 own forecasts, that is, they are a cause of g [growth]. The accuracy
20 of these forecasts in the sense of whether they turn out to be
21 correct is not an issue here, as long as they reflect widely held
22 expectations.¹²

23 **Q55. HAVE OTHER REGULATORS ALSO RECOGNIZED THAT**
24 **ANALYSTS' GROWTH RATE ESTIMATES ARE AN IMPORTANT AND**
25 **MEANINGFUL GUIDE TO INVESTORS' EXPECTATIONS?**

26 A55. Yes. FERC has expressed a clear preference for projected EPS growth rates from
27 IBES in applying the DCF model to estimate the cost of equity for both electric

¹² Morin, Roger A., "New Regulatory Finance," *Public Utilities Reports, Inc.* at 298 (2006) (emphasis added).

1 and natural gas pipeline utilities, and has expressly rejected reliance on other
2 sources.¹³ As FERC concluded:

3 Opinion No. 414-A held that the IBES five-year growth forecasts
4 for each company in the proxy group are the best available
5 evidence of the short-term growth rates expected by the investment
6 community. It cited evidence that (1) those forecasts are provided
7 to IBES by professional security analysts, (2) IBES reports the
8 forecast for each firm as a service to investors, and (3) the IBES
9 reports are well known in the investment community and used by
10 investors. The Commission has also rejected the suggestion that
11 the IBES analysts are biased and stated that “in fact the analysts
12 have a significant incentive to make their analyses as accurate as
13 possible to meet the needs of their clients since those investors will
14 not utilize brokerage firms whose analysts repeatedly overstate the
15 growth potential of companies.”¹⁴

16 Similarly, the Kentucky Public Service Commission has also indicated its
17 preference for relying on analysts’ projections in establishing investors’
18 expectations:

19 KU’s argument concerning the appropriateness of using investors’
20 expectations in performing a DCF analysis is more persuasive than
21 the AG’s argument that analysts’ projections should be rejected in
22 favor of historical results. The Commission agrees that analysts’
23 projections of growth will be relatively more compelling in
24 forming investors’ forward-looking expectations than relying on
25 historical performance, especially given the current state of the
26 economy.¹⁵

27 More recently, the Public Utility Regulatory Authority of Connecticut noted that:

28 The Authority used growth in earnings exclusively based on the
29 record of this docket showing that financial literature supports
30 security analysts’ EPS growth rate projections as superior for use
31 in a DCF analysis. Response to Interrogatory FI-106. The
32 Authority takes note that long-term, there is not growth in DPS

¹³ See, e.g., *Midwest Independent Transmission System Operator, Inc.*, 99 FERC ¶ 63,011 at P 53 (2002); *Golden Spread Elec. Coop. Inc.*, 123 FERC ¶ 61,047 (2008).

¹⁴ *Kern River Gas Transmission Co.*, 126 FERC ¶ 61,034 at P 121 (2009) ((footnote omitted).

¹⁵ *Order*, Case No. 2009-00548 at 30-31 (Jul. 30, 2010).

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without growth in EPS. Market prices are more highly influenced by security analyst's earnings expectations than expectations in dividends. The Authority agrees with Ms. Ahern that "the use of earnings growth rates in a DCF analysis provides a better matching between investors' market price appreciation expectations and the growth rate component of the DCF."¹⁶

7 **Q56. HOW ELSE ARE INVESTORS' EXPECTATIONS OF FUTURE LONG-**
8 **TERM GROWTH PROSPECTS OFTEN ESTIMATED WHEN APPLYING**
9 **THE CONSTANT GROWTH DCF MODEL?**

10 A56. In constant growth theory, growth in book equity will be equal to the product of
11 the earnings retention ratio (one minus the dividend payout ratio) and the earned
12 rate of return on book equity. Furthermore, if the earned rate of return and the
13 payout ratio are constant over time, growth in earnings and dividends will be
14 equal to growth in book value. Despite the fact that these conditions are never
15 met in practice, this "sustainable growth" approach may provide a rough guide for
16 evaluating a firm's growth prospects and is frequently proposed in regulatory
17 proceedings.

18 The sustainable growth rate is calculated by the formula, $g = br + sv$, where
19 "b" is the expected retention ratio, "r" is the expected earned return on equity, "s"
20 is the percent of common equity expected to be issued annually as new common
21 stock, and "v" is the equity accretion rate.

22 **Q57. WHAT IS THE PURPOSE OF THE "SV" TERM?**

23 A57. Under DCF theory, the "sv" factor is a component of the growth rate designed to
24 capture the impact of issuing new common stock at a price above, or below, book
25 value. When a company's stock price is greater than its book value per share, the
26 per-share contribution in excess of book value associated with new stock issues

¹⁶ Decision, Docket No. 13-02-20 (Sep. 24, 2013).

1 will accrue to the current shareholders. This increase to the book value of existing
2 shareholders leads to higher expected earnings and dividends, with the "sv" factor
3 incorporating this additional growth component.

4 **Q58. WHAT GROWTH RATE DOES THE EARNINGS RETENTION**
5 **METHOD SUGGEST FOR THE ELECTRIC GROUP?**

6 A58. The sustainable, "br+sv" growth rates for each firm in the Electric Group are
7 summarized on page 2 of Exhibit WEA-4, with the underlying details being
8 presented on Exhibit WEA-5. For each firm, the expected retention ratio (b) was
9 calculated based on Value Line's projected dividends and earnings per share.
10 Likewise, each firm's expected earned rate of return (r) was computed by dividing
11 projected earnings per share by projected net book value. Because Value Line
12 reports end-of-year book values, an adjustment factor was incorporated to
13 compute an average rate of return over the year, consistent with the theory
14 underlying this approach to estimating investors' growth expectations.
15 Meanwhile, the percent of common equity expected to be issued annually as new
16 common stock (s) was equal to the product of the projected market-to-book ratio
17 and growth in common shares outstanding, while the equity accretion rate (v) was
18 computed as 1 minus the inverse of the projected market-to-book ratio.

19 **Q59. ARE THERE SIGNIFICANT SHORTCOMINGS ASSOCIATED WITH**
20 **THE "BR+SV" GROWTH RATE?**

21 A59. Yes. First, in order to calculate the sustainable growth rate, it is necessary to
22 develop estimates of investors' expectations for four separate variables; namely,
23 "b", "r", "s", and "v." Given the inherent difficulty in forecasting each parameter
24 and the difficulty of estimating the expectations of investors, the potential for
25 measurement error is significantly increased when using four variables, as
26 opposed to referencing a direct projection for EPS growth. Second, empirical

1 research in the finance literature indicates that sustainable growth rates are not as
2 significantly correlated to measures of value, such as share prices, as are analysts'
3 EPS growth forecasts.¹⁷

4 The "sustainable growth" approach was included for completeness, but
5 evidence indicates that analysts' forecasts provide a superior and more direct
6 guide to investors' growth expectations. Accordingly, I give less weight to cost
7 of equity estimates based on br+sv growth rates in evaluating the results of the
8 DCF model.

9 **Q60. WHAT COST OF COMMON EQUITY ESTIMATES WERE IMPLIED**
10 **FOR THE ELECTRIC GROUP USING THE DCF MODEL?**

11 A60. After combining the dividend yields and respective growth projections for each
12 utility, the resulting cost of common equity estimates are shown on page 3 of
13 Exhibit WEA-4.

14 **Q61. IN EVALUATING THE RESULTS OF THE CONSTANT GROWTH DCF**
15 **MODEL, IS IT APPROPRIATE TO ELIMINATE ESTIMATES THAT**
16 **ARE EXTREME LOW OR HIGH OUTLIERS?**

17 A61. Yes. In applying quantitative methods to estimate the cost of equity, it is essential
18 that the resulting values pass fundamental tests of reasonableness and economic
19 logic. Accordingly, DCF estimates that are implausibly low or high should be
20 eliminated when evaluating the results of this method.

21 **Q62. HOW DID YOU EVALUATE DCF ESTIMATES AT THE LOW END OF**
22 **THE RANGE?**

23 A62. I based my evaluation of DCF estimates at the low end of the range on the
24 fundamental risk-return tradeoff, which holds that investors will only take on

¹⁷ Morin, Roger A., "New Regulatory Finance," *Public Utilities Reports, Inc.*, at 307 (2006).

1 more risk if they expect to earn a higher rate of return to compensate them for the
2 greater uncertainty. Because common stocks lack the protections associated with
3 an investment in long-term bonds, a utility's common stock imposes far greater
4 risks on investors. As a result, the rate of return that investors require from a
5 utility's common stock is considerably higher than the yield offered by senior,
6 long-term debt. Consistent with this principle, DCF results that are not
7 sufficiently higher than the yield available on less risky utility bonds must be
8 eliminated.

9 **Q63. HAVE SIMILAR TESTS BEEN APPLIED BY REGULATORS?**

10 A63. Yes. FERC has noted that adjustments are justified where applications of the
11 DCF approach produce illogical results. FERC evaluates DCF results against
12 observable yields on long-term public utility debt and has recognized that it is
13 appropriate to eliminate estimates that do not sufficiently exceed this threshold.
14 The practice of eliminating low-end outliers has been affirmed in numerous
15 FERC proceedings,¹⁸ and in its April 15, 2010 decision in *SoCal Edison*, FERC
16 affirmed that, "it is reasonable to exclude any company whose low-end ROE fails
17 to exceed the average bond yield by about 100 basis points or more."¹⁹

18 **Q64. WHAT INTEREST RATE BENCHMARK DID YOU CONSIDER IN**
19 **EVALUATING THE DCF RESULTS FOR BLACK HILLS POWER?**

20 A64. As noted earlier, S&P has assigned a corporate credit rating of "BBB" to Black
21 Hills Power. Companies rated "BBB-", "BBB", and "BBB+" are all considered
22 part of the triple-B rating category, with Moody's monthly yields on triple-B
23 bonds averaging approximately 5.1% in February 2014.²⁰ Based on my

¹⁸ See, e.g., *Virginia Electric Power Co.*, 123 FERC ¶ 61,098 at P 64 (2008).

¹⁹ *Southern California Edison Co.*, 131 FERC ¶ 61,020 at P 55 (2010) ("*SoCal Edison*").

²⁰ Moody's Investors Service, <http://credittrends.moody's.com/chartroom.asp?c=3>.

1 professional experience and the risk-return principle that is fundamental to
2 finance, it is inconceivable that investors are not requiring a substantially higher
3 rate of return for holding common stock.

4 **Q65. WHAT ELSE SHOULD BE CONSIDERED IN EVALUATING DCF**
5 **ESTIMATES AT THE LOW END OF THE RANGE?**

6 A65. As indicated earlier, while corporate bond yields have declined substantially as
7 the worst of the financial crisis has abated, it is generally expected that long-term
8 interest rates will rise as the economy returns to a more normal pattern of growth.
9 As shown in Table WEA-2 below, forecasts of IHS Global Insight and the EIA
10 imply an average triple-B bond yield of approximately 6.6% over the period
11 2014-2018:

12 **TABLE WEA-2**
13 **IMPLIED BBB BOND YIELD**

	<u>2014-18</u>
Projected AA Utility Yield	
IHS Global Insight (a)	6.04%
EIA (b)	<u>5.75%</u>
Average	5.89%
Current BBB - AA Yield Spread (c)	<u>0.67%</u>
Implied Triple-B Utility Yield	6.56%

(a) IHS Global Insight, U.S. Economic Outlook at 25 (Nov. 2013)

(b) Energy Information Administration, Annual Energy Outlook 2014,
Early Release (Dec. 16, 2013)

(c) Based on monthly average bond yields from Moody's Investors
Service for the six-month period Sep. 2013 - Feb. 2014

14 The increase in debt yields anticipated by IHS Global Insight and EIA is also
15 supported by the widely referenced Blue Chip Financial Forecasts, which projects

1 that yields on corporate bonds will climb on the order of 165 basis points through
2 2018.²¹

3 **Q66. WHAT DOES THIS TEST OF LOGIC IMPLY WITH RESPECT TO THE**
4 **DCF RESULTS FOR THE ELECTRIC GROUP?**

5 A66. As highlighted on page 3 of Exhibit WEA-4, I eliminated low-end DCF estimates
6 ranging from -1.2% to 7.4%. In light of the risk-return tradeoff principle, it is
7 inconceivable that investors are not requiring a substantially higher rate of return
8 for holding common stock, which is the riskiest of a utility's securities. As a
9 result, consistent with the upward trend expected for utility bond yields, these
10 values provide little guidance as to the returns investors require from utility
11 common stocks and should be excluded.

12 **Q67. IS THERE A BASIS TO EXCLUDE DCF ESTIMATES AT THE HIGH**
13 **END OF THE RANGE?**

14 A67. Yes. It is just as important to eliminate high-end outliers as low-end outliers.
15 This is also consistent with the precedent adopted by FERC, which has
16 established that estimates found to be "extreme outliers" should be disregarded in
17 interpreting the results of the DCF model.²² In my current analysis, the upper end
18 of the cost of common equity range produced for the Electric Group was set by a
19 cost of equity estimate of 25.0%. When compared with the balance of the
20 remaining estimates, this value is implausible and should be excluded in
21 evaluating the results of the DCF model.

²¹ *Blue Chip Financial Forecasts*, Vol. 32, No.12 (Dec. 1, 2013).

²² See, e.g., *ISO New England, Inc.*, 109 FERC ¶ 61,147 at P 205 (2004). Under FERC's test, cost of equity estimates of 17.7% or greater are considered extreme outliers, as are estimates based on growth rates of 13.3% or higher.

1 **Q68. WHAT COST OF COMMON EQUITY ESTIMATES ARE IMPLIED BY**
2 **YOUR DCF RESULTS FOR THE ELECTRIC GROUP?**

3 A68. As shown on page 3 of Exhibit WEA-4 and summarized in Table WEA-3, below,
4 after eliminating illogical values, application of the constant growth DCF model
5 resulted in the following cost of equity estimates:

6 **TABLE WEA-3**
7 **DCF RESULTS – ELECTRIC GROUP**

<u>Growth Rate</u>	<u>Cost of Equity</u>	
	<u>Average</u>	<u>Midpoint</u>
Value Line	10.4%	11.9%
IBES	9.7%	11.0%
Zacks	9.8%	9.6%
Reuters	9.6%	10.4%
br + sv	8.4%	8.6%

8

C. Empirical Capital Asset Pricing Model

9 **Q69. PLEASE DESCRIBE THE ECAPM.**

10 A69. The ECAPM is a variant of the traditional CAPM, which is a theory of market
11 equilibrium that measures risk using the beta coefficient. Assuming investors are
12 fully diversified, the relevant risk of an individual asset (*e.g.*, common stock) is its
13 volatility relative to the market as a whole, with beta reflecting the tendency of a
14 stock's price to follow changes in the market. A stock that tends to respond less to
15 market movements has a beta less than 1.00, while stocks that tend to move more
16 than the market have betas greater than 1.00. The CAPM is mathematically
17 expressed as:

1
$$R_j = R_f + \beta_j(R_m - R_f)$$

2 where: R_j = required rate of return for stock j;
3 R_f = risk-free rate;
4 R_m = expected return on the market portfolio; and,
5 β_j = beta, or systematic risk, for stock j.

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

11 **Q70. WHY IS THE ECAPM APPROACH AN APPROPRIATE COMPONENT**
12 **IN EVALUATING THE COST OF EQUITY FOR BLACK HILLS**
13 **POWER?**

14 A70. The CAPM approach, which forms the foundation of the ECAPM, generally is
15 considered to be the most widely referenced method for estimating the cost of
16 equity among academicians and professional practitioners, with the pioneering
17 researchers of this method receiving the Nobel Prize in 1990. Because this is the
18 dominant model for estimating the cost of equity outside the regulatory sphere,²³
19 the ECAPM provides important insight into investors' required rate of return for
20 utility stocks, including Black Hills Power.

21 **Q71. HOW DOES THE ECAPM APPROACH DIFFER FROM TRADITIONAL**
22 **APPLICATIONS OF THE CAPM?**

23 A71. Myriad empirical tests of the CAPM have shown that low-beta securities earn
24 returns somewhat higher than the CAPM would predict, and high-beta securities
25 earn less than predicted. In other words, the CAPM tends to overstate the

²³ See, e.g., Bruner, R.F., Eades, K.M., Harris, R.S., and Higgins, R.C., "Best Practices in Estimating Cost of Capital: Survey and Synthesis," *Financial Practice and Education* (1998).

1 actual sensitivity of the cost of capital to beta, with low-beta stocks tending to
2 have higher returns and high-beta stocks tending to have lower risk returns
3 than predicted by the CAPM. This empirical finding is widely reported in the
4 finance literature, as summarized in *New Regulatory Finance*:

5 As discussed in the previous section, several finance scholars have
6 developed refined and expanded versions of the standard CAPM
7 by relaxing the constraints imposed on the CAPM, such as
8 dividend yield, size, and skewness effects. These enhanced
9 CAPMs typically produce a risk-return relationship that is flatter
10 than the CAPM prediction in keeping with the actual observed
11 risk-return relationship. The ECAPM makes use of these empirical
12 relationships.²⁴

13 As discussed in *New Regulatory Finance*, based on a review of the
14 empirical evidence, the expected return on a security is related to its risk by the
15 ECAPM, which is represented by the following formula:

16
$$R_j = R_f + 0.25(R_m - R_f) + 0.75[\beta_j(R_m - R_f)]$$

17 This ECAPM equation, and the associated weighting factors, recognize the
18 observed relationship between standard CAPM estimates and the cost of capital
19 documented in the financial research, and correct for the understated returns that
20 would otherwise be produced for low beta stocks.

21 **Q72. HOW DID YOU APPLY THE ECAPM TO ESTIMATE THE COST OF**
22 **COMMON EQUITY?**

23 A72. Application of the ECAPM to the Electric Group based on a forward-looking
24 estimate for investors' required rate of return from common stocks is presented on
25 Exhibit WEA-6. In order to capture the expectations of today's investors in

²⁴ Morin, Roger A., "New Regulatory Finance," *Public Utilities Reports* at 189 (2006).

1 current capital markets, the expected market rate of return was estimated by
2 conducting a DCF analysis on the 405 dividend paying firms in the S&P 500.

3 The dividend yield for each firm was obtained from Value Line, and the
4 growth rate was equal to the average of the EPS growth projections for each firm
5 published by IBES, with each firm's dividend yield and growth rate being
6 weighted by its proportionate share of total market value. Based on the weighted
7 average of the projections for the 405 individual firms, current estimates imply an
8 average growth rate over the next five years of 10.1%. Combining this average
9 growth rate with a year-ahead dividend yield of 2.3% results in a current cost of
10 common equity estimate for the market as a whole (R_m) of approximately 12.4%.
11 Subtracting a 3.8% risk-free rate based on the average yield on 30-year Treasury
12 bonds for February 2014 produced a market equity risk premium of 8.6%.

13 **Q73. WHAT WAS THE SOURCE OF THE BETA VALUES YOU USED TO**
14 **APPLY THE ECAPM?**

15 A73. As indicated earlier, I relied on the beta values reported by Value Line, which in
16 my experience is the most widely referenced source for beta in regulatory
17 proceedings.

18 **Q74. WHAT ELSE SHOULD BE CONSIDERED IN APPLYING THE ECAPM?**

19 A74. As explained by *Morningstar*:

20 One of the most remarkable discoveries of modern finance is that
21 of a relationship between firm size and return. The relationship
22 cuts across the entire size spectrum but is most evident among
23 smaller companies, which have higher returns on average than
24 larger ones.²⁵

²⁵ *Morningstar*, "Ibbotson SBBI 2013 Valuation Yearbook," at p. 85.

1 Because financial research indicates that the ECAPM does not fully account for
2 observed differences in rates of return attributable to firm size, a modification is
3 required to account for this size effect.

4 According to the ECAPM, the expected return on a security should consist
5 of the riskless rate, plus a premium to compensate for the systematic risk of the
6 particular security. The degree of systematic risk is represented by the beta
7 coefficient. The need for the size adjustment arises because differences in
8 investors' required rates of return that are related to firm size are not fully
9 captured by beta. To account for this, Morningstar has developed size premiums
10 that need to be added to the theoretical ECAPM cost of equity estimates to
11 account for the level of a firm's market capitalization in determining the ECAPM
12 cost of equity.²⁶ These premiums correspond to the size deciles of publicly traded
13 common stocks, and range from a premium of 6.0% for a company in the first
14 decile (market capitalization less than \$254.6 million), to a reduction of 37 basis
15 points for firms in the tenth decile (market capitalization between \$17.6 billion
16 and \$626.6 billion). Accordingly, my ECAPM analyses also incorporated an
17 adjustment to recognize the impact of size distinctions, as measured by the
18 average market capitalization for the Electric Group.

19 **Q75. WHAT COST OF EQUITY IS IMPLIED FOR THE ELECTRIC GROUP**
20 **USING THE ECAPM APPROACH?**

21 A75. As shown on page 1 of Exhibit WEA-6, a forward-looking application of the
22 ECAPM approach resulted in an average unadjusted ROE estimate of 10.8%.
23 After adjusting for the impact of firm size, the ECAPM approach implied an
24 average cost of equity of 11.8% for the Electric Group.²⁷

²⁶ *Id.* at Table C-1.

²⁷ The midpoint of the unadjusted and size adjusted ECAPM ranges were 10.9% and 11.6%, respectively.

1 **Q76. DID YOU ALSO APPLY THE ECAPM USING FORECASTED BOND**
2 **YIELDS?**

3 A76. Yes. As discussed earlier, there is widespread consensus that interest rates will
4 increase materially as the economy continues to strengthen. Accordingly, in
5 addition to the use of current bond yields, I also applied the CAPM based on the
6 forecasted long-term Treasury bond yields developed based on projections
7 published by Value Line, IHS Global Insight and Blue Chip. As shown on page 2
8 of Exhibit WEA-6, incorporating a forecasted Treasury bond yield for 2014-2018
9 implied a cost of equity of approximately 11.0% for the Electric Group, or 12.0%
10 after adjusting for the impact of relative size. The midpoints of the unadjusted
11 and size adjusted cost of equity ranges were 11.1% and 11.8%, respectively.

D. Utility Risk Premium

12 **Q77. BRIEFLY DESCRIBE THE RISK PREMIUM METHOD.**

13 A77. The risk premium method extends the risk-return tradeoff observed with bonds to
14 estimate investors' required rate of return on common stocks. The cost of equity
15 is estimated by first determining the additional return investors require to forgo
16 the relative safety of bonds and to bear the greater risks associated with common
17 stock, and by then adding this equity risk premium to the current yield on bonds.
18 Like the DCF model, the risk premium method is capital market oriented.
19 However, unlike DCF models, which indirectly impute the cost of equity, risk
20 premium methods directly estimate investors' required rate of return by adding an
21 equity risk premium to observable bond yields.

1 **Q78. IS THE RISK PREMIUM APPROACH A WIDELY ACCEPTED**
2 **METHOD FOR ESTIMATING THE COST OF EQUITY?**

3 A78. Yes. The risk premium approach is based on the fundamental risk-return principle
4 that is central to finance, which holds that investors will require a premium in the
5 form of a higher return in order to assume additional risk. This method is
6 routinely referenced by the investment community and in academia and
7 regulatory proceedings, and provides an important tool in estimating a fair ROE
8 for Black Hills Power.

9 **Q79. HOW DID YOU IMPLEMENT THE RISK PREMIUM METHOD?**

10 A79. I based my estimates of equity risk premiums on surveys of previously authorized
11 ROEs. Authorized ROEs presumably reflect regulatory commissions' best
12 estimates of the cost of equity, however determined, at the time they issued their
13 final order. Such ROEs should represent a balanced and impartial outcome that
14 considers the need to maintain a utility's financial integrity and ability to attract
15 capital. Moreover, allowed returns are an important consideration for investors
16 and have the potential to influence other observable investment parameters,
17 including credit ratings and borrowing costs. Thus, these data provide a logical
18 and frequently referenced basis for estimating equity risk premiums for regulated
19 utilities.

20 **Q80. IS IT CIRCULAR TO CONSIDER RISK PREMIUMS BASED ON**
21 **AUTHORIZED RETURNS IN ASSESSING A FAIR ROE FOR BLACK**
22 **HILLS POWER?**

23 A80. No. In establishing authorized ROEs, regulators typically consider the results of
24 alternative market-based approaches, including the DCF model. Because allowed
25 risk premiums consider objective market data (e.g., stock prices dividends, beta,

1 and interest rates), and are not based strictly on past actions of other regulators,
2 this mitigates concerns over any potential for circularity.

3 **Q81. HOW DID YOU CALCULATE THE EQUITY RISK PREMIUMS BASED**
4 **ON ALLOWED ROES?**

5 A81. The ROEs authorized for electric utilities by regulatory commissions across the
6 U.S. are compiled by Regulatory Research Associates and published in its
7 *Regulatory Focus* report. On page 3 of Exhibit WEA-7, the average yield on
8 public utility bonds is subtracted from the average allowed ROE for electric
9 utilities to calculate equity risk premiums for each year between 1974 and 2013.²⁸

10 **Q82. IS THERE ANY CAPITAL MARKET RELATIONSHIP THAT MUST BE**
11 **CONSIDERED WHEN IMPLEMENTING THE RISK PREMIUM**
12 **METHOD?**

13 A82. Yes. The magnitude of equity risk premiums is not constant and equity risk
14 premiums tend to move inversely with interest rates. In other words, when
15 interest rate levels are relatively high, equity risk premiums narrow, and when
16 interest rates are relatively low, equity risk premiums widen. The implication of
17 this inverse relationship is that the cost of equity does not move as much as, or in
18 lockstep with, interest rates. Accordingly, for a 1% increase or decrease in
19 interest rates, the cost of equity may only rise or fall, say, 50 basis points.
20 Therefore, when implementing the risk premium method, adjustments may be
21 required to incorporate this inverse relationship if current interest rate levels have
22 diverged from the average interest rate level represented in the data set.

²⁸ My analysis encompasses the entire period for which published data is available.

1 **Q83. HAS THIS INVERSE RELATIONSHIP BEEN DOCUMENTED IN THE**
2 **FINANCIAL RESEARCH?**

3 A83. Yes. There is considerable empirical evidence to support the finding that when
4 interest rates are relatively high, equity risk premiums narrow, and when interest
5 rates are relatively low, equity risk premiums are greater.²⁹ This inverse
6 relationship between equity risk premiums and interest rates has been widely
7 reported in the financial literature. For example, *New Regulatory Finance*
8 documented this inverse relationship:

9 Published studies by Brigham, Shome, and Vinson (1985), Harris
10 (1986), Harris and Marston (1992, 1993), Carelton, Chambers, and
11 Lakonishok (1983), Morin (2005), and McShane (2005), and
12 others demonstrate that, beginning in 1980, risk premiums varied
13 inversely with the level of interest rates – rising when rates fell and
14 declining when rates rose.³⁰

15 Other regulators have also recognized that the cost of equity does not move in
16 tandem with interest rates.³¹

17 **Q84. WHAT ARE THE IMPLICATIONS OF THIS RELATIONSHIP UNDER**
18 **CURRENT CAPITAL MARKET CONDITIONS?**

19 A84. As noted earlier, bond yields are at unprecedented lows. Given that equity risk
20 premiums move inversely with interest rates, these uncharacteristically low bond
21 yields also imply a sharp increase in the equity risk premium that investors
22 require to accept the higher uncertainties associated with an investment in utility

²⁹ See, e.g., Brigham, E.F., Shome, D.K., and Vinson, S.R., "The Risk Premium Approach to Measuring a Utility's Cost of Equity," *Financial Management* (Spring 1985); Harris, R.S., and Marston, F.C., "Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts," *Financial Management* (Summer 1992).

³⁰ Morin, Roger A., "New Regulatory Finance," Public Utilities Reports, at 128 (2006).

³¹ See, e.g., California Public Utilities Commission, Decision 08-05-035 (May 29, 2008); Entergy Mississippi Formula Rate Plan FRP-5, http://www.entropy-mississippi.com/content/price/tariffs/emi_frp.pdf.

1 common stocks versus bonds. In other words, higher required equity risk
2 premiums offset the impact of declining interest rates on the ROE.

3 **Q85. WHAT COST OF EQUITY IS IMPLIED BY THE RISK PREMIUM**
4 **METHOD USING SURVEYS OF ALLOWED ROES?**

5 A85. Based on the regression output between the interest rates and equity risk
6 premiums displayed on page 4 of Exhibit WEA-7, the equity risk premium for
7 electric utilities increased approximately 42 basis points for each percentage point
8 drop in the yield on average public utility bonds. As illustrated on page 1 of
9 Exhibit WEA-7, with an average yield on public utility bonds for February 2014
10 of 4.72%, this implied a current equity risk premium of 5.22% for electric
11 utilities. Adding this equity risk premium to the average yield on triple-B utility
12 bonds for February 2014 of 5.01% implies a current cost of equity of
13 approximately 10.3%.

14 **Q86. WHAT RISK PREMIUM COST OF EQUITY ESTIMATE WAS**
15 **PRODUCED FOR THE COMPANY'S OPERATIONS AFTER**
16 **INCORPORATING FORECASTED BOND YIELDS?**

17 A86. As shown on page 2 of Exhibit WEA-7, incorporating a forecasted yield for 2014-
18 2018 and adjusting for changes in interest rates since the study period implied an
19 equity risk premium of 4.59% for electric utilities. Adding this equity risk
20 premium to the implied average yield on triple-B public utility bonds for 2014-
21 2018 of 6.56% resulted in an implied cost of equity of approximately 11.2%.

E. Flotation Costs

1 **Q87. WHAT OTHER CONSIDERATIONS ARE RELEVANT IN SETTING THE**
2 **RETURN ON EQUITY FOR A UTILITY?**

3 A87. The common equity used to finance the investment in utility assets is provided
4 from either the sale of stock in the capital markets or from retained earnings not
5 paid out as dividends. When equity is raised through the sale of common stock,
6 there are costs associated with "floating" the new equity securities. These
7 flotation costs include services such as legal, accounting, and printing, as well as
8 the fees and discounts paid to compensate brokers for selling the stock to the
9 public. Also, some argue that the "market pressure" from the additional supply of
10 common stock and other market factors may further reduce the amount of funds
11 utility nets when it issues common equity.

12 **Q88. IS THERE AN ESTABLISHED MECHANISM FOR A UTILITY TO**
13 **RECOGNIZE EQUITY ISSUANCE COSTS?**

14 A88. No. While debt flotation costs are recorded on the books of the utility, amortized
15 over the life of the issue, and thus increase the effective cost of debt capital, there
16 is no similar accounting treatment to ensure that equity flotation costs are
17 recorded and ultimately recognized. No rate of return is authorized on flotation
18 costs necessarily incurred to obtain a portion of the equity capital used to finance
19 plant. In other words, equity flotation costs are not included in a utility's rate base
20 because neither that portion of the gross proceeds from the sale of common stock
21 used to pay flotation costs is available to invest in plant and equipment, nor are
22 flotation costs capitalized as an intangible asset. Unless some provision is made to
23 recognize these issuance costs, a utility's revenue requirements will not fully reflect
24 all of the costs incurred for the use of investors' funds. Because there is no

1 accounting convention to accumulate the flotation costs associated with equity
2 issues, they must be accounted for indirectly, with an upward adjustment to the
3 cost of equity being the most appropriate mechanism.

4 **Q89. IS THERE A THEORETICAL AND PRACTICAL BASIS TO INCLUDE A**
5 **FLOTATION COST ADJUSTMENT IN THIS CASE?**

6 A89. Yes. First, an adjustment for flotation costs associated with past equity issues is
7 appropriate, even when the utility is not contemplating any new sales of common
8 stock. The need for a flotation cost adjustment to compensate for past equity
9 issues been recognized in the financial literature. In a *Public Utilities Fortnightly*
10 article, for example, Brigham, Aberwald, and Gapenski demonstrated that even if
11 no further stock issues are contemplated, a flotation cost adjustment in all future
12 years is required to keep shareholders whole, and that the flotation cost
13 adjustment must consider total equity, including retained earnings.³² Similarly,
14 *New Regulatory Finance* contains the following discussion:

15 Another controversy is whether the flotation cost allowance should
16 still be applied when the utility is not contemplating an imminent
17 common stock issue. Some argue that flotation costs are real and
18 should be recognized in calculating the fair rate of return on equity,
19 but only at the time when the expenses are incurred. In other
20 words, the flotation cost allowance should not continue
21 indefinitely, but should be made in the year in which the sale of
22 securities occurs, with no need for continuing compensation in
23 future years. This argument implies that the company has already
24 been compensated for these costs and/or the initial contributed
25 capital was obtained freely, devoid of any flotation costs, which is
26 an unlikely assumption, and certainly not applicable to most
27 utilities. ... The flotation cost adjustment cannot be strictly
28 forward-looking unless all past flotation costs associated with past
29 issues have been recovered.³³

³² Brigham, E.F., Aberwald, D.A., and Gapenski, L.C., "Common Equity Flotation Costs and Rate Making," *Public Utilities Fortnightly*, May, 2, 1985.

³³ Morin, Roger A., "New Regulatory Finance," *Public Utilities Reports, Inc.* (2006) at 335.

1 **Q90. WHAT IS THE MAGNITUDE OF THE ADJUSTMENT TO THE “BARE**
2 **BONES” COST OF EQUITY TO ACCOUNT FOR ISSUANCE COSTS?**

3 A90. There are a number of ways in which a flotation cost adjustment can be
4 calculated, but the most common methods used to account for flotation costs in
5 regulatory proceedings is to apply an average flotation-cost percentage to a
6 utility’s dividend yield. Based on a review of the finance literature, *Regulatory*
7 *Finance: Utilities’ Cost of Capital* concluded:

8 The flotation cost allowance requires an estimated adjustment to
9 the return on equity of approximately 5% to 10%, depending on
10 the size and risk of the issue.³⁴

11 Alternatively, a study of data from Morgan Stanley regarding issuance
12 costs associated with utility common stock issuances suggests an average flotation
13 cost percentage of 3.6%.³⁵ Multiplying this 3.6% expense percentage by a
14 representative dividend yield of 4.0% produces a flotation cost adjustment on the
15 order of 14 basis points.

VI. OTHER ROE BENCHMARKS

16 **Q91. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?**

17 A91. This section presents alternative tests to demonstrate that the end-results of the
18 ROE analyses discussed earlier are reasonable and do not exceed a fair ROE
19 given the facts and circumstances of Black Hills Power. The first test is based on
20 applications of the traditional CAPM analysis using current and projected interest
21 rates. The second test is based on expected earned returns for electric utilities.

³⁴ Roger A. Morin, “Regulatory Finance: Utilities’ Cost of Capital,” *Public Utilities Reports, Inc. at 166* (1994).

³⁵ *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%.

1 Finally, I present a DCF analysis for an extremely low risk group of non-utility
2 firms, with which Black Hills Power must compete for investors' money.

A. Capital Asset Pricing Model

3 **Q92. WHAT COST OF EQUITY ESTIMATES WERE INDICATED BY THE**
4 **TRADITIONAL CAPM?**

5 A92. My applications of the traditional CAPM were based on the same forward-
6 looking market rate of return, risk-free rates, and beta values discussed earlier in
7 connections with the ECAPM. As shown on page 1 of Exhibit WEA-8, applying
8 the forward-looking CAPM approach to the firms in the Electric Group results in
9 an average theoretical cost of equity estimate of 10.3%, or 11.3% after
10 incorporating the size adjustment corresponding to the market capitalization of the
11 individual utilities.

12 As shown on page 2 of Exhibit WEA-8, incorporating a forecasted
13 Treasury bond yield for 2014-2018 implied a cost of equity of approximately
14 10.5% for the Electric Group, or 11.5 % after adjusting for the impact of relative
15 size.

B. Expected Earnings Approach

16 **Q93. WHAT OTHER ANALYSES DID YOU CONDUCT TO ESTIMATE THE**
17 **COST OF COMMON EQUITY?**

18 A93. As noted earlier, I also evaluated the cost of common equity using the expected
19 earnings method. Reference to rates of return available from alternative
20 investments of comparable risk can provide an important benchmark in assessing
21 the return necessary to assure confidence in the financial integrity of a firm and its
22 ability to attract capital. This expected earnings approach is consistent with the

1 economic underpinnings for a fair rate of return established by the U.S. Supreme
2 Court in *Bluefield* and *Hope*. Moreover, it avoids the complexities and limitations
3 of capital market methods and instead focuses on the returns earned on book
4 equity, which are readily available to investors.

5 **Q94. WHAT ECONOMIC PREMISE UNDERLIES THE EXPECTED**
6 **EARNINGS APPROACH?**

7 A94. The simple, but powerful concept underlying the expected earnings approach is
8 that investors compare each investment alternative with the next best opportunity.
9 If the utility is unable to offer a return similar to that available from other
10 opportunities of comparable risk, investors will become unwilling to supply the
11 capital on reasonable terms. For existing investors, denying the utility an
12 opportunity to earn what is available from other similar risk alternatives prevents
13 them from earning their opportunity cost of capital. In this situation the
14 government is effectively taking the value of investors' capital without adequate
15 compensation. The expected earnings approach is consistent with the economic
16 rationale underpinning established regulatory standards, which specifies a
17 methodology to determine an ROE benchmark based on earned rates of return for
18 a peer group of other regional utilities.

19 **Q95. HOW IS THE EXPECTED EARNINGS APPROACH TYPICALLY**
20 **IMPLEMENTED?**

21 A95. The traditional comparable earnings test identifies a group of companies that are
22 believed to be comparable in risk to the utility. The actual earnings of those
23 companies on the book value of their investment are then compared to the
24 allowed return of the utility. While the traditional comparable earnings test is
25 implemented using historical data taken from the accounting records, it is also
26 common to use projections of returns on book investment, such as those published

1 by recognized investment advisory publications (e.g., Value Line). Because these
2 returns on book value equity are analogous to the allowed return on a utility's rate
3 base, this measure of opportunity costs results in a direct, "apples to apples"
4 comparison.

5 Moreover, regulators do not set the returns that investors earn in the
6 capital markets, which are a function of dividend payments and fluctuations in
7 common stock prices- both of which are outside their control. Regulators can only
8 establish the allowed ROE, which is applied to the book value of a utility's
9 investment in rate base, as determined from its accounting records. This is
10 directly analogous to the expected earnings approach, which measures the return
11 that investors expect the utility to earn on book value. As a result, the expected
12 earnings approach provides a meaningful guide to ensure that the allowed ROE is
13 similar to what other utilities of comparable risk will earn on invested capital.
14 This expected earnings test does not require theoretical models to indirectly infer
15 investors' perceptions from stock prices or other market data. As long as the
16 proxy companies are similar in risk, their expected earned returns on invested
17 capital provide a direct benchmark for investors' opportunity costs that is
18 independent of fluctuating stock prices, market-to-book ratios, debates over DCF
19 growth rates, or the limitations inherent in any theoretical model of investor
20 behavior.

21 **Q96. WHAT RATES OF RETURN ON EQUITY ARE INDICATED FOR**
22 **UTILITIES BASED ON THE EXPECTED EARNINGS APPROACH?**

23 A96. Value Line's projections imply an average rate of return on common equity for the
24 electric utility industry of 10.3% over its forecast horizon.³⁶ Meanwhile, for the

³⁶ The Value Line Investment Survey (Dec. 20, 2013, Jan. 31 & Feb. 21, 2014). Recall that Value Line reports return on year-end equity so the equivalent return on average equity would be higher.

1 firms in the Electric Group specifically, the year-end returns on common equity
2 projected by Value Line over its forecast horizon are shown on Exhibit WEA-9.
3 Consistent with the rationale underlying the development of the br+sv growth
4 rates, these year-end values were converted to average returns using the same
5 adjustment factor discussed earlier and developed on Exhibit WEA-5. As shown
6 on Exhibit WEA-9, Value Line's projections for the Electric Group suggest an
7 average ROE of approximately 9.7%, with a midpoint value of 10.5%.

C. Extremely Low Risk Non-Utility DCF

8 **Q97. WHAT OTHER PROXY GROUP DID YOU CONSIDER IN**
9 **EVALUATING A FAIR ROE FOR BLACK HILLS POWER?**

10 A97. Consistent with underlying economic and regulatory standards, I also applied the
11 DCF model to a reference group of low-risk risk companies in the non-utility
12 sectors of the economy. I refer to this group as the "Non-Utility Group".

13 **Q98. DO UTILITIES HAVE TO COMPETE WITH NON-REGULATED FIRMS**
14 **FOR CAPITAL?**

15 A98. Yes. The cost of capital is an opportunity cost based on the returns that investors
16 could realize by putting their money in other alternatives. Clearly, the total
17 capital invested in utility stocks is only the tip of the iceberg of total common
18 stock investment, and there are a plethora of other enterprises available to
19 investors beyond those in the utility industry. Utilities must compete for capital,
20 not just against firms in their own industry, but with other investment
21 opportunities of comparable risk. Indeed, modern portfolio theory is built on the
22 assumption that rational investors will hold a diverse portfolio of stocks, not just
23 companies in a single industry.

1 **Q99. IS IT CONSISTENT WITH THE *BLUEFIELD* AND *HOPE* CASES TO**
2 **CONSIDER INVESTORS' REQUIRED ROE FOR NON-UTILITY**
3 **COMPANIES?**

4 A99. Yes. The cost of equity capital in the competitive sector of the economy form the
5 very underpinning for utility ROEs because regulation purports to serve as a
6 substitute for the actions of competitive markets. The Supreme Court has
7 recognized that it is the degree of risk, not the nature of the business, which is
8 relevant in evaluating an allowed ROE for a utility. The *Bluefield* case refers to
9 "business undertakings attended with comparable risks and uncertainties." It does
10 not restrict consideration to other utilities. Similarly, the *Hope* case states:

11 By that standard the return to the equity owner should be
12 commensurate with returns on investments in other enterprises
13 having corresponding risks.³⁷

14 As in the *Bluefield* decision, there is nothing to restrict "other enterprises" solely
15 to the utility industry.

16 In the early applications of the comparable earnings approach, utilities
17 were explicitly eliminated due to a concern about circularity. In other words,
18 soon after the *Hope* decision regulatory commissions did not want to get involved
19 in circular logic by looking to the returns of utilities that were established by the
20 same or similar regulatory commissions in the same geographic region. To avoid
21 circularity, regulators looked only to the returns of non-utility companies.

³⁷ *Federal Power Comm'n v. Hope Natural Gas Co.* 320 U.S. 391, (1944).

1 **Q100. DOES CONSIDERATION OF THE RESULTS FOR THE NON-UTILITY**
2 **GROUP MAKE THE ESTIMATION OF THE COST OF EQUITY USING**
3 **THE DCF MODEL MORE RELIABLE?**

4 A100. Yes. The estimates of growth from the DCF model depend on analysts' forecasts.
5 It is possible for utility growth rates to be distorted by short-term trends in the
6 industry, or by the industry falling into favor or disfavor by analysts. The result of
7 such distortions would be to bias the DCF estimates for utilities. Because the
8 Non-Utility Group includes low risk companies from many industries, it
9 diversifies away any distortion that may be caused by the ebb and flow of
10 enthusiasm for a particular sector.

11 **Q101. WHAT CRITERIA DID YOU APPLY TO DEVELOP THE NON-UTILITY**
12 **GROUP?**

13 A101. The comparable risk proxy group was composed of those United States
14 companies followed by Value Line that:

- 15 1) pay common dividends;
- 16 2) have a Safety Rank of "1";
- 17 3) have a Financial Strength Rating of "B++" or greater;
- 18 4) have a beta of 0.60 or less; and
- 19 5) have investment grade credit ratings from S&P.³⁸

20 **Q102. HOW DO THE OVERALL RISKS OF THIS NON-UTILITY GROUP**
21 **COMPARE WITH THE ELECTRIC GROUP?**

22 A102. Table WEA-4 compares the Non-Utility Group with the Electric Group and Black
23 Hills Power across the four key risk measures discussed earlier:

³⁸ Credit rating firms, such as S&P, use designations consisting of upper- and lower-case letters 'A' and 'B' to identify a bond's credit quality rating. 'AAA', 'AA', 'A', and 'BBB' ratings are considered investment grade. Credit ratings for bonds below these designations ('BB', 'B', 'CCC', etc.) are considered speculative grade, and are commonly referred to as "junk bonds". The term "investment grade" refers to bonds with ratings in the 'BBB' category and above.

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

	S&P Credit Rating	Value Line		
		Safety Rank	Financial Strength	Beta
Non-Utility Group	A	1	A+	0.59
Electric Group	BBB	2	B++	0.76
Black Hills Power	BBB	3	B+	0.90

3 As shown above, the average credit rating, Safety Rank, Financial
4 Strength Rating, and beta for the Non-Utility Group suggest less risk than for
5 Black Hills Power and the proxy group of electric utilities. When considered
6 together, a comparison of these objective measures, which consider a broad
7 spectrum of risks, including financial and business position, relative size, and
8 exposure to company-specific factors, indicates that investors would likely
9 conclude that the overall investment risks for the Electric Group and Black Hills
10 Power are greater than those of the firms in the Non-Utility Group.

11 The eight companies that make up the Non-Utility Group are
12 representative of the pinnacle of corporate America. These firms, which include
13 household names such as Colgate-Palmolive, McDonalds, and Wal-Mart, have
14 long corporate histories, well-established track records, and exceedingly
15 conservative risk profiles. Many of these companies pay dividends on a par with
16 utilities, with the average dividend yield for the group approaching 3%.
17 Moreover, because of their significance and name recognition, these companies
18 receive intense scrutiny by the investment community, which increases
19 confidence that published growth estimates are representative of the consensus
20 expectations reflected in common stock prices.

1 **Q103. WHAT WERE THE RESULTS OF YOUR DCF ANALYSIS FOR THE**
2 **NON-UTILITY GROUP?**

3 A103. I applied the DCF model to the Non-Utility Group using the same analysts' EPS
4 growth projections described earlier for the Electric Group, with the results being
5 presented in Exhibit WEA-10. As summarized in Table WEA-5, below,
6 application of the constant growth DCF model resulted in the following cost of
7 equity estimates:

TABLE WEA-5
DCF RESULTS – NON-UTILITY GROUP

<u>Growth Rate</u>	<u>Average</u>	<u>Midpoint</u>
Value Line	11.2%	11.1%
IBES	11.1%	11.4%
Zacks	11.2%	11.6%
Reuters	11.1%	11.4%

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

12 **Q104. HOW CAN YOU RECONCILE THESE DCF RESULTS FOR THE NON-**
13 **UTILITY GROUP AGAINST THE SIGNIFICANTLY LOWER**
14 **ESTIMATES PRODUCED FOR YOUR GROUP OF UTILITIES?**

15 A104. First, it is important to be clear that the higher DCF results for the Non-Utility
16 Group cannot be attributed to risk differences. As documented earlier, the risks
17 that investors associate with the group of non-utility firms - as measured by
18 S&P's credit ratings, Value Line's Safety Rank, Financial Strength, and beta - are
19 lower than the risks investors associate with the Electric Group and Black Hills
20 Power. The objective evidence provided by these observable risk measures rules

1 out a conclusion that the higher non-utility DCF estimates are associated with
2 higher investment risk.

3 Rather, the divergence between the DCF results for these groups of utility
4 and non-utility firms can be attributed to the fact that DCF estimates invariably
5 depart from the returns that investors actually require because their expectations
6 may not be captured by the inputs to the model, particularly the assumed growth
7 rate. Because the actual cost of equity is unobservable, and DCF results
8 inherently incorporate a degree of error, the cost of equity estimates for the Non-
9 Utility Group provide an important benchmark in evaluating a fair ROE for Black
10 Hills Power. There is no basis to conclude that DCF results for a group of utilities
11 would be inherently more reliable than those for firms in the competitive sector,
12 and the divergence between the DCF estimates for the group of utilities and the
13 Non-Utility Group suggests that both should be considered to ensure a balanced
14 end-result. The DCF results for the Non-Utility Group suggest that the 10.25%
15 requested ROE for Black Hills Power's utility operations is a conservative
16 estimate of a fair return.

17 **Q105. PLEASE SUMMARIZE THE RESULTS OF YOUR ALTERNATIVE ROE**
18 **BENCHMARKS.**

19 A105. The cost of common equity estimates produced by the various tests of
20 reasonableness discussed above are shown on page 2 of Exhibit WEA-2, and
21 summarized in Table WEA-6, below:

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**TABLE WEA-6
SUMMARY OF ALTERNATIVE ROE BENCHMARKS**

	<u>Average</u>	<u>Midpoint</u>
<u>CAPM - Current Bond Yield</u>		
Unadjusted	10.3%	10.4%
Size Adjusted	11.3%	11.1%
<u>CAPM - Projected Bond Yield</u>		
Unadjusted	10.5%	10.6%
Size Adjusted	11.5%	11.3%
<u>Expected Earnings</u>		
Industry	10.3%	
Proxy Group	9.7%	10.5%
<u>Non-Utility DCF</u>		
Value Line	11.2%	11.1%
IBES	11.1%	11.4%
Zacks	11.2%	11.6%
Reuters	11.1%	11.4%

3 The results of these alternative benchmarks confirm my conclusion that an ROE
4 of 10.25% for Black Hills Power's utility operations is reasonable.

5 **Q106. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

6 A106. Yes.