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

Q1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

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

Q2. IN WHAT CAPACITY ARE YOU EMPLOYED?

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

A. Qualifications

Q3. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

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

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

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

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

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

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

B. Overview

Q4. FOR WHOM ARE YOU TESTIFYING IN THIS CASE?

A4. I am testifying on behalf of Black Hills Power, Inc. ("Black Hills Power" or "the Company").

Q5. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

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

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

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

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

Q7. HOW IS YOUR TESTIMONY ORGANIZED?

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

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

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

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

II. RETURN ON EQUITY FOR BLACK HILLS POWER

Q9. WHAT IS THE PURPOSE OF THIS SECTION?

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

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

A10. Regulatory signals are a major driver of investors' risk assessment for utilities. Security analysts study commission orders and regulatory policy statements to advise investors where to put their money. If the Commission's actions instill 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).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

III. FUNDAMENTAL ANALYSES

Q15. WHAT IS THE PURPOSE OF THIS SECTION?

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

A. Black Hills Power

Q16. BRIEFLY DESCRIBE BLACK HILLS POWER.

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

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

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

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

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

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

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

A18. Black Hills Power has been assigned a corporate credit rating of "BBB" by Standard & Poor's Corporation ("S&P"), an issuer credit rating of "A3" by Moody's Investor Services, Inc. ("Moody's"), and an issuer default rating of "BBB" by Fitch Ratings Ltd. ("Fitch").[3]

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

A19. Yes. Black Hills Power will require capital investment to provide for necessary maintenance and replacements of its utility infrastructure, as well as to fund new investment in electric generation, transmission and distribution facilities. Support for the Company's financial integrity and flexibility will be instrumental in 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

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

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

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

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

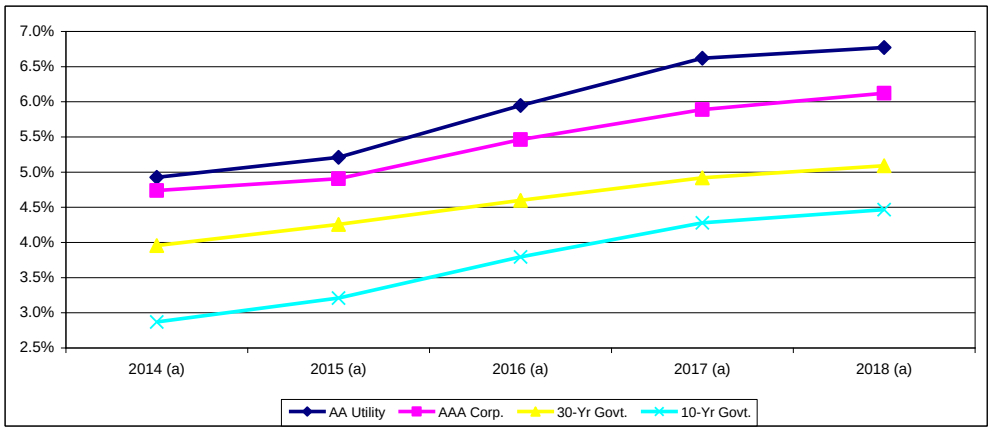
FIGURE WEA-1
BBB UTILITY BOND YIELDS – CURRENT VS. HISTORICAL

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

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

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

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)

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

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

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

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

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

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

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[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).

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

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

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

IV. COMPARABLE RISK PROXY GROUP

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

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

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

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

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

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

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

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

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

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

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

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

> Value Line is the largest and most widely circulated independent investment advisory service, and influences the expectations of a large number of institutional and individual investors. … Value Line betas are computed on a theoretically sound basis using a broadly based market index, and they are adjusted for the regression tendency of betas to converge to 1.00.[8]

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

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

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

TABLE WEA-1
COMPARISON OF RISK INDICATORS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

V. CAPITAL MARKET ESTIMATES

Q35. WHAT IS THE PURPOSE OF THIS SECTION?

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

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

A. Economic Standards

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

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

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

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

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

$$k_i = R_f + RP_i$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

B. Discounted Cash Flow Analyses

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

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

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

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

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

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

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

A44. Rather than developing annual estimates of cash flows into perpetuity, the DCF model can be simplified to a "constant growth" form:[9]

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

[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.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

> A number of considerations suggest that investors may, in fact, use 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).

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

A53. The earnings growth projections for each of the firms in the Electric Group reported by Value Line, Thomson Reuters ("IBES"), Zacks Investment Research ("Zacks"), and Reuters are displayed on page 2 of Exhibit WEA-4. [11]

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

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

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

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

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

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

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

A55. Yes. FERC has expressed a clear preference for projected EPS growth rates from 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).

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

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

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

> KU's argument concerning the appropriateness of using investors' expectations in performing a DCF analysis is more persuasive than the AG's argument that analysts' projections should be rejected in favor of historical results. The Commission agrees that analysts' projections of growth will be relatively more compelling in forming investors' forward-looking expectations than relying on historical performance, especially given the current state of the economy. [15]

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

> The Authority used growth in earnings exclusively based on the record of this docket showing that financial literature supports security analysts' EPS growth rate projections as superior for use in a DCF analysis. Response to Interrogatory FI-106. The 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 ¶ 61,034at P 121 (2009) ((footnote omitted).

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

without growth in EPS. Market prices are more highly influenced by security analyst's earnings expectations then 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]

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

A62. I based my evaluation of DCF estimates at the low end of the range on the 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).

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

Q63. HAVE SIMILAR TESTS BEEN APPLIED BY REGULATORS?

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

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

A64. As noted earlier, S&P has assigned a corporate credit rating of "BBB" to Black Hills Power. Companies rated "BBB-", "BBB", and "BBB+" are all considered part of the triple-B rating category, with Moody's monthly yields on triple-B 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.moodys.com/chartroom.asp?c=3.

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

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

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

TABLE WEA-2
IMPLIED BBB BOND YIELD

	2014-18
Projected AA Utility Yield	
IHS Global Insight (a)	6.04%
EIA (b)	5.75%
Average	5.89%
Current BBB - AA Yield Spread (c)	0.67%
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

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

that yields on corporate bonds will climb on the order of 165 basis points through 2018.[21]

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

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

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

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

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

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

TABLE WEA-3
DCF RESULTS – ELECTRIC GROUP

	Cost of Equity	
Growth Rate	**Average**	**Midpoint**
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%

C. Empirical Capital Asset Pricing Model

Q69. PLEASE DESCRIBE THE ECAPM.

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

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

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

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

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

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

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

A71. Myriad empirical tests of the CAPM have shown that low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities 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).

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

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

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

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

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

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

A72. Application of the ECAPM to the Electric Group based on a forward-looking estimate for investors' required rate of return from common stocks is presented on 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).

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

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

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

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

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

A74. As explained by *Morningstar*:

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

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

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

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

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

A75. As shown on page 1 of Exhibit WEA-6, a forward-looking application of the ECAPM approach resulted in an average unadjusted ROE estimate of 10.8%. After adjusting for the impact of firm size, the ECAPM approach implied an 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.

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

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

D. Utility Risk Premium

Q77. BRIEFLY DESCRIBE THE RISK PREMIUM METHOD.

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

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

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

Q79. HOW DID YOU IMPLEMENT THE RISK PREMIUM METHOD?

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

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

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

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

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

A81. The ROEs authorized for electric utilities by regulatory commissions across the U.S. are compiled by Regulatory Research Associates and published in its *Regulatory Focus* report. On page 3 of Exhibit WEA-7, the average yield on public utility bonds is subtracted from the average allowed ROE for electric utilities to calculate equity risk premiums for each year between 1974 and 2013.[28]

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

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

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

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

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

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

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

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

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[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.entergy-mississippi.com/content/price/tariffs/emi_frp.pdf.

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

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

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

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

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

E. Flotation Costs

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

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

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

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

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

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

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

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

Q90. WHAT IS THE MAGNITUDE OF THE ADJUSTMENT TO THE "BARE BONES" COST OF EQUITY TO ACCOUNT FOR ISSUANCE COSTS?

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

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

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

VI. OTHER ROE BENCHMARKS

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

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

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[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%.

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

A. Capital Asset Pricing Model

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

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

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

B. Expected Earnings Approach

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

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

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

Q94. WHAT ECONOMIC PREMISE UNDERLIES THE EXPECTED EARNINGS APPROACH?

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

Q95. HOW IS THE EXPECTED EARNINGS APPROACH TYPICALLY IMPLEMENTED?

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

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

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

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

A96. Value Line's projections imply an average rate of return on common equity for the 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.

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

C. Extremely Low Risk Non-Utility DCF

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

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

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

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

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

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

> By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks.[37]

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

In the early applications of the comparable earnings approach, utilities were explicitly eliminated due to a concern about circularity. In other words, soon after the *Hope* decision regulatory commissions did not want to get involved in circular logic by looking to the returns of utilities that were established by the same or similar regulatory commissions in the same geographic region. To avoid 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).

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

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

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

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

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

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

A102. Table WEA-4 compares the Non-Utility Group with the Electric Group and Black 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.

TABLE WEA-4
COMPARISON OF RISK INDICATORS

	S&P	Value Line		
	Credit Rating	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

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

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

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

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

TABLE WEA-5
DCF RESULTS – NON-UTILITY GROUP

Growth Rate	Average	Midpoint
Value Line	11.2%	11.1%
IBES	11.1%	11.4%
Zacks	11.2%	11.6%
Reuters	11.1%	11.4%

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

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

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

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

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

Q105. PLEASE SUMMARIZE THE RESULTS OF YOUR ALTERNATIVE ROE BENCHMARKS.

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

TABLE WEA-6
SUMMARY OF ALTERNATIVE ROE BENCHMARKS

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

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

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

A106. Yes.