BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

IN THE MATTER OF BLACK HILLS/ NEBRASKA GAS UTILITY COMPANY, LLC D/B/A BLACK HILLS ENERGY, OMAHA, SEEKING A GENERAL RATE INCREASE FOR BLACK HILLS ENERGY'S RATE AREAS ONE, TWO AND THREE (CONSOLIDATED)	)))))))	**DOCKET NO. NG_____**

Direct Testimony and Exhibits of William E. Avera

Rate of Return on Common Equity and Capital Structure

December 1, 2009

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EXHIBITS

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

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

Q. IN WHAT CAPACITY ARE YOU EMPLOYED?

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

A. Qualifications

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

A. 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.

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

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to present to the Nebraska Public Service Commission ("NPSC" or "the Commission") my independent assessment of the fair rate of return on equity ("ROE") for the jurisdictional gas utility operations of Black Hills/Nebraska Gas Utility Company, LLC, d/b/a Black Hills Energy ("Black Hills Energy"). In addition, I also examined the reasonableness of Black Hills Energy's requested capital structure, considering both the specific risks faced by the Black Hills Energy and other industry guidelines.

Q. PLEASE SUMMARIZE THE BASIS OF YOUR KNOWLEDGE AND CONCLUSIONS CONCERNING THE ISSUES TO WHICH YOU ARE TESTIFYING IN THIS CASE.

A. 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 and management discussions, publicly available financial reports and filings, and other published information relating to Black Hills/Nebraska Gas Utility Company, LLC d/b/a Black Hills Energy, Black Hills Utility Holdings, Inc, and the parent company, Black Hills Corporation ("Black Hills

Corp."). The legal structure of Black Hills Energy as it relates to Black Hills Utility Holdings, Inc. and Black Hills Corp. are described by Black Hills Energy witness Dan Mechtenberg, Vice President, Operations for Black Hills/Nebraska Gas Utility Company, LLC. 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 investors' requirements for Black Hills Energy and they form the basis of my analyses and conclusions.

Q. WHAT IS THE ROLE OF THE ROE IN SETTING A UTILITY'S RATES?

A. The ROE compensates 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 United States Supreme Court in the *Bluefield*[1] and *Hope*[2] cases, a utility's allowed return on equity should be sufficient to (1) fairly compensate the utility's investors, (2) enable the utility to offer a return adequate to attract new capital on reasonable terms, and (3) maintain the utility's financial integrity.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. I first reviewed the operations and finances of Black Hills Energy, its financing relationship with Black Hills Utility Holdings, Inc and Black Hills Corp, and the general conditions in the utility industry and the capital markets. With this as a background, I

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[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).

conducted various well-accepted quantitative analyses to estimate the current cost of equity, including alternative applications of the discounted cash flow ("DCF") model and the Capital Asset Pricing Model ("CAPM"), as well as reference to expected earned rates of return for utilities. Based on the cost of equity estimates indicated by my analyses, Black Hills Energy's proposed ROE was evaluated taking into account the specific risks and potential challenges for its jurisdictional gas utility operations as well as other factors (*e.g.*, flotation costs) that are properly considered in setting a fair ROE for Black Hills Energy.

C. Summary of Conclusions

Q. WHAT ARE YOUR FINDINGS REGARDING THE FAIR ROE FOR BLACK HILLS ENERGY?

A. Based on the results of my analyses and the economic requirements necessary to support continuous access to capital, I recommend that Black Hills Energy be authorized a fair ROE in the range of 11.2 percent to 12.2 percent. The bases for my conclusion are summarized below:

- In order to reflect the risks and prospects associated with Black Hills Energy's jurisdictional utility operations, my analyses focused on proxy groups of 1) other natural gas utilities, and 2) combination utilities with both gas and electric utility operations. Consistent with the fact that utilities must compete for capital with firms outside their own industry, I also referenced a proxy group of low-risk companies in the non-utility sector of the economy;
- Because investors' required return on equity is unobservable and no single method should be viewed in isolation, I applied both the DCF and CAPM methods, as well as the expected earnings approach, to estimate a fair ROE for Black Hills Energy:
    - After eliminating low- and high-end outliers, my DCF analyses implied cost of common equity estimates ranging from 8.9 percent to 11.5 percent for my proxy group of gas utilities, 10.7 percent to 12.9 percent for the

proxy group of combination utilities, and 11.4 percent to 13.0 percent for the group of non-utility companies;

- While a forward-looking application of the CAPM approach implied cost of equity estimates of 9.5 percent, 10.2 percent, and 10.3 percent for the three proxy groups, the capital market crisis and ensuing recovery have created a number of problems that bias these results;

- My evaluation of earned rates of return expected for utilities suggested a cost of common equity in the range of 10.5 percent to 11.5 percent;

- Based on these results, and giving less weight to extremes at the high and low ends of the range, I concluded that the cost of equity for the proxy groups of utilities and non-utility companies is in the 10.7 percent to 12.2 percent range;

- While the 10.7 percent to 12.2 percent ROE range does not incorporate an explicit adjustment to account for the impact of common equity flotation costs or the greater investment risks implied by Black Hills Energy's relative size, low bond rating, and lack of an adjustment mechanism to account for the impact of deviations from normal weather, these are legitimate considerations in evaluating a fair ROE for Black Hills Energy. Considering these factors, and the expected upward trend in capital costs, I concluded that a fair ROE to Black Hills Energy is at least in the 11.2 percent to 12.2 percent range.

- As reflected in the testimony of Anthony S. Cleberg, Black Hills Energy is requesting a fair ROE of 11.5 percent to balance customer impact during these challenging economic times with Black Hills Energy's need to maintain is financial integrity and access to capital. This 11.5 percent ROE falls below the midpoint of my recommended range and, in my professional opinion, represents a reasonable ROE for Black Hills Energy.

Q. WHAT OTHER EVIDENCE DID YOU CONSIDER IN EVALUATING YOUR ROE RECOMMENDATION IN THIS CASE?

A. My recommendation was reinforced by the following findings:

- Recent turmoil in financial markets has increased sensitivity to risk and highlighted the importance of maintaining financial integrity to accommodate potential uncertainties;

- Given Black Hills Energy' present credit standing, an inadequate ROE authorized in this proceeding would further pressure Black Hills Energy's financial flexibility and credit ratings;

- Sensitivity to regulatory uncertainties has increased dramatically and investors recognize that constructive regulation is a key ingredient in supporting utility credit standing and financial integrity; and,

- Providing Black Hills Energy with the opportunity to earn a return that reflects these realities is an essential ingredient to support its financial position, which ultimately benefits customers by ensuring reliable service at lower long-run costs.

Q. WHAT IS YOUR CONCLUSION AS TO THE REASONABLENESS OF BLACK HILLS ENERGY'S CAPITAL STRUCTURE?

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

- The common equity ratio implied by Black Hills Energy's capital structure is entirely consistent with the capitalizations maintained by the proxy groups of utilities based on data at year-end 2008 and near-term expectations;
- The additional uncertainties associated with Black Hills Energy's relatively small size warrant a more conservative financial posture; and,
- The requested capitalization reflects the need to support the credit standing and financial flexibility of Black Hills Energy as it seeks to fund system investments and meet the requirements of customers.

II. FUNDAMENTAL ANALYSES

Q. WHAT IS THE PURPOSE OF THIS SECTION?

A. As a predicate to subsequent quantitative analyses, this section briefly reviews the operations and finances of Black Hills Energy. In addition, it examines the risks and prospects for the utility industry and 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/Nebraska Gas Utility Company, LLC

Q. BRIEFLY DESCRIBE BLACK HILLS ENERGY.

A. A wholly owned subsidiary of Black Hills Utility Holdings, Inc. ("Utility Holdings"), which in turn is wholly owned by Black Hills Corp., Black Hills Energy is primarily engaged in the procurement, transmission, and distribution of natural gas to nearly 197,000 customers located in 110 communities located in the eastern third of Nebraska, including, but not limited to, the towns of Lincoln, Norfolk, La Vista, and Beatrice. During the most recent fiscal year, Black Hills Energy's throughput totaled approximately 20.4 million decatherms. Black Hills Energy's revenue mix was comprised of 68.4 percent residential, 23.4 percent commercial, and 1.9 percent industrial sales revenue, with 6.3 percent from transportation and other. Black Hills Energy's transportation and distribution system comprises approximately 3,500 miles of mains and as of September 30, 2009, Black Hills Energy's jurisdictional rate base totaled approximately $168 million, with year-to-date operating revenues totaling approximately $205 million. While Black Hills Energy has a gas cost adjustment tracker ("GCA") in place that allows it to pass-through changes in natural gas costs to customers, it currently does not have any adjustment mechanisms to adjust for the impact of abnormal weather on earnings ("WNA") or for changes in retail loads related to energy efficiency or price elasticity.[3]

Q. WHERE DOES BLACK HILLS ENERGY OBTAIN THE CAPITAL USED TO FINANCE ITS INVESTMENT IN GAS UTILITY PLANT?

A. Black Hills Corp. has established Black Hills Utility Holdings, Inc as a wholly-owned subsidiary to hold the assets purchased from Aquila, Inc. in a transaction effective July

[3] As discussed in the testimony of other witnesses, Black Hills Energy is proposing certain changes to the methodology used to normalize test year volumes for deviations from normal weather.

14, 2008. Black Hills Corp. also created separate subsidiaries of Black Hills Utility Holdings, Inc. for the individual state operations. The legal entity established by Black Hills Corp. to conduct its Nebraska utility operations is Black Hills/Nebraska Gas Utility Company, LLC, which conducts business under the trade name of "Black Hills Energy." The corporate organization chart can be found as Exhibit No. _ DJM-1 attached to the testimony of Mr. Dan Mechtenberg.

Black Hills Corp. is the legal entity that obtains common equity capital, a portion of which is allocated to Black Hills Utility Holdings, Inc., which in turn, allocates a portion to Black Hills Energy. Thus, Black Hills Energy obtains its equity capital solely from Black Hills Corp. The common stock of Black Hills Corp. is publicly traded on the New York Stock Exchange. In addition to common equity, long-term debt capital is allocated to Black Hills Energy from Black Hills Corp. through Black Hills Utility Holdings, Inc. in a manner similar to that of equity.

Q. WHAT CREDIT RATINGS HAVE BEEN ASSIGNED TO BLACK HILLS CORP.?

A. Black Hills Corp. has been assigned a corporate credit rating of "BBB-" by Standard & Poor's Corporation ("S&P"), which represents the lowest rung on the ladder of the investment grade scale. Moody's Investor Services, Inc. ("Moody's") has established an issuer credit rating of "Baa3" for Black Hills Corp., while Fitch Ratings Ltd. ("Fitch") has assigned an issuer default rating of "BBB".

B. Natural Gas Utility Industry

Q. HOW HAVE INVESTORS' RISK PERCEPTIONS FOR THE UTILITY INDUSTRY EVOLVED?

A. Beginning in approximately 1980, the natural gas industry was buffeted by decreasing demand and prices, a natural gas glut, an ever-changing federal regulatory environment, and increased competition among participants and with other fuels. These developments spawned striking structural changes, not only within the pipeline segment of the industry, but for natural gas local distribution companies ("LDCs") as well, with both experiencing "bypass" as large commercial, industrial, and wholesale customers sought to acquire gas supplies at the lowest possible cost. Structural changes within the utility industry have forced LDCs and electric utilities to confront new complexities and risks entailed in actively contracting for economical and secure energy supplies. Coupled with an increasingly competitive market environment, these structural changes have resulted in LDCs having greater business risk and operating leverage.

Implementation of structural change and related events caused investors to rethink their assessment of the relative risks associated with the utility industry. The past decade witnessed steady erosion in credit quality throughout the utility industry, both as a result of revised perceptions of the risks in the industry and the weakened finances of the utilities themselves. S&P recently reported that the majority of the companies in the utility sector now fall in the triple-B rating category.[4] Going forward, Fitch concluded

[4] Standard & Poor's Corporation, "Industry Report Card: U.S. Electric Utility Sector's Liquidity Remains Adequate In Third Quarter 2009," (Sep. 21, 2009).

that the short- and long-term outlook for investor-owned utilities is negative,[5] while Moody's observed, "Material negative bias appears to be developing over the intermediate and longer term due to rapidly rising business and operating risks."[6]

Q. IS THE POTENTIAL FOR ENERGY MARKET VOLATILITY AN ONGOING CONCERN FOR INVESTORS?

A. Yes. In recent years LDCs and their customers have had to contend with dramatic fluctuations in gas costs due to ongoing price volatility in the spot markets. S&P concluded that "natural gas prices have proven to be very volatile" and warned of a "turbulent journey" due to the uncertainty associated with future fluctuations in energy costs,[7] with Moody's warning investors of ongoing exposure to "extremely volatile" energy commodity costs.[8] Fitch has also highlighted the challenges that fluctuations in commodity prices can have for utilities and recently noted that:

> From their September 2007 low of $5.29, spot natural gas prices as reported at Henry Hub rose 150% to $13.31 in early July 2008 and declined 57% to $5.68 per million British thermal unit (mmBtu) on Dec. 10, 2008. The sharp run-up and subsequent collapse of natural gas prices in 2008 is emblematic of the extreme price volatility that characterizes the commodity and is likely to persist in the future.[9]

More recently, Fitch noted, "uncertainty regarding fuel prices, in particular natural gas costs, has made planning for the future even more problematic."[10] Moody's concluded

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[5] Fitch Ratings, Ltd., "U.S. Utilities, Power and Gas 2009 Outlook," *Global Power North America Special Report* (Dec. 22, 2008).

[6] Moody's Investors Service, "U.S. Electric Utility Sector," *Industry Outlook* (Jan. 2008).

[7] Standard & Poor's Corporation, "Top Ten Credit Issues Facing U.S. Utilities," *RatingsDirect* (Jan. 29, 2007).

[8] Moody's Investors Service, "Storm Clouds Gathering on the Horizon for the North American Electric Utility Sector," *Special Comment* at 6 (Aug. 2007).

[9] Fitch Ratings, Ltd., "U.S. Utilities, Power and Gas 2009 Outlook," *Global Power North American Special Report* (Dec. 22, 2008).

[10] Fitch Ratings, Ltd., "Electric Utility Capital Spending: The Show Will Go On," *Global Power U.S. and Canada Special Report* (Oct. 14, 2009).

that natural gas "remains highly volatile," and warned that such price fluctuations "could have a significant impact on a utility's liquidity profile."[11]

While expectations for significantly lower power prices reflect weaker fundamentals affecting current load and fuel prices, investors recognize the potential that such trends could quickly reverse. While lower consumption brought about by the economic slowdown and higher production levels have contributed to a significant decline in gas costs, investors recognize that the continuing prospect of further volatility in energy markets cannot be discounted. As the Energy Information Administration ("EIA"), a statistical agency of the U.S. Department of Energy, noted:

> A high degree of price volatility seems inherent in natural gas markets owing to the nature of the commodity, supply capacity constraints, and the sensitivity of peak day demands to temperatures.[12]

The EIA concluded, "Volatile prices create uncertainty and financial risk in the market and may increase the cost of capital, causing pipeline and other infrastructure investment to be more expensive".[13]

Besides discouraging potential customers from choosing natural gas, causing certain existing users to substitute alternative fuels, and leading to decreased customer usage, volatile natural gas prices have increased the risks of investing in natural gas distribution utilities and placed additional pressure on their bond ratings. Moody's echoed this sentiment, concluding that rising natural gas prices represent a challenge for

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[11] Moody's Investors Service, "Carbon Risks Becoming More Imminent for U.S. Electric Utility Sector," *Special Comment* (March 2009).
[12] Energy Information Administration, *An Analysis of Price Volatility in Natural Gas Markets* (Aug. 2007).
[13] Energy Information Administration, *An Analysis of Price Volatility in Natural Gas Markets* (Aug. 2007).

LDCs because of reduced demand and margins.[14] As a result, a senior Fitch analyst concluded that investors "should exercise greater caution" when evaluating companies in the gas utility sector.[15] This becomes especially relevant when the utility does not benefit from a WNA or decoupling mechanism, as is the case for Black Hills Energy's gas utility operations.

Q. WHAT OTHER RISKS ARE FACED BY NATURAL GAS DISTRIBUTION UTILITIES?

A. The rapid rise in utility rates that can result from higher wholesale energy prices has heightened investor concerns over the implications for regulatory uncertainty. S&P noted that, while timely cost recovery was paramount to maintaining credit quality in the utility sector, an "environment of rising customer tariffs, coupled with a sluggish economy, portend a difficult regulatory environment in coming years."[16] In addition, LDCs such as Black Hills Energy continue to face the same ongoing challenges and risks that have confronted them in the past, including those related to inflation, weather, rate regulation, customer usage and growth, non-rate regulatory changes, tax law changes, environmental laws and regulations, operating hazards, general economic conditions, and capital market changes, as well as extraordinary risks such as legal liabilities and natural disasters.

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[14] Moody's Investors Service, "North American Natural Gas Transmission & Distribution," *Industry Outlook* (Sep. 2007).

[15] Lapson, Ellen, "Rising Unit Costs & Credit Quality: Warning Signals," *Public Utilities Fortnightly* (Feb. 1, 2006).

[16] Standard & Poor's Corporation, "Top 10 U.S. Electric Utility Credit Issues For 2008 And Beyond," *RatingsDirect* (Jan. 28, 2008).

Q. DOES BLACK HILLS ENERGY ANTICIPATE THE NEED FOR ADDITIONAL CAPITAL GOING FORWARD?

A. Yes. Black Hills Energy and its parent, Black Hills Corp., will require capital investment to meet customer growth, provide for necessary maintenance and replacements of utility infrastructure, as well as fund new investment in gas transmission and distribution facilities. Black Hills Corp. anticipates significant capital requirements to support its utility operations, and maintaining financial integrity and flexibility will be instrumental in attracting the capital necessary to fund these projects in an effective manner.

Q. WHAT OTHER FINANCIAL PRESSURES IMPACT INVESTORS' RISK ASSESSMENT OF BLACK HILLS ENERGY?

A. Investors are aware of the financial and regulatory pressures faced by utilities associated with rising costs and the need to undertake significant capital investments. As S&P noted, "heavy construction programs," along with rising operating and maintenance costs and volatile energy costs, are a significant challenge to the utility industry.[17] Fitch echoed this assessment, concluding:

> Continued access to capital at reasonable rates in 2009 remains uncertain at a time when many utility holding groups have historically high capital investment programs and will require ongoing access to reasonably priced capital in order to fund new investment and refinance maturing debt.[18]

As noted earlier, investors anticipate that Black Hills Corp. will undertake significant utility capital expenditures. While providing the infrastructure necessary to meet the energy needs of customers is certainly desirable, it imposes additional financial

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[17] Standard & Poor's Corporation, "Ratings Roundup: Utility Sector Experienced Equal Number Of Upgrades And Downgrades During Second Quarter Of 2008," *RatingsDirect* (Jul. 22, 2008).

[18] Fitch Ratings Ltd., "U.S. Utilities, Power and Gas 2009 Outlook," *Global Power North America Special Report* (Dec. 22, 2008).

responsibilities on Black Hills Energy.

C. Impact of Capital Market Conditions

Q. WHAT ARE THE IMPLICATIONS OF RECENT CAPITAL MARKET CONDITIONS?

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

With respect to utilities specifically, as of September 30, 2009, the Dow Jones Utility Average stock index remained almost 30 percent below the level in June 2008. This sell-off in common stocks and sharp fluctuations in utility bond yields reflect the fact that the utility industry was not immune to the impact of financial market turmoil and the ongoing economic downturn. Although utilities may have fared somewhat better during the recent recession than their counterparts in the unregulated sector, they have not been immune to the global and domestic economic slowdowns. As described by The Value Line Investment Survey ("Value Line") in a recent discussion of the Natural Gas Utility industry:

> The U.S. economy has been in a recession for over a year and a half. This environment has added pressure to already difficult industry conditions. Most notably, the weakness in the housing market has reduced demand for natural gas. Indeed, usage has moderated as consumers are being more

> cost-conscious of late. What's more, customers have been stretching their budgets, which has resulted in lower bill collection in recent months.[19]

An October 2008 report on the implications of credit market upheaval for utilities noted that even high-quality companies "now have to pay an unusually high risk premium over Treasuries."[20] Meanwhile, a Managing Director with Fitch Ratings, Ltd. ("Fitch") observed that, "significantly higher regulated returns will be required to attract equity capital."[21] In December 2008, Fitch confirmed "sharp repricing of and aversion to risk in the investment community," and noted that the disruptions in financial markets and the fundamental shift in investors' risk perceptions has increased the cost of capital for utilities:

> While credit is available to investment-grade issuers in the utilities, power and gas sectors, it is more expensive, particularly when viewed against the easy money environment which prevailed for most of this decade.[22]

Fitch recently concluded, "While utilities maintained relatively good market access during the credit crisis, the cost of capital is higher than prior to the credit crisis, and bank credit remains relatively tight."[23]

Q. WHAT DO THESE EVENTS IMPLY WITH RESPECT TO THE ROE FOR BLACK HILLS ENERGY?

A. No one knows the future of our complex global economy. We know that the financial crisis had been building for a long time and few predicted that the economy would fall as

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[19] The Value Line Investment Survey (June 12, 2009) at 446.
[20] *Rudden's Energy Strategy Report* (Oct. 1, 2008).
[21] Fitch Ratings Ltd., "EEI 2008 Wrap-Up: Cost of Capital Rising," *Global Power North America Special Report* (Nov. 17, 2008).
[22] Fitch Ratings Ltd., "U.S. Utilities, Power and Gas 2009 Outlook," *Global Power North America Special Report* (Dec. 22. 2008).
[23] Fitch Ratings Ltd., "Electric Utility Capital Spending: The Show Will Go On," *Global Power U.S. and Canada Special Report* (Oct. 14, 2009).

rapidly as it has, or that corporate bond yields would fluctuate as dramatically as they did. While conditions in the economy and capital markets appear to have stabilized, investors are apt to react swiftly and negatively to any future signs of trouble in the financial system or economy. Given the importance of reliable utility service for customers and the economy, it would be unwise to ignore investors' increased sensitivity to risk in evaluating Black Hills Energy's ROE.

III. CAPITAL MARKET ESTIMATES

Q. WHAT IS THE PURPOSE OF THIS SECTION?

A. In this section, I develop capital market estimates of the cost of common 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 and CAPM analyses conducted to estimate the cost of common equity for benchmark groups of comparable risk firms and evaluate expected earned rates of return for utilities. Finally, I examine flotation costs, which are properly considered in evaluating a fair ROE.

A. Economic Standards

Q. WHAT ROLE DOES THE RETURN ON COMMON EQUITY PLAY IN A UTILITY'S RATES?

A. The return on common equity is the cost of inducing and retaining 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.

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

A. 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.

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

A. 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. The observed yields on government securities, which are considered free of default risk, and bonds of various rating categories demonstrate that the risk-return tradeoff does, in fact, exist in the capital markets.

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

A. It is generally 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.

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

A. 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.

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

A. 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 utility 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.

Q. DID YOU RELY ON A SINGLE METHOD TO ESTIMATE THE COST OF COMMON EQUITY FOR BLACK HILLS ENERGY?

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

> Each model requires the exercise of judgment as to the reasonableness of the underlying assumptions of the methodology and on the reasonableness of the proxies used to validate the theory. Each model has its own way of examining investor behavior, its own premises, and its own set of simplifications of reality. Each method proceeds from different fundamental premises, most of which cannot be validated empirically.

> Investors clearly do not subscribe to any singular method, nor does the stock price reflect the application of any one single method by investors.[24]

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

Q. DOES THE FACT THAT THERE ARE DIFFERENT ACCEPTED METHODS TO ESTIMATE THE COST OF COMMON EQUITY, EACH BASED ON CERTAIN ASSUMPTIONS, IMPLY THAT DETERMINING THE ROE IS SUBJECTIVE?

A. Absolutely not. The alternative approaches that I have applied to estimate the cost of common equity have considerable theoretical and practical support, and the body of knowledge on the topic of cost of capital attests to the significance of developing estimates that work in the real world of financial markets. For example, the reality that investors require compensation for bearing the risk of putting their money in common stock is a fundamental tenet of the theory and practice of finance. While assumptions and judgment underlie these methods to estimate the cost of common equity, this does not imply that they are subjective or that the cost of common equity is unknowable.

Each method of estimating the cost of common equity is based on empirical evidence and accepted applications. While experts may disagree on particular nuances and details of their application, the reliability of these methods is confirmed by their use

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[24] Parcell, David C., "The Cost of Capital – A Practitioner's Guide," *Society of Utility and Regulatory Financial Analysts* at Part 2, p. 4 (1997).

throughout the regulatory arena as well as in the worlds of investment management and corporate finance. The fact that alternative methods may give somewhat different results, or that different experts may come to different estimates using these methods, does not mean the methods are subjective or unreliable. It means simply that interpreting the results of these methods requires care and practical judgment.

B. Comparable Risk Proxy Groups

Q. HOW DID YOU IMPLEMENT THESE QUANTITATIVE METHODS TO ESTIMATE THE COST OF COMMON EQUITY FOR BLACK HILLS ENERGY?

A. Application of the DCF model and other 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 the DCF model and other quantitative methods to a proxy group of publicly traded companies that investors regard as risk-comparable.

Q. WHAT SPECIFIC PROXY GROUPS OF UTILITIES DID YOU RELY ON FOR YOUR ANALYSIS?

A. In order to reflect the risks and prospects associated with Black Hills Energy's jurisdictional gas utility operations, my analyses focused on a reference group of twelve publicly traded firms included by Value Line in their Natural Gas Utility industry group. I refer to this group as the "Gas Utility Proxy Group". Given that these utilities are all engaged in gas utility operations and classified by Value Line as gas utilities, investors

are likely to regard this group as facing similar market conditions and having comparable risks and prospects.

In addition, I also considered quantitative estimates of investors' required rate of return for those utilities followed by Value Line with: (1) both gas and electric utility operations, (1) an S&P corporate credit rating of "BBB" or "BBB-", (2) a Value Line Safety Rank of "2" or "3", and (3) a Value Line Financial Strength Rating of "B" to "B++". In addition, I excluded one firm that otherwise would have been in the proxy group, but is not appropriate for inclusion because it is in the process of a major divestiture (Constellation Energy Group, Inc.). These criteria resulted in a proxy group composed of twelve companies, which I will refer to as the "Combination Utility Proxy Group."

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

A. Under the regulatory standards established by *Hope* and *Bluefield*, the salient criterion in establishing a meaningful benchmark to evaluate a fair ROE is relative risk, not the particular business activity or degree of regulation. As noted in *Regulatory Finance: Utilities' Cost of Capital*:

> "It should be emphasized that the definition of a comparable risk class of companies does not entail similarity of operation, product lines, or environmental conditions, but rather similarity of experienced business risk and financial risk."[25]

Utilities must compete for capital, not just against firms in their own industry, but with other investment opportunities of comparable risk. With regulation taking the place of

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[25] Morin, Roger A., "Regulatory Finance: Utilities' Cost of Capital," *Public Utilities Reports, Inc.* at 58 (1994).

competitive market forces, required returns for utilities should be in line with those of non-utility firms of comparable risk operating under the constraints of free competition. Consistent with this accepted regulatory standard, I also applied the DCF model to a reference group of comparable risk companies in the non-utility sectors of the economy. I refer to this group as the "Non-Utility Proxy Group".

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

A. My comparable risk proxy group was composed of those U.S. companies followed by Value Line that: 1) pay common dividends; 2) have a Safety Rank of "1"; 3) have investment grade credit ratings from S&P, and 4) have an S&P Stock Quality Ranking of "B" or higher. In addition, I also included only those firms with published earnings per share ("EPS") growth projections from at least two of the following sources: Value Line, Thomson Reuters ("IBES"),[26] First Call Corporation ("First Call"), and Zacks Investment Research ("Zacks").

Q. DO THESE CRITERIA PROVIDE OBJECTIVE EVIDENCE TO EVALUATE INVESTORS' RISK PERCEPTIONS?

A. Yes. 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.*, "A+") 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

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[26] Formerly I/B/E/S International, Inc., IBES growth rates are now compiled and published by Thomson Reuters. Thomson Reuters separately compiles and publishes consensus securities analyst growth rates under the IBES and First Call brands.

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.

Q. HOW DO THE OVERALL RISKS OF YOUR PROXY GROUPS COMPARE WITH BLACK HILLS ENERGY?

A. Table WEA-1 below compares the Gas Utility Proxy Group, the Combination Utility Proxy Group and Non-Utility Proxy Group with Black Hills Energy across four key indicia of investment risk. Because Black Hills Energy does not have publicly traded common stock or independent credit ratings, the values shown reflect those published for its parent, Black Hills Corp.:

TABLE WEA-1
COMPARISON OF RISK INDICATORS

	S&P Credit Rating	Value Line Safety Rank	Value Line Financial Strength	Value Line Beta
Gas Utility Group	A	2	B++	0.68
Combination Utility Group	BBB	3	B+	0.77
Non-Utility Proxy Group	A	1	A+	0.79
Black Hills Corp.	BBB-	3	B+	0.85

Q. DO THESE COMPARISONS INDICATE THAT INVESTORS WOULD VIEW THE FIRMS IN YOUR PROXY GROUPS AS RISK-COMPARABLE TO BLACK HILLS ENERGY?

A. Yes. As discussed earlier, Black Hills Corp. is assigned a corporate credit rating of "BBB-" by S&P, which falls below the average corporate credit rating for the Gas Utility and Combination Utility Proxy Groups. Meanwhile, the Value Line measures for the Gas Utility Proxy Group indicate less risk than the values assigned to Black Hills Energy's parent, while the values for the Combination Utility Proxy Group are generally comparable to Black Hills Corp. The Non-Utility Proxy Group's average risk measures also suggest less risk than for Black Hills Energy. While any differences in investment

risk attributable to regulation should already be reflected in these objective measures, my analyses conservatively focus on a lower-risk group of non-utility firms. Considered together, a comparison of these objective measures indicates that the risks investors associate with Black Hills Energy generally exceed those of the proxy groups. As a result, the costs of equity estimates indicated by my analyses provide a conservative estimate of investors' required ROE for Black Hills Energy.

C. Discounted Cash Flow Analyses

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

A. 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. Notationally, 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.

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

A. Rather than developing annual estimates of cash flows into perpetuity, the DCF model can be simplified to a "constant growth" form:[27]

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

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 price appreciation.

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[27] 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.

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

A. I applied the constant growth DCF model to estimate the cost of common equity for Black Hills Energy, 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.

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

A. 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, and more controversial, 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.

Q. HOW WAS THE DIVIDEND YIELD FOR THE GAS UTILITY PROXY GROUP DETERMINED?

A. Estimates of dividends to be paid by each of these utilities over the next twelve months, obtained from Value Line, served as D_1. This annual dividend was then divided by the corresponding 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 Gas Utility Proxy Group are presented on Exhibit WEA-2. As shown there, dividend yields for this group of natural gas LDCs ranged from 3.2 percent to 6.8 percent.

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

A. 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.

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

A. 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 dividends, earnings pressure, and, in many cases, significant write-offs. While these conditions serve to distort historical growth measures, they are not representative of long-term growth for the utility industry or 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.

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

A. While the DCF model is technically concerned with growth in dividend cash flows, implementation of this 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 gas utilities falling from approximately 75 percent historically to on the order of 60 percent.[28] 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, 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. As noted in *Finding Reality in Reported Earnings* published by the Association for Investment Management and Research:

> [E]arnings, presumably, are the basis for the investment benefits that we all seek. "Healthy earnings equal healthy investment benefits" seems a logical equation, but earnings are also a scorecard by which we compare

[28] The Value Line Investment Survey (Mar. 29, 1996 at 472, Mar. 13, 2009 at 446).

> companies, a filter through which we assess management, and a crystal ball in which we try to foretell future performance.[29]

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

> The future earnings rank accounts for 65% in the determination of relative price change in the future; the other two variables (current earnings rank and current price rank) explain 35%.[30]

The fact that investment advisory services focus primarily on growth in earnings indicates that the investment community regards this as a superior indicator of future long-term growth. Indeed, "A Study of Financial Analysts: Practice and Theory," published in the *Financial Analysts Journal*, reported the results of a survey conducted to determine what analytical techniques investment analysts actually use.[31] Respondents were asked to rank the relative importance of earnings, dividends, cash flow, and book value in analyzing securities. Of the 297 analysts that responded, only 3 ranked dividends first while 276 ranked it last. The article concluded:

> Earnings and cash flow are considered far more important than book value and dividends.[32]

More recently, the *Financial Analysts Journal* reported the results of a study of the relationship between valuations based on alternative multiples and actual market prices,

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[29] Association for Investment Management and Research, "Finding Reality in Reported Earnings: An Overview" at 1 (Dec. 4, 1996).
[30] The Value Line Investment Survey, *Subscriber's Guide* at 53.
[31] Block, Stanley B., "A Study of Financial Analysts: Practice and Theory", *Financial Analysts Journal* (July/August 1999).
[32] *Id.* at 88.

which concluded, "In all cases studied, earnings dominated operating cash flows and dividends."[33]

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

A. 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.

Q. WHAT ARE SECURITY ANALYSTS CURRENTLY PROJECTING IN THE WAY OF GROWTH FOR THE FIRMS IN THE GAS UTILITY PROXY GROUP?

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

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

A. No. 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.

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[33] Liu, Jing, Nissim, Doron, & Thomas, Jacob, "Is Cash Flow King in Valuations?," *Financial Analysts Journal*, Vol. 63, No. 2 at 56 (March/April 2007).

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 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 *Regulatory Finance: Utilities' Cost of Capital*:

> 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 also 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]. ... Published studies in the academic literature demonstrate that growth forecasts made by securities analysts represent an appropriate source of DCF growth rates, are reasonable indicators of investor

expectations and are more accurate than forecasts based on historical growth.[34]

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

A. 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 seldom, if ever, 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.

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

A. 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 will accrue to the current shareholders. This increase to the book value of existing shareholders leads to higher

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[34] Morin, Roger A., "Regulatory Finance: Utilities' Cost of Capital," *Public Utilities Reports, Inc.* at 154 (1994).

expected earnings and dividends, with the "sv" factor incorporating this additional growth component.

Q. WHAT GROWTH RATE DOES THE EARNINGS RETENTION METHOD SUGGEST FOR THE GAS UTILITY PROXY GROUP?

A. The sustainable, "br+sv" growth rates for each firm in the Utility Proxy Group are summarized on Exhibit WEA-2, with the underlying details being presented on Exhibit WEA-3. 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.

Q. WHAT OTHER GROWTH RATE DID YOU CONSIDER?

A. As noted earlier, the DCF model assumes that investors expect to receive a portion of their total return in the form of current dividends and the remainder through price appreciation. Consistent with this paradigm, I also examined expected growth in each utility's stock price based on Value Line's 2011-2014 projections.

Q. WHAT COST OF COMMON EQUITY ESTIMATES WERE IMPLIED FOR THE GAS UTILITY PROXY GROUP USING THE DCF MODEL?

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

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

A. 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.

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

A. It is a basic economic principle that investors can be induced to hold more risky assets only if they expect to earn a return to compensate them for their risk bearing. 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 senior, long-term debt. Consistent with this principle, the DCF results for the Utility Proxy Group must be adjusted to eliminate estimates that are determined to be extreme low outliers when compared against the yields available to investors from less risky utility bonds.

Q. HAVE SIMILAR TESTS BEEN APPLIED BY REGULATORS?

A. 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. In a 2002 opinion establishing its current precedent for determining ROEs for electric utilities, for example, FERC noted:

> An adjustment to this data is appropriate in the case of PG&E's low-end return of 8.42 percent, which is comparable to the average Moody's "A" grade public utility bond yield of 8.06 percent, for October 1999. Because investors cannot be expected to purchase stock if debt, which has less risk than stock, yields essentially the same return, this low-end return cannot be considered reliable in this case.[35]

More recently, in its March 27, 2009 decision in *Pioneer*, FERC concluded that it would exclude low-end ROEs "within about 100 basis points above the cost of debt."[36]

Q. WHAT DOES THIS TEST OF LOGIC IMPLY WITH RESPECT TO THE DCF RESULTS FOR THE GAS UTILITY PROXY GROUP?

A. The average corporate credit rating associated with the firms in the Gas Utility Proxy Group is "A", with Moody's monthly yields on single-A bonds averaging approximately 5.6 percent in October 2009.[37] As highlighted on Exhibit WEA-2, one of the individual equity estimates for the firms in the Gas Utility Proxy Group exceeded this threshold by less than 100 basis points. In light of the risk-return tradeoff principle and the test applied in *Pioneer*, it is inconceivable that investors are not requiring a substantially

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[35] *Southern California Edison Company*, 92 FERC ¶ 61,070 (2000) at p. 22.
[36] *Pioneer Transmission, LLC*, 126 FERC ¶ 61,281 at P 94 (2009) ("*Pioneer*").
[37] Moody's Investors Service, www.credittrends.com.

higher rate of return for holding common stock, which is the riskiest of a utility's securities. As a result, consistent with the test of economic logic applied by FERC, this value provides little guidance as to the returns investors require from gas utility common stocks and should be excluded.

Q. DO YOU ALSO RECOMMEND EXCLUDING ESTIMATES AT THE HIGH END OF THE RANGE OF DCF RESULTS?

A. Yes. The upper end of the cost of common equity range produced by the DCF analysis presented in Exhibit WEA-2 was set by an estimate of 18.8 percent. In addition to this extreme outlier, I determined that, when compared with the balance of the remaining estimates, a DCF estimate of 17.9 percent should also be excluded in evaluating the results of the DCF model for the Gas Utility Proxy Group. 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.[38]

Q. WHAT COST OF COMMON EQUITY ESTIMATES ARE IMPLIED BY YOUR DCF RESULTS FOR THE GAS UTILITY PROXY GROUP?

A. As shown on Exhibit WEA-2 and summarized in Table WEA-2, below, after eliminating illogical low- and high-end values, application of the constant growth DCF model resulted in cost of common equity estimates ranging from 8.9 percent to 11.5 percent:

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[38] See, *e.g.*, *ISO New England, Inc.*, 109 FERC ¶ 61,147 at P 205 (2004).

TABLE WEA-2
DCF RESULTS –GAS UTILITY PROXY GROUP

Growth Rate	Average Cost of Equity
Value Line	8.9%
IBES	9.9%
First Call	9.8%
Zacks	10.2%
br+sv	10.6%
Stock Price	11.5%

Q. WHAT WERE THE RESULTS OF YOUR DCF ANALYSIS FOR THE COMBINATION UTILITY PROXY GROUP?

A. I applied the DCF model to the Combination Utility Proxy Group in exactly the same manner described earlier for the Gas Utility Proxy Group. The results of my DCF analysis for the Combination Utility Proxy Group are presented in Exhibit WEA-4, with the sustainable, "br+sv" growth rates being developed on Exhibit WEA-5. As shown on Exhibit WEA-4 and summarized in Table WEA-3, below, after eliminating illogical low- and high-end values,[39] application of the constant growth DCF model resulted in cost of common equity estimates in the 10.7 percent to 12.9 percent range:

[39] As noted earlier, the average credit rating for the firms in the Combination Utility Proxy Group is "BBB". Accordingly, low-end cost of equity estimates were evaluated against the average yield on triple-B bonds of 6.1 percent reported by Moody's for October 2009.

TABLE WEA-3
DCF RESULTS – COMBINATION UTILITY PROXY GROUP

Growth Rate	Average Cost of Equity
Value Line	12.0%
IBES	11.1%
First Call	10.7%
Zacks	12.4%
br+sv	10.8%
Stock Price	12.9%

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

A. As shown on Exhibit WEA-6 and summarized in Table WEA-4, below, after eliminating illogical low- and high-end values, application of the constant growth DCF model resulted in cost of common equity estimates generally in the 12 percent to 13 percent range:

TABLE WEA-4
DCF RESULTS – NON-UTILITY PROXY GROUP

Growth Rate	Average Cost of Equity
Value Line	11.3%
IBES	12.3%
First Call	12.7%
Zacks	13.0%
br+sv	12.3%
Stock Price	12.4%

As discussed earlier, reference to the Non-Utility Proxy 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.

D. Capital Asset Pricing Model

Q. PLEASE DESCRIBE THE CAPM.

A. The CAPM 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. 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 CAPM 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 CAPM must be applied using estimates that reflect the expectations of actual investors in the market, not with backward-looking, historical data.

Q. HOW DID YOU APPLY THE CAPM TO ESTIMATE THE COST OF COMMON EQUITY?

A. Application of the CAPM to the three proxy groups based on a forward-looking estimate for investors' required rate of return from common stocks is presented on Exhibit WEA-8. In order to capture the expectations of today's investors in current capital markets, the expected market rate of return was estimated by conducting a DCF analysis on the dividend paying firms in the S&P 500.

The dividend yield for each firm was calculated based on the annual indicated

dividend payment obtained from Value Line, increased by one-years' growth using the rate discussed subsequently (1 + *g*) to convert them to year-ahead dividend yields presumed by the constant growth DCF model. The growth rate was equal to the consensus earnings 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 348 individual firms, current estimates imply an average growth rate over the next five years of 9.2 percent. Combining this average growth rate with an adjusted dividend yield of 2.7 percent results in a current cost of common equity estimate for the market as a whole of approximately 11.9 percent. Subtracting a 4.2 percent risk-free rate based on the average yield on 20-year Treasury bonds produced a market equity risk premium of 7.7 percent.

Q. WHAT WAS THE SOURCE OF THE BETA VALUES YOU USED TO APPLY THE CAPM?

A. 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. As noted in *Regulatory Finance: Utilities' Cost of Capital*:

> 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. . . . Value Line is the largest and most widely circulated independent investment advisory service, and exerts influence on a large number of institutional and individual investors and on the expectations of these investors.[40]

As shown on page 1 of Exhibit WEA-8, multiplying the 7.7 percent market risk premium by the average Value Line beta for the firms in the Gas Utility Proxy Group, and then

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[40] Morin, Roger A., "Regulatory Finance: Utilities' Cost of Capital," *Public Utilities Reports* at 65 (1994).

adding the resulting risk premium to the average long-term Treasury bond yield, results in an average indicated cost of common equity of 9.5 percent. Applying this same CAPM approach to the firms in the Combination Utility Proxy Group implied an average cost of equity of 10.2 percent (Exhibit WEA-8, page 2).

Q. WHAT COST OF COMMON EQUITY WAS INDICATED FOR THE NON-UTILITY PROXY GROUP BASED ON THIS FORWARD-LOOKING APPLICATION OF THE CAPM?

A. As shown on page 3 of Exhibit WEA-8, applying the forward-looking CAPM approach to the firms in the Non-Utility Proxy Group results in an average implied cost of common equity of 10.3 percent.

Q. DO YOU HAVE ANY OBSERVATIONS REGARDING THESE CAPM RESULTS?

A. Yes. Applying the CAPM is complicated by the impact of the recent capital market turmoil and recession on investors' risk perceptions and required returns. The CAPM cost of common equity estimate is calibrated from investors' required risk premium between Treasury bonds and common stocks. In response to heightened uncertainties, investors have sought a safe haven in U.S. government bonds and this "flight to safety" has pushed Treasury yields to abnormally low levels while yield spreads for corporate debt have widened. This distortion not only impacts the absolute level of the CAPM cost of equity estimate, but it affects estimated risk premiums. Economic logic would suggest that investors' required risk premium for common stocks over Treasury bonds has also increased. Thus, recent capital market conditions may cause CAPM cost of common equity estimates to understate investors' required returns for common stocks, particularly when historical data are used to calculate the market risk premium. While my application

of the CAPM makes every effort to incorporate investors' forward-looking expectations, the full effect of the "flight to safety" may not be captured in my market risk premium estimate.

Second, the beta in CAPM theory is a measure of the investors' expected relationship of a firm's stock price to the market as a whole. Because investors' expected beta for a firm is not known, reported betas are estimated based on historical relationships. The precipitous drop and subsequent partial recovery in stock prices over the last year or so have caused many firms' historical betas to become unstable, so that reported betas may or may not reflect investors' expected beta. Because of this inherent mismatch between the historical circumstances underlying reported beta values and the current perceptions of investors, the CAPM may not accurately reflect investor's forward-looking rate of return requirements.

Meanwhile, forward-looking estimates of the market required rate of return may be distorted by the recent run-up in stock prices. It is not clear whether reported security analysts' dividend and growth projections have kept pace with the economic recovery expectations presumably pushing up stock prices; if not, there is a mismatch that under-estimates of the market required rate of return. This incongruity between current measures of the market risk premium and historical beta values is particularly relevant during periods of heightened uncertainty and rapidly changing capital market conditions, such as those experienced recently. As a result, there is every indication that CAPM approaches fail to fully reflect the risk perceptions of real-world investors in today's capital markets, which would violate the standards underlying a fair rate of return by

failing to provide an opportunity to earn a return commensurate with other investments of comparable risk.

E. Expected Earnings Approach

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

A. As I 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.

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

A. Value Line reports that its analysts anticipate an average rate of return on common equity for the gas utility industry of 10.0 percent in 2009, 10.5 percent in 2010, and 11.0 percent over its 2012-2014 forecast horizon.[41] Meanwhile, for the electric utility industry Value Line expects earned returns on common equity of 10.5 percent in 2009 and 11.0 percent in 2010 and for 2012-2014.[42]

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[41] The Value Line Investment Survey at 445 (Sep. 11, 2009).
[42] The Value Line Investment Survey at 687 (Sep. 25, 2009).

For the firms in the Gas Utility Proxy Group specifically, the returns on common equity projected by Value Line over its three-to-five year forecast horizon are shown on page 1 of Exhibit WEA-9, with identical values for the Combination Utility Proxy Group being presented on page 2. 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 Exhibits WEA-3 and WEA-5, respectively. As shown on page 1 Exhibit WEA-9, Value Line's projections for the Gas Utility Proxy Group suggested an average ROE of 11.5 percent. The average indicated ROE for the Combination Utility Proxy Group (page 2 of Exhibit WEA-9) was 10.4 percent.

F. Flotation Costs

Q. WHAT OTHER CONSIDERATIONS ARE RELEVANT IN DETERMINING THE ROE FOR BLACK HILLS ENERGY?

A. 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 that a utility nets when it issues common equity.

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

A. 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. Alternatively, 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 common equity being the most logical mechanism.

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

A. While there are a number of ways in which a flotation cost adjustment can be calculated, one of 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.[43]

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 percent.[44]

Issuance costs are a legitimate consideration in setting the return on equity for a utility, and applying these expense percentages to a representative dividend yield for a utility of 5.5 percent implies a flotation cost adjustment on the order of 20 to 55 basis points. While my recommendation does not include an adjustment for flotation costs, this is a legitimate consideration that should be reflected in establishing an ROE for Black Hills Energy in this case.

IV. RETURN ON EQUITY FOR BLACK HILLS ENERGY

Q. WHAT IS THE PURPOSE OF THIS SECTION?

A. In addition to presenting the conclusions of my evaluation of a fair ROE on equity range for Black Hills Energy, this section also discusses the relationship between ROE and preservation of a utility's financial integrity and the ability to attract capital. In addition, I evaluate the reasonableness of Black Hills Energy's requested capital structure.

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[43] Roger A. Morin, "Regulatory Finance: Utilities' Cost of Capital," *Public Utilities Reports* (1994) at 166.

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

A. Implications for Financial Integrity

Q. WHY IS IT IMPORTANT TO ALLOW BLACK HILLS ENERGY AN ADEQUATE ROE?

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

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

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

Q. WHAT ROLE DOES REGULATION PLAY IN ENSURING THAT BLACK HILLS ENERGY HAS ACCESS TO CAPITAL UNDER REASONABLE TERMS AND ON A SUSTAINABLE BASIS?

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

> Regulatory risk remains a recurring theme for this year's outlook, as the pressure of a weak economic backdrop could result in political push-back to rate increase requests.[45]

The report went on to conclude, "Fitch is concerned that the recent rapid escalation in the cost of capital will not be reflected on a timely basis in utility rates."[46] Moody's has also emphasized the need for regulatory support, concluding:

> For the longer term, however, we are becoming increasingly concerned about possible changes to our fundamental assumptions about regulatory risk, particularly the prospect of a more adversarial political (and therefore regulatory) environment. A prolonged recessionary climate with high unemployment, or an intense period of inflation, could make cost recovery more uncertain.[47]

Similarly, S&P concluded, "the quality of regulation is at the forefront of our analysis of utility creditworthiness."[48]

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[45] Fitch Ratings Ltd., "U.S. Utilities, Power and Gas 2009 Outlook," *Global Power North America Special Report* (Dec. 22, 2008).
[46] *Id.*
[47] Moody's Investors Service, "U.S. Regulated Electric Utilities, Six-Month Update," *Industry Outlook* (July 2009).
[48] Standard & Poor's Corporation, "Assessing U.S. Utility Regulatory Environments," *RatingsDirect* (Nov. 7, 2008).

Q. DO CUSTOMERS BENEFIT BY ENHANCING THE UTILITY'S FINANCIAL FLEXIBILITY?

A. Yes. Providing an ROE that is both commensurate with those available from investments of corresponding risk and sufficient to maintain Black Hills Energy's ability to attract capital (through the efforts of Black Hills Corp., or in it's own name as needed) is consistent with the economic requirements embodied in the U.S. Supreme Court's *Bluefield* and *Hope* decisions; but it is also in customers' best interests. Ultimately, it is customers and the service area economy that enjoy the benefits that come from ensuring that the utility has the financial wherewithal to take whatever actions are required to ensure a reliable energy supply. By the same token, customers also bear a significant burden when the ability of the utility to attract capital is impaired and service quality is compromised.

B. Relative Risks of Black Hills Energy

Q. HOW DO THE INVESTMENT RISKS OF BLACK HILLS ENERGY COMPARE TO THE REFERENCE GROUPS USED TO ESTIMATE THE COST OF EQUITY?

A. Though indicative of dramatically less risk than the speculative grade ratings formerly assigned to Aquila, Inc., the "BBB-" corporate credit rating applicable to Black Hills Corp. and attributable to Black Hills Energy occupies the lowest rung on the investment grade ladder. Black Hills Corp.'s credit ratings are indicative of higher investment risks than the proxy groups of gas utilities and non-utility firms, which have average corporate credit ratings of "A". Similarly, as illustrated earlier in Table WEA-2, a comparison of key risk indicators for common stocks also confirms that investors would conclude that

Black Hills Energy's risks generally exceed those of the proxy groups used to estimate the cost of equity. Because investors require a higher rate of return to compensate them for bearing more risk, the greater investment risks implied for Black Hills Energy suggests that the cost of equity is correspondingly higher than for the proxy groups.

Q. HOW DOES THE LACK OF A WNA IMPACT BLACK HILLS ENERGY'S ROE RELATIVE TO THE GAS UTILITY PROXY GROUP?

A. As indicated earlier, Black Hills Energy does not have a weather normalization adjustment mechanism in place to account for the impacts of abnormal weather on its gas utility operations. A WNA moderates the impact of extreme weather on customers and, at the same time, dampens the volatility of a gas utility's revenues. Indeed, all but one of the twelve LDCs in the proxy group used to estimate the cost of equity have some form of weather mitigant, including adjustment clauses, insurance, or rate design features that make the LDC less susceptible to variations in gas consumption due to weather. As Value Line noted, "Weather abnormalities can hurt results," concluding, "Many of these businesses have weather-adjusted rate mechanisms that are used to hedge the risk of unseasonable weather."[49] As a result, while Black Hills Energy remains exposed to the risks associated with abnormal weather, the reduced uncertainties associated with a WNA are at least partially accounted-for by investors and reflected in my cost of equity estimates.

[49] The Value Line Investment Survey at 446 (Mar. 13, 2009).

Q. WHAT OTHER CONSIDERATIONS ARE RELEVANT IN DETERMINING A REASONABLE ROE FOR BLACK HILLS ENERGY?

A. In evaluating a reasonable ROE, it is also important to note that, unlike many gas utilities, Black Hills Energy does not benefit from elasticity or decoupling mechanisms that insulate utility margins from declining usage. As a result, Black Hills Energy's continued exposure to the uncertainties associated with the impact of price elasticity and other fluctuations in customer usage implies a level of risk in excess of that faced by other gas utilities.

Q. WOULD INVESTORS CONSIDER BLACK HILLS ENERGY'S RELATIVE SIZE IN DETERMINING THEIR REQUIRED RATE OF RETURN?

A. Yes. A firm's relative size has important implications for investors in their evaluation of alternative investments, and it is well established that smaller firms are more risky than larger firms. With a market capitalization of less than $950 million, Black Hills Corp. is one of the smallest publicly traded utilities followed by Value Line, which have an average capitalization of approximately $5.7 billion.[50] Similarly, the average market capitalization for the other utilities in my two proxy groups is $3.5 billion. Black Hills Energy, in turn, is considerably smaller than its parent.

The magnitude of the size disparity between Black Hills Energy and other firms in the utility industry has important practical implications with respect to the risks faced by investors. All else being equal, it is well accepted that smaller firms are more risky than their larger counterparts, due in part to their relative lack of diversification and lower financial resiliency. This size relationship is well established and widely documented in

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[50] www.valueline.com (Retrieved Nov. 16, 2009).

the financial literature.[51] In the case of a smaller utility, its earnings are principally dependent on the economic, social, regulatory, and other factors affecting a more limited constituency. This can result in significant exposure, especially where key employers or industries dominate the economy.

Additionally, due to the lower density and other characteristics of its service territory, a smaller utility serving more sparsely populated rural areas generally incurs higher investment and expenses per customer than is typical for other utility providers. Meanwhile, larger utilities generally enjoy improved exposure to financial markets, which enhances their ability to raise additional capital relative to smaller utilities. As a result, they are better prepared to withstand adverse events and possess greater financial flexibility to respond or adapt to changing market conditions, such as those that currently confront the utility industry. Common sense and accepted financial doctrine hold that investors require higher returns from smaller companies, and unless that compensation is provided in the ROE allowed for a utility, the tests embodied in the *Bluefield* and *Hope* cases cannot be met.

Q. WHAT IS THE MAGNITUDE OF THE ADJUSTMENT REQUIRED TO ACCOUNT FOR THIS SIZE PREMIUM?

A. Extensive analyses of firm size and returns are available from Morningstar, Inc. ("Morningstar"),[52] which reports data for "Mid-Cap" and "Low-Cap" stocks in addition to its better-known reports on the S&P 500. Mid-Cap companies comprise the 3rd

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[51] See, *e.g.*, Eugene F. Fama and Kenneth R. French, "The Cross-Section of Expected Stock Returns", *The Journal of Finance* (June 1992); George E. Pinches, J. Clay Singleton, and Ali Jahankhani, "Fixed Coverage as a Determinant of Electric Utility Bond Ratings", *Financial Management* (Summer 1978).

[52] Morningstar, Inc. now publishes *Stocks, Bonds, Bills, and Inflation*, which is based on the seminal study of long-term historical returns on asset classes originally published by Roger G. Ibbotson and Rex A. Sinquefield, and expanded upon by Ibbotson Associates.

through 5th size-deciles of those stocks listed on the New York Stock Exchange, American Stock Exchange, and NASDAQ, while Low-Cap stocks represent the 6th through 8th size-deciles.

The individual firms in the Mid-Cap group have market capitalizations at or below about $7.4 billion but greater than $1.8 billion, with the market capitalization of Low-Cap stocks falling between approximately $1.8 billion and $453 million.[53] These smaller companies have historically earned higher rates of return than the large companies comprising the S&P 500. For the 1926 to 2008 period, Morningstar reported a size premium in excess of the return implied by the CAPM of 94 basis points for the mid-cap sector, or 174 basis points for low-cap companies.[54]

Q. IS THERE ANY OTHER EVIDENCE THAT QUANTIFIES THE DIFFERENCE IN THE COST OF EQUITY BETWEEN LARGE AND SMALL UTILITIES?

A. Yes. A study reported in *Public Utilities Fortnightly* noted that the betas of small companies do not fully account for the higher realized rates of return associated with small company stocks:

> The smaller deciles show returns not fully explainable by the CAPM. The difference in risk premium (realized versus CAPM) grows larger as one moves from the largest companies in decile 1 to the smallest in decile 10. The difference is especially pronounced for deciles 9 and 10, which contain the smallest companies. [55]

The study went on to conclude that a publicly traded utility with a market capitalization of $1.0 billion would require a small company premium of approximately 130 basis points above the rate of return for larger firms.

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[53] Morningstar, Inc., *Ibbotson SBBI, 2009 Valuation Handbook* at 90.
[54] *Id.* at 94, Table 7-5.
[55] Annin, Michael, "Equity and the Small-Stock Effect", Public Utilities Fortnightly (Oct. 15, 1995), at 43.

Q. HAVE YOU MADE A SPECIFIC ADJUSTMENT TO YOUR ROE RESULTS TO REFLECT THE IMPACT OF BLACK HILLS ENERGY'S SMALLER SIZE?

A. No. While the impact of a firm's relative size is properly included in estimating investors' required ROE, I have not made a specific adjustment to the results of my analyses. Rather, I recommend that Black Hills Energy's smaller size be considered in establishing a point estimate from within my recommended range.

Q. WHAT DOES THIS EVIDENCE SUGGEST WITH RESPECT TO BLACK HILLS ENERGY'S COST OF EQUITY RELATIVE TO THE PROXY GROUP RESULTS?

A. Although marking a vast improvement over the speculative ratings formerly associated with Aquila, Inc., Black Hills Energy's relatively lower credit ratings and the lack of WNA or decoupling mechanism suggest that investors' required return for Black Hills Energy exceeds that of the proxy groups used to estimate the cost of equity. Similarly, considering Black Hills Corp.'s equity market capitalization of less than $1.0 billion, and the fact that Black Hills Energy is considerably smaller still, this data implies that investors require an ROE in excess of the cost of equity estimates discussed above.

Competition for capital resources is intense and investors are free to invest their funds wherever they choose. Denying investors the opportunity to earn a return that is commensurate with Black Hills Energy's investment risks would stymie the efforts of both Black Hills Energy and Black Hills Corp. to maintain its credit standing and hamper its future ability to attract capital under reasonable terms, especially during periods of adverse capital market conditions.

C. Capital Structure

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

A. 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.

Q. WHAT COMMON EQUITY RATIO IS IMPLICIT IN BLACK HILLS ENERGY'S REQUESTED CAPITAL STRUCTURE?

A. Black Hills Energy's capital structure is presented in the testimony of Anthony S. Cleberg. As summarized there, common equity as a percent of the capital sources used to compute the overall ROE for Black Hills Energy was 52 percent.

Q. HOW CAN BLACK HILLS ENERGY'S REQUESTED CAPITAL STRUCTURE BE EVALUATED?

A. It is generally accepted that the norms established by comparable firms provide one valid benchmark against which to evaluate the reasonableness of a utility's capital structure. The capital structure maintained by other utilities should reflect their collective efforts to finance themselves so as to minimize capital costs while preserving their financial integrity and ability to attract capital. Moreover, these industry capital structures should

also incorporate the requirements of investors (both debt and equity), as well as the influence of regulators.

Q. WHAT AVERAGE CAPITALIZATION IS MAINTAINED BY THE GAS UTILITY PROXY GROUP?

A. As shown on Exhibit WEA-10, for the firms in the Utility Proxy Group, common equity ratios at fiscal year-end 2008 ranged between 42.4 percent and 66.1 percent and averaged 52.9 percent of long-term capital. Meanwhile, Value Line expects an average common equity ratio for the Gas Utility Proxy Group of 56.2 percent for its three-to-five year forecast horizon.

Q. WHAT AVERAGE CAPITALIZATION IS MAINTAINED BY THE COMBINATION UTILITY PROXY GROUP?

A. Capitalization ratios for the firms in the Combination Utility Proxy Group are shown on Exhibit WEA-11. Common equity ratios at year-end 2008 ranged between 26.5 percent and 67.6 percent and averaged 45.4 percent of long-term capital for these combination utilities, with Value Line projecting an average common equity ratio for the Combination Utility Proxy Group of 46.2 percent for 2012-2014.

Q. WHAT IMPLICATION DOES THE INCREASING RISK OF THE UTILITY INDUSTRY HAVE FOR THE CAPITAL STRUCTURE MAINTAINED BY BLACK HILLS ENERGY?

A. As discussed earlier, utilities are facing energy market volatility, rising cost structures, the need to finance significant capital investment plans, uncertainties over accommodating economic and financial market uncertainties, and ongoing regulatory risks. Taken together, 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.

Moody's has warned investors of the risks associated with debt leverage and fixed obligations and advised utilities not to squander the opportunity to strengthen the balance sheet as a buffer against future uncertainties.[56] Moody's noted that, "maintaining unfettered access to capital markets will be crucial," and cited the importance of forestalling future downgrades by bolstering utility balance sheets.[57] As Moody's concluded:

> Our concerns are clearly growing, but we believe utilities have adequate time to adjust and revise their corporate finance polices and strengthen balance sheets, thereby improving their ability to manage volatility and address uncertainty.[58]

Moody's affirmed that because of its significant investment plans, the utility industry "will need to attract a significant amount of new equity capital in order to maintain existing ratings."[59] Considering the implications of the low credit ratings and small size associated with Black Hills Energy, an equity ratio higher than the proxy group average is reasonable and necessary.

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[56] Moody's Investors Service, "Storm Clouds Gathering on the Horizon for the North American Electric Utility Sector," *Special Comment* (Aug. 2007); "U.S. Electric Utility Sector," *Industry Outlook* (Jan. 2008).
[57] Moody's Investors Service, "U.S. Investor-Owned Electric Utilities," *Industry Outlook* (Jan. 2009).
[58] *Id.*
[59] Moody's Investors Service, "U.S. Investor-Owned Electric Utilities: Six-Month Industry Update," *Industry Outlook* (July 2008).

Q. WHAT DOES THIS EVIDENCE SUGGEST WITH RESPECT TO BLACK HILLS ENERGY'S PROPOSED CAPITAL STRUCTURE?

A. Based on my evaluation, I concluded that Black Hills Energy's requested capital structure represents a reasonable mix of capital sources from which to calculate its overall rate of return. The 52 percent common equity ratio requested by Black Hills Energy falls below the average maintained by the proxy group of other natural gas utilities and is within the range of capitalizations for the Combination Utility Proxy Group. 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 firm has large capital requirements over a period of years, and financing must be continuously available, even during unfavorable capital market conditions.

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

D. Return on Equity Range Recommendation

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR ANALYSES.

A. Reflecting the fact that investors' required return on equity is unobservable and no single method should be viewed in isolation, I used both the DCF and CAPM methods and referenced expected earned rates of return for utilities. In order to reflect the risks and prospects associated with the Black Hills Energy's utility operations, my analyses focused on a proxy group of other LDCs, as well as a group of utilities with both gas and electric utility operations. Consistent with the fact that utilities must compete for capital with firms outside their own industry, I also referenced a proxy group of low-risk companies in the non-utility sectors of the economy.

My application of the constant growth DCF model considered four alternative growth measures based on projected earnings growth, the sustainable, "br+sv" growth rate, as well as expected stock price appreciation for each firm in the respective proxy groups. In addition, I evaluated the reasonableness of the resulting DCF estimates and eliminated low- and high-end outliers that failed to meet threshold tests of economic logic. My CAPM analyses were based on forward-looking data that best reflects the underlying assumptions of this approach. The cost of common equity estimates produced by the various capital market oriented analyses described in my testimony are summarized in Table WEA-5, below:

TABLE WEA-5
SUMMARY OF QUANTITATIVE RESULTS

	Gas Utility	Combination Utility	Non-Utility
DCF			
Value Line	8.9%	12.0%	11.3%
IBES	9.9%	11.1%	12.3%
First Call	9.8%	10.7%	12.7%
Zacks	10.2%	12.4%	13.0%
br+sv	10.6%	10.8%	12.3%
Stock Price	11.5%	12.9%	12.4%
CAPM	9.5%	10.2%	10.3%
Expected Earnings			
2009	10.0%	10.5%	
2010	10.5%	11.0%	
2012-14	11.0%	11.0%	
Utility Proxy Group	11.5%	10.4%	

As noted earlier, because the capital market crisis and ensuing recovery have created a number of problems in applying the CAPM, I largely disregarded the resulting cost of equity estimates. Based on my assessment of the relative strengths and weaknesses inherent in each method, and conservatively giving less emphasis to the upper- and lower-most boundaries of the range of results, I concluded that the cost of common equity indicated by my analyses is in the 10.7 percent to 12.2 percent range.

Q. WHAT OTHER CONSIDERATIONS ARE REASONABLY CONSIDERED IN ESTABLISHING A FAIR ROE RANGE FOR BLACK HILLS ENERGY?

A. 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 recession ends and the economy returns to a more normal pattern of growth. This implies that the cost of permanent capital, including common equity, will be higher in the upcoming years than it is currently.

Q. HOW DO CURRENT INTEREST RATES ON LONG-TERM BONDS COMPARE WITH THOSE PROJECTED FOR THE NEXT FEW OF YEARS?

A. Table WEA-6 below compares current interest rates on 30-year Treasury bonds, double-A rated utility bonds, and triple-A rated corporate bonds with those projected for 2008 through 2011 by Value Line,[60] GlobalInsight,[61] , and the EIA:[62]

TABLE WEA-6
INTEREST RATE TRENDS

	Oct. 2009	2010	2011	2012	2013
30-Yr. Treasury					
Value Line	4.2%	4.8%	4.5%	5.1%	5.5%
GlobalInsight	4.2%	3.8%	4.9%	5.0%	5.2%
AA Utility					
GlobalInsight	5.2%	6.2%	6.5%	6.4%	6.7%
EIA	5.2%	6.1%	6.8%	6.6%	6.8%
AAA Corporate					
Value Line	5.2%	5.9%	5.8%	6.2%	6.7%
GlobalInsight	5.2%	5.4%	6.0%	6.0%	6.2%

As evidenced above, there is a clear consensus that the cost of permanent capital will be higher in the 2010-2013 timeframe than it is currently. As a result, current cost of capital estimates are likely to understate investors' requirements at the time the outcome of this proceeding becomes effective and beyond.

Q. WHAT THEN IS YOUR CONCLUSION AS TO A FAIR ROE ON EQUITY RANGE FOR BLACK HILLS ENERGY?

A. Considering capital market expectations, the potential exposures faced by both Black Hills Energy and Black Hills Corp, and the economic requirements necessary to maintain

[60] The Value Line Investment Survey, *Forecast for the U.S. Economy* (Aug. 28, 2009).
[61] GlobalInsight, *The U.S. Economy: The 30-Year Focus* (First Quarter 2009).
[62] Energy Information Administration, *Updated Annual Energy Outlook 2009* (Mar. 2009).

financial integrity and support additional capital investment even under adverse circumstances, it is my opinion that 11.2 percent to 12.2 percent represents a fair and reasonable ROE range for Black Hills Energy.

In addition, uncertainties associated with jurisdictional operations – including renewed focus on regulatory uncertainties and exposure to potential energy market volatility and energy procurement – are clearly evident to investors. Combined with the relatively lower credit ratings associated with Black Hills Energy, the lack of a WNA in Nebraska, and Black Hills Energy's relatively small size, these factors imply a level of investment risk and required return that exceeds that of the proxy groups used to estimate the cost of equity. Coupled with the need to consider flotation costs and provide an ROE that supports the credit standing attributed to Black Hills Energy while funding necessary system investments, these considerations indicate that an ROE in the range of 11.2 percent to 12.2 percent is reasonable.

As discussed in the testimony of Mr. Cleberg, Black Hills Energy is requesting an ROE of 11.5 percent in this case. Because Black Hills Energy'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 Energy with a return that is adequate to compensate investors, maintain financial integrity, and attract capital. The cost of providing Black Hills Energy an adequate return is small relative to the potential benefits that a strong utility can have in providing reliable service. Considering investors' heightened awareness of the risks associated with the utility industry and the damage that results when a utility's financial flexibility is compromised, supportive regulation is crucial.

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

A. Yes.

BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

IN THE MATTER OF BLACK HILLS/ NEBRASKA GAS UTILITY COMPANY, LLC D/B/A BLACK HILLS ENERGY, OMAHA, SEEKING A GENERAL RATE INCREASE FOR BLACK HILLS ENERGY'S RATE AREAS ONE TWO AND THREE (CONSOLIDATED)	))))))	APPLICATION NO. NG____

VERIFICATION

STATE OF TEXAS)
) **ss.**
COUNTY OF TRAVIS)

William E. Avera, of lawful age, being first duly sworn, deposes and says that he is the President of FINCAP, Inc.; that his is engaged as an expert witness for, Black Hills/Nebraska Gas Utility Company, LLC d/b/a Black Hills Energy; that he has read the foregoing testimony, knows the contents thereof, and that the statements and allegations therein contained, including the information provided herewith pursuant to the State Natural Gas Regulation Act, are true to the best of his information, knowledge, and belief.

William E. Avera

SUBSCRIBED AND SWORN TO before me this 23rd day of November, 2009.

Notary Public

ADRIEN MCKENZIE
Notary Public
STATE OF TEXAS
My Comm Exp. Jan. 10, 2011