Direct Testimony and Exhibits
Adrien M. McKenzie

Before the South Dakota Public Utilities Commission
of the State of South Dakota

In the Matter of the Application of
Black Hills Power, Inc. d/b/a Black Hills Energy

for Authority to Increase Rates for Electric Service in South Dakota

Docket No. EL26-_____

February 19, 2026

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EXHIBITS

GLOSSARY OF TERMS AND ABBREVIATIONS

BHC	Black Hills Corporation
Black Hills Power	Black Hills Power, Inc.
CAPM	Capital Asset Pricing Model
Commission	South Dakota Public Utilities Commission
Company	Black Hills Power, Inc.
CPI	Consumer Price Index
DCF	Discounted Cash Flow
DPS	dividends per share
ECAPM	Empirical Capital Asset Pricing Model
EPS	earnings per share
FERC	Federal Energy Regulatory Commission
FINCAP, Inc.	Financial Concepts and Applications, Inc.
GDP	Gross Domestic Product
LSEG	London Stock Exchange Group
Moody's	Moody's Ratings
NYSE	New York Stock Exchange
PCE	Personal Consumption Expenditures
ROE	return on equity
RRA	S&P Global Market Intelligence, *RRA Regulatory Focus*
S&P	S&P Global Ratings
Value Line	The Value Line Investment Survey
Zacks	Zacks Investment Research

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Adrien M. McKenzie. My business address is 3907 Red River, Austin, Texas, 78751.

Q. IN WHAT CAPACITY ARE YOU EMPLOYED?

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

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

A. A description of my background and qualifications, including a resume containing the details of my experience, is attached as Exhibit AMM-1.

Q. WHAT ARE YOUR CURRENT JOB RESPONSIBILITIES?

A. I have extensive experience in economic and financial analysis for regulated industries and have participated in consulting assignments involving a broad range of economic and financial issues, including cost of capital, cost of service, rate design, economic damages, and business valuation.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE ANY REGULATORY BODIES?

A. Yes. I have personally sponsored testimony in over 200 proceedings filed with FERC and regulatory agencies in Alaska, Arkansas, Colorado, District of Columbia, Florida, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Montana, Nebraska, New Mexico, Ohio, Oklahoma, Oregon, South Dakota, Texas, Virginia, Washington, West Virginia, and Wyoming.

Q. FOR WHOM ARE YOU TESTIFYING IN THIS CASE?

A. I am testifying on behalf of Black Hills Power.

A. Overview

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS CASE?

A. The purpose of my testimony is to present to the Commission my independent assessment of the fair ROE for the jurisdictional electric utility operations of Black Hills Power. In addition, I also examined the reasonableness of Black Hills Power's requested capital structure, considering both the specific risks faced by the Company and other industry guidelines.

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

A. To prepare my testimony, I use information from a variety of sources that would normally be relied upon by a person in my capacity. I am familiar with the organization, finances, and operations of Black Hills Power from my participation in prior proceedings before the Commission. In connection with the present filing, I consider and rely upon discussions with corporate management, publicly available financial reports, and prior regulatory filings relating to Black Hills Power. I also review information relating generally to current capital market conditions and specifically to investor perceptions, requirements, and expectations for Black Hills Power's electric utility operations. These sources, coupled with my experience in the fields of finance and utility regulation, have given me a working knowledge of the issues relevant to investors' required return for the Company, and they form the basis of my analyses and conclusions.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. First, I summarize the results of my analyses and present my conclusions and recommendations regarding a fair ROE for Black Hills Power, giving special attention to the importance of financial strength and other risk factors. I also comment on the reasonableness of the Company's proposed capital structure.

Next, I briefly review the Company's operations and finances and discuss current conditions in the capital markets and their implications in evaluating a just and reasonable return for the Company. I then explain the development of the proxy group of electric utilities used as the basis for my quantitative analyses and examine Black Hills Power's risk profile in relation to this group. With this as a background, I discuss well-accepted quantitative analyses to estimate the current cost of equity for the proxy group of electric utilities. These include the DCF model, the CAPM, the ECAPM, an equity risk premium approach based on allowed equity returns, and reference to expected earned rates of return for electric utilities, which are all methods that are commonly relied on in regulatory proceedings

Based on the results of my analyses, I determine a fair ROE for Black Hills Power. My evaluation considers the specific risks for the Company's electric operations in South Dakota and Black Hills Power's requirements for financial strength.

B. Summary and Conclusions

Q. WHAT ROE DO YOU RECOMMEND FOR BLACK HILLS POWER?

A. I apply DCF, CAPM, ECAPM, risk premium, and expected earnings analyses to a proxy group of electric utilities, with the results being summarized on Exhibit AMM-2. As shown there, based on the results of my analysis, I recommend a cost of equity range for

the Company's electric operations of 10.0% to 11.0%. It is my conclusion that the 10.5% midpoint of this range represents a reasonable cost of equity that is adequate to compensate the Company's investors, while maintaining Black Hills Power's financial integrity and ability to attract capital on reasonable terms.

I also examine the reasonableness of Black Hills Power's capital structure, considering both the specific risks faced by the Company and other industry guidelines. Based on this examination, I conclude that the Company's investor-supplied capital structure of 46.79% debt and 53.21% equity is reasonable considering industry benchmarks and the importance of maintaining Black Hills Power's financial strength to meet the capital requirements of its customers.

II. RETURN ON EQUITY FOR BLACK HILLS POWER

Q. WHAT IS THE PURPOSE OF THIS SECTION?

A. This section presents my conclusions regarding the fair ROE applicable to Black Hills Power's electric utility operations. I also describe the relationship between ROE and preservation of a utility's financial integrity and the ability to attract capital. Finally, I discuss the reasonableness of the Company's capital structure.

A. Importance of Financial Strength

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

A. The ROE is the cost of attracting and retaining common equity investment in the utility's physical plant and assets. This investment is necessary to finance the asset base needed to provide utility service. Investors commit capital only if they expect to earn a return that is commensurate with those available from alternative investments with comparable risks. A just and reasonable ROE is also integral in meeting sound regulatory economics

and the requirements established by the United States Supreme Court. The *Bluefield* case set the standard against which just and reasonable rates are measured:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties. . . . The return should be reasonable, sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise money necessary for the proper discharge of its public duties.[1]

The *Hope* case expanded on the guidelines as to a reasonable ROE, reemphasizing its findings in *Bluefield* and establishing that the rate-setting process must produce an end-result that allows the utility a reasonable opportunity to recover its capital costs. The Supreme Court stated:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. . . . By that standard, the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain credit and attract capital.[2]

In summary, the Supreme Court's findings in *Hope* and *Bluefield* established that a just and reasonable ROE must 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. These standards

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

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

should allow the utility to fulfill its obligation to provide reliable service while meeting the needs of customers through necessary system replacement and expansion, but the Supreme Court's requirements can only be met if the utility has a reasonable opportunity to actually earn its allowed ROE.

Although the *Hope* and *Bluefield* decisions did not establish a particular method to be followed in fixing rates (or in determining the allowed ROE),[3] these and subsequent cases enshrined the importance of an end result that meets the opportunity cost standard of finance. Under this doctrine, the required return is established by investors in the capital markets based on expected returns available from comparable risk investments. Coupled with modern financial theory, which has led to the development of formal risk-return models (e.g., DCF and CAPM), practical application of the *Bluefield* and *Hope* standards involves the independent, case-by-case consideration of capital market data in order to evaluate an ROE that will produce a balanced and fair end result for investors and customers.

Q. THROUGHOUT YOUR TESTIMONY YOU REFER TO THE CONCEPTS OF "FINANCIAL STRENGTH," "FINANCIAL INTEGRITY," AND "FINANCIAL FLEXIBILITY." WOULD YOU BRIEFLY DESCRIBE WHAT YOU MEAN BY THESE TERMS?

A. These terms are generally synonymous and refer to the utility's ability to attract and retain the capital that is necessary to provide service at reasonable cost, consistent with the Supreme Court standards. Black Hills Power's plans call for a continuation and

[3] *Id.* at 602 (finding, "the Commission was not bound to the use of any single formula or combination of formulae in determining rates." and, "[I]t is not theory but the impact of the rate order which counts.").

expansion of capital investments to preserve and enhance service reliability for its customers. The Company must generate adequate cash flow from operations to fund these requirements, repay maturing debt and maintain access to capital from external sources.

Rating agencies and potential debt investors place significant emphasis on maintaining strong financial metrics and credit ratings that support access to debt capital markets under reasonable terms. This emphasis on financial metrics and credit ratings is shared by equity investors who also focus on cash flows, capital structure, and liquidity.

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

A. Regulatory signals heavily influence how investors assess risk for utilities. Investors recognize that constructive regulation is a key ingredient in supporting utility credit ratings and financial integrity. Security analysts study commission orders and regulatory policy statements to advise investors about where to put their money. As Moody's noted, "The regulatory framework is important because it provides the basis for decisions that affect utilities, including rate-setting as well as consistency and predictability of regulatory decision-making."[4] Similarly, S&P observed that, "Regulatory advantage is the most heavily weighted factor when S&P Global Ratings analyzes a regulated utility's business risk profile."[5] More recently, S&P confirmed that "Utility regulation, no matter

[4] Moody's Ratings, Rating Methodology, Regulated Electric and Gas Utilities (Aug. 6, 2024).

[5] S&P Global Ratings, Assessing U.S. Investors-Owned Utility Regulatory Environments, RatingsExpress (Aug. 10, 2016).

where on the continuum of our assessments, strengthens a utility's business risk profile, and generally underpins our ratings."[6] Value Line summarizes similar sentiments:

> As we often point out, the most important factor in any utility's success, whether it provides electricity, gas, or water, is the regulatory climate in which it operates. Harsh regulatory conditions can make it nearly impossible for the best run utilities to earn a reasonable return on their investment.[7]

In addition, the ROE set by the Commission impacts investor confidence in not only the jurisdictional utility, but also in the ultimate parent company that is the entity that actually issues common stock.

Q. DO CUSTOMERS BENEFIT FROM REGULATORY ACTIONS THAT SUPPORT THE UTILITY'S FINANCIAL FLEXIBILITY?

A. Yes. Providing an ROE that is sufficient to maintain the Company's ability to attract capital under reasonable terms, even in times of financial and market stress, is not only consistent with the economic requirements embodied in the U.S. Supreme Court's *Hope* and *Bluefield* decisions, but it is also in customers' best interests.

The allowed ROE and other regulatory features are key determinants of the cash flows that support Black Hills Power's financial metrics and credit standing. Because investors demand a higher return for assuming greater risk, an erosion in the utility's credit standing leads directly to higher borrowing costs, as well as a higher required return on equity capital. This additional return is further magnified during periods of

[6] S&P Global Ratings, North American Utility Regulatory Jurisdictions: Some Notable Developments (Nov. 10, 2023).

[7] Value Line Investment Survey, *Water Utility Industry* (Jan. 13, 2017) at 1780.

turmoil in capital markets, when risk spreads may widen significantly.[8] Thus, authorizing a fair ROE and providing the utility a reasonable opportunity to actually earn this return also lowers the cost of borrowing and maintains access to the capital necessary to provide service. As a result, customers enjoy the benefits that come from ensuring that the utility has the financial wherewithal to take whatever actions are required to ensure safe and reliable service.

B. Conclusions and Recommendations

Q. WHAT ARE YOUR FINDINGS REGARDING THE JUST AND REASONABLE ROE FOR BLACK HILLS POWER?

A. Considering the results of my analysis, I conclude that 10.5% represents a fair ROE for Black Hills Power. The bases for this conclusion are summarized below:

- In order to reflect the risks and prospects associated with Black Hills Power's electric utility operations, my analyses focused on a proxy group of twenty-seven publicly traded utility firms.
- Because investors' required return on equity is unobservable and no single method should be viewed in isolation, I applied the DCF, CAPM, ECAPM, and risk premium methods to estimate a just and reasonable ROE for Black Hills Power, as well as referencing the expected earnings approach.
- As summarized on Exhibit AMM-2, based on the average values resulting from these analyses, and giving less weight to extremes at the high and low ends of the range, I conclude that the cost of equity for the Utility Group falls in the 10.0% to 11.0% range.[9]
- My recommendation for Black Hills Power's electric operations is the midpoint of this range, or 10.5%.

[8] In March 2009 the yield spread between utility bonds rated Baa and A-rated bonds rose to 158 basis points, more than seven times the 2024 average.

[9] This ROE range does not consider issuance costs associated with the sale of common stock. Flotation costs are legitimate business expenses and the lack of an upward adjustment to account for them further supports the reasonableness of my recommended ROE range.

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

A. Based on my evaluation, I conclude that the Company's proposed common equity ratio of 53.21% represents a reasonable basis from which to calculate Black Hills Power's overall rate of return. This conclusion was based on the following findings:

- Black Hills Power's common equity ratio is well within the range of capitalizations maintained by other electric utility operating companies and the firms in the proxy group based on data at year-end 2024 and near-term expectations.
- The Company's proposed equity ratio is also consistent with the average equity ratio of 53.1% maintained by comparable electric utility operating companies.
- Black Hills Power's requested capitalization is consistent with the Company's need to maintain its credit standing and financial flexibility as it seeks to raise additional capital to fund significant system investments and meet the requirements of customers.

III. FUNDAMENTAL ANALYSES

Q. WHAT IS THE PURPOSE OF THIS SECTION?

A. As a foundation for my opinions and subsequent quantitative analyses, this section briefly reviews the operations and finances of Black Hills Power and examines conditions impacting today's capital markets and the general economy. An understanding of the fundamental factors driving the risks and prospects of electric utilities is essential in developing an informed opinion of investors' expectations and requirements that are the basis of fair ROE.

A. Black Hills Power, Inc.

Q. BRIEFLY DESCRIBE BLACK HILLS POWER AND ITS UTILITY OPERATIONS.

A. Black Hills Power is primarily engaged in the generation, transmission, and distribution of electric power to approximately 78,000 customers within a 9,300 square mile area in western South Dakota, northeastern Wyoming, and southeastern Montana. Approximately 86% percent of Black Hills Power's retail electric revenues in 2024 were attributable to its South Dakota utility operations. Black Hills Power is a wholly-owned subsidiary of BHC, which is a diversified electric and gas utility providing service to approximately 1.35 million customers in Arkansas, Colorado, Iowa, Kansas, Montana, Nebraska, South Dakota and Wyoming. BHC's electric utilities own 1,394 MW of generation and 9,196 miles of electric transmission and distribution lines. During 2024, BHC had total revenues of approximately $2.1 billion, with total assets of $10.0 billion at December 31, 2024. The Company's retail electric operations are subject to the jurisdiction of the Commission, the Montana Public Service Commission, and the Wyoming Public Service Commission.

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

A. Apart from retained earnings, Black Hills Power obtains its equity capital solely from BHC, which issues common stock that is publicly traded on the NYSE. Black Hills Power does have outstanding legacy debt issued at the electric operating company level. Long-term debt capital is also issued at the BHC level and allocated to Black Hills Power.

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

A. Yes. The Company must undertake investments to provide necessary maintenance and replacements of its electric utility systems as it continues to provide safe and reliable service to its customers. Apart from these enhancements, Black Hills Power's capital spending plans are also driven by the need to construct generation facilities to meet the capacity and energy needs of its service territory, including approximately $320 million associated with the Lange II Generating Station, which is expected to enter commercial operation in 2026. Continued support for Black Hills Power's financial integrity and flexibility will be instrumental in attracting the capital necessary to fund these projects in an effective manner.

B. Outlook for Capital Costs

Q. PLEASE SUMMARIZE CURRENT ECONOMIC AND CAPITAL MARKET CONDITIONS.

A. Following the economic contraction stemming from the COVID-19 pandemic in 2020, U.S. real GDP improved significantly in 2021, with GDP growing at a pace of 5.7%.[10] Economic growth was more subdued in subsequent years, falling in a range of 2.5% to 2.9% between 2022 and 2024.[11] More recently, real GDP grew at an annual rate of -

[10] U.S. Dep't of Commerce, Bureau of Economic Analysis, https://www.bea.gov/news/2022/gross-domestic-product-fourth-quarter-and-year-2021-second-estimate (last visited Dec. 3, 2025).

[11] U.S. Dep't of Commerce, Bureau of Economic Analysis, https://www.bea.gov/sites/default/files/2025-05/gdp1q25-2nd.pdf (last visited Dec. 3, 2025).

0.6%, 3.8%, and 4.3% in the first three quarters of 2025.[12] Meanwhile, the unemployment rate remained steady in December 2025 at 4.4%.[13]

The underlying risk and price pressures associated with the COVID-19 pandemic were overshadowed by a dramatic increase in global uncertainties following Russia's invasion of Ukraine in February 2022. Resurgence of conflict in the Middle East compounded these geopolitical risks. Apart from disrupting global trade, the potential for escalation prompted concerns over potential constraints to crude oil supplies and resulting supply-side price shocks that could reignite inflation and further dampen economic growth.

Stimulative monetary and fiscal policies, coupled with supply-chain disruptions and rapid price rises in the energy and commodities markets, led to increasing concern that inflation would remain significantly above the Federal Reserve's longer-run benchmark of 2%. CPI inflation peaked in June 2022 at 9.1%, its highest level since November 1981. CPI inflation stood at 2.7% in November 2025.[14] Though inflation has moderated significantly since its peak in June 2022, it continues to exceed the Federal Reserve's 2.0% target. The so-called "core" price index, which excludes more volatile energy and food costs, rose at an annual rate of 2.6% in November 2025.[15] PCE inflation

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[12] U.S. Dep't of Commerce, Bureau of Economic Analysis, https://www.bea.gov/news/2025/gross-domestic-product-2nd-quarter-2025-third-estimate-gdp-industry-corporate-profits (last visited Dec. 3, 2025); U.S. Dep't of Commerce, Bureau of Economic Analysis, https://www.bea.gov/news/2025/gross-domestic-product-3rd-quarter-2025-initial-estimate-and-corporate-profits (last visited Jan. 13, 2026).

[13] News Release, U.S. Dep't of Labor, Bureau of Labor Statistics, *The Employment Situation—December 2025* (Jan. 6, 2026), https://www.bls.gov/news.release/pdf/empsit.pdf (last visited Jan. 13, 2026).

[14] U.S. Dep't of Labor, Bureau of Labor Statistics, *Consumer Price Index Summary* (Oct. 24, 2025), https://www.bls.gov/news.release/cpi.nr0.htm (last visited Jan. 13, 2026).

[15] *Id.*

ticked up slightly in September 2025 to 2.8%, before and after excluding more volatile food and energy costs.[16]

The investment community continues to monitor the extent to which import tariffs and the disruptions to global commerce and supply chains may reignite inflation and lead to economic recession. Oscillating trade developments have also contributed to an erosion of consumer confidence. In November 2025, the University of Michigan consumer sentiment index, which measures consumer expectations about current and future economic conditions, was about 30% weaker than in November 2024 and well below its historical average,[17] demonstrating relative consumer pessimism. Meanwhile, the Congressional Budget Office reported in late October that the shutdown of the federal government would shave 1% to 2% from GDP in the fourth quarter of 2025.[18] Investors continue to face the prospect of heightened market volatility as capital markets respond to these uncertainties.

Q. HAVE CREDIT RATING AGENCIES COMMENTED ON THE RISKS FACED BY UTILITIES AND THEIR INVESTORS?

A. Yes. Although S&P noted it expects a more stable environment for credit quality, it observed that the electric utility industry "consistently operates with high cash flow deficits at about $100 billion annually," and concluded that:

> Because about 40% of the [investor-owned utility] industry is actively operating with minimal credit cushion, an unexpected event outside of the

[16] Bureau of Economic Analysis, *Personal Income and Outlays, September 2025*, BEA 25-46 (Dec. 5, 2025), https://www.bea.gov/news/2025/personal-income-and-outlays-september-2025 (last visited Jan. 13, 2026).

[17] University of Michigan, *Surveys of Consumers, Final Results for November 2025*. https://www.sca.isr.umich.edu/ (last visited Dec. 3, 2025).

[18] Congressional Budget Office, *A Quantitative Analysis of the Effects of the Government Shutdown on the Economy Under Three Scenarios, as of October 29, 2025*, https://www.cbo.gov/publication/61823 (last visited Nov. 11, 2025).

> base case could result in a negative outlook or even a possible downgrade for many IOU utilities if financial levers are not quickly implemented to restore credit quality.[19]

In addition to concerns over declining credit metrics, S&P cited financial pressures from significant capital spending, regulatory risks associated with higher customer bills and ongoing wildfire risks as key concerns for investors.[20] Meanwhile, Moody's cautioned that widening cash flow deficits in the utility industry were placing increasing negative pressure on financial credit metrics, concluding that credit pressure "will likely continue to lead to negative rating actions if not sufficiently mitigated."[21] In its most recent annual review of the utility industry, Moody's noted that a continuation of supportive regulation would be required to offset ongoing pressure from still-high interest rates and other negative pressures on utilities' credit standing.[22]

Utilities are also exposed to supply chain risk and procurement cost management associated with increasing tariff barriers to trade. In 2024, China accounted for over 50% of low-voltage transformer imports, while Mexico is the largest trading partner for medium and high-voltage transformers.[23] Utilities in the U.S. also rely heavily on imports from China, Canada, and Mexico for breakers and switchgear. Wood Mackenzie, a global data and analytics provider for the energy industry, noted that:

> This critical path aspect of transmission and distribution projects has already faced tremendous security of supply and cost pressure the past five years with increased competition for the materials with the rise of

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[19] S&P Global Ratings, *North America Regulated Utilities*, Industry Credit Outlook 2026 (Jan. 14, 2026).

[20] *Id.*

[21] Moody's Ratings, *Electric and Gas Utilities – US,* Sector In-Depth (Oct. 21, 2024).

[22] Moody's Ratings, *Electric and Gas Utilities – US*, Outlook (Oct. 31, 2025).

[23] Wood Mackenzie, *Navigating the impact of President Trump's tariffs on utility supply chains* (Jan. 16, 2025). https://www.woodmac.com/news/opinion/the-impact-of-proposed-tariffs-on-utility-supply-chains/ (last visited Oct. 13, 2025).

> renewables and transmission & distribution construction, increased storm response and volatile metals markets. . . . The additional cost pressure from tariffs coupled with supply pressure via new electric generation assets to support AI data centres, and a shift of federal investments from renewables builds to T&D infrastructure may exacerbate what the last five years have been.[24]

Apart from contributing to higher prices for materials and equipment, supply chain disruptions and shortages have the potential to delay necessary construction and maintenance of utility infrastructure. Chris Seiple, Vice Chairman at Wood Mackenzie concluded that, "In a business with 5-to-10-year planning cycles, not knowing what a project will cost next year or the year after is disruptive and causes massive uncertainty for US power industry participants."[25] Similarly, S&P concluded that tariff policies will contribute to financial volatility and weakened investor confidence in the utility sector over the medium to long-term.[26]

Q. ARE THERE BENCHMARKS AVAILABLE FOR GENERAL CHANGES IN CAPITAL COSTS?

A. Yes. Although the cost of equity is not observable, a number of market benchmarks provide a gauge for the direction of capital costs, including required returns on common stocks. Yields on 30-year Treasury bonds are generally accepted as a guide to the risk-free rate. While yields on long-term Treasury bonds can be impacted by monetary policy (*e.g.*, quantitative easing) or a flight to safety in times of turmoil, they provide an observable benchmark for underlying trends in capital costs. Similarly, utility bonds are

[24] Id.

[25] Wood Mackenzie, *Tariffs to increase costs and slow down development for US power industry* (Jun. 2, 2025). https://www.cbo.gov/publication/61823 (last visited October 31, 2025).

[26] S&P Global Ratings, *Navigating Tariffs' Credit Implications Across Asset Classes*, Comments (Jun. 17, 2025).

actively traded in the debt markets and the resulting yields offer a touchstone for the direction and magnitude of the return utilities must offer to attract capital. Although not specific to long-term capital costs, the target range for the Federal Funds rate established by the Federal Reserve is also widely followed by investors as a metric for monetary policies and underlying capital market conditions.

Q. DO THESE BENCHMARKS INDICATE THAT THE COST OF EQUITY HAS INCREASED IN RECENT YEARS?

A. Yes. Figure AMM-1 below compares capital market benchmarks in November 2025 with the levels that prevailed during 2021.

FIGURE AMM-1
CAPITAL MARKET BENCHMARKS

Series	2021	November 2025	Change (bps)
10-Year Treasury Bonds	1.44%	4.09%	265
30-Year Treasury Bonds	2.05%	4.70%	265
Baa Utility Bonds	3.35%	5.83%	248
Prime Loan Rate	3.25%	7.00%	375
Federal Funds Rate	0.13%	3.88%	375

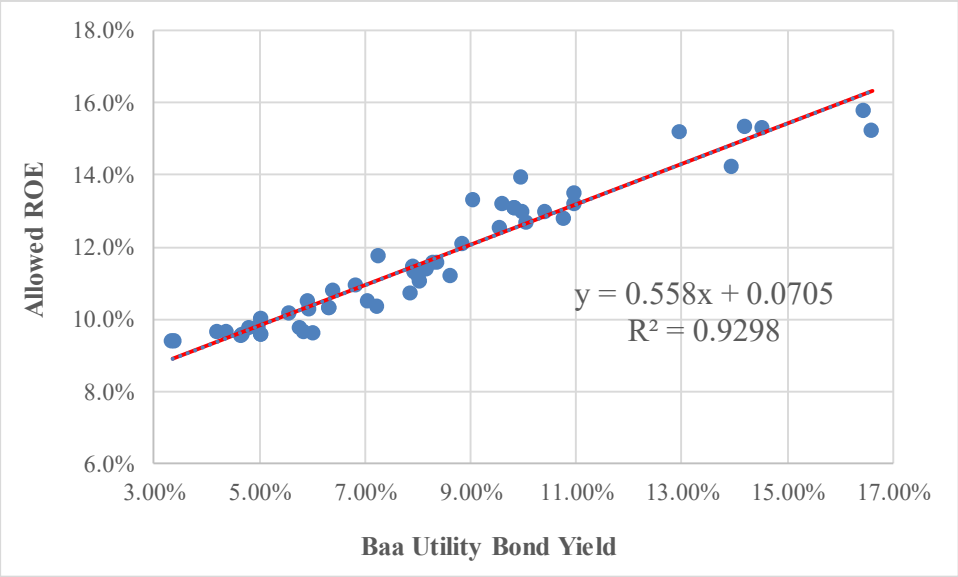
Source: https://fred.stlouisfed.org; Moody's Credit Trends.

As shown above, trends in bond yields since 2021 document a substantial increase in the returns on long-term capital demanded by investors. With respect to Baa utility bonds, the average yield in November 2025 was 248 basis points above the level prevailing during 2021, while Treasury bond yields have increased 265 basis points. The Prime Rate and the midpoint of the Federal Reserve's target range for the Federal Funds rate have increased approximately 375 basis points.

Q. DO AUTHORIZED ROES EXHIBIT A STRONG POSITIVE RELATIONSHIP WITH BOND YIELDS?

A. Yes. The positive relationship between allowed ROEs and bond yields is confirmed by the data underlying my risk premium study.[27] The relationship between allowed ROEs for electric utilities and Baa utility bond yields is displayed below.

FIGURE AMM-2
ALLOWED ROES AND UTILITY BOND YIELDS (1974-Q3 2025)



Source: Exhibit AMM-9 at 2; S&P Global Market Intelligence, *Major Rate Case Decisions* , RRA Regulatory Focus (Nov. 11, 2025); Moody's Credittrends.

As the data displayed above indicates, on average allowed ROEs for electric utilities increase approximately 56 basis points with each 100 basis point increase in Baa utility bond yields.[28]

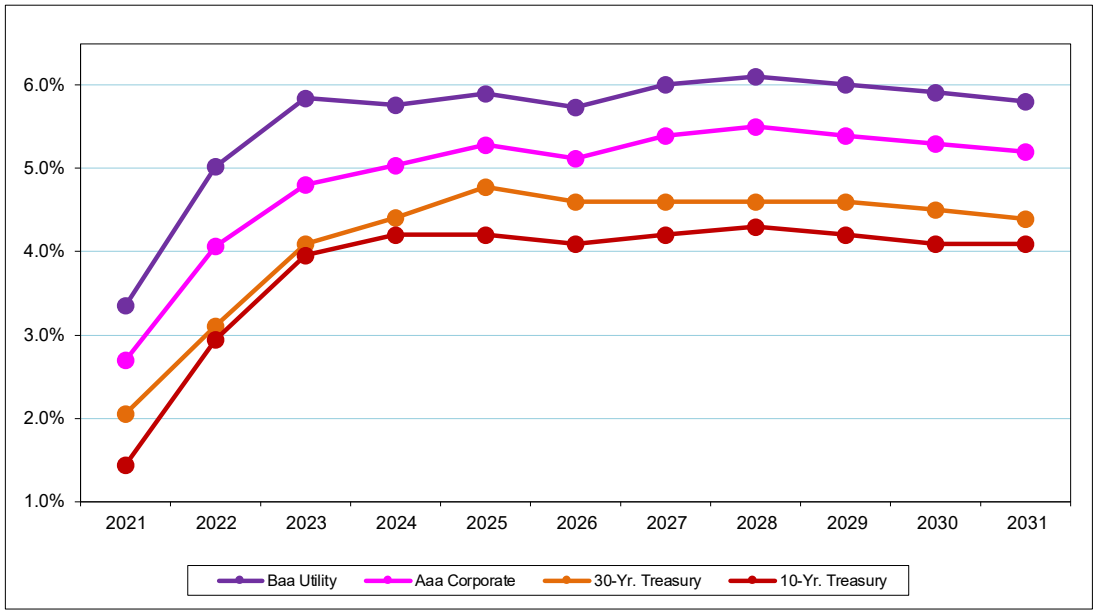
[27] Exhibits AMM-9 and AMM-10.

[28] This relationship is statistically significant at a level exceeding 99%, indicating very high statistical reliability, and the regression R-Square value of 0.93 reveals that almost all of the movement in allowed ROEs over this time period is explained by changing bond yields.

Q. DO INVESTORS ANTICIPATE THAT THESE HIGHER BOND YIELDS WILL BE SUSTAINED?

A. Yes. As illustrated in Figure AMM-3 below, the most recent long-term consensus projections from top economists published by Blue Chip Financial Forecasts document that long-term bond yields are expected to remain elevated when compared to recent historical levels.

FIGURE AMM-3
PROJECTED INTEREST RATES



Source: Moody's Investors Service; https://fred.stlouisfed.org/; Wolters Kluwer, Blue Chip Financial Forecasts (Dec. 1, 2025).

This evidence shows that long-term capital costs—including the ROE—have increased substantially, and that investors expect these higher capital costs to be sustained at least through 2031.

Q. THE FEDERAL RESERVE LOWERED THE TARGET RANGE FOR THE FEDERAL FUNDS RATE SEVERAL TIMES IN 2024 AND 2025. DOES THIS CHANGE YOUR CONCLUSION THAT THE COST OF EQUITY IS NOW SIGNIFICANTLY HIGHER?

A. No. Bond yields embody the market's expectations of future events, including Federal Reserve monetary policy and inflation trends. For example, a Reuters.com article on the day of the Federal Reserve's September 2024 rate action confirmed that it, along with future cuts to the federal funds rate, were anticipated:

> The U.S. central bank on Wednesday kicked off an anticipated series of interest rate cuts with a larger-than-usual half-percentage-point reduction that Federal Reserve Chair Jerome Powell said was meant to show policymakers' commitment to sustaining a low unemployment rate now that inflation has eased.[29]

In response to the September 2025 rate cut, Guy Lebas, Chief Fixed Income Strategist at Janney Capital Management, observed, "This was about as close to expectations as humanly possible (and) basically what was baked into markets ahead of time."[30] Similarly, Uto Shinohara, Senior Investment Strategist at Mesirow Currency Management, confirmed that "the Fed delivered a widely expected rate cut" in October 2025,"[31] while Business Insider characterized the December move as "in alignment with

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[29] Reuters.com, *Fed unveils oversized rate cut as it gains 'greater confidence' about inflation* (Sep. 18, 2024), https://www.reuters.com/markets/rates-bonds/with-feds-rate-cut-hand-debate-swirls-over-how-big-move-2024-09-18/ (last visited Oct. 12, 2024) (emphasis added).

[30] Reuters.com, *Instant View: Analysts react after Fed cuts interest rates by quarter of a percentage point* (Sep. 17, 2025), https://www.reuters.com/business/view-fed-lowers-rates-by-quarter-point-powell-says-was-risk-management-cut-2025-09-17/ (last visited Sep. 23, 2025) (emphasis added).

[31] Reuters.com, *Instant View: Fed delivers expected rate cut; Powell says December rate cut not assured* (Oct. 29, 2025), https://www.reuters.com/business/view-fed-delivers-expected-rate-cut-nods-limits-data-during-shutdown-2025-10-29/ (last visited Dec. 15, 2025).

expectations."[32] Similarly, the forecasts of leading economists presented in Figure AMM-3 also consider expectations for future changes in Federal Reserve monetary policies.

Long-term interest rates and capital cost are also influenced by a host of considerations beyond the Federal Funds rate, which is an overnight lending rate between banks. For example, Moody's noted the potential for higher broad-based tariffs on imports and deficit-financed tax cuts to "result in some combination of higher inflation and interest rates."[33] There is no indication that the impact of any near-term cuts in the Federal Funds rate have erased the significant increase in key interest rate benchmarks documented in Figure AMM-1.

Q. WHAT DO THESE TRENDS INDICATE REGARDING A FAIR ROE FOR BLACK HILLS POWER?

A. The upward move in interest rates suggests that long-term capital costs—including the cost of equity—have increased significantly in recent years. Exposure to higher interest rates, inflation, and capital expenditure requirements also reinforce the importance of buttressing Black Hills Power's financial integrity. Considering the potential for financial market instability, competition with other investment alternatives, and investors' sensitivity to risk exposures in the utility industry, credit strength is a key ingredient in maintaining access to capital at reasonable cost.

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[32] Business Insider, *Fed meeting recap: Central bank cuts rates for a 3rd time—and shows its biggest split in years* (Dec. 10, 2025). https://www.businessinsider.com/fed-rate-cut-decision-december-meeting-live-updates-2025-12?utm (last visited Dec. 15, 2025).

[33] Moody's Ratings, *Trump Take Two (Take Two)*, Economic View (Nov. 19, 2024).

If the upward shift in investors' risk perceptions and required rates of return for long-term capital is not incorporated in the allowed ROE, the results will fail to meet the comparable earnings standard that is fundamental in determining the cost of capital. From a more practical perspective, failing to provide investors with the opportunity to earn a rate of return commensurate with Black Hills Power's risks will weaken its financial integrity and undermine its ability to attract necessary capital.

IV. COMPARABLE RISK PROXY GROUP

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

A. This section explains the basis of the proxy group of publicly traded companies I use to estimate the cost of equity, examines alternative objective indicators of investment risk for these firms and compares Black Hills Power's investment risks with those of the proxy group.

Q. WHAT KEY PRINCIPLES UNDERPIN THE EVALUATION OF A PROXY GROUP?

A. The United States Supreme Court's *Hope* and *Bluefield* decisions establish a standard of comparison between a subject utility and other companies based on comparable risk. The generally accepted approach is to select a group of companies that are similar in risk to the subject utility, and then to perform various quantitative analyses based on this proxy group to estimate investors' required returns. The results of these analyses are then used to evaluate a range of reasonableness and develop a final recommendation for the ROE attributable to the subject utility.

Q. AS AN INITIAL MATTER, DOES THE FACT THAT BLACK HILLS POWER IS A WHOLLY OWNED SUBSIDIARY ALTER THESE FUNDAMENTAL STANDARDS?

A. No. While the Company has no publicly traded common stock, this does not change the standards governing the determination of a just and reasonable ROE for the Company. Ultimately, the common equity required to support Black Hills Power's utility operations must be raised in the capital markets, where investors consider the Company's ability to offer a rate of return that is competitive with other risk-comparable alternatives. Black Hills Power must compete with other investment opportunities and unless there is a reasonable expectation that investors will have the opportunity to earn returns that compensate for the underlying risks, capital will be allocated elsewhere, the Company's financial integrity will weaken, and investors will demand a higher rate of return.

A. Determination of the Proxy Group

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

A. Estimating the cost of common equity using quantitative methods requires observable capital market data, such as stock prices and beta values. Even for a firm with publicly traded stock, the cost of common equity can only be estimated and the results of quantitative models inherently include some degree of error. The accepted approach to increase confidence in the results is to apply quantitative methods to a proxy group of publicly traded companies that investors regard as risk comparable. The results of the analysis on the sample of companies are relied upon to establish a range of reasonableness for the cost of equity for the specific company at issue.

Q. HOW DO YOU IDENTIFY THE PROXY GROUP OF ELECTRIC UTILITIES USED IN YOUR ANALYSES?

A. To reflect the risks and prospects associated with Black Hills Power's electric utility operations, I begin with the companies included in the Electric Utility industry groups compiled by Value Line. Value Line is one of the most widely available sources of investment advisory information, and its industry groups provide an objective source to identify publicly traded firms that investors would regard as similar in operations. I then apply the following criteria to identify a proxy group of utilities:

1. No cuts in common dividends during the last six months and no announcement of a dividend cut since that time.
2. No ongoing involvement in a major merger or acquisition that would distort quantitative results.
3. Assigned a Value Line Safety Rank of "1," "2," or "3."
4. Assigned a Value Line Financial Strength Rating of "B++" or higher.

In addition, my analysis also considered credit ratings from Moody's and S&P in evaluating relative risk. Specifically, I excluded companies with ratings more than one "notch" higher or lower than BHC's issuer credit ratings of Baa2 (Moody's) and BBB+ (S&P). These criteria result in a proxy group composed of twenty-seven companies, which I refer to as the "Utility Group."

B. Relative Risks of the Utility Group and Black Hills Power

Q. HOW DO YOU EVALUATE THE RISKS OF THE UTILITY GROUP RELATIVE TO BLACK HILLS POWER?

A. My evaluation of relative risk considers five objective, published benchmarks that are widely relied on by investors—credit ratings from Moody's and S&P, along with Value Line's Safety Rank, Financial Strength Rating, and beta values. Credit ratings are

assigned by independent rating agencies for the purpose of providing investors with a broad assessment of the creditworthiness of a firm. Ratings generally extend from triple-A (the highest) to D (in default). Other symbols (*e.g.*, "+" or "-") are used to show relative standing within a category. Because the rating agencies' evaluation includes the factors considered important in assessing a firm's relative credit standing, corporate credit ratings provide broad, objective measures of overall investment risk that are 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.

Although credit ratings provide a widely referenced benchmark, quality rankings published by Value Line provide an important and objective assessment of relative risks that are considered by investors. 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. 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. Value Line is one of the most widely available sources of investment advisory information and these published indicators consider a broad spectrum of risks—including financial and business position, relative size, and exposure to firm-specific factors—and provide useful guidance regarding the risk perceptions of investors.

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

> Value Line is the largest and most widely circulated independent investment advisory service, and influences the expectations of a large number of institutional and individual investors. … Value Line betas are computed on a theoretically sound basis using a broadly based market index, and they are adjusted for the regression tendency of betas to converge to 1.00.[34]

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

A. Figure AMM-4 compares the Utility Group to the Company across the five key measures of investment risk discussed above.

FIGURE AMM-4
COMPARISON OF RISK INDICATORS

	Credit Ratings		Value Line		
	Moody's	S&P	Safety Rank	Financial Strength	Beta
Utility Group	Baa2	BBB+	2	A	0.75
Black Hills Power	Baa2	BBB+	2	A	0.70

Note: Black Hills Power's risk indicators are for its parent company, BHC.

[34] Roger A. Morin, *New Regulatory Finance*, Pub. Util. Reports (2006) at 71.

As illustrated above, the risk measures corresponding to Black Hills Power are identical to the averages for the proxy group, with the exception of beta, which indicates slightly less risk for the Company. Taken together, a comparison of these objective risk indicators would lead investors to conclude that Black Hills Power's investment risk is generally comparable to the Utility Group.

Q. WOULD INVESTORS ALSO CONSIDER THE IMPLICATIONS OF REGULATORY MECHANISMS IN EVALUATING BLACK HILLS POWER'S RELATIVE RISKS?

A. Yes. Decoupling mechanisms, cost trackers, and future test years have become increasingly prevalent in the industry in recent years, along with alternatives to traditional ratemaking such as formula rates and multi-year rate plans. In its most recent review of adjustment clauses RRA noted that:

> More recently and with greater frequency, commissions have approved mechanisms that permit the costs associated with the construction of new generation or delivery infrastructure to be used, effectively including these items in rate base without the need for a full rate case. In some instances, these mechanisms may even provide the utilities a cash return on construction work in progress.
>
> . . . [C]ertain types of adjustment clauses are more prevalent than others. For example, those that address electric fuel and gas commodity charges are in place in all jurisdictions. Also, about two-thirds of all utilities have riders in place to recover costs related to energy efficiency programs, and roughly half of the utilities have some type of decoupling mechanism in place.[35]

As shown on Exhibit AMM-3, the companies in the Utility Group operate under a wide variety of cost adjustment mechanisms, including revenue decoupling mechanisms

[35] S&P Global Market Intelligence, *Adjustment Clause: A state-by-state overview*, RRA Regulatory Focus (Jul. 18, 2022).

and future test years. The proxy utilities also benefit from adjustment clauses to include new capital investment without requiring a traditional rate case and to recover costs of environmental compliance measures, as well as riders for energy conservation programs and transmission-related charges. Riders to recover the cost of vegetation management expenses, certain taxes and fees, and storm recovery costs are also common.

Q. WHAT REGULATORY MECHANISMS HAVE BEEN APPROVED FOR BLACK HILLS POWER?

A. Like other vertically integrated utilities, the Company recovers fuel and purchased power costs through an energy cost adjustment rider. In addition, mechanisms to recover eligible environmental improvement costs (Environmental Improvement Adjustment) and transmission facility improvement costs (Transmission Facility Adjustment) have been approved for Black Hills Power.[36]

Q. WHAT DO THESE CHARACTERISTICS IMPLY WITH RESPECT TO THE COMPANY'S RISKS RELATIVE TO OTHER UTILITIES?

A. Regulatory adjustment mechanisms have important implications for a utility's financial health and relative risk. Investors recognize that the use of adjustment mechanisms and future test years is widely prevalent in the utility industry and consider the relative impact of these provisions in forming their expectations and risk perceptions for the firms in the Utility Group. While the Company's existing regulatory clauses would be regarded as supportive, in contrast to many of the specific operating companies associated with the firms in the Utility Group, Black Hills Power does not operate under a revenue

[36] Both of these rate mechanisms were suspended under the provisions of the existing base rate moratorium, which expires on June 30, 2026.

decoupling mechanism and has limited ability to recover the costs of new investments outside of a traditional rate case. Further, South Dakota has routinely relied on an adjusted historical test year approach. Thus, the Company's continued exposure to the uncertainties of revenue variability and regulatory lag would imply a greater level of risk than is faced by other utilities, including the firms in the Utility Group.[37]

Q. WHAT OTHER CONSIDERATION IS RELEVANT TO INVESTORS WHEN ASSESSING THE INVESTMENT RISKS ASSOCIATED WITH BLACK HILLS POWER?

A. Investors have become increasingly concerned regarding the implications of potential liabilities for damages associated with wildfires. The unprecedented scope and damages associated with wildfires led PG&E to suspend common dividend payments in 2017 and seek bankruptcy protection in January 2019. Similarly, the catastrophic wildfires that ravaged Maui in early August 2023 pushed HEI to the brink of bankruptcy. More recently, in January 2025 several wind-driven wildfires devastated areas of Los Angeles County in California.

Warren Buffett highlighted the risks to electric utility investors posed by wildfires, noting that "it is difficult to project both earnings and asset values in what was once regarded as among the most stable industries in America."[38] As Mr. Buffett

[37] While I reference corporate credit ratings in evaluating a risk-comparable proxy group, these indicators are focused on the risk of default associated with a utility's outstanding debt securities. While debtholders are also concerned about the stability and sufficiency of a utility's cash flows, the implications of attrition and earnings variability are especially relevant to equity investors, who are only entitled to the residual earnings once all other claimants have been paid.

[38] Berkshire Hathaway Inc., *Shareholder Letters* (Feb. 24, 2024). https://www.berkshirehathaway.com/letters/2023ltr.pdf (last visited Apr. 25, 2024).

concluded, "the final result for the utility industry may be ominous."[39] Similarly, S&P recently observed that:

> Climate change is contributing to more frequent and severe weather events, including making conditions drier for longer periods. When high winds bring dry trees and other combustible materials into contact with power lines it raises the probability of a wildfire, raising the IOUs' wildfire risks and putting downward pressure on credit quality.[40]

S&P concluded that despite industry efforts to mitigate these risks, "a single severe wildfire could still devastate a utility's credit quality."[41]

Moody's noted that BHC faces "above-average wildfire risk exposure",[42] and according to the wildfire-risk mapping site published by the United States Department of Agriculture, South Dakota has a wildfire risk level that is higher than 64% of U.S. states.[43] Investors clearly recognize the potential for large-scale damage claims resulting from acute and chronic wildfire risks pose an extreme risk that can severely undermine a utility's financial position.

C. Capital Structure

Q. WHAT IS THE ROLE OF CAPITAL STRUCTURE IN SETTING A UTILITY'S RATE OF RETURN?

A. Capital structure reflects the mix of capital—debt, preferred securities, and common equity—used to finance a utility's assets. The proportions attributable to each source of

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[39] *Id.*

[40] S&P Ratings, *North America Regulated Utilities*, Industry Credit Outlook 2026 (Jan. 14, 2026).

[41] *Id.*

[42] Moody's Ratings, *Black Hills Corporation*, Credit Opinion (Aug. 27, 2025).

[43] United States Department of Agriculture, *Wildfire Risk to Communities,* https://apps.wildfirerisk.org/explore/overview/46/ (last visited Jan. 23, 2026).

capital are typically used to weight the costs of investor-supplied capital in calculating an overall rate of return.

Q. HOW DO COMPANIES DETERMINE AN APPROPRIATE CAPITAL STRUCTURE FOR THEIR OPERATIONS?

A. There are many considerations in the capital structure decision. Given the interplay between costs of debt and equity, the impact of taxes, bankruptcy costs, and the level of business risks, determining a firm's optimal capital structure is an imprecise exercise. In practice, capital structure decisions must be made by combining management's judgment, numerical analysis, and considering investors' risk perceptions.

It is generally accepted that the norms established by comparable firms provide a valid benchmark to evaluate a reasonable capital structure for a utility. 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 COMMON EQUITY RATIO IS IMPLICIT IN BLACK HILLS POWER'S CAPITAL STRUCTURE?

A. As summarized in the Direct Testimony of Thomas D. Stevens, Black Hills Power's capital structure consists of 46.79% long-term debt and 53.21% common equity.

Q. IS THIS CONSISTENT WITH INDUSTRY BENCHMARKS FOR OTHER UTILITY OPERATING COMPANIES?

A. Yes. Because this proceeding focuses on the ROE for the regulated utility operations of Black Hills Power, the capital structures of other regulated utility operating companies provide a consistent basis of comparison. The first three pages of Exhibit AMM-4 display capital structure data for the group of utility operating companies owned by the firms in the Utility Group. As shown there, common equity ratios for these utilities ranged from 43.1% to 68.0% and averaged 53.1%. Thirty-nine of these seventy-five operating companies maintained a common equity ratio higher than the 53.21% applicable to Black Hills Power.

Q. WHAT ARE THE EQUITY RATIOS CORRESPONDING TO THE COMPANIES IN THE UTILITY GROUP?

A. As shown on page 4 of Exhibit AMM-4, common equity ratios for the Utility Group ranged from a low of 33.8% to a high of 63.9% at year-end 2024. Also shown on page 4 of Exhibit AMM-4, Value Line expects common equity ratios for the Utility Group to range between 35.0% and 57.5% over its three-to-five year forecast horizon.

Q. DO ONGOING ECONOMIC AND CAPITAL MARKET UNCERTAINTIES ALSO INFLUENCE THE APPROPRIATE CAPITAL STRUCTURE FOR BLACK HILLS POWER?

A. Yes. Financial flexibility plays a crucial role in ensuring the wherewithal of a utility to meet funding needs, and utilities with higher financial leverage may be foreclosed or have limited access to additional borrowing, especially during times of financial market stress. As Moody's observed:

> Utilities are among the largest debt issuers in the corporate universe and typically require consistent access to capital markets to assure adequate sources of funding and to maintain financial flexibility. During times of distress and when capital markets are exceedingly volatile and tight, liquidity becomes critically important because access to capital markets may be difficult.[44]

Similarly, while noting that cash flows in the utility industry are generally predictable and stable, S&P highlighted that "unexpected events beyond the base case still occur." S&P observed that, "Utilities with financial cushion from their downgrade threshold are more able to absorb these unexpected events while maintaining credit quality," and concluded that "balanced equity and debt funding [will be required] to maintain credit quality."[45]

As a result, the Company's capital structure must maintain adequate equity to preserve the flexibility necessary to maintain continuous access to capital even during times of unfavorable energy or financial market conditions.

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

A. Utilities, including Black Hills Power, are facing significant capital investment plans in order to continue to provide reliable service to their customers. Coupled with the potential for turmoil in capital markets, this warrants a stronger balance sheet to deal with an uncertain environment. As S&P noted:

> [W]e expect IOU capital spending will grow at unprecedented levels during the next decade. To maintain credit quality over this timeframe, the industry must fund these projects in a credit-supportive manner.[46]

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[44] Moody's Investors Service, *FAQ on credit implications of the coronavirus outbreak*, Sector Comment (Mar. 26, 2020).

[45] S&P Global Ratings, *North America Regulated Utilities*, Industry Credit Outlook 2026 (Jan. 14, 2026).

[46] S&P Global Ratings,*: North America Regulated Utilities*, Industry Credit Outlook 2026 (Jan. 14, 2026).

Similarly, Moody's noted that higher interest rates and the pressure of maintaining credit metrics while funding capital investments were leading to greater reliance on common equity.[47] Moody's concluded that the utility sector "is likely to continue to generate negative free cash flow and credit quality is likely to suffer unless utilities fund this negative free cash flow appropriately with a balance of debt and equity financing."[48]

In addition, the investment community also considers the impact of other considerations, such as leases, purchased power agreements, and postretirement benefit and asset retirement obligations in its evaluation of a utility's financial standing. Considering the magnitude of the Company's ongoing infrastructure investments, a conservative financial profile is warranted to maintain continuous access to capital under reasonable terms, even during times of adverse capital market conditions.

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

A. Based on my evaluation, I conclude that the Company's requested common equity ratio of 53.21% represents a reasonable basis on which to calculate the Company's overall rate of return. While industry averages provide one benchmark for comparison, each firm must select its capitalization based on the risks and prospects it faces, as well as its specific needs to access the capital markets. Financial flexibility plays a crucial role in ensuring the wherewithal to meet the needs of customers, and utilities with higher leverage may be foreclosed from additional borrowing under reasonable terms, especially during times of stress. The Company's capital structure reflects the need to fund ongoing

[47] Moody's Investors Service, *Regulated Electric and Gas Utilities – US; Rising capital expenditures will require higher annual equity funding*, Sector In-Depth (Nov. 8, 2023).
[48] *Id*.

capital expenditures and support Black Hills Power's financial integrity and access to capital on reasonable terms.

V. CAPITAL MARKET ESTIMATES

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

A. This section presents capital market estimates of the cost of equity. The concept of the cost of common equity is explained, as well as the risk-return tradeoff principle that is central to capital markets. I then describe the quantitative analyses I conduct to estimate the cost of common equity for the Utility Group.

A. Economic Standards

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

A. Underlying the concept of the cost of equity is the understanding that investors are risk averse. In capital markets where relatively risk-free assets are available (e.g., U.S. Treasury securities), investors will hold riskier assets only if they are offered an additional return, or risk premium, above the rate of return on a risk-free asset. Because all assets compete 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 OPERATES IN THE CAPITAL MARKETS?

A. Yes. The risk-return tradeoff can be documented in the debt markets, where required rates of return can be directly inferred from market data and where generally accepted measures of risk exist. Comparing the observed yields on Treasury bonds, which are considered free of default risk, to the yields on corporate bonds of various rating categories demonstrates that the risk-return tradeoff does exist.

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

A. Yes. It is widely accepted that the risk-return tradeoff 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 observed. Nevertheless, there is every reason to believe that investors demonstrate risk aversion in deciding whether 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. The last investors in line are common shareholders. They share in the net earnings, if any, that remain 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 ARE THE CHALLENGES IN DETERMINING A JUST AND REASONABLE ROE FOR A UTILITY?

A. The actual return investors require is not directly observable. Different methodologies have been developed to estimate investors' expected and required return on capital, but these theoretical tools produce a range of estimates, based on different assumptions and inputs. The DCF method, which is frequently referenced and relied on by regulators, is only one theoretical approach to evaluate the return investors require. There are a number of other accepted methodologies for estimating the cost of capital and the ranges produced by these approaches may differ significantly.

Q. IS IT CUSTOMARY TO CONSIDER THE RESULTS OF MULTIPLE APPROACHES WHEN EVALUATING A JUST AND REASONABLE ROE?

A. Yes. Financial analysts and regulators routinely consider the results of alternative approaches in evaluating investors' cost of equity. No single method can be regarded as failsafe, with all approaches having advantages and shortcomings. As FERC has noted, "[t]he determination of rate of return on equity starts from the premise that there is no

single approach or methodology for determining the correct rate of return."[49] Similarly, a publication of the Society of Utility and Regulatory Financial 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.[50]

As this treatise observed, "no single model is so inherently precise that it can be relied on solely to the exclusion of other theoretically sound models."[51] Similarly, *New Regulatory Finance* concluded that:

> There is no single model that conclusively determines or estimates the expected return for an individual firm. Each methodology possesses 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 that cannot be validated empirically. Investors do not necessarily subscribe to any one method, nor does the stock price reflect the application of any one single method by the price-setting investor. There is no monopoly as to which method is used by investors. In the absence of any hard evidence as to which method outdoes the other, all relevant evidence should be used and weighted equally, in order to minimize judgmental error, measurement error, and conceptual infirmities.[52]

Thus, while the DCF model is a recognized approach to estimating the ROE, it is not without shortcomings and does not otherwise eliminate the need to ensure that the

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[49] *Northwest Pipeline Co.*, Opinion No. 396-C, 81 FERC ¶ 61,036 at 4 (1997).

[50] David C. Parcell, *The Cost of Capital – A Practitioner's Guide*, Society of Utility and Regulatory Financial Analysts (2010) at 84.

[51] *Id*.

[52] Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 429.

"end result" is fair. The Indiana Utility Regulatory Commission has recognized this principle:

> There are three principal reasons for our unwillingness to place a great deal of weight on the results of any DCF analysis. One is. . . the failure of the DCF model to conform to reality. The second is the undeniable fact that rarely if ever do two expert witnesses agree on the terms of a DCF equation for the same utility – for example, as we shall see in more detail below, projections of future dividend cash flow and anticipated price appreciation of the stock can vary widely. And, the third reason is that the unadjusted DCF result is almost always well below what any informed financial analysis would regard as defensible, and therefore require an upward adjustment based largely on the expert witness's judgment. In these circumstances, we find it difficult to regard the results of a DCF computation as any more than suggestive.[53]

FERC has also recognized the potential for any application of the DCF model to produce unreliable results.[54]

As this discussion indicates, considering results from alternative approaches reduces the potential for error associated with any single quantitative method. Just as investors inform their decisions using a variety of methodologies, my evaluation of a fair ROE for Black Hills Power considers the results of multiple financial models.

Q. WHAT DOES THE ABOVE DISCUSSION IMPLY WITH RESPECT TO ESTIMATING THE ROE FOR A UTILITY?

A. Although the ROE cannot be observed directly, it is a function of the returns available from other investment alternatives and the risks of the investment. Because it is not readily observable, the ROE for a particular utility must be estimated by analyzing information about capital market conditions generally, assessing the relative risks of the

[53] *Ind. Michigan Power Co.*, Cause No. 38728, 116 PUR4th, 1, 17-18 (IURC 8/24/1990).

[54] *Coakley v. Bangor Hydro-Elec. Co.*, Opinion No. 531, 147 FERC ¶ 61,234 at P 41 (2014).

Company specifically, and employing alternative quantitative methods that focus on investors' required rates of return. These methods typically attempt to infer investors' required rates of return from stock prices, interest rates, or other capital market data.

B. Discounted Cash Flow Analysis

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

A. DCF models assume that the price of a share of common stock is equal to the present value of the expected cash flows (i.e., future dividends and stock price) that will be received while holding the stock, discounted at investors' required rate of return. Rather than developing annual estimates of cash flows into perpetuity, the DCF model can be simplified to a "constant growth" form:[55]

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

where: k_e = Cost of equity;
D_1 = Expected dividend per share in the coming year;
P_0 = Current price per share; and,
g = Investors' long-term growth expectations.

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

[55] 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 the above extend to infinity. Nevertheless, the DCF method provides a workable and practical approach to estimate investors' required return that is widely referenced in utility ratemaking.

words, investors expect to receive a portion of their total return in the form of current dividends and the remainder through price appreciation.

Q. WHAT STEPS ARE REQUIRED TO APPLY THE CONSTANT GROWTH DCF MODEL?

A. The first step 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 add the firm's dividend yield and estimated growth rate to arrive at an estimate of its cost of common equity.

Q. HOW DO YOU DETERMINE THE DIVIDEND YIELDS FOR THE UTILITY GROUP?

A. I rely on Value Line's estimates of dividends to be paid by each of these utilities over the next twelve months as D_1. This annual dividend is then divided by a 30-day average stock price for each utility to arrive at the expected dividend yield. The expected dividends, stock prices, and resulting dividend yields for the firms in the Utility Group are presented on page 1 of Exhibit AMM-5. As shown there, dividend yields for the firms in the Utility Group ranged from 2.2% to 5.0% and averaged 3.3%.

Q. WHAT IS THE NEXT STEP TO APPLY 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 not a theoretical exercise; it is focused on replicating the mechanism investors used to arrive at observable stock prices. A 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. WHAT ARE INVESTORS MOST LIKELY TO CONSIDER IN DEVELOPING THEIR LONG-TERM GROWTH EXPECTATIONS?

A. In the case of utilities, growth in DPS is not likely to provide a meaningful guide to investors' current growth expectations. Utility dividend policies reflect the need to accommodate business risks and investment requirements in the industry, as well as potential uncertainties in the capital markets. As a result, dividend growth in the utility industry generally lags growth in earnings as utilities conserve financial resources.

A measure that plays a pivotal role in determining investors' long-term growth expectations is future trends in EPS, which provide the source for future dividends and ultimately support share prices. The importance of earnings in evaluating investors' expectations and requirements is well accepted in the investment community, and surveys of analytical techniques relied on by professional analysts indicate that growth in earnings is far more influential than trends in DPS.

The availability of projected EPS growth rates is also key to investors relying on this measure as compared to future trends in DPS. Apart from Value Line, investment advisory services do not generally publish comprehensive DPS growth projections, and this scarcity of dividend growth rates relative to the abundance of earnings forecasts attests to their relative influence. The fact that securities analysts focus on EPS growth, and that DPS growth rates are not routinely published, indicates that projected EPS

growth rates are likely to provide a superior indicator of the future long-term growth expected by investors.

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

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

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

A. The EPS growth projections for each of the firms in the Utility Group reported by IBES,[56] S&P Capital IQ, Value Line and Zacks are displayed on page 2 of Exhibit AMM-5.

Q. HOW ELSE ARE INVESTORS' EXPECTATIONS OF FUTURE LONG-TERM GROWTH PROSPECTS SOMETIMES 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 never met in practice, this "sustainable growth" approach may provide a rough guide for evaluating a firm's growth prospects.

[56] Formerly I/B/E/S International, Inc., IBES growth rates are now compiled and published by LSEG.

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. 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. The sustainable, "br+sv" growth rates for each firm in the proxy group are summarized on page 2 of Exhibit AMM-5, with the underlying details being presented on Exhibit AMM-6.

The sustainable growth rate analysis shown in Exhibit AMM-6 incorporates an "adjustment factor" because Value Line's reported returns are based on year-end book values. Since earnings are a flow over the year while book value is determined at a given point in time, the measurement of earnings and book value are distinct concepts. This fundamental difference between a flow (earnings) and point estimate (book value) makes it necessary to adjust to mid-year in calculating the ROE. Given that book value will increase or decrease over the year, using year-end book value (as Value Line does) understates or overstates the average investment that corresponds to the flow of earnings. To address this concern, earnings must be matched with a corresponding representative measure of book value, or the resulting ROE will be distorted. The adjustment factor determined in Exhibit AMM-6, is solely a means of converting Value Line's end-of-period values to an average return over the year, and the formula for this adjustment is supported in recognized textbooks and has been adopted by other regulators.[57]

[57] *See,* Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 305-306; *Bangor Hydro-Electric Co. et al*., 122 FERC ¶ 61,265 at n.12 (2008).

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

A. Yes. First, in order to calculate the sustainable growth rate, it is necessary to develop estimates of investors' expectations for four separate variables; namely, "b", "r", "s", and "v." Given the inherent difficulty in forecasting each parameter and the difficulty of estimating the expectations of investors, the potential for measurement error is significantly increased when using four variables, as opposed to referencing a direct projection for EPS growth. Second, empirical research in the finance literature indicates that sustainable growth rates are not as significantly correlated to measures of value, such as share prices, as are analysts' EPS growth forecasts.[58] The "sustainable growth" approach is included for completeness, but evidence indicates that analysts' forecasts provide a superior and more direct guide to investors' growth expectations. Accordingly, I give less weight to cost of equity estimates based on br+sv growth rates in evaluating the results of the DCF model.

Q. WHAT COST OF COMMON EQUITY ESTIMATES WERE IMPLIED FOR THE UTILITY 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 page 3 of Exhibit AMM-5.

[58] Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 307.

Q. IN EVALUATING THE RESULTS OF THE CONSTANT GROWTH DCF MODEL, IS IT APPROPRIATE TO ELIMINATE ILLOGICAL ESTIMATES?

A. Yes. It is essential that the cost of equity estimates produced by quantitative methods pass fundamental tests of reasonableness and economic logic. Accordingly, DCF estimates that are implausibly low or high should be eliminated.

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

A. My evaluation of DCF estimates at the low end of the range is based on the fundamental risk-return tradeoff. As explained earlier, this holds that investors will only assume more risk if they expect to earn a higher rate of return to compensate for the greater uncertainty. Because common stocks lack the protections associated with an investment in long-term bonds, a utility's common stock imposes far greater risks on investors. As a result, the rate of return that investors require from a utility's common stock is considerably higher than the yield offered by senior, long-term debt. Consistent with this principle, DCF results that are not sufficiently higher than the yield available on less risky utility bonds must be eliminated.

Q. HAVE SIMILAR TESTS BEEN APPLIED BY REGULATORS?

A. Yes. FERC has noted that adjustments are justified where applications of the DCF approach and other methods produce illogical results. FERC evaluates low-end 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.[59]

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[59] *See, e.g., Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc*., Opinion No. 569, 169 FERC ¶ 61,129 at PP 19, 387-89.

FERC's current practice is to exclude low-end estimates that fall below the six-month average yield on Baa-rated utility bonds, plus 20% of the CAPM market risk premium.[60] In addition, FERC also excludes estimates that are "irrationally or anomalously high."[61]

Q. DO YOU EXCLUDE ANY ESTIMATES AT THE LOW OR HIGH END OF THE RANGE OF DCF RESULTS?

A. Yes. As highlighted on page 3 of Exhibit AMM-5, I remove low-end DCF cost of equity estimates ranging from 5.5% to 7.3% because they do not sufficiently exceed observable yields on long-term public utility bonds. I also eliminated a single high-end DCF estimate of 15.1%. After removing these values, the lower end of the DCF results is set by cost of equity estimates of 7.5% to 7.7% and the upper end is established by a cost of equity estimate of 13.6%. While a 13.6% cost of equity estimate exceeds the other values, retained low-end DCF estimates in the 7.5% to 7.7% range are assuredly far below investors' required rate of return. Taken together and considered along with the balance of the results, the remaining values provide a reasonable basis on which to frame the range of plausible DCF estimates and evaluate investors' required rate of return.

Q. WHAT ROE ESTIMATES ARE IMPLIED BY YOUR DCF RESULTS FOR THE UTILITY GROUP?

A. As shown on page 3 of Exhibit AMM-5 and summarized in Figure AMM-5, application of the constant growth DCF model results in the following ROE estimates:

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[60] Based on the average yield on Baa-rated utility bonds for the six month period ending December 2025 of 5.88%, and the current market risk premium from Exhibit AMM-7 of 7.9%, FERC's low-end threshold would equate to approximately 7.5%.

[61] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, 171 FERC ¶ 61,154 at P 152 (2020).

FIGURE AMM-5
DCF RESULTS – UTILITY GROUP

Growth Rate	Average
IBES	10.4%
S&P Capital IQ	10.7%
Value Line	9.6%
Zacks	10.3%
br + sv	8.9%

C. 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. A stock that tends to respond less to market movements has a beta less than 1.0, while stocks that tend to move more than the market have betas greater than 1.0. 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.

Under the CAPM formula above, a stock's required return is a function of the risk-free rate (R_f), plus a risk premium that is scaled to reflect the relative volatility of a firm's stock price, as measured by beta (β). Like the DCF model, the CAPM is an *ex-ante,* or forward-looking model based on expectations of the future. As a result, 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. WHY IS THE CAPM A RELEVANT APPROACH TO EVALUATE THE COST OF EQUITY FOR BLACK HILLS POWER?

A. The CAPM approach (which also forms the foundation of the ECAPM) generally is considered the most widely referenced method for estimating the cost of equity among academicians and professional practitioners, with the pioneering researchers of this method receiving the Nobel Prize in 1990. Because this is the dominant model for estimating the cost of equity outside the regulatory sphere, the CAPM (and ECAPM) provides important insight into investors' required rate of return for utility stocks, including the Company.

Q. HOW DO YOU APPLY THE CAPM TO ESTIMATE THE ROE?

A. Exhibit AMM-7 applies the CAPM to the proxy group based on a forward-looking estimate for investors' required rate of return from common stocks. To capture the expectations of today's investors in current capital markets, the expected market rate of return is estimated by conducting a DCF analysis on the dividend paying firms in the S&P 500.

The dividend yield for each firm is obtained from Value Line, and the growth rate is equal to the average of the earnings growth projections from IBES, Value Line, and Zacks for each firm, with each firm's dividend yield and growth rate being weighted by its proportionate share of total market value. After removing companies with growth rates that were negative or greater than 20%, the weighted average of the projections for the individual firms implies an average growth rate over the next five years of 11.3%.

Combining this average growth rate with a year-ahead dividend yield of 1.4% results in a current cost of common equity estimate for the market as a whole (R_m) of 12.7%. Subtracting a 4.8% risk-free rate based on the average yield on 30-year Treasury bonds for the six-month period ending December 2025 produced a market equity risk premium of 7.9%.

Q. WHAT BETA VALUES DO YOU USE?

A. As indicated earlier in my discussion of risk measures for the proxy group, 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.

Q. WHAT OTHER FACTOR SHOULD BE ACCOUNTED FOR WHEN USING THE CAPM?

A. Financial research indicates that the CAPM does not fully account for observed differences in rates of return attributable to firm size. Accordingly, a modification is required to account for this size effect. As explained by Morningstar:

> One of the most remarkable discoveries of modern finance is the finding of a relationship between firm size and return. On average, small companies have higher returns than large ones. . . . The relationship between firm size and return cuts across the entire size spectrum; it is not restricted to the smallest stocks.[62]

According to the CAPM, the expected return on a security should consist of the riskless rate, plus a premium to compensate for the systematic risk of the particular security. The degree of systematic risk is represented by the beta coefficient. The need for the size adjustment arises because differences in investors' required rates of return

[62] Morningstar, *2015 Ibbotson SBBI Classic Yearbook*, at 99.

that are related to firm size are not fully captured by beta. To account for this, researchers have developed size adjustments that account for the level of a firm's market capitalization in determining the CAPM cost of equity.[63]

Q. WHAT IS THE BASIS FOR THE SIZE ADJUSTMENT?

A. The size adjustment reflects that, after accounting for risk differences reflected in beta, the CAPM tends to overestimate returns for large companies and underestimate them for smaller firms. The size adjustments are sourced from Kroll, which now publishes the well-known compilation of capital market series originally developed by Professor Roger G. Ibbotson of the Yale School of Management. Calculation of the size adjustments involve the following steps:

1. Divide all stocks traded on the NYSE, NYSE MKT, and NASDAQ indices into deciles based on their market capitalization.

2. Using the average beta value for each decile, calculate the implied excess return over the risk-free rate using the CAPM.

3. Compare the calculated excess returns based on the CAPM to the actual excess returns for each decile, with the difference being the increment of return that is related to firm size, or "size adjustment."

New Regulatory Finance observed that "small market-cap stocks experience higher returns than large market-cap stocks with equivalent betas," and concluded that "the CAPM understates the risk of smaller utilities, and a cost of equity based purely on a CAPM beta will therefore produce too low an estimate."[64] As FERC has recognized, "[t]his type of size adjustment is a generally accepted approach to CAPM analyses."[65]

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[63] Originally compiled by Ibbotson Associates and published in their annual yearbook entitled, *Stocks, Bonds, Bills and Inflation*, these size premia are now developed by Kroll and presented in its *Cost of Capital Navigator.*

[64] Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 187.

[65] *Coakley v. Bangor Hydro-Elec. Co.*, Opinion No. 531-B, 150 FERC ¶ 61,165 (2015) at P 117.

Q. IS THIS SIZE ADJUSTMENT RELATED TO THE RELATIVE SIZE OF BLACK HILLS POWER AS COMPARED WITH THE PROXY GROUP?

A. No. I am not proposing to apply a general size risk premium in evaluating a just and reasonable ROE for the Company, and my recommendation does not include any adjustment related to the relative size of Black Hills Power. Rather, this size adjustment is specific to the CAPM and merely corrects for an observed inability of the beta measure to fully reflect the risks perceived by investors for the firms in the proxy group.

Q. WHAT IS THE IMPLIED ROE FOR THE UTILITY GROUP USING THE CAPM APPROACH?

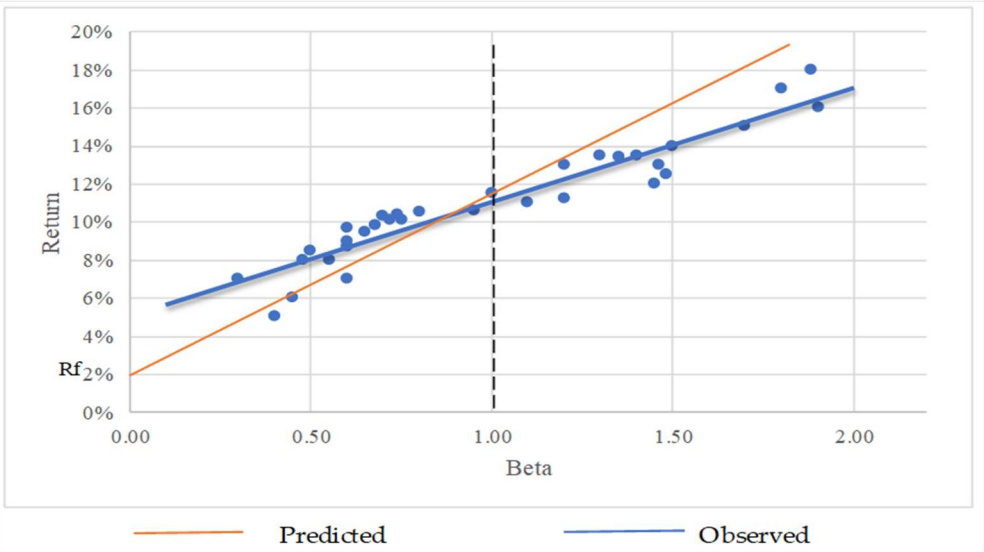
A. As shown on Exhibit AMM-7, the CAPM approach implies an average ROE for the Utility Group of 11.1% after adjusting for the impact of firm size.

D. Empirical Capital Asset Pricing Model

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

A. Empirical tests of the CAPM have shown that low-beta securities earn higher returns than the CAPM would predict, and high-beta securities earn less than predicted. In other words, the CAPM tends to overstate the actual sensitivity of the cost of capital to beta, with low-beta stocks tending to have higher returns and high-beta stocks tending to have lower returns than predicted by the CAPM. This is illustrated graphically in Figure AMM-6:

FIGURE AMM-6
CAPM – PREDICTED VS. OBSERVED RETURNS



Because the betas of utility stocks, including those in the proxy group, are generally less than 1.0, this implies that cost of equity estimates based on the traditional CAPM would understate the cost of equity. This empirical finding is widely reported in the finance literature, as summarized in *New Regulatory Finance*:

> As discussed in the previous section, several finance scholars have developed refined and expanded versions of the standard CAPM by relaxing the constraints imposed on the CAPM, such as dividend yield, size, and skewness effects. These enhanced CAPMs typically produce a risk-return relationship that is flatter than the CAPM prediction in keeping with the actual observed risk-return relationship. The ECAPM makes use of these empirical relationships.[66]

Based on a review of the empirical evidence, *New Regulatory Finance* concluded the expected return on a security is represented by the following formula:

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

[66] Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports (2006) at 189.

Like the CAPM formula presented earlier, the ECAPM represents a stock's required return as a function of the risk-free rate (R_f), plus a risk premium. In the formula above, this risk premium is composed of two parts: (1) the market risk premium (R_m - R_f) weighted by a factor of 25%, and (2) a company-specific risk premium based on the stock's relative volatility [$\beta_j(R_m - R_f)$] weighted by 75%. This ECAPM equation, and its associated weighting factors, recognizes the observed relationship between standard CAPM estimates and the cost of capital documented in the financial research, and corrects for the understated returns that would otherwise be produced for low beta stocks.

Q. WHAT COST OF EQUITY IS INDICATED BY THE ECAPM?

A. My application of the ECAPM is based on the same forward-looking market rate of return, risk-free rates, and beta values discussed earlier in connection with the CAPM. As shown on Exhibit AMM-8, applying the forward-looking ECAPM approach to the firms in the Utility Group results in an average cost of equity estimate of 11.5% after incorporating the size adjustment.

E. Utility Risk Premium

Q. BRIEFLY DESCRIBE THE RISK PREMIUM METHOD.

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

indirectly impute the cost of equity, risk premium methods directly estimate investors' required rate of return by adding an equity risk premium to observable bond yields.

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

A. Yes. This method is routinely referenced by the investment community and in academia and regulatory proceedings and provides an important tool in estimating a just and reasonable ROE for Black Hills Power.

Q. HOW DO YOU IMPLEMENT THE RISK PREMIUM METHOD?

A. Estimates of equity risk premiums for utilities are based on surveys of previously authorized ROEs. Authorized ROEs presumably reflect regulatory commissions' best estimates of the cost of equity, however determined, at the time they issued their final order. Such ROEs should represent a balanced and impartial outcome that considers the need to maintain a utility's financial integrity and ability to attract capital. Allowed returns are also an important consideration for investors and have the potential to influence other observable investment parameters, including credit ratings and borrowing costs. Thus, when considered in the context of a complete and rigorous analysis, this data provides a logical and frequently referenced basis for estimating equity risk premiums for regulated utilities.

Q. HOW DO YOU CALCULATE EQUITY RISK PREMIUMS BASED ON ALLOWED RETURNS?

A. The ROEs authorized for electric utilities by regulatory commissions across the U.S. are compiled by RRA. On page 2 of Exhibit AMM-9, the average yield on public utility bonds is subtracted from the average allowed ROE for electric utilities to calculate equity

risk premiums for each year between 1974 and 2024.[67] As shown there, over this period these equity risk premiums for electric utilities average 3.90%, and the yields on public utility bonds average 7.74%.

Q. WHAT CAPITAL MARKET RELATIONSHIP MUST BE CONSIDERED WHEN IMPLEMENTING THE RISK PREMIUM METHOD?

A. Equity risk premiums are not constant and tend to move inversely with interest rates. In other words, when interest rate levels are relatively high, equity risk premiums narrow, and when interest rates are relatively low, equity risk premiums widen. The implication of this inverse relationship is that the cost of equity does not move as much as, or in lockstep with, interest rates. Accordingly, for a 1% increase or decrease in interest rates, the cost of equity may only rise or fall some fraction of 1%. When implementing the risk premium method, adjustments may be required to incorporate this inverse relationship if the current interest rate is different from the average interest rate represented in the data set.

Current bond yields are lower than those prevailing over the risk premium study period. Given that equity risk premiums move inversely with interest rates, these lower bond yields also imply an increase in the equity risk premium. In other words, higher required equity risk premiums partially offset the impact of declining interest rates on the ROE.

[67] My analysis encompasses the entire period for which published data is available.

Q. IS THIS INVERSE RELATIONSHIP CONFIRMED BY PUBLISHED FINANCIAL RESEARCH?

A. Yes. The inverse relationship between equity risk premiums and interest rates has been widely reported in the financial literature. As summarized by *New Regulatory Finance*:

> Published studies by Brigham, Shome, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carleton, Chambers, and Lakonishok (1983), Morin (2005), and McShane (2005), and others demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates – rising when rates fell and declining when rates rose.[68]

Other regulators have also recognized that, while the cost of equity trends in the same direction as interest rates, these variables do not move in lockstep.[69] This relationship is illustrated in the figure on page 3 of Exhibit AMM-9.

Q. WHAT ROE IS IMPLIED BY THE RISK PREMIUM METHOD USING SURVEYS OF ALLOWED RETURNS?

A. Based on the regression output between the interest rates and equity risk premiums displayed on page 3 of Exhibit AMM-9, the equity risk premium for electric utilities increases by approximately 42 basis points for each percentage point drop in the yield on average public utility bonds. As illustrated on page 1 of Exhibit AMM-9 with an average yield on public utility bonds for the six-month period ending December 2025 of 5.70%, this implies a current equity risk premium of 4.76% for electric utilities. Adding this

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[68] Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports (2006) at 128.

[69] *See, e.g.*, California Public Utilities Commission, Decision 08-05-035 (May 29, 2008); Entergy Mississippi Formula Rate Plan Rider Schedule FRP-7 (Third Revised), https://www.entergymississippi.com/wp-content/uploads/eml_frp.pdf (last visited Nov. 25, 2025); *Coakley v. Bangor Hydro-Elec. Co.*, Opinion No. 531, 147 FERC ¶ 61,234 at P 147 (2014).

equity risk premium to the average yield on Baa-rated utility bonds for the six-month period ending December 2025 of 5.88% implies a current ROE of 10.64%.

F. Expected Earnings Approach

Q. WHAT OTHER ANALYSIS DO YOU CONDUCT TO ESTIMATE THE ROE?

A. I also evaluate the ROE 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 just and reasonable rate of return established by the United States 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 ECONOMIC PREMISE UNDERLIES THE EXPECTED EARNINGS APPROACH?

A. The expected earnings approach is based on the concept that investors compare each investment alternative with the next best opportunity. If the utility is unable to offer a return similar to that available from other opportunities of comparable risk, investors will become unwilling to supply the capital on reasonable terms. For existing investors, denying the utility an opportunity to earn what is available from other similar risk alternatives prevents them from earning their opportunity cost of capital. This outcome would violate the *Hope* and *Bluefield* standards and undermine the utility's access to capital on reasonable terms.

Q. HOW IS THE EXPECTED EARNINGS APPROACH TYPICALLY IMPLEMENTED?

A. The traditional comparable earnings test identifies a group of companies that are believed to be comparable in risk to the utility. The actual earnings of those companies on the book value of their investment are then compared to the allowed return of the utility. While the traditional comparable earnings test is implemented using historical data taken from the accounting records, it is also common to use projections of returns on book investment, such as those published by recognized investment advisory publications (*e.g.*, Value Line). Because these returns on book value equity are analogous to the allowed return on a utility's rate base, this measure of opportunity costs results in a direct, "apples to apples" comparison.

Q. WHAT OTHER CONSIDERATION SUPPORTS REFERENCE TO EXPECTED RETURNS ON BOOK VALUE?

A. Regulators do not set the returns that investors earn in the capital markets, which are a function of dividend payments and fluctuations in common stock prices, both of which are outside their control. Regulators can only establish the allowed ROE, which is applied to the book value of a utility's investment in rate base, as determined from its accounting records. This is analogous to the expected earnings approach, which measures the return that investors expect the utility to earn on book value. As a result, the expected earnings approach provides a meaningful guide to ensure that the allowed ROE is similar to what other utilities of comparable risk will earn on invested capital. This expected earnings test does not require theoretical models to indirectly infer investors' perceptions from stock prices or other market data. As long as the proxy

companies are similar in risk, their expected earned returns on invested capital provide a direct benchmark for investors' opportunity costs that is independent of fluctuating stock prices, market-to-book ratios, debates over DCF growth rates, or the limitations inherent in any theoretical model of investor behavior.

Q. WHAT ROE IS INDICATED FOR BLACK HILLS POWER BASED ON THE EXPECTED EARNINGS APPROACH?

A. For the firms in the Utility Group, the year-end returns on common equity projected by Value Line over its forecast horizon are shown on Exhibit AMM-10. As I explained earlier in my discussion of the br+sv growth rates used in applying the DCF model, Value Line's returns on common equity are calculated using year-end equity balances, which understates the average return earned over the year.[70] Accordingly, these year-end values were converted to average returns using the same adjustment factor discussed earlier and developed on Exhibit AMM-6. As shown on Exhibit AMM-10, Value Line's projections suggest an average ROE of 11.2% for the Utility Group.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

[70] For example, to compute the annual return on a passbook savings account with a beginning balance of $1,000 and an ending balance of $5,000, the interest income would be divided by the average balance of $3,000. Using the $5,000 balance at the end of the year would understate the actual return.

VERIFICATION

This Direct Testimony and Exhibits of Adrien M. McKenzie is true and accurate to the best of my knowledge, information, and belief.

/s/ *Adrien M. McKenzie*
Adrien M. McKenzie