BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

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IN THE MATTER OF THE APPLICATION OF BLACK HILLS NEBRASKA GAS, LLC, D/B/A BLACK HILLS ENERGY, RAPID CITY, SOUTH DAKOTA, SEEKING APPROVAL OF A GENERAL RATE INCREASE

APPLICATION NO. NG-124

DIRECT TESTIMONY OF ADRIEN M. MCKENZIE, CFA

ON BEHALF OF BLACK HILLS NEBRASKA GAS, LLC

Date: May 1, 2025

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EXHIBITS

BH Nebraska Gas or Company	Black Hills Nebraska Gas LLC d/b/a Black Hills Energy		
ВНС	Black Hills Corporation		
ВНИН	Black Hills Utility Holdings, Inc.		
САРМ	Capital Asset Pricing Model		
Chesapeake Utilities	Chesapeake Utilities Corporation		
Commission	Nebraska Public Service Commission		
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.		
FOMC	Federal Open Market Committee		
GDP	Gross Domestic Product		
Moody's	Moody's Investors Service		
NAIC	National Association of Insurance Companies		
ROE	Return on Equity		
RRA	S&P Global Market Intelligence, RRA Regulatory Focus		
S&P	S&P Global Ratings		
UGI	UGI Corporation		
Value Line	The Value Line Investment Survey		
WNA	Weather Normalization Adjustment mechanism		
Zacks	Zacks Investment Research, Inc.		

TABLE OF ABBREVIATIONS AND ACRONYMS

1		I. <u>INTRODUCTION</u>
2	Q.	PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.
3	А.	My name is Adrien M. McKenzie, and my business address is 3907 Red River, Austin,
4		Texas, 78751.
5	Q.	IN WHAT CAPACITY ARE YOU EMPLOYED?
6	А.	I am President of FINCAP, Inc., a firm providing financial, economic, and policy
7		consulting services to business and government.
8	Q.	ON WHOSE BEHALF ARE YOU TESTIFYING?
9	А.	I am testifying on behalf of BH Nebraska Gas.
10		A. <u>Overview</u>
11	Q.	PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND
12		BUSINESS EXPERIENCE.
13	А.	My education, employment history, and professional experience are provided on
14		Exhibit AMM-1.
15	Q.	WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS CASE?
16	А.	The purpose of my testimony is to present to the Commission my independent
17		assessment of the fair ROE for the jurisdictional gas utility operations of BH Nebraska
18		Gas. In addition, I also examined the reasonableness of BH Nebraska Gas' requested
19		capital structure, considering both the specific risks faced by the Company and other
20		industry guidelines.

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

4 To prepare my testimony, I use information from a variety of sources that would A. 5 normally be relied upon by a person in my capacity. I am familiar with BHC, having 6 previously filed rate of return testimony on behalf of its utility operations in Nebraska, 7 as well as Arkansas, Colorado, Iowa, Kansas, South Dakota, and Wyoming. In 8 connection with the present filing, I consider and rely upon corporate disclosures, 9 publicly available financial reports and filings, and other published information relating 10 to BHC and BH Nebraska Gas. I also review information relating generally to current 11 capital market conditions and specifically to investor perceptions, requirements, and 12 expectations for utilities. These sources, coupled with my experience in the fields of 13 finance and utility regulation, have given me a working knowledge of the issues 14 relevant to investors' required return for BH Nebraska Gas, and they form the basis of 15 my analyses and conclusions.

16 Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. After first summarizing my conclusion and recommendations, 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. Next, I explain the development of a relevant proxy group of natural gas utilities and examine BH Nebraska Gas' 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 my proxy group. 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 gas utilities, which are all methods that are commonly relied on in regulatory proceedings. Finally, consistent with the fact that utilities must compete for capital with firms outside their own industry, I corroborate my utility quantitative analyses by applying the DCF model to a group of low-risk nonutility firms.

Based on the cost of equity estimates indicated by my analyses, a fair ROE for
the Company is evaluated considering the specific risks for BH Nebraska Gas and its
requirements for financial strength. I also consider the Company's requested capital
structure in relation to industry benchmarks and the Company's ongoing efforts to
maintain its credit standing and support access to capital on reasonable terms.

12

B.

Summary and Conclusions

13 Q. WHAT IS YOUR RECOMMENDED ROE FOR BH NEBRASKA GAS?

A. I apply the DCF, CAPM, ECAPM, risk premium, and expected earnings analyses to a
proxy group of utilities, with the results being summarized on Exhibit No. AMM-2. As
shown there, based on the results of my analysis, I recommend a cost of equity range
for the Company's operations of 10.0% to 11.0%. It is my conclusion that 10.5%, which
falls at the midpoint of this range, represents a just and reasonable cost of equity that is
adequate to compensate the Company's investors, while maintaining BH Nebraska
Gas' financial integrity and ability to attract capital on reasonable terms.

In addition, my testimony confirms the reasonableness of Company witness Thomas D. Stevens recommendation that the Company's ratemaking capital structure be established using a common equity ratio of 50.52%.

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1 My ROE recommendation does not consider the very recent dislocations in 2 capital markets attributable to the potential impact of a worsening trade war on global 3 commerce and economic growth. While investors are clearly demanding significantly 4 higher returns to compensate for the unprecedented risks associated with the global 5 threat to economic growth and financial stability posed by the Trump administration's 6 tariff policies, the high degree of uncertainty and extreme short-term volatility greatly 7 complicates any ability to account for this heightened risk in evaluating the cost of 8 equity for the Company at this time. Thus, I may revise my analyses and ROE 9 recommendations for BH Nebraska Gas as additional information becomes available 10 and there is greater clarity over the implications of the trade conflict on investors' long-11 term risk perceptions and required returns.

12

II. <u>FUNDAMENTAL ANALYSES</u>

13 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 BH Nebraska Gas and examines
conditions impacting todays' capital markets and the general economy. An
understanding of the fundamental factors driving the risks and prospects of gas utilities
is essential in developing an informed opinion of investors' expectations and
requirements that are the basis of a fair ROE.

1

A. <u>BH Nebraska Gas</u>

2 Q. BRIEFLY DESCRIBE BH NEBRASKA GAS AND ITS GAS UTILITY 3 OPERATIONS.

4 BH Nebraska Gas provides natural gas utility services to approximately 304,000 A. 5 customers in Nebraska. The Company is an indirect, wholly-owned subsidiary of Black 6 Hills Energy, which in turn is a direct, wholly-owned subsidiary of BHC. 7 Headquartered in Rapid City, South Dakota, BHC operates regulated electric utilities, 8 regulated gas utilities, and power generation and mining business segments. Its gas 9 utilities segment serves approximately 1.13 million natural gas utility customers in 10 Arkansas, Colorado, Iowa, Kansas, Montana, Nebraska, and Wyoming. BH Nebraska 11 Gas' jurisdictional gas utility system includes over 8,600 miles of distribution mains, 12 approximately 3,000 miles of gas service lines, and over 1,300 miles of natural gas 13 transmission pipelines. In 2024, the Company's gas utility operations in Nebraska 14 reported revenues of \$304.5 million.

15 Q. WHERE DOES BH NEBRASKA GAS OBTAIN THE CAPITAL USED TO

- 16 **FINANCE ITS INVESTMENT IN UTILITY PLANT?**
- A. BH Nebraska Gas does not directly access the capital markets. As a subsidiary of BHC,
 it obtains its debt and equity capital solely from BHC. BHC's common stock is publicly
 traded on the New York Stock Exchange, and it is assigned corporate credit ratings of
 Baa2 by Moody's and BBB+ by S&P.

Q. DOES BH NEBRASKA GAS ANTICIPATE THE NEED FOR CAPITAL GOING FORWARD?

A. Yes. The BH Nebraska Gas must undertake investments to meet customer demand and
necessary maintenance and replacements of its natural gas utility system as it continues
to provide safe and reliable service to its customers. Continued support for BH
Nebraska Gas' financial integrity and flexibility will be instrumental in attracting the
capital necessary to fund these projects in an effective manner.

8

B. <u>Outlook for Capital Costs</u>

9 Q. PLEASE SUMMARIZE CURRENT ECONOMIC AND CAPITAL MARKET 10 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%.¹
Economic growth was more subdued in subsequent years, falling in a range of 2.5% to
2.9% between 2022 and 2024.² Meanwhile, indicators of employment have been
weakening somewhat, with the national unemployment rate rising slightly to 4.1% in
February 2025.³

17 The underlying risk and price pressures associated with the COVID-19 18 pandemic were overshadowed by a dramatic increase in geopolitical risks following 19 Russia's invasion of Ukraine in February 2022. Geopolitical risks were compounded 20 by the resurgence of conflict in the Middle East. Apart from disrupting global trade,

¹ 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 Mar. 12, 2025).

² U.S. Dep't of Commerce, Bureau of Economic Analysis, https://www.bea.gov/data/gdp/gross-domestic-product (last visited Feb. 14, 2025).

³ News Release, U.S. Dep't of Labor, Bureau of Labor Statistics, *The Employment Situation—February 2025* (Mar. 7, 2025), https://www.bls.gov/news.release/pdf/empsit (last visited Mar. 12, 2025).

1		the potential for escalation prompted concerns over potential constraints to crude oil
2		supplies and resulting supply-side price shocks that could reignite inflation.
3		Stimulative monetary and fiscal policies, coupled with supply-chain disruptions
4		and rapid price rises in the energy and commodities markets, led to increasing concern
5		that inflation would remain significantly above the Federal Reserve's longer-run
6		benchmark of 2%. CPI inflation peaked in June 2022 at 9.1%, its highest level since
7		November 1981. Since then, CPI inflation moderated significantly, but remained at
8		2.8% in February 2025, ⁴ which exceeds the Federal Reserve's 2.0% target. The so-
9		called "core" price index, which excludes more volatile energy and food costs, rose at
10		an annual rate of 3.1% in February 2025. ⁵ PCE inflation rose 2.5% in January 2025, or
11		2.6% after excluding more volatile food and energy costs. ⁶
12		Recently, the potential for a global tariffs conflict has raised concerns regarding
13		the impact on economic growth and inflationary pressures. Investors continue to face
14		the prospect of heightened market volatility as capital markets respond to these
15		uncertainties.
16	Q.	HAVE THESE DEVELOPMENTS IMPACTED THE RISKS FACED BY
17		UTILITIES AND THEIR INVESTORS?

18 A. Yes. In February 2024, S&P revised its outlook for the utility sector to "negative,"
19 noting that:

⁴ U.S. Dep't of Labor, Bureau of Labor Statistics, *Consumer Price Index Summary* (Mar. 12, 2025), https://www.bls.gov/news.release/cpi.nr0.htm (last visited Mar. 12, 2025). ⁵ *Id*.

⁶ Bureau of Economic Analysis, *Personal Income and Outlays, January 2025*, BEA 25-06 (Feb. 28, 2025), https://www.bea.gov/news/2025/personal-income-and-outlays-january-2025 (last visited Mar. 12, 2025).

1Credit quality for North American investor-owned regulated utilities has2weakened over the past four years, with downgrades outpacing upgrades3by more than three times. We expect downgrades to again surpass4upgrades in 2024 for the fifth consecutive year.⁷

5 More recently, S&P affirmed their negative outlook, citing to rising physical 6 risks, as well as weakening financial measures due to "record-breaking capital 7 spending" and cash flow deficits, and noting "the industry's high percentage of 8 companies ... that operate with only minimal financial cushion from their downgrade 9 threshold."⁸

10 Meanwhile, Moody's cautioned that widening cash flow deficits in the utility 11 industry were placing increasing negative pressure on financial credit metrics, 12 concluding that credit pressure "will likely continue to lead to negative rating actions 13 if not sufficiently mitigated."⁹

14 Q. DO RECENT BOND YIELD TRENDS INDICATE THAT THE COST OF 15 EQUITY HAS INCREASED RELATIVE TO THE RECENT PAST?

A. Yes. While the cost of equity is unobservable, the yields on long-term bonds provide a
 widely referenced benchmark for the direction of capital costs, including required
 returns on common stocks. Table 1 below compares the average yields on Treasury
 securities and Baa-rated public utility bonds in January 2025 with those required during
 20
 2021.

⁷ Standard & Poor's, *Rising Risks: Outlook For North American Investor-Owned Regulated Utilities Weakens,* Comments (Feb. 14, 2024).

⁸ S&P Global Ratings, *Regulated Utilities: Credit risks are rising*, Industry Credit Outlook Update – North America (Jul. 18, 2024).

⁹ Moody's Investors Service, *Electric and Gas Utilities – US*, Sector In-Depth (Oct. 21, 2024).

TABLE AMM-1 CAPITAL MARKET BENCHMARKS

1 2

Series	2021	Jan. 2025	Change (bps)
10-Year Treasury Bonds	1.44%	4.63%	319
30-Year Treasury Bonds	2.05%	4.85%	280
Baa Utility Bonds	3.35%	6.07%	<u>272</u>
Average			290

Source: https://fred.stlouisfed.org/series/GS30; 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 utility bond yields—which is the most relevant indicator in gauging the implications for the Company's common equity investors—the average yield in January 2025 is more than 270 basis points above the level prevailing during 2021.

8 Q. DO INVESTORS ANTICIPATE THAT THESE HIGHER BOND YIELDS 9 WILL BE SUSTAINED?

10 A. Yes. As illustrated in Figure 1 below, the most recent long-term consensus projections 11 from top economists published by Blue Chip Financial Forecasts demonstrate that 12 long-term bond yields are expected to remain elevated when compared to recent 13 historical levels.



FIGURE AMM-1 INTEREST RATE TRENDS

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2

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Source: Wolters Kluwer, Blue Chip Financial Forecasts (Nov. 27, 2024); Moody's Investors Service; https://fred.stlouisfed.org/.

This evidence shows that long-term capital costs—including the ROE—have increased substantially since 2021, and that investors expect these higher capital costs to be sustained at least through 2030.

6 Q. WHAT DO THESE TRENDS INDICATE REGARDING A FAIR ROE FOR BH 7 NEBRASKA GAS?

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 the Company's credit standing. 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. 1If the upward shift in investors' risk perceptions and required rates of return for2long-term capital is not incorporated in the allowed ROE, the results will fail to meet3the comparable earnings standard that is fundamental in determining the cost of capital.4From a more practical perspective, failing to provide investors with the opportunity to5earn a rate of return commensurate with BH Nebraska Gas' risks will weaken its6financial integrity and undermine its ability to attract necessary capital.

7 Q. WHAT ARE THE IMPLICATIONS OF MORE RECENT CAPITAL MARKET 8 CONDITIONS?

9 Since the date when my analyses were prepared, an escalating global tariffs conflict A. 10 has led to extreme volatility in the capital markets as investors revise their risk 11 perceptions and return requirements to reflect the potential for severe disruptions to 12 global commerce and economic growth. President Trump's April 3, 2025 13 announcement of far-reaching import tariffs on nearly all U.S. trading partners was 14 followed by the announcement two days later of a 90-day reprieve on certain 15 "reciprocal" tariffs. Goods from China presently face a levy of 145%, with the Chinese 16 retaliating by raising tariffs on U.S. products to 125%, creating an effective trade 17 embargo between the world's two largest economies. The result has been one of the 18 most volatile periods on record in the equity markets, with major stock market indices 19 whipsawed as investors struggle to decipher the impact of rapidly changing trade 20 policies on economic growth and corporate profits.

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1		The greater uncertainty faced by equity investors is confirmed by reference to
2		the VIX, ¹⁰ with Reuters reporting that this index of volatility "spiked above 60—a level
3		usually seen during meltdowns such as 2020 or the 2008 financial crisis." ¹¹ Similarly,
4		the MOVE index, which is a market-based measure of uncertainty about interest rates,
5		rose to levels not seen since the 2008-2009 financial crisis. ¹² The debt markets have
6		also been shaken by the threat to global trade and finance, with uncharacteristic selling
7		in U.S. Treasury bonds further unsettling investors. Oscillating trade war developments
8		have also precipitated a dramatic drop in consumer confidence, with the University of
9		Michigan consumer sentiment index plunging 11% from March 2025 and year-ahead
10		inflation expectations surging from 5.0% in March 2025 to 6.7% in April 2025. ¹³
11		While the ongoing volatility in capital markets is evidence of the greater risks
12		now faced by investors, the high degree of uncertainty posed by these developments
13		further complicates an evaluation of investors' cost of capital for BH Nebraska Gas.
14		III. <u>COMPARABLE RISK PROXY GROUP</u>
15	Q.	WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?
16	A.	This section explains the basis of the proxy group of publicly traded companies I use
17		to estimate the cost of equity, examines alternative objective indicators of investment
18		risk for these firms, and compares the investment risks applicable to BH Nebraska Gas
19		with my reference group.

¹⁰ The VIX, which is commonly referred to as Wall Street's "fear gauge," is one of the most widely recognized measures of expectations of near-term volatility and market sentiment referenced by the investment community. ¹¹ Tom Westbrook and Dhara Ranasinghe, Ten trading days that shook financial markets, Reuters (Apr. 11, 2025). https://www.reuters.com/markets/wealth/global-markets-tariffs-ticktock-pix-2025-04-11/ (last visited Apr. 11, 2025).

 ¹² https://finance.yahoo.com/quote/%5EMOVE/ (last visited April 11, 2025).
 ¹³ University of Michigan, *Surveys of Consumers* (Apr. 2025). <u>http://www.sca.isr.umich.edu/</u> (last visited Apr. 11, 2025).

1

A. <u>Determination of the Proxy Group</u>

2 Q. HOW DO YOU IMPLEMENT QUANTITATIVE METHODS TO ESTIMATE 3 THE COST OF COMMON EQUITY FOR BH NEBRASKA GAS?

4 Estimating the cost of common equity using quantitative methods requires observable A. 5 capital market data, such as stock prices and beta values. Even for a firm with publicly 6 traded stock, the cost of common equity can only be estimated and the results of 7 quantitative models inherently include some degree of error. The accepted approach to 8 increase confidence in the results is to apply quantitative methods to a proxy group of 9 publicly traded companies that investors regard as risk comparable. The results of the 10 analysis on the sample of companies are relied upon to establish a range of 11 reasonableness for the cost of equity for the specific company at issue.

12 Q. HOW DO YOU IDENTIFY THE PROXY GROUP OF GAS UTILITIES USED 13 IN YOUR ANALYSES?

A. To reflect the risks and prospects associated with natural gas utility operations, I
examine quantitative estimates of investors' required ROE for a group of eight natural
gas utilities. To identify this group, I begin with those companies included in the
Natural Gas Utility industry group 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 to be similar in operations.

Q. WHAT OTHER FACTORS DO YOU CONSIDER IN EVALUATING YOUR PROXY GROUP?

3 From the list of gas utilities compiled by Value Line, I exclude UGI because it is A. 4 primarily engaged in international sales and marketing of liquid propane gas, as well 5 as energy marketing in the United States and Europe, midstream infrastructure, storage, 6 natural gas gathering and processing, and natural gas production. During fiscal year 7 2024, UGI's regulated gas and electric utility operations combined accounted for just 21% of total revenues.¹⁴ Accordingly, UGI's primary business activities are not directly 8 9 comparable to the Company's gas utility operations, and I excluded UGI from the 10 proxy group on this basis.

11I then confirmed that all of the proxy group firms have investment-grade credit12ratings.¹⁵ While Chesapeake Utilities does not have published credit ratings from13Moody's or S&P, it has privately placed bonds that are rated "2.B" by the NAIC.¹⁶14Under NAIC guidelines, a 2.B rating is equivalent to a rating of Baa2 or BBB on the15Moody's and S&P rating scales, respectively.¹⁷ Finally, I verified that the remaining16firms have not cut dividend payments during the past six months and have not

¹⁴ UGI Corporation, *Form 10-K Report for the Fiscal Year Ended September 20, 2024* at F-63. https://www.sec.gov/ix?doc=/Archives/edgar/data/884614/000088461424000086/ugi-20240930.htm (last visited Mar. 13, 2025).

¹⁵ Credit rating firms, such as Moody's and S&P, use designations consisting of upper- and lower-case letters 'A' and 'B' to identify a bond's credit quality rating. 'Aaa', 'Aa', 'A', and 'Baa' ratings are considered investment grade. Credit ratings for bonds below these designations ('Ba', 'B', 'Caa', etc.) are considered speculative grade, and are commonly referred to as "junk bonds." The term "investment grade" refers to bonds with ratings in the 'Baa' category ('BBB' by S&P) and above.

¹⁶ See, Annual Statement of the Metropolitan Life Insurance Company (Dec. 31, 2024) at Schedule D – Part 1. https://s201.q4cdn.com/280976757/files/doc_downloads/statutory-filings/metropolitan/2024/MLIC-Q4-2024-Final-Statement-incl-inv-sch.pdf (last visited Mar. 12, 2025).

¹⁷ NAIC, *Purposes & Procedures Manual of the NAIC Investment Analysis Office* (December 2023) at 125. https://naic.soutronglobal.net/Portal/Public/en-

GB/DownloadImageFile.ashx?objectId=10880&ownerType=0&ownerId=11833 (last visited Mar. 12, 2025).

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announced a dividend cut since that time. As shown in Table 2 below, application of
 these criteria results in a proxy group composed of eight companies, which I refer to as
 the "Gas Group:"

TABLE AMM-2

5 GAS GROUP 6 Atmos Energy Corp. 7 Chesapeake Utilities 8 New Jersey Resources 9 NiSource Inc. 10 Northwest Natural 11 ONE Gas. Inc. 12 Southwest Gas 13 Spire Inc.

4

14 B. <u>Relative Risks of the Gas Group and BH Nebraska Gas</u>

15 Q. HOW DO YOU EVALUATE THE INVESTMENT RISKS OF THE GAS 16 GROUP?

My evaluation of relative risk considers five published benchmarks that are widely 17 A. 18 relied on by investors—credit ratings from Moody's and S&P, along with Value Line's 19 Safety Rank, Financial Strength Rating, and beta values. Credit ratings are assigned by 20 independent rating agencies to provide investors with a broad assessment of the 21 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 22 23 a category. Because the rating agencies' evaluation includes the factors considered 24 important in assessing a firm's relative credit standing, corporate credit ratings provide 25 broad, objective measures of overall investment risk that are readily available to 26 investors. Widely cited in the investment community and referenced by investors, 1 2 credit ratings are also frequently used as a primary risk indicator in establishing proxy groups to estimate the cost of common equity.

3 While credit ratings provide a widely referenced benchmark, other quality 4 rankings published by investment advisory services also provide relative assessments 5 of 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 6 7 measure is intended to capture the total risk of a stock and incorporates elements of 8 stock price stability and financial strength. The Financial Strength Rating is designed 9 as a guide to overall financial strength and creditworthiness, with the key inputs 10 including financial leverage, business volatility measures, and company size. Value 11 Line's Financial Strength Ratings range from "A++" (strongest) down to "C" (weakest) 12 in nine steps. Value Line is one of the most widely available source of investment 13 advisory information and these objective, published indicators consider a broad 14 spectrum of risks-including financial and business position, relative size, and 15 exposure to firm-specific factors-and provide useful guidance regarding the risk 16 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 of less than 1.0, while stocks that tend to move more than the market have betas greater than 1.0. Beta is the only relevant measure of investment risk under modern capital market theory, and it is widely cited in academics and in the investment industry as a guide to investors' risk perceptions.

1Q.WHAT DO THESE MEASURES INDICATE WITH RESPECT TO THE2OVERALL RISKS OF THE GAS GROUP?

A. The average risk indicators for the Gas Group are shown below in Table 3. Because BH Nebraska Gas does not issue its own debt securities and has no publicly traded common stock, the proxy group risk measures are compared to those of the Company's parent, BHC:

7 8

TABLE AMM-3 COMPARISON OF RISK INDICATORS

				Value Lin	e
	<u>Credit</u>	t Ratings	Safety	Financial	
<u>Proxy Group</u>	<u>S&P</u>	Moody's	<u>Rank</u>	<u>Strength</u>	<u>Beta</u>
Gas Group	BBB+	A3	2	А	0.90
BHC	BBB+	Baa2	2	А	1.05

9 The credit ratings corresponding to the Gas Group indicate comparable if not 10 slightly lower risk than BH Nebraska Gas. The average Value Line Safety Rank and 11 Financial Strength indicators for the Gas Group are identical to those for BHC, 12 although BHC's higher beta value indicates greater risk. Considered together, a 13 comparison of these objective measures indicates that investors would likely conclude 14 that the overall investment risks corresponding to BH Nebraska Gas are comparable to, 15 if not slightly greater than, those of the Gas Group.

Q. WOULD INVESTORS ALSO CONSIDER THE IMPLICATIONS OF REGULATORY MECHANISMS IN EVALUATING RELATIVE RISK?

A. Yes. In response to the increasing sensitivity over fluctuations in costs and the
 importance of advancing other public interest goals such as reliability, energy
 conservation, and safety, utilities and their regulators have sought to mitigate cost

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1	recovery uncertainty and align the interest of utilities and their customers. As a result,
2	adjustment mechanisms, cost trackers, and future test years have become increasingly
3	prevalent, along with alternatives to traditional ratemaking such as formula rates and
4	multi-year rate plans. RRA concluded in its most recent review of adjustment clauses
5	that:

6 More recently and with greater frequency, commissions have approved 7 mechanisms that permit the costs associated with the construction of 8 new generation or delivery infrastructure to be used, effectively 9 including these items in rate base without the need for a full rate case. 10 In some instances, these mechanisms may even provide the utilities a 11 cash return on construction work in progress. . . . [C]ertain types of 12 adjustment clauses are more prevalent than others. For example, those 13 that address electric fuel and gas commodity charges are in place in all 14 jurisdictions. Also, about two-thirds of all utilities have riders in place 15 to recover costs related to energy efficiency programs, and roughly half of the utilities have some type of decoupling mechanism in place.¹⁸ 16

17 Q. HAVE YOU SUMMARIZED THE REGULATORY MECHANISMS

18

AVAILABLE TO THE GAS GROUP?

A. Yes. As summarized on Exhibit No. AMM-3, these mechanisms are ubiquitous and
wide ranging. For example, of the twenty-nine separate utilities controlled by the
companies in the Gas Group, twenty-three benefit from trackers designed to address
rising capital investment in utility infrastructure outside of a traditional rate case. In
addition, fifteen of these utilities operate under some form of decoupling mechanism
that accounts for the impact of various factors affecting sales volumes and revenues
and a WNA mechanism has been approved for twenty of these utilities.¹⁹

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

¹⁹ Weather risks are also offset by other forms of rate design, including decoupling and straight-fixed-variable pricing, with four of the twenty-nine utilities having decoupling mechanisms that accounts for changes in weather.

1

WHAT IS THE PURPOSE OF A WNA MECHANISM? **Q**.

2 A. A WNA mechanism adjusts a customer's bill due to variations from normal weather in 3 terms of temperature. For billing periods that are warmer than normal, a surcharge 4 would be applied to customer's bills, and for billing periods that are colder than normal, 5 a credit would be applied. WNA mechansims have the effect of smoothing out the 6 utility's revenues month to month and year to year, which reduces the variability that 7 unusual weather would otherwise have on the utility's revenues and operating income. 8 WNA mechanisms are particularly relevant during the winter months for customers 9 with gas heat.

10 WHAT REGULATORY MECHANISMS HAVE BEEN APPROVED FOR THE Q. 11 **COMPANY'S NEBRASKA JURISDICTIONAL OPERATIONS?**

12 Like all companies represented in the Gas Group, BH Nebraska Gas has a gas cost A. 13 adjustment mechanism that allows it to pass prudently incurred gas costs through to 14 customers between rate reviews. In addition, the Company has riders that allow 15 recovery of infrastructure system replacement, safety, and integrity costs, as well as 16 mechanisms to recover bad debts.

17 Q. DO THE COMPANY'S CURRENT REGULATORY MECHANISMS SET BH

18 NEBRASKA GAS APART FROM OTHER FIRMS OPERATING IN THE GAS 19 **UTILITY INDUSTRY?**

20 Yes. Unlike many gas utilities, BH Nebraska Gas does not have a WNA mechanism in A. 21 place to account for the impacts of abnormal weather on its Nebraska gas utility 22 operations. A WNA mechanism moderates the impact of extreme weather on customers 23 and, at the same time, dampens the volatility of a gas utility's revenues. Indeed, the

1		vast majority of the gas utilities in the Gas Group used to estimate the cost of equity
2		have some form of weather mitigant, including decoupling mechanisms, adjustment
3		clauses, insurance, and/or rate design features that make revenues less susceptible to
4		variations in gas consumption due to weather. As Value Line noted:
5 6 7 8 9 10 11 12 13 14		Weather is a factor that affects the demand for natural gas, especially from small commercial businesses and consumers. Not surprisingly, earnings for utilities are susceptible to seasonal temperature patterns, with consumption normally at its peak during the winter heating months. Unseasonably warm or cold weather can cause substantial volatility in quarterly operating results. But some companies strive to counteract this exposure through temperature-adjusted rate mechanisms, which are available in many states. Therefore, investors interested in utilities with more-stable profits from one year to the next are advised to look for companies that are able to hedge this risk. ²⁰
15		In evaluating a reasonable ROE, it is also important to note that, unlike many
16		gas utilities, BH Nebraska Gas does not benefit from a decoupling mechanism that
17		insulates utility margins from declining usage. As a result, while the Company has been
18		exposed to the risks associated with abnormal weather and changing usage patterns, the
19		reduced uncertainties associated with weather mitigants and revenue decoupling are
20		accounted-for by investors and reflected in my cost of equity estimates.
21	Q.	HOW IS BH NEBRASKA GAS PROPOSING TO ADDRESS THESE
22		DISPARITIES?
23	A.	As discussed in the direct testimony of Company witness Mr. Douglas N. Hyatt, BH
24		Nebraska Gas is requesting approval of a WNA in this proceeding to address the
25		impacts of abnormal weather.

²⁰ Value Line Investment Survey (Jun. 3, 2016) at 541.

1	Q.	IF A WNA IS APPROVED FOR BH NEBRASKA GAS, WOULD THAT
2		DISTINGUISH THE COMPANY FROM OTHER GAS UTILITIES?
3	A.	No. Approval of a WNA would bring BH Nebraska Gas more into line with the utilities
4		represented by the Gas Group and make it competitive for investment in the industry.
5		On the other hand, because the utilities in the Gas Group benefit from a wider range of
6		regulatory mechanisms, if the proposed WNA was rejected by the Commission this
7		would indicate more risk for BH Nebraska Gas relative to other gas utilities and imply
8		a higher ROE. As the Washington Utilities and Transportation Commission
9		recognized:
10 11 12 13 14		Circumstances in the industry today and modern regulatory practice have led to a proliferation of risk reducing mechanisms being in place for utilities throughout the United States The effects of these risk mitigating factors was by 2013, and is today, built into the data experts draw from the samples of companies they select as proxies. ²¹
15		The Staff of the Kansas State Corporation Commission also concluded that no ROE
16		adjustment was justified when approving certain tariff riders because the impact of
17		similar mechanisms is already accounted for through the use of a proxy group:
18 19 20 21 22 23 24		Those mechanisms differ from company to company and jurisdiction to jurisdiction. Regardless of their nuances, the intent is the same; reduce cash-flow volatility year to year and place recent capital expenditures in rates as quickly as possible. Investors are aware of these mechanisms and their benefits are a factor when investors value those stocks. Thus, any risk reduction associated with these mechanisms is captured in the market data (stock prices) used in Staff's analysis. ²²

 ²¹ Wash. Utils. & Transp. Comm'n v. Puget Sound Energy, Inc., Dockets UE-130130 and UG-130138 consolidated) et al., Order 15.14 at 69, ¶ 155 (June 29, 2015). Internal citations omitted (Emphasis added).
 ²² Direct Testimony Prepared by Adam H. Gatewood, State Corporation Commission of the State of Kansas, Docket No. 12-ATMG-564-RTS, pp. 8-9 (June 8, 2012). This proceeding was ultimately resolved through a stipulated settlement.

1 Similarly, the Maryland Public Service Commission has also recognized that a 2 downward adjustment to the ROE is not warranted because of decoupling, noting that, 3 "as the parties testified, decoupling provisions are common among natural gas 4 distribution companies."²³

5 Thus, while investors would consider approval of the proposed WNA to be 6 supportive of BH Nebraska Gas' financial integrity, this leveling of the playing field 7 only serves to address factors that could otherwise impair the Company's opportunity 8 to earn its authorized return, as required by established regulatory standards. Continued 9 exposure to the uncertainties associated with the impact of weather and other 10 fluctuations in customer usage would imply a greater level of risk than is faced by other 11 utilities, including the firms in the Gas Group. In other words, the increased mitigation 12 of risks associated with the greater ability to adjust revenues and attenuate the risk of 13 cost recovery under the proposed WNA is already reflected in the cost of equity results 14 determined from the Gas Group analyses.

15

Q. DO PAST WEATHER EVENTS EMPHASIZE THE NEED TO MAINTAIN BH

16 NEBRAKSA GAS' FINANCIAL INTEGRITY?

A. Yes. A severe winter storm in February 2021 resulted in uncharacteristically frigid
temperatures across the south-central United States that disrupted natural gas supplies
at a time of unprecedented winter natural gas demand. In turn, this produced dramatic
spikes in the costs of natural gas and wholesale power throughout the region. As a
result, natural gas utilities throughout the region were required to secure liquidity
quickly in order to fund the extraordinary purchased gas costs necessary to maintain

²³ Maryland Public Service Commission, Order No. 85374 (Feb. 22, 2013) at 78.

service to customers. Continued support for the Company's financial strength is
 instrumental to ensure that BH Nebraska Gas can maintain access to the capital
 necessary to respond effectively under times of turmoil in the energy and capital
 markets.

5

IV. <u>CAPITAL MARKET ANALYSES AND ESTIMATES</u>

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

A. This section presents capital market estimates of the cost of equity. First, I address the
concept of the cost of common equity, along with the risk-return tradeoff principle
fundamental to capital markets. I then describe various quantitative analyses conducted
to estimate the cost of common equity for the proxy group of comparable risk utilities.

11

A.

Economic Standards

12 Q. WHAT FUNDAMENTAL ECONOMIC PRINCIPLE UNDERLIES THE COST 13 OF EQUITY?

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.

20 Given this risk-return tradeoff, the required rate of return (k) from an asset (i) 21 can generally be expressed as:

1		$k_{\rm i} = R_{\rm f} + RP_{\rm i}$
2 wh 3	here:	$R_{\rm f}$ = Risk-free rate of return, and $RP_{\rm i}$ = 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?

9 A. Yes. The risk-return tradeoff can be documented in the debt markets, where required 10 rates of return can be directly inferred from market data and where generally accepted 11 measures of risk exist. Comparing the observed yields on Treasury bonds, which are 12 considered free of default risk, to the yields on corporate bonds of various rating 13 categories demonstrates that the risk-return tradeoff does, in fact, exist.

14 Q. DOES THE RISK-RETURN TRADEOFF OBSERVED WITH FIXED INCOME

15 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, it is generally accepted that investors exhibit risk aversion in deciding whether or not to hold common stocks and other assets, just as when choosing among fixed-income securities.

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

3 A. No. The risk-return tradeoff principle applies not only to investments in different firms, 4 but also to different securities issued by the same firm. The securities issued by a utility 5 vary considerably in risk because they have different characteristics and priorities. As 6 noted earlier, long-term debt is senior among all capital in its claim on a utility's net 7 revenues and is, therefore, the least risky. The last investors in line are common 8 shareholders. They share in the net earnings, if any, that remain after all other claimants 9 have been paid. As a result, the rate of return that investors require from a utility's 10 common stock, the most junior and riskiest of its securities, must be considerably 11 higher than the yield offered by the utility's senior, long-term debt.

12 Q. WHAT ARE THE CHALLENGES IN DETERMINING A JUST AND 13 REASONABLE ROE FOR A REGULATED UTILITY?

A. The actual return that equity investors require is not directly observable. Different methodologies have been developed to estimate investors' expected return on capital, but these methods are theoretical tools and 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 can vary widely.

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1	Q.	IS IT CUSTOMARY TO CONSIDER THE RESULTS OF MULTIPLE
2		APPROACHES WHEN EVALUATING A JUST AND REASONABLE ROE?
3	А.	Yes. Financial analysts and regulators routinely consider the results of alternative
4		approaches in evaluating a fair ROE. No single method can be regarded as failsafe,
5		with all approaches having advantages and shortcomings. As FERC has noted, "[t]he
6		determination of rate of return on equity starts from the premise that there is no single
7		approach or methodology for determining the correct rate of return." ²⁴ Similarly, a
8		publication of the Society of Utility and Regulatory Financial Analysts concluded that:
9 10 11 12 13 14 15 16 17		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. ²⁵
18		As this treatise observed, "no single model is so inherently precise that it can
19		be relied on solely to the exclusion of other theoretically sound models." ²⁶ Similarly,
20		New Regulatory Finance concluded that:

²⁴ Northwest Pipeline Co., Opinion No. 396-C, 81 FERC ¶ 61,036 at 4 (1997).
²⁵ David C. Parcell, *The Cost of Capital – A Practitioner's Guide*, Society of Utility and Regulatory Financial Analysts (2010) at 84.

1 2 3 4 5 6 7 8 9 10 11 12	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. ²⁷
13	Thus, while the DCF model is a recognized approach to estimating the ROE, it
14	is not without shortcomings and does not otherwise eliminate the need to ensure that
15	the "end result" is fair. The Indiana Utility Regulatory Commission, for example, has
16	recognized this principle:
17	There are three principal reasons for our unwillingness to place a great
18	deal of weight on the results of any DCF analysis. One is the failure
19	of the DCF model to conform to reality. The second is the undeniable
20	fact that rarely if ever do two expert witnesses agree on the terms of a
21	DCF equation for the same utility – for example, as we shall see in more
22	detail below, projections of future dividend cash flow and anticipated
23	price appreciation of the stock can vary widely. And, the third reason is
24	that the unadjusted DCF result is almost always well below what any
25	informed financial analysis would regard as defensible, and therefore
26	require an upward adjustment based largely on the expert witness'
27	judgment. In these circumstances, we find it difficult to regard the
28	results of a DCF computation as any more than suggestive. ²⁸
29	FERC has also recognized the potential for any application of the DCF model
30	to produce unreliable results. ²⁹
31	As this discussion indicates, considering the results of alternative approaches
32	reduces the potential for error associated with any single method. Just as investors

 ²⁷ Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 429.
 ²⁸ *Ind. Michigan Power Co.*, Cause No. 38728, 116 PUR4th, 1, 17-18 (IURC 8/24/1990).
 ²⁹ *Coakley v. Bangor Hydro-Elec. Co.*, Opinion No. 531, 147 FERC ¶ 61,234 at P 41 (2014).

inform their decisions using a variety of methodologies, my evaluation of a fair ROE
 for BH Nebraska Gas considered the results of multiple financial models.

3 Q. DOES THE FACT THAT BH NEBRASKA GAS IS A SUBSIDIARY OF BHC 4 ALTER THESE FUNDAMENTAL STANDARDS?

5 A. No. While BH Nebraska Gas has no publicly traded common stock and BHC is the 6 ultimate owner, this does not change the standards governing the determination of a 7 fair ROE for the jurisdictional gas utility. Ultimately, the common equity that is 8 required to support the Company's utility operations must be raised in the capital 9 markets, where investors consider the Company's ability to offer a rate of return that is competitive with other risk-comparable alternatives. BH Nebraska Gas must compete 10 11 with other investment opportunities—both external and internal—and unless investors 12 have a reasonable expectation that they will earn a return commensurate with the 13 underlying risks, capital will be allocated elsewhere, the Company's financial integrity 14 will be weakened, and investors will demand a higher rate of return. The Company's 15 ability to offer a reasonable ROE is a necessary ingredient in ensuring that customers 16 continue to enjoy economical rates and reliable service.

17 Q. WHAT DOES THIS DISCUSSION IMPLY WITH RESPECT TO 18 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 company specifically, and employing alternative quantitative methods that focus

1 on investors' required rates of return. These methods typically attempt to infer 2 investors' required rates of return from stock prices, interest rates, or other capital 3 market data.

4

B. <u>Discounted Cash Flow Analysis</u>

5 Q. HOW IS THE DCF MODEL USED TO ESTIMATE THE COST OF COMMON 6 EQUITY?

A. The DCF model assumes 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:³⁰

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

13	where:	$k_{\rm e} = {\rm Cost} {\rm of equity};$
14		D_1 = Expected dividend per share in the coming year;
15		P_0 = Current price per share; and,
16		g = Investors' long-term growth expectations.

17 This constant growth form of the DCF model recognizes that the rate of return 18 to stockholders consists of two parts: 1) dividend yield (D_1/P_0) ; and 2) growth (g). In 19 other words, investors expect to receive a portion of their total return in the form of 20 current dividends and the remainder through price appreciation.

 $^{^{30}}$ The constant growth DCF model is dependent on a number of strict assumptions, which in practice are never met. These include a constant growth rate for both dividends and earnings; a stable dividend payout ratio; the discount rate exceeds the growth rate; a constant growth rate for book value and price; a constant earned rate of return on book value; no sales of stock at a price above or below book value; a constant price-earnings ratio; a constant discount rate (*i.e.*, no changes in risk or interest rate levels and a flat yield curve); and all of the above extend to infinity. Nevertheless, the DCF method provides a workable and practical approach to estimate investors' required return that is widely referenced in utility ratemaking.

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.

9 Q. HOW DO YOU DETERMINE THE DIVIDEND YIELDS FOR THE UTILITIES

10 IN THE GAS 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 D₁. 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 Gas Group are presented on page 1 of Exhibit No. AMM-4. As shown there, dividend yields for the firms in the Gas Group ranged from 2.2% to 4.9% and averaged 3.5%.

17 Q. WHAT IS THE NEXT STEP TO APPLY THE CONSTANT GROWTH DCF 18 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 implementing the DCF model is not a theoretical exercise; it is an attempt to replicate the mechanism investors used to arrive at observable stock prices. A variety 1 of techniques can be used to derive growth rates, but the only "g" that matters in 2 applying the DCF model is the value that investors expect.

3 Q. WHAT ARE INVESTORS MOST LIKELY TO CONSIDER IN DEVELOPING 4 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.

10 A measure that plays a pivotal role in determining investors' long-term growth 11 expectations is future trends in EPS, which provide the source for future dividends and 12 ultimately support share prices. The importance of earnings in evaluating investors' 13 expectations and requirements is well accepted in the investment community, and 14 surveys of analytical techniques relied on by professional analysts indicate that growth 15 in earnings is far more influential than trends in DPS.

16 The availability of projected EPS growth rates also is key to investors relying 17 on this measure as compared to future trends in DPS. Apart from Value Line, 18 investment advisory services do not generally publish comprehensive DPS growth 19 projections, and this scarcity of dividend growth rates relative to the abundance of 20 earnings forecasts attests to their relative influence. The fact that securities analysts 21 focus on EPS growth, and that DPS growth rates are not routinely published, indicates 22 that projected EPS growth rates are likely to provide a superior indicator of the future 23 long-term growth expected by investors.

1 Q.

2

CONSIDER HISTORICAL TRENDS?

DO THE GROWTH RATE PROJECTIONS OF SECURITY ANALYSTS ALSO

3 A. Yes. Professional security analysts study historical trends extensively in developing 4 their projections of future earnings. To the extent there is any useful information in 5 historical patterns, that information is incorporated into analysts' growth forecasts.

6 Q. WHAT ARE SECURITY ANALYSTS CURRENTLY PROJECTING IN THE 7 WAY OF GROWTH FOR THE FIRMS IN THE GAS GROUP?

- 8 A. The earnings growth projections for each of the firms in the Gas Group reported by 9 Value Line, IBES,³¹ and Zacks are displayed on page 2 of Exhibit No. AMM-4.
- 10 Q. HOW ELSE ARE INVESTORS' EXPECTATIONS OF FUTURE LONG-TERM **GROWTH PROSPECTS SOMETIMES ESTIMATED WHEN APPLYING THE** 11 12 **CONSTANT GROWTH DCF MODEL?**
- 13 In constant growth theory, growth in book equity will be equal to the product of the A. 14 earnings retention ratio (one minus the dividend payout ratio) and the earned rate of 15 return on book equity. Furthermore, if the earned rate of return and the payout ratio are 16 constant over time, growth in earnings and dividends will be equal to growth in book 17 value. Despite the fact that these conditions are never met in practice, this "sustainable 18 growth" approach may provide a rough guide for evaluating a firm's growth prospects 19 and is frequently proposed in regulatory proceedings.
- 20 The sustainable growth rate is calculated by the formula, g = br+sv, where "b" 21 is the expected retention ratio, "r" is the expected earned return on equity, "s" is the 22 percent of common equity expected to be issued annually as new common stock, and

32

³¹ Formerly I/B/E/S International, Inc., IBES growth rates are now compiled and published by LSEG.

"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 No. AMM-4, with the underlying
details being presented on Exhibit No. AMM-5.

6 The sustainable growth rate analysis shown on Exhibit No. AMM-4 7 incorporates an "adjustment factor" because Value Line's reported returns are based 8 on year-end book values. Since earnings are a flow over the year while book value is 9 determined at a given point in time, the measurement of earnings and book value are 10 distinct concepts. This fundamental difference between a flow (earnings) and point 11 estimate (book value) makes it necessary to adjust to mid-year in calculating the ROE. 12 Given that book value will increase or decrease over the year, using year-end book 13 value (as Value Line does) understates or overstates the average investment that 14 corresponds to the flow of earnings. To address this concern, earnings must be matched 15 with a corresponding representative measure of book value, or the resulting ROE will 16 be distorted. The adjustment factor determined in Exhibit No. AMM-5 is solely a means 17 of converting Value Line's end-of-period values to an average return over the year, and 18 the formula for this adjustment is supported in recognized textbooks and has been adopted by other regulators.³² 19

³² 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).

1 Q. WHAT COST OF COMMON EQUITY ESTIMATES ARE IMPLIED FOR THE

- 2 GAS 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 No.
 AMM-4.

6 Q. IN EVALUATING THE RESULTS OF THE CONSTANT GROWTH DCF 7 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.

11 Q. HOW DO YOU EVALUATE DCF ESTIMATES AT THE LOW END OF THE 12 RANGE?

13 I base my evaluation of DCF estimates at the low end of the range on the fundamental A. 14 risk-return tradeoff, which holds that investors will only assume more risk if they 15 expect to earn a higher rate of return to compensate them for the greater uncertainly. 16 Because common stocks lack the protections associated with an investment in long-17 term bonds, a utility's common stock imposes far greater risks on investors. As a result, 18 the rate of return that investors require from a utility's common stock is considerably 19 higher than the yield offered by senior, long-term debt. Consistent with this principle, 20 DCF results that are not sufficiently higher than the yield available on less risky utility 21 bonds must be eliminated.

1 Q.

HAVE SIMILAR TESTS BEEN APPLIED BY REGULATORS?

2 Yes. FERC has noted that adjustments are justified where applications of the DCF A. 3 approach and other methods produce illogical results. FERC evaluates low-end DCF 4 results against observable yields on long-term public utility debt and has recognized 5 that it is appropriate to eliminate estimates that do not sufficiently exceed this 6 threshold.³³ FERC's current practice is to exclude low-end cost of estimates that fall 7 below the six-month average yield on Baa-rated utility bonds, plus 20% of the CAPM market risk premium.³⁴ In addition, FERC also excludes estimates that are "irrationally 8 9 or anomalously high."35

10 DO YOU EXCLUDE ANY ESTIMATES AT THE LOW OR HIGH END OF Q. 11 **THE RANGE OF DCF RESULTS?**

12 Yes. As highlighted on page 3 of Exhibit No. AMM-4, I remove two low-end values A. 13 of 7.1% and 7.2%. Based on my professional experience and the risk-return tradeoff 14 principle that is fundamental to finance, it is inconceivable that investors are not 15 requiring a substantially higher rate of return for holding common stock. As a result, 16 this value provides little guidance as to the returns investors require from utility 17 common stocks and should be excluded.

18 The upper end of the DCF results for the Gas Group is established by a cost of 19 equity estimate of 13.5%. While a 13.5% cost of equity estimate may exceed the other 20 values, low-end DCF estimates in the 7.4% to 7.8% range retained in my DCF study

³⁴ Based on the six-month average yield at January 2025 of 5.71% and the 8.1% market risk premium shown on Exhibit No. AMM-6, this implies a current low-end threshold of approximately 7.3%.

³³ See, Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc., 169 FERC ¶ 61,129 at PP 387, 388 (2019).

³⁵ Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc., 171 FERC ¶ 61,154 at P 152 (2020).

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are assuredly far below investors' required rate of return. Taken together and
 considered along with the balance of the results, these values provide a reasonable basis
 on which to frame the range of plausible DCF estimates and evaluate investors'
 required rate of return.

- 5 Q. WHAT ROE ESTIMATES ARE IMPLIED BY YOUR DCF RESULTS FOR
 6 THE GAS GROUP?
- A. As shown on page 3 of Exhibit No. AMM-4 and summarized in Table 4, below,
 application of the constant growth DCF model resulted in the following ROE estimates:
- 9
- 10

TABLE AMM-4 DCF RESULTS—GAS GROUP

Growth Rate	<u>Average</u>	<u>Midpoint</u>
Value Line	10.2%	10.6%
IBES	10.5%	10.3%
Zacks	9.9%	9.8%
br + sv	9.5%	9.6%

11 C. <u>Capital Asset Pricing Model</u>

12 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 representing the extent to which a firm's stock price 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:

1		$R_j = R_f + \beta_j (R_m - R_f)$
2 3 4 5		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.
0 7		Under the CAPM formula above, a stock's required return is a function of the
8		risk-free rate (R _f), plus a risk premium that is scaled to reflect the relative volatility of
9		a firm's stock price, as measured by beta (β). Like the DCF model, the CAPM is an <i>ex</i> -
10		ante, or forward-looking model based on expectations of the future. As a result, in order
11		to produce a meaningful estimate of investors' required rate of return, the CAPM must
12		be applied using estimates that reflect the expectations of actual investors in the market,
13		not with backward-looking, historical data.
14	0	WHY IS THE CAPM A DELEVANT ADDROACH TO EVALUATE THE COST
17	Q.	WITT IS THE CALWARE RELEVANT ATTROACH TO EVALUATE THE COST
15	Q.	OF EQUITY FOR BH NEBRASKA GAS?
15 16	Q. A.	OF EQUITY FOR BH NEBRASKA GAS? The CAPM approach (which also forms the foundation of the ECAPM) generally is
15 16 17	Q. A.	OF EQUITY FOR BH NEBRASKA GAS? The CAPM approach (which also forms the foundation of the ECAPM) generally is considered to be the most widely referenced method for estimating the cost of equity
14 15 16 17 18	Q.	OF EQUITY FOR BH NEBRASKA GAS? The CAPM approach (which also forms the foundation of the ECAPM) generally is considered to be the most widely referenced method for estimating the cost of equity among academicians and professional practitioners, with the pioneering researchers of
15 16 17 18 19	Q.	OF EQUITY FOR BH NEBRASKA GAS? The CAPM approach (which also forms the foundation of the ECAPM) generally is considered to be the most widely referenced method for estimating the cost of equity among academicians and professional practitioners, with the pioneering researchers of this method receiving the Nobel Prize in 1990. Because this is the dominant model for
15 16 17 18 19 20	Α.	OF EQUITY FOR BH NEBRASKA GAS? The CAPM approach (which also forms the foundation of the ECAPM) generally is considered to be the most widely referenced method for estimating the cost of equity among academicians and professional practitioners, with the pioneering researchers of this method receiving the Nobel Prize in 1990. Because this is the dominant model for estimating the cost of equity outside the regulatory sphere, the CAPM (and ECAPM)
15 16 17 18 19 20 21	Α.	OF EQUITY FOR BH NEBRASKA GAS? The CAPM approach (which also forms the foundation of the ECAPM) generally is considered to be the most widely referenced method for estimating the cost of equity among academicians and professional practitioners, with the pioneering researchers of this method receiving the Nobel Prize in 1990. Because this is the dominant model for estimating the cost of equity outside the regulatory sphere, the CAPM (and ECAPM) provides important insight into investors' required rate of return for utility stocks.
15 16 17 18 19 20 21 22	Q.	OF EQUITY FOR BH NEBRASKA GAS? The CAPM approach (which also forms the foundation of the ECAPM) generally is considered to be the most widely referenced method for estimating the cost of equity among academicians and professional practitioners, with the pioneering researchers of this method receiving the Nobel Prize in 1990. Because this is the dominant model for estimating the cost of equity outside the regulatory sphere, the CAPM (and ECAPM) provides important insight into investors' required rate of return for utility stocks. HOW DO YOU APPLY THE CAPM TO ESTIMATE THE ROE?
15 16 17 18 19 20 21 22 23	Q. Q. A.	 OF EQUITY FOR BH NEBRASKA GAS? The CAPM approach (which also forms the foundation of the ECAPM) generally is considered to be the most widely referenced method for estimating the cost of equity among academicians and professional practitioners, with the pioneering researchers of this method receiving the Nobel Prize in 1990. Because this is the dominant model for estimating the cost of equity outside the regulatory sphere, the CAPM (and ECAPM) provides important insight into investors' required rate of return for utility stocks. HOW DO YOU APPLY THE CAPM TO ESTIMATE THE ROE? Application of the CAPM to the Gas Group based on a forward-looking estimate for
15 16 17 18 19 20 21 22 23 24	Q. Q. A.	OF EQUITY FOR BH NEBRASKA GAS? The CAPM approach (which also forms the foundation of the ECAPM) generally is considered to be the most widely referenced method for estimating the cost of equity among academicians and professional practitioners, with the pioneering researchers of this method receiving the Nobel Prize in 1990. Because this is the dominant model for estimating the cost of equity outside the regulatory sphere, the CAPM (and ECAPM) provides important insight into investors' required rate of return for utility stocks. HOW DO YOU APPLY THE CAPM TO ESTIMATE THE ROE? Application of the CAPM to the Gas Group based on a forward-looking estimate for investors' required rate of return for utility No.

1

2

the expected market rate of return is estimated by conducting a DCF analysis on the dividend paying firms in the S&P 500.

3 The dividend vield for each firm is obtained from Value Line, and the growth 4 rate is equal to the average of the earnings growth projections for each firm published 5 by IBES, Value Line, and Zacks, with each firm's dividend yield and growth rate being 6 weighted by its proportionate share of total market value. After removing companies 7 with growth rates that were negative or greater than 20%, the weighted average of the 8 projections for the individual firms implies an average growth rate over the next five 9 years of 10.9%. Combining this average growth rate with a year-ahead dividend yield 10 of 1.6% results in a current cost of common equity estimate for the market as a whole 11 (R_m) of 12.5%. Subtracting a 4.4% risk-free rate based on the average yield on 30-year 12 Treasury bonds for the six-months ending January 2025 produced a market equity risk 13 premium of 8.1%.

14

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.

18 Q. WHAT ELSE SHOULD BE CONSIDERED IN APPLYING 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:

1One of the most remarkable discoveries of modern finance is the finding2of a relationship between firm size and return. On average, small3companies have higher returns than large ones. . . . The relationship4between firm size and return cuts across the entire size spectrum; it is5not restricted to the smallest stocks. 36

6 According to the CAPM, the expected return on a security should consist of the 7 riskless rate, plus a premium to compensate for the systematic risk of the particular 8 security. The degree of systematic risk is represented by the beta coefficient. The need 9 for the size adjustment arises because differences in investors' required rates of return 10 that are related to firm size are not fully captured by beta. To account for this, 11 researchers have developed size adjustments that account for the level of a firm's market capitalization in determining the CAPM cost of equity.³⁷ Accordingly, my 12 13 CAPM analyses also incorporated adjustment to recognize the impact of size 14 distinctions, as measured by the market capitalization for the firms in the Gas Group.

15 Q. WHAT IS THE BASIS FOR THE SIZE ADJUSTMENT?

16A.The size adjustment required in applying the CAPM is based on the finding that after17controlling for risk differences reflected in beta, the CAPM overstates returns to18companies with larger market capitalizations and understates returns for relatively19smaller firms. The size adjustments utilized in my analysis are sourced from Kroll, who20now publish the well-known compilation of capital market series originally developed21by Professor Roger G. Ibbotson of the Yale School of Management. Calculation of the22size adjustments involve the following steps:

³⁶ Morningstar, 2015 Ibbotson SBBI Classic Yearbook, at 99.

³⁷ Originally compiled by Ibbotson Associates and published in their annual yearbook entitled, *Stocks, Bonds, Bills and Inflation*, these size premia are now developed by Duff & Phelps and presented in its *Valuation Handbook – Guide to Cost of Capital*.

1 2		 Divide all stocks traded on the NYSE, NYSE MKT, and NASDAQ indices into deciles based on their market capitalization.
3 4		2. Using the average beta value for each decile, calculate the implied excess return over the risk-free rate using the CAPM.
5 6 7		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."
8		New Regulatory Finance observed that "small market-cap stocks experience
9		higher returns than large market-cap stocks with equivalent betas," and concluded that
10		"the CAPM understates the risk of smaller utilities, and a cost of equity based purely
11		on a CAPM beta will therefore produce too low an estimate."38 As FERC has
12		recognized, "[t]his type of size adjustment is a generally accepted approach to CAPM
13		analyses."39
14	Q.	IS THIS SIZE ADJUSTMENT RELATED TO THE SIZE OF BH NEBRASKA
15		GAS RELATIVE TO THE PROXY GROUP?
16	А.	No. I am not proposing to apply a general size risk premium in evaluating a just and
17		reasonable ROE for the Company and my recommendation does not include any

- 18 adjustment related to the relative size of BH Nebraska Gas. Rather, this size adjustment
- 19 is specific to the CAPM and corrects for an observed inability of the beta measure to
- 20 fully reflect the risks perceived by investors for the firms in the proxy group.

³⁸ Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 187.

³⁹ Coakley v. Bangor Hydro-Elec. Co., Opinion No. 531-B, 150 FERC ¶ 61,165 at P 117 (2015).

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

A. As shown on Exhibit No. AMM-6, the CAPM approach implies an average cost of
equity of 11.7% for the Gas Group, and 12.4% after adjusting for the impact of firm
size.

6 **D.** <u>ECAPM</u>

7 Q. HOW DOES THE ECAPM APPROACH DIFFER FROM TRADITIONAL 8 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 risk returns than predicted by the CAPM. This is illustrated graphically
in Figure 2:



FIGURE AMM-2 CAPM – PREDICTED VS. OBSERVED RETURNS

1 2

3 4 Because the betas of utility stocks, including those in the Gas Group, are 5 generally less than 1.0, this implies that cost of equity estimates based on the traditional 6 CAPM would understate the cost of equity. This empirical finding is widely reported 7 in the finance literature, as summarized in New Regulatory Finance: 8 As discussed in the previous section, several finance scholars have 9 developed refined and expanded versions of the standard CAPM by relaxing the constraints imposed on the CAPM, such as dividend yield, 10 size, and skewness effects. These enhanced CAPMs typically produce a 11 risk-return relationship that is flatter than the CAPM prediction in 12 13 keeping with the actual observed risk-return relationship. The ECAPM 14 makes use of these empirical relationships.⁴⁰ 15 Based on a review of the empirical evidence, New Regulatory Finance 16 concluded that the expected return on a security is represented by the following 17 formula:

⁴⁰ Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports (2006) at 189.

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1
$$R_j = R_f + 0.25(R_m - R_f) + 0.75[\beta_j(R_m - R_f)]$$

2 Like the CAPM formula presented earlier, the ECAPM represents a stock's 3 required return as a function of the risk-free rate (R_f) , plus a risk premium. In the 4 formula above, this risk premium is composed of two parts: (1) the market risk 5 premium $(R_m - R_f)$ weighted by a factor of 25%, and (2) a company-specific risk 6 premium based on the stock's relative volatility $[\beta_i(R_m - R_f)]$ weighted by 75%. This 7 ECAPM equation, and its associated weighting factors, recognizes the observed 8 relationship between standard CAPM estimates and the cost of capital documented in 9 the financial research, and corrects for the understated returns that would otherwise be 10 produced for low beta stocks.

11 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 No. AMM-7, applying the forward-looking ECAPM approach
 results in an average cost of equity estimate of 11.9%, or 12.6% after incorporating the
 size adjustment corresponding to the market capitalization of the individual utilities.
- 17

E.

<u>Gas Utility Risk Premium</u>

18 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

1 model, the risk premium method is capital market oriented. However, unlike DCF 2 models, which indirectly impute the cost of equity, risk premium methods directly 3 estimate investors' required rate of return by adding an equity risk premium to 4 observable bond yields.

5

6

Q.

FOR ESTIMATING THE COST OF EQUITY?

IS THE RISK PREMIUM APPROACH A WIDELY ACCEPTED METHOD

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

12 Q. HOW DO YOU IMPLEMENT THE RISK PREMIUM METHOD?

13 Estimates of equity risk premiums for utilities are based on surveys of previously A. 14 authorized ROEs. Authorized ROEs presumably reflect regulatory commissions' best 15 estimates of the cost of equity, however determined, at the time they issued their final 16 order. Such ROEs should represent a balanced and impartial outcome that considers 17 the need to maintain a utility's financial integrity and ability to attract capital. 18 Moreover, allowed returns are an important consideration for investors and have the 19 potential to influence other observable investment parameters, including credit ratings 20 and borrowing costs. Thus, when considered in the context of a complete and rigorous 21 analysis, this data provides a logical and frequently referenced basis for estimating 22 equity risk premiums for regulated utilities.

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

A. The ROEs authorized for gas utilities by regulatory commissions across the U.S. are
compiled and published by RRA. On pages 2-4 of Exhibit No. AMM-8, the average
yield on single-A public utility bonds is subtracted from the average allowed return for
gas utilities to calculate equity risk premiums for each quarter between 1980 and 2024.
As shown on page 4 of Exhibit No. AMM-8, over this period, these equity risk
premiums for gas utilities averaged 3.81%, and the yields on single-A public utility
bonds averaged 7.52%.

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

- 12 Yes. Equity risk premiums are not constant and tend to move inversely with interest A. 13 rates. In other words, when interest rate levels are relatively high, equity risk premiums 14 narrow, and when interest rates are relatively low, equity risk premiums widen. The 15 implication of this inverse relationship is that the cost of equity does not move as much 16 as, or in lockstep with, interest rates. Accordingly, for a 1% increase or decrease in 17 interest rates, the cost of equity may only rise or fall some fraction of 1%. When 18 implementing the risk premium method, adjustments are required to incorporate this 19 inverse relationship if the current interest rate is different from the average interest rate 20 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

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1		bond yields also imply an increase in the equity risk premium. In other words, higher
2		required equity risk premiums offset the impact of declining interest rates on the ROE.
3	Q.	IS THIS INVERSE RELATIONSHIP CONFIRMED BY PUBLISHED
4		FINANCIAL RESEARCH?
5	A.	Yes. The inverse relationship between equity risk premiums and interest rates has been
6		widely reported in the financial literature. As summarized by New Regulatory Finance:
7 8 9 10 11 12		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. ⁴¹
13		Other regulators have also recognized that, while the cost of equity trends in the
14		same direction as interest rates, these variables do not move in lockstep.42 This
15		relationship is illustrated in the figure on page 5 of Exhibit No. AMM-8.
16	Q.	WHAT ROE IS IMPLIED BY THE RISK PREMIUM METHOD USING
17		SURVEYS OF ALLOWED ROES?
18	A.	Based on the regression output between the interest rates and equity risk premiums
19		displayed on page 5 of Exhibit No. AMM-8, the equity risk premium for gas utilities
20		increases by approximately 47 basis points for each percentage point drop in the yield
21		on average public utility bonds. As shown on page 1 of Exhibit No. AMM-8, with an
22		average yield on single-A public utility bonds for the six-months ending January 2025
23		of 5.50%, this implies a current equity risk premium of 4.77%. Adding this equity risk

⁴¹ Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports (2006) at 128.

⁴² See, e.g., California Public Utilities Commission, Decision 08-05-035 (May 29, 2008); Entergy Mississippi Formula Rate Plan FRP-7, https://cdn.entergy-mississippi.com/userfiles/content/price/tariffs/eml_frp.pdf (last visited Mar. 13, 2025); *Martha Coakley et al.*, 147 FERC ¶ 61,234 at P 147 (2014).

- premium to the average yield on Baa-rated utility bonds of 5.71% results in an indicated
 cost of equity for BH Nebraska Gas of 10.48%.
- 3

F. <u>Expected Earnings Approach</u>

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

5 A. I also evaluate the ROE using the expected earnings method. Reference to rates of 6 return available from alternative investments of comparable risk can provide an important benchmark in assessing the return necessary to assure confidence in the 7 8 financial integrity of a firm and its ability to attract capital. This expected earnings 9 approach is consistent with the economic underpinnings for a just and reasonable rate of return established by the U.S. Supreme Court in *Bluefield* and *Hope*.⁴³ Moreover, it 10 11 avoids the complexities and limitations of capital market methods and instead focuses 12 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 based on the widely accepted principle 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

⁴³ Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n, 262 U.S. 679 (1923) ("Bluefield"); Fed. Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944) ("Hope").

of capital. This outcome would violate the *Hope* and *Bluefield* standards and undermine
 the utility's access to capital on reasonable terms.

3 Q. HOW IS THE EXPECTED EARNINGS APPROACH TYPICALLY 4 IMPLEMENTED?

5 A. The traditional comparable earnings test identifies a group of companies that are 6 believed to be comparable in risk to the utility. The actual earnings of those companies 7 on the book value of their investment are then compared to the allowed return of the 8 utility. While the traditional comparable earnings test is implemented using historical 9 data taken from the accounting records, it is also common to use projections of returns 10 on book investment, such as those published by recognized investment advisory 11 publications (e.g., Value Line). Because these projected returns on book value equity 12 are analogous to the forward-looking allowed ROE on a utility's rate base, this measure 13 of opportunity costs results in a direct, "apples to apples" comparison.

14

Q.

WHAT OTHER CONSIDERATION SUPPORTS REFERENCE TO

15 EXPECTED RETURNS ON BOOK VALUE?

16 A. Regulators do not set the returns that investors earn in the capital markets, which are a 17 function of dividend payments and fluctuations in common stock prices-both of 18 which are outside their control. Regulators can only establish the allowed ROE, which 19 is applied to the book value of a utility's investment in rate base, as determined from 20 its accounting records. This is analogous to the expected earnings approach, which 21 measures the return that investors expect the utility to earn on book value. As a result, 22 the expected earnings approach provides a meaningful guide to ensure that the allowed 23 ROE is similar to what other utilities of comparable risk will earn on invested capital.

1 This expected earnings test does not require theoretical models to indirectly infer 2 investors' perceptions from stock prices or other market data. As long as the proxy 3 companies are similar in risk, their expected earned returns on invested capital provide 4 a direct benchmark for investors' opportunity costs that is independent of fluctuating 5 stock prices, market-to-book ratios, debates over DCF growth rates, or the limitations 6 inherent in any theoretical model of investor behavior.

Q. WHAT ROE IS INDICATED FOR BH NEBRASKA GAS BASED ON THE 8 EXPECTED EARNINGS APPROACH?

9 For the firms in the Gas Group, the year-end returns on common equity projected by A. 10 Value Line over its forecast horizon are shown on Exhibit No. AMM-9. As I explained 11 earlier in my discussion of the br+sv growth rates used to apply the DCF model, Value 12 Line's returns on common equity are calculated using year-end equity balances, which understates the average return earned over the year.⁴⁴ Accordingly, these year-end 13 14 values were converted to average returns using the same adjustment factor discussed 15 earlier and developed on Exhibit No. AMM-5. As shown on Exhibit No. AMM-9, after 16 removing illogical values, Value Line's projections suggest an average ROE of 9.6% 17 for the Gas Group.

18

V. NON-UTILITY BENCHMARK

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

A. This section presents the results of my DCF analysis for a group of low-risk firms in
the competitive sector, which I refer to as the "Non-Utility Group." I do not rely on this

⁴⁴ 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.

analysis to arrive at my recommended ROE range of reasonableness; however, it is my
 opinion that this is a relevant consideration in evaluating a just and reasonable ROE for
 the Company's gas utility operations.

4 Q. DO UTILITIES COMPETE WITH NON-REGULATED FIRMS FOR 5 CAPITAL?

A. Yes. The cost of capital is an opportunity cost based on the returns that investors could
realize by putting their money in other alternatives. Utilities must compete for capital,
not just against firms in their own industry, but with other investment opportunities of
comparable risk. This understanding is consistent with modern portfolio theory, which
is built on the assumption that rational investors will hold a diverse portfolio of stocks
and not just companies in a single industry.

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

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

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1 2 3		By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. ⁴⁵
4		As in the <i>Bluefield</i> decision, there is nothing to restrict "other enterprises" solely
5		to the utility industry.
6	Q.	WHAT CRITERIA DO YOU APPLY TO DEVELOP THE NON-UTILITY
7		GROUP?
8	A.	My comparable risk proxy group is composed of those United States companies
9		followed by Value Line that:
10		1) pay common dividends;
11		2) have a Safety Rank of "1";
12		3) have a Financial Strength Rating of "A" or greater;
13		4) have a beta of 0.95 or less; and
14		5) have investment grade credit ratings from Moody's and S&P.
15	Q.	HOW DO THE OVERALL RISKS OF THIS NON-UTILITY GROUP
16		COMPARE WITH THE GAS GROUP?
17	A.	Table 5 compares the Non-Utility Group with the Gas Group and BH Nebraska Gas
18		across the measures of investment risk discussed earlier:
19		TABLE AMM-5

20

TABLE AMM-5COMPARISON OF RISK INDICATORS

				Value Lin	e
	Credi	<u>t Ratings</u>	Safety	Financial	
<u>Proxy Group</u>	<u>S&P</u>	<u>Moody's</u>	<u>Rank</u>	<u>Strength</u>	<u>Beta</u>
Non-Utility Group	А	A2	1	A+	0.80
Gas Group	BBB+	A3	2	А	0.90
BHC	BBB+	Baa2	2	А	1.05

⁴⁵ Federal Power Comm'n v. Hope Natural Gas Co., 320 U.S. 391 (1944).

As shown above, considered together the risk indicators for the Non-Utility
 Group suggest less risk than for the Gas Group and BHC.

3 The companies that make up the Non-Utility Group are representative of the 4 pinnacle of corporate America. These firms, which include household names such as 5 Colgate-Palmolive, McDonalds, Procter & Gamble, and Walmart, have long corporate 6 histories, well-established track records, and conservative risk profiles. Many of these 7 companies pay dividends on a par with utilities, with the average dividend yield for the 8 group at 2.2%. Moreover, because of their significance and name recognition, these 9 companies receive intense scrutiny by the investment community, which increases 10 confidence that published growth estimates are representative of the consensus 11 expectations reflected in common stock prices.

12 Q. WHAT ARE THE RESULTS OF YOUR DCF ANALYSIS FOR THE NON13 UTILITY GROUP?

A. I apply the DCF model to the Non-Utility Group using the same analysts' EPS growth
 projections described earlier for the Gas Group, with the results being presented in
 Exhibit No. AMM-10. As summarized in Table 6, below, after eliminating illogical
 values, application of the constant growth DCF model resulted in the following cost of
 equity estimates:

19 20

TABLE AMM-6 DCF RESULTS—NON-UTILITY GROUP

Growth Rate	<u>Average</u>	<u>Midpoint</u>
Value Line	11.5%	11.6%
IBES	10.8%	11.7%
Zacks	10.4%	11.5%

As discussed earlier, reference to the Non-Utility Group is consistent with established regulatory principles. Required returns for utilities should be in line with those of non-utility firms of comparable risk operating under the constraints of free competition. Because the actual cost of equity is unobservable, and DCF results inherently incorporate a degree of error, cost of equity estimates for the Non-Utility Group provide an important benchmark in evaluating a just and reasonable ROE for BH Nebraska Gas.

8

VI. <u>RETURN ON EQUITY FOR BH NEBRASKA GAS</u>

9

Q.

WHAT IS THE PURPOSE OF THIS SECTION?

A. This section presents an overview of the relationship between ROE and preservation of
 a utility's financial integrity and its ability to attract capital under reasonable terms and
 presents my conclusions regarding the fair and reasonable ROE applicable to BH
 Nebraska Gas' utility operations. I also present evidence supporting the ratemaking
 capital structure presented in the testimony of BH Nebraska Gas witness Mr. Stevens.

15

A.

Importance of Financial Strength

16 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 on their investment commensurate with returns available from alternative
 investments with comparable risks. Moreover, a fair and reasonable ROE is integral in
 meeting sound regulatory economics and the standards set forth by the U.S.

- 1 Supreme Court. The Bluefield case set the standard against which just and reasonable
- 2 rates are measured:

3 A public utility is entitled to such rates as will permit it to earn a return 4 on the value of the property which it employs for the convenience of the 5 public equal to that generally being made at the same time and in the 6 same general part of the country on investments in other business 7 undertakings which are attended by corresponding risks and 8 uncertainties.... The return should be reasonable, sufficient to assure 9 confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and 10 11 support its credit and enable it to raise money necessary for the proper 12 discharge of its public duties.

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

17 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 18 19 costs of the business. These include service on the debt and dividends 20 on the stock.... By that standard, the return to the equity owner should 21 be commensurate with returns on investments in other enterprises 22 having corresponding risks. That return, moreover, should be sufficient 23 to assure confidence in the financial integrity of the enterprise, so as to 24 maintain credit and attract capital.

In summary, the U.S. 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 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.

3 While the Hope and Bluefield decisions did not establish a particular method to be followed in fixing rates (or in determining the allowed ROE),⁴⁶ these and subsequent 4 5 cases enshrined the importance of an end result that meets the opportunity cost standard 6 of finance. Under this doctrine, the required return is established by investors in the 7 capital markets based on expected returns available from comparable risk investments. 8 Coupled with modern financial theory, which has led to the development of formal 9 risk-return models (e.g., DCF and CAPM), practical application of the Bluefield and 10 Hope standards involves the independent, case-by-case consideration of capital market 11 data in order to evaluate an ROE that will produce a balanced and fair end result for 12 investors and customers.

Q. THROUGHOUT YOUR TESTIMONY YOU REFER REPEATEDLY 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 a reasonable cost, consistent with the Supreme Court standards. The Company's plans call for a continuation of capital investments in main replacement, system safety and integrity, and technology to preserve and enhance service reliability for its customers. The Company must

⁴⁶ *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. at 602 (1944) (*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.")

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generate adequate cash flow from operations to fund these requirements and maintain access to capital from external sources.

3 Rating agencies and potential debt investors tend to place significant emphasis 4 on maintaining strong financial metrics and credit ratings that support access to debt 5 capital markets under reasonable terms. This emphasis on financial metrics and credit 6 ratings is shared by equity investors who also focus on cash flows, capital structure and 7 liquidity, much like debt investors. Investors understand the important role that a 8 supportive regulatory environment plays in establishing a sound financial profile that 9 will permit the utility access to debt and equity capital markets on reasonable terms in 10 both favorable financial markets and during times of potential disruption and crisis.

Q. WHAT PART DOES REGULATION PLAY IN ENSURING THAT BH NEBRASKA GAS HAS ACCESS TO CAPITAL UNDER REASONABLE TERMS AND ON A SUSTAINABLE BASIS?

14 Regulatory signals are a major driver of investors' risk assessment for utilities. A. 15 Investors recognize that constructive regulation is a key ingredient in supporting utility 16 credit ratings and financial integrity. Security analysts study commission orders and 17 regulatory policy statements to advise investors about where to put their money. As 18 Moody's noted, "The regulatory framework is important because it provides the basis 19 for decisions that affect utilities, including rate-setting as well as consistency and predictability of regulatory decision-making."⁴⁷ Similarly, S&P has observed that, 20 21 "Regulatory advantage is the most heavily weighted factor when S&P Global Ratings

⁴⁷ Moody's Investors Service, *Rating Methodology, Regulated Electric and Gas Utilities* (Aug. 6, 2024).

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1		analyzes a regulated utility's business risk profile."48 More recently, S&P confirmed
2		that "Utility regulation, no matter where on the continuum of our assessments,
3		strengthens a utility's business risk profile, and generally underpins our ratings."49
4		Value Line summarizes similar sentiments:
5 6 7 8 9		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. ⁵⁰
10		In addition, the ROE set by the Commission impacts investor confidence in not
11		only the jurisdictional utility, but also in the ultimate parent company that is the entity
12		that actually issues common stock.
13	Q.	DO CUSTOMERS BENEFIT FROM REGULATORY ACTIONS THAT
14		
		SUPPORT THE UTILITY'S FINANCIAL FLEXIBILITY?
15	A.	SUPPORT THE UTILITY'S FINANCIAL FLEXIBILITY? Yes. Providing an ROE that is sufficient to maintain the Company's ability to attract
15 16	A.	SUPPORT THE UTILITY'S FINANCIAL FLEXIBILITY?Yes. Providing an ROE that is sufficient to maintain the Company's ability to attractcapital under reasonable terms, even in times of financial and market stress, is not only
15 16 17	A.	SUPPORT THE UTILITY'S FINANCIAL FLEXIBILITY? 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
15 16 17 18	A.	SUPPORT THE UTILITY'S FINANCIAL FLEXIBILITY? 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 <i>Hope</i> and <i>Bluefield</i> decisions, but also in customers' best interests. Customers enjoy
15 16 17 18 19	A.	SUPPORT THE UTILITY'S FINANCIAL FLEXIBILITY? 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 <i>Hope</i> and <i>Bluefield</i> decisions, but also in customers' best interests. Customers enjoy the benefits that come from ensuring that the utility has the financial wherewithal to
15 16 17 18 19 20	A.	SUPPORT THE UTILITY'S FINANCIAL FLEXIBILITY? 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 <i>Hope</i> and <i>Bluefield</i> decisions, but also in customers' best interests. 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.
15 16 17 18 19 20 21	A.	SUPPORT THE UTILITY'S FINANCIAL FLEXIBILITY? 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 <i>Hope</i> and <i>Bluefield</i> decisions, but also in customers' best interests. 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. In contrast, denying a utility the opportunity to earn a fair ROE or attract capital

⁴⁸ S&P Global Ratings, *Assessing U.S. Investors-Owned Utility Regulatory Environments*, Credit Research (Aug. 10, 2016).

⁴⁹ S&P Global Ratings, North American Utility Regulatory Jurisdictions: Some Notable Developments (Nov. 10, 2023).

⁵⁰ Value Line Investment Survey, *Water Utility Industry* (January 13, 2017) at p. 1780.

1		The costs of obtaining capital rise as the risks of the utility mount, which ultimately
2		increases the cost of providing service. Financial stress can also hinder the ability to
3		provide safe and reliable service if the utility is unable to raise the capital necessary for
4		system expansion and improvements.
5		B. <u>Conclusions and Recommendations</u>
6	Q.	WHAT ARE YOUR FINDINGS REGARDING A FAIR ROE FOR BH
7		NEBRASKA GAS?
8	А.	Based on the results of my analyses and the economic requirements necessary to
9		support continuous access to capital under reasonable terms, I determined that 10.5%
10		is a reasonable estimate of investors' required ROE for BH Nebraska Gas. The bases
11		for my conclusion are summarized below:
12 13 14		• To reflect the risks and prospects associated with BH Nebraska Gas' utility business, my analysis focuses on the seven gas utility firms in the Gas Group.
15 16 17 18 19		• Because investors' required ROE is unobservable, and no single method should be viewed in isolation, I apply the DCF, CAPM, ECAPM, and risk premium methods to estimate a fair and reasonable ROE for BH Nebraska Gas, as well as referencing the expected earnings approach.
20 21 22 23 24		• As summarized on Exhibit No. AMM-2, based on the results of 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 a regulated gas utility is in the 10.0% to 11.0% range, with a midpoint of 10.5%. ⁵¹
25 26		• Based on the results outlined above, I conclude that 10.5% represents a just and reasonable ROE for BH Nebraska Gas.
27 28		• Continued support for BH Nebraska Gas' financial integrity is imperative to ensure that the Company has the capability to confront

⁵¹ While I do not make an explicit adjustment to the results of my quantitative methods to include an adjustment for flotation costs associated with issuing common stock, this is another legitimate consideration that supports the reasonableness of my evaluation of a just and reasonable ROE for BH Nebraska Gas in this case.

1 2 potential challenges associated with attracting necessary capital, even during times of turmoil in the energy and capital markets.

Q. BH NEBRASKA GAS IS REQUESTING APPROVAL OF A WNA IN THIS PROCEEDING. WHAT IMPLICATIONS DOES THIS HAVE FOR THE FAIR ROE?

6 As my testimony documents, BH Nebraska Gas does not currently benefit from many A. 7 of the regulatory mechanisms, such as revenue decoupling and WNAs, that are 8 available to the utilities included in my proxy group. As a result, approval of the 9 Company's requested WNA would help to bring BH Nebraska Gas more into line with 10 other gas utilities by addressing a consideration that could otherwise impair the 11 Company's opportunity to earn its authorized ROE. On the other hand, if BH Nebraska 12 Gas' proposed WNA is not approved, the greater risks associated with the Company's 13 relative lack of regulatory mechanisms would lend additional support for an ROE 14 above my 10.5% recommendation.

15 Q. WHAT DO THE DCF RESULTS FOR YOUR SELECT GROUP OF NON-

16

UTILITY FIRMS INDICATE WITH RESPECT TO YOUR EVALUATION?

A. As shown on Exhibit No. AMM-10, page 3, average DCF estimates for a low-risk group of firms in the competitive sector of the economy range from 10.4% to 11.5%.
While I do not base my recommendation directly on these results, they confirm that an ROE of 10.5% falls in a reasonable range to maintain BH Nebraska Gas' financial integrity, to provide a return commensurate with investments of comparable risk, and to support the Company's ability to attract capital.

1 С. **Capital Structure** 2 **Q**. WHAT IS THE ROLE OF CAPITAL STRUCTURE IN SETTING A UTILITY'S 3 **RATE OF RETURN?** 4 Capital structure reflects the mix of capital-debt, preferred securities, and common A. 5 equity-used to finance a utility's assets. The proportions of the total capitalization 6 attributable to each source of capital are typically used to weight the costs of investor-7 supplied capital in calculating an overall rate of return. 8 Q. WHY DOES THIS WEIGHTING MATTER? 9 The capital structure ratios determine how much weight is given to a particular source A. 10 of capital. Because the costs of debt and preferred securities and the rate of return on 11 common equity are not the same, this affects the weighted average cost, or overall rate 12 of return, of all sources of capital. 13 Q. HOW DO COMPANIES DETERMINE AN APPROPRIATE CAPITAL 14 **STRUCTURE FOR THEIR OPERATIONS?** 15 There are many considerations in the capital structure decision. In general, the goal is A. 16 to employ the mix of capital that minimizes the weighted average cost of capital. Given 17 the interplay between costs of debt and equity, the impact of taxes, bankruptcy costs, 18 and the level of business risks, determining a firm's optimal capital structure is an 19 imprecise exercise. In practice, capital structure decisions must be made by combining 20 managements' judgment, numerical analysis, and considering investors' risk 21 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.

6 Q. WHAT COMMON EQUITY RATIO IS IMPLICIT IN THE COMPANY'S 7 CAPITAL STRUCTURE?

- A. As summarized the direct testimony of Company witness Mr. Stevens, BH Nebraska
 Gas is proposing a capital structure that includes 50.52% common equity.
- 10 Q. HOW DOES THIS COMPARE TO RECENT HISTORICAL
 11 CAPITALIZATION FOR THE GAS GROUP, AND ALSO INVESTORS'
 12 FORWARD-LOOKING EXPECTATIONS?
- A. As shown on page 1 of Exhibit No. AMM-11, the most recent four quarters imply
 equity ratios ranging from 42.4% to 60.8% for the Gas Group, with an average equity
 ratio of 48.9%. With regard to forward-looking expectations, page 2 of Exhibit No.
 AMM-11 shows that Value Line is expecting an average common equity ratio of 48.9%
 for the Gas Group over its three-to-five year forecast horizon, which falls in a range of
 44.0% to 60.0% for the individual proxy group companies.

Q. WHAT OTHER EVIDENCE SUPPORTS THE REASONABLENESS OF THE COMPANY'S REQUESTED CAPITAL STRUCTURE?

A. Reference to recent findings for gas utilities in other regulatory proceedings also
supports the reasonableness of the 50.52% common equity ratio used as the basis for

1 the Company's external capital. The table below presents the common equity ratios

approved for gas utilities over the past eight quarters, as reported by RRA:

TABLE AMM-7 GAS UTILITY ALLOWED COMMON EQUITY RATIOS

	Low	High	Average
Q1-23	45.16%	 52.93%	52.93%
Q2-23	50.00%	 56.73%	56.73%
Q3-23	48.00%	 51.20%	51.20%
Q4-23	48.00%	 51.31%	51.31%
Q1-24	50.87%	 59.07%	53.11%
Q2-24	50.00%	 60.61%	53.07%
Q3-24	48.00%	 62.38%	51.49%
Q4-24	45.30%	 83.18%	54.30%
Average	48.17%	 59.68%	53.02%

Source: S&P Global Market Intelligence, *Major Rate Case Decisions*, RRA Regulatory Focus (Feb. 4, 2025; Feb. 6, 2024). Excludes cases involving Limited Issuer Riders and capital structures that include cost-free items.

- 5 As demonstrated in the table above, the Company's requested 50.52% common 6 equity ratio falls well within the range of capital structures recently approved for other 7 gas utilities, and below the average of 53.02%. 8 **DO ONGOING ECONOMIC AND CAPITAL MARKET UNCERTAINTIES Q**. 9 INFLUENCE THE APPROPRIATE CAPITAL STRUCTURE FOR BLACK 10 HILLS? 11 A. Yes. Financial flexibility plays a crucial role in ensuring the wherewithal of a utility to 12 meet funding needs, and utilities with higher financial leverage may be foreclosed or
- 13 have limited access to additional borrowing, especially during times of financial market

14 stress. As Moody's observed:

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1 2 3 4 5 6	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. ⁵²
7	Moody's emphasized that the utility sector "is likely to continue to generate
8	negative free cash flow and credit quality is likely to suffer unless utilities fund this
9	negative free cash flow appropriately with a balance of debt and equity financing."53
10	S&P confirmed the financial challenges associated with funding heightened
11	investment in the utility sector, noting that, "In February [2024] we revised our industry
12	outlook to negative, reflecting the industry's high percentage of companies with
13	negative outlooks that operate with only minimal financial cushion from their
14	downgrade threshold," and warning that common equity is at a level "insufficient to
15	fund the industry's cash flow deficits."54
16	As a result, the Company's capital structure must maintain adequate equity to
17	preserve the flexibility necessary to maintain continuous access to capital even during

times of unfavorable energy or financial market conditions. 18

⁵² Moody's Investors Service, FAQ on credit implications of the coronavirus outbreak, Sector Comment (Mar. 26, 2020).

⁵³ Moody's Investors Service, Regulate Electric and Gas Utilities – US, Rising capital expenditures will require higher annual equity funding, Sector In-Depth (Nov. 8, 2023). ⁵⁴ S&P Global Ratings, *Regulated Utilities: Credit risks are rising*, Industry Credit Outlook Update (Jul. 18,

^{2024).}

1	Q.	WHAT OTHER FACTORS DO INVESTORS CONSIDER IN THEIR
2		ASSESSMENT OF A COMPANY'S CAPITAL STRUCTURE?
3	A.	Utilities, including Black Hills, are facing significant capital investment plans. Coupled
4		with the potential for turmoil in capital markets, this warrants a stronger balance sheet
5		to deal with an uncertain environment. As S&P noted:
6 7 8 9 10		The industry's capital spending remains at record levels, supporting initiatives for safety, reliability, energy transition, and growth. We consider these trends long term and expect capital spending will only continue to increase over this decade. Accordingly, cash flow deficits have increased, pressuring the industry's credit quality. ⁵⁵
11		A conservative financial profile, in the form of a reasonable common equity
12		ratio, is consistent with the need to accommodate these uncertainties and maintain the
13		continuous access to capital under reasonable terms that is required to fund operations
14		and necessary system investment, even during times of adverse capital market
15		conditions.
16	Q.	WHAT DOES THIS EVIDENCE SUGGEST WITH RESPECT TO THE
17		COMMON EQUITY RATIO PROPOSED BY BH NEBRASKA GAS?
18	А.	Based on my evaluation, I conclude that BH Nebraska Gas' requested common equity
19		ratio of approximately 50.52% represents a reasonable basis on which to calculate the
20		Company's overall rate of return. While industry averages provide one benchmark for
21		comparison, each firm must select its capitalization based on the risks and prospects it
22		faces, as well its specific needs to access the capital markets. A public utility with an
23		obligation to serve must maintain ready access to capital under reasonable terms so that

⁵⁵ S&P Global Ratings, *Rising Risks: Outlook For North American Investor-Owned Regulated Utilities Weakens*, Comments (Feb. 14, 2024).

it can meet the service requirements of its customers. 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.

5 BH Nebraska Gas' ratemaking capital structure is consistent with the range of 6 industry benchmarks reflected in the capital structure ratios expected for the Gas 7 Group, as well as the common equity ratios authorized for other gas utilities. The 8 Company's capitalization reflects the need to fund ongoing capital expenditures and 9 strengthen its financial integrity and access to capital on reasonable terms. Based on 10 this evidence, I conclude that the Company's ratemaking capital structure represents a 11 reasonable mix of capital sources from which to calculate Black Hills's overall rate of 12 return.

13 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

14 A. Yes, it does.

STATE OF TEXAS)) SS COUNTY OF TRAVIS)

I, Adrien M. McKenzie, being first duly sworn on oath, depose and state that I am the witness identified in the foregoing prepared testimony, and I am familiar with its contents, and that the facts set forth are true to the best of my knowledge, information and belief.

Adrien M. McKenzie

Subscribed and sworn to before me this **942** day of April, 2025.

My Commission Expires:

2/25/2027

Anch'

(SEAL)

BRUCE HARCUM FAIRCHILD Notary ID #131906507 Av Commission Expires February 25, 2027

Notary Public