Exhibit No.:
Issue(s): *Rate of Return*
Witness: *Seoung Joun Won, PhD*
Sponsoring Party: *MoPSC Staff*
Type of Exhibit: *Rebuttal Testimony*
Case No.: *GR-2025-0107*
Date Testimony Prepared: *May 30, 2025*

MISSOURI PUBLIC SERVICE COMMISSION

FINANCIAL AND BUSINESS ANALYSIS DIVISION

FINANCIAL ANALYSIS DEPARTMENT

REBUTTAL TESTIMONY

OF

SEOUNG JOUN WON, PhD

SPIRE MISSOURI, INC., d/b/a SPIRE

CASE NO. GR-2025-0107

Jefferson City, Missouri
May 30, 2025

****** Denotes Confidential Information ******

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d/b/a SPIRE

CASE NO. GR-2025-0107

Q. Please state your name and business address.

A. My name is Seoung Joun Won and my business address is P.O. Box 360, Jefferson City, Missouri 65102.

Q. Who is your employer, and what is your present position?

A. I am employed by the Missouri Public Service Commission ("Commission") as a member of Commission Staff ("Staff") and my title is Regulatory Compliance Manager for the Financial Analysis Department, in the Financial and Business Analysis Division.

Q. Are you the same Seoung Joun Won who filed Direct Testimony on April 23, 2025, in this proceeding?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to the direct testimonies of Adam Woodard, David Murray and Christopher C. Walters regarding cost of capital issues such as return on equity ("ROE"), cost of debt, capital structure, and overall rate of return ("ROR"). Mr. Woodard filed his testimony on behalf of Spire Missouri, Inc., d/b/a Spire ("Spire Missouri"), a subsidiary of Spire, Inc. ("Spire Inc."). Mr. Murray and Mr. Walters filed testimony on behalf of the Missouri Office of the Public Counsel ("OPC") and the Missouri Industrial Energy Consumers ("MIEC"), respectively.

I. EXECUTIVE SUMMARY

Q. What is the overview of your response to the testimony of Mr. Woodard?

A. Staff's rebuttal will focus on Mr. Woodard's proposed ROE, capital structure, and ROR. Mr. Woodard proposed an ROE of 10.50%, and an ROR of 7.689% utilizing a hypothetical capital structure consisting of 55.00% common equity and 45.00% long-term debt with a cost of debt of 4.254%.[1] To estimate his proposed ROE, Mr. Woodard utilized the Constant Growth form of the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM") and Risk Premium.[2] Mr. Woodard proposed an overestimated ROE based on his false claim that Spire Missouri is significantly under-earning its authorized rate of return.[3]

During the audit review process, Staff found that Mr. Woodard improperly used inflated input values in his Cost of Equity ("COE") analyses to overstate the estimates of his proposed ROE. In this rebuttal testimony, Staff will provide a detailed explanation on how Mr. Woodard inappropriately used input data in his comparative COE analysis. In addition, Mr. Woodard's proposed ROR is not based on Spire Missouri's actual standalone capital structure and cost of debt for Spire Missouri. Staff found that Spire Missouri's actual equity ratio of 50.69% as of March 31, 2025, is different from Mr. Woodard's proposed equity ratio of 55.0%.[4] Using a hypothetical capital structure without a proper reason is considered inappropriate for ratemaking purposes because it does not reflect how the company is actually financed or the real risks the company faces.[5] Staff has not found any proper reason for Spire Missouri to use a capital structure other than its actual standalone operating capital structure for ratemaking.

[1] Page 40, lines 9-13, and Schedule AWW-D-20-21, Woodard's Direct Testimony.
[2] Page 15, lines 14-15, Woodard's Direct Testimony.
[3] Page 4, lines 16-18, Woodard's Direct Testimony.
[4] Staff's Data Request No. 0053 and Confidential Schedule SJW-r1.
[5] Paragraphs 12-17, 172 FERC ¶ 61,242, Docket No. ER20-276-002.

Q. What is the overview of your response to the testimony of Mr. Murray?

A. Mr. Murray recommended an ROE of 9.50% within a range of 9.00% to 9.50% and an after-tax ROR of 6.45% based on his recommended capital structure of 41.5% common equity, 51.5% long-term debt and 7.0% short-term debt and applying a cost of long-term debt of 4.25% and a cost of short-term debt of 4.55%.[6]

Mr. Murray's recommended common equity to total capital ratio ("equity ratio") of 41.5% is approximately 920 basis points lower than Spire Missouri's actual common equity ratio of 50.69% as of March 31, 2025.[7] Mr. Murray's recommended capital structure is a hypothetical capital structure based on Spire Inc. capital structure with an adjustment to short-term debt based on the percentage of Spire Missouri's short-term debt which is attributed to CWIP[8] and deferred gas cost balances.[9] Staff will address its concern that Mr. Murray's recommended equity ratio of 41.5% is significantly lower than Spire Missouri's current common equity ratio.

Q. What is the overview of your response to the testimony of Mr. Walters?

A. Mr. Walters recommended an ROE of 9.45%, within a range of 9.00% to 9.90%, and a ROR of 7.02%, based on his proposed capital structure of 53.2% common equity and 46.8% long-term debt.[10] This structure is based on Spire Missouri's actual capital structure as of December 31, 2024, and applies a cost of long-term debt of 4.25%.[11] Since Mr. Walters' recommended ROE of 9.45% falls within Staff's reasonable ROE range of 9.38% to 9.88%, and his ratemaking capital structure used Spire Missouri's actual capital structure, Staff did not raise any concerns regarding Mr. Walters' ROR analysis in this proceeding.

[6] Page 4, lines 25-28, and Schedule DM-D-9, Murray's Direct Testimony.
[7] Staff's Data Request No. 0053 and Confidential Schedule SJW-r1.
[8] Construction work in progress ("CWIP").
[9] Page 36, lines 13-15, Murray's Direct Testimony.
[10] Page 2 lines 21-23, and Page 3, lines 8-19, Walters' Direct Testimony.
[11] Page 24, line 14, Walters' Direct Testimony.

II. RESPONSE TO TESTIMONY OF SPIRE MISSOURI'S WITNESS

Q. What are the specific areas in which Staff is responding to Spire Missouri's witnesses?

A. Staff is responding to the testimony of Mr. Woodard. The areas in which Staff addresses issues of Mr. Woodard's direct testimony regarding his proposed ROE include:

- Financial Condition
- Recommended ROE,
- Assumption of COE Estimation,
- Discount Cash Flow,
- Capital Asset Pricing Model, and
- Risk Premium Estimate.

Then, Staff will address Mr. Woodard's recommended capital structure. Staff will discuss each, in turn, below.

1. Financial Condition

Q. Do you agree with Mr. Woodard when he stated, "If the Company is significantly underearning its authorized return it could require a higher authorized rate of return than a theoretical analysis would suggest, in order to repair its financial condition, which may have negatively impacted capital structure"?[12]

A. No, I do not. This statement contains several ambiguities regarding Spire Missouri's financial status. First, the meaning of 'underearning its authorized return' is unclear. Based on the context, "its authorized return" could refer to an ROR determined by the Commission in the most recent rate case. If so, the sentence could imply that Spire Missouri is substantially falling short of its authorized return. However, this interpretation is misleading

[12] Page 3 (line 23) – Page 4 (line 3), Woodard's Direct Testimony.

because an authorized ROR remains fixed until a new ROR is approved by the Commission in the next rate case.

Second, if the sentence means that Spire Missouri is substantially falling short of its actual return compared to its authorized ROR, it is also misleading because Spire Missouri's most recent rate case was settled using a black-box approach, meaning no specific authorized return value was determined by the Commission.[13]

Third, even if an ROR had been determined by the Commission in Spire Missouri's most recent case, the following statement remains logically inconclusive: 'it could require a higher authorized rate of return than a theoretical analysis would suggest.' This is because Spire Missouri's actual earning was not solely determined by the authorized ROR.

Fourth, the idea that repairing Spire Missouri's financial condition requires a higher authorized ROR than a theoretical analysis would suggest is valid only if the company's lower actual return is not due to other factors, such as its operations, investment needs, or overall economic conditions. Mr. Woodard did not provide any evidence that an authorized ROE is the sole reason for Spire Missouri's lower actual return.

Fifth, the meaning of 'negatively impacted capital structure' is obscure. If Mr. Woodard intends to suggest that a lower equity ratio is considered a negative impact, he is mistaken. There is no basis for assuming that a higher equity ratio is inherently better. In fact, a higher equity ratio results in a higher cost of capital. Mr. Woodard proposed a 55% equity ratio for a hypothetical capital structure, which is 5% higher than the average equity ratio of approximately 50% among natural gas service ("NGS") utilities in the U.S.[14]

[13] *Order Approving Stipulation and Agreement*, GR-2022-0179.
[14] RRA, S&P Global IQ Pro.

Q. Above, you stated, "Spire Missouri's actual earnings were not solely determined by the authorized ROR." Could you please explain what this means in a general regulatory context?

A. A company's actual ROR is not solely determined by its authorized ROR because the authorized ROR serves as a target or benchmark set by a regulatory body (such as the Commission) based on the company's operations, investment needs, and overall economic conditions. However, the actual ROR reflects the company's real performance and profitability, which can be influenced by several factors, including operational efficiency, market conditions, and investment decisions.

Operational efficiency affects whether the company outperforms or underperforms its targets based on cost management, revenue generation, and business strategies. Market conditions, such as changes in demand, competition, or economic shifts, can impact the company's ability to meet or exceed the authorized ROR. Investment decisions, such as whether the company invests in high-risk or low-return projects, can also cause its actual ROR to deviate from the authorized ROR.

Thus, while the authorized ROR serves as a reference point, it does not guarantee that the company will achieve that rate. In other words, the authorized ROR serves to establish a normalized earning opportunity deemed reasonable in terms of profitability and financial soundness.

Q. Why has Spire Missouri's earned return decreased in recent years?[15]

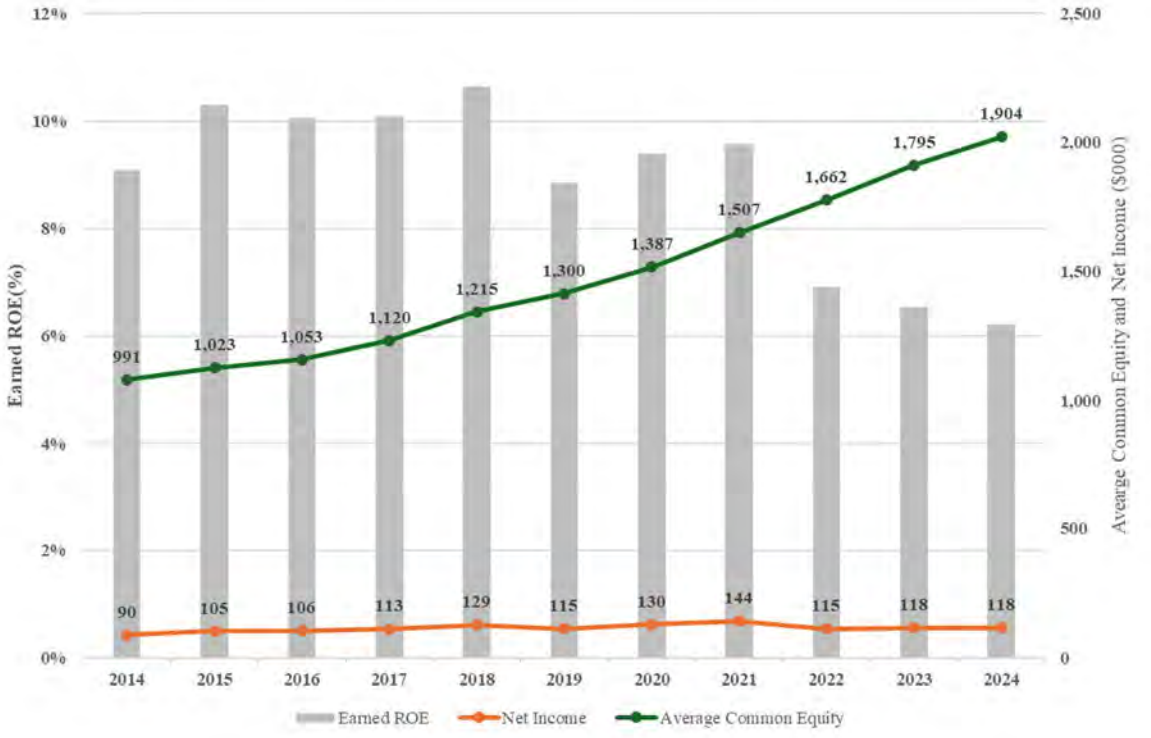
A. While Mr. Woodard stated, "Currently, Spire Missouri is significantly underearning its authorized rate of return"[16] and "This deterioration in the earned ROE is caused

[15] Page 5 and Schedule AWW-D-2, Woodard's Direct Testimony.
[16] Page 4, lines 16-17, Woodard's Direct Testimony.

by the insufficient recovery of both cost of capital and cost of service, as well as a tariff structure that is only partially mitigated for weather volatility", [17] the full story differs from what he described. Spire Missouri's earned return decreased due to an increase in its common equity.

To explain Spire Missouri's underearning, Mr. Woodard presented a chart of Spire Missouri's earned ROEs in his direct testimony.[18] Mr. Woodard defined annual earned ROE as Spire Missouri's annual net income divided by the annual average common equity.[19]

Figure 1. Spire Missouri Earned ROEs, Net Income and Common Equity



To explain the real cause of the decrease in Spire Missouri's return, Staff added annual net income and average common equity data to Mr. Woodard's Schedule AWW-D-2. As shown in

[17] Page 4 (line 23) – Page 5 (line 2), Woodard's Direct Testimony.
[18] Page 5, lines 2-6, Woodard's Direct Testimony.
[19] Staff Data Request No. 0081.1 and Schedule AWW-D-1, Woodard's Direct Testimony.

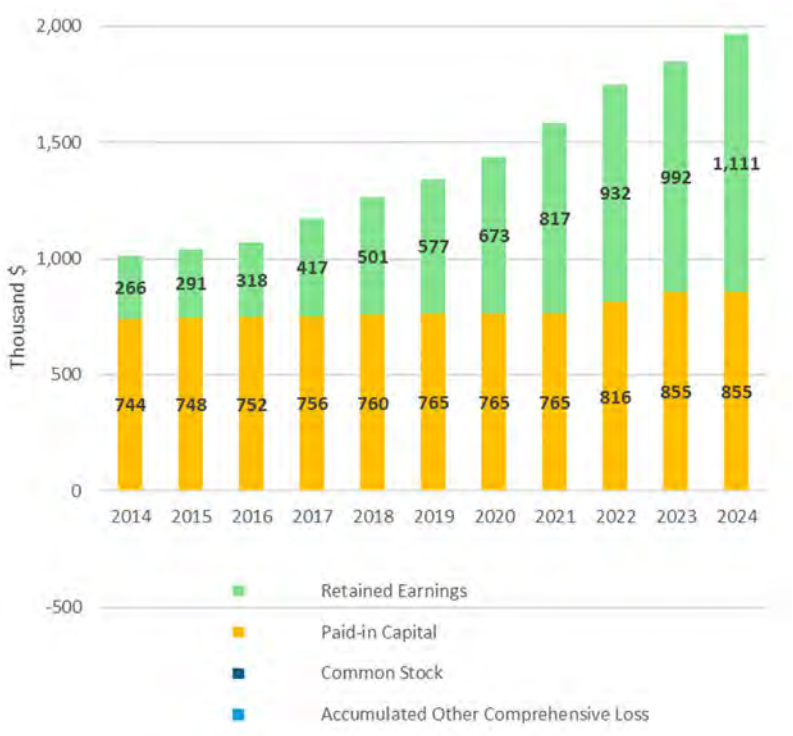
Figure 1, Spire Missouri's net income has remained relatively stable compared to its common equity, which has nearly doubled during the period from 2014 to 2024.

Upon conducting a further step of analysis, Staff found the real reason for the increase in common equity to be particularly noteworthy. When Mr. Woodard calculated Spire Missouri's common equity for each fiscal year, he used the following formula:

Common Equity = Common Stock + Accumulated Other Comprehensive Loss + Paid-in Capital + Retained Earnings

Figure 2 shows how the dollar value of each common equity component has changed over the fiscal years from 2014 to 2024.[20]

Figure 2. Components of Common Equity (2014-2025)



[20] Staff Data Request No. 0080.2.

As shown in Figure 2, the amounts of common stock and accumulated other comprehensive loss are negligible,[21] and paid-in capital is relatively stable. However, retained earnings have increased nearly fourfold, from $266 thousand in 2014 to $1,111 thousand in 2024. It is clear that the main reason for the decreasing earned return is Spire Missouri's increasing retained earnings, which represent the portion of Spire Missouri's net income that is retained in the business rather than distributed to shareholders as dividends. Therefore, it is a baseless argument to claim that Spire Missouri's recent years of underearning resulted from its lower authorized ROE.

2. Recommended ROE

Q. What is Mr. Woodard's proposed ROE and its reasonable range for Spire Missouri in this proceeding?

A. Mr. Woodard proposed an ROE of 10.50% for use in this proceeding.[22] In his direct testimony, Mr. Woodard did not clearly state what range he proposed as a zone of reasonableness for his proposed ROE. Regarding the range of ROE in his direct testimony, Mr. Woodard only stated that Spire Alabama's rates are set through an annual Rate Stabilization and Equalization ("RSE") budget process and that its band of allowed returns is currently 9.50% to 9.90%.[23] Interestingly, this band of returns is much lower than the 10.50% ROE proposed by Mr. Woodard. He also stated, "While Spire Alabama is also a gas utility, its corresponding risks are not similar to those of Spire Missouri."[24] Therefore, Staff understands that Mr. Woodard did not propose any reasonable range of ROEs in his direct testimony in this proceeding.

[21] Staff Data Request 0081. For example, in 2024, Spire Missouri reported approximately $100 in common stock and a negative $2,000 in Other Comprehensive Loss. These amounts represent less than 1% of common equity, so neither common stock nor Other Comprehensive Loss is visibly reflected in Figure 2.
[22] Page 10, line 13, Woodard's Direct Testimony.
[23] Page 12, lines 17-19, Woodard's Direct Testimony.
[24] Page 12, lines 20-21, Woodard's Direct Testimony.

Q. How did Mr. Woodard determine his recommended ROE?

A. Mr. Woodard determined his proposed ROE of 10.50% based upon his COE estimation analysis through an examination of multiple corporate finance methodologies.[25] Mr. Woodard stated, "I utilized versions of three methodologies in the estimation of a fair ROE: Discounted Cash Flow ("DCF"); the Capital Asset Pricing Model ("CAPM"), and Risk Premium. Each is a market-based methodology designed to estimate the cost of equity capital committed to Spire Missouri."[26] In addition, Mr. Woodard recognized that current economic and market conditions present difficulties in applying cost of capital methodologies due to volatility and uncertainty, making it crucial to use multiple methodologies and rely on a large comparable group of companies.[27]

Q. What are Staff's concerns with Mr. Woodard's recommended ROE?

A. Staff's concern is that Mr. Woodard's proposed ROE of 10.50% is too high compared to the average authorized ROE of 9.72% in natural gas utility rate cases completed in 2024.[28] In the past three fully litigated Spire Missouri rate cases, the Commission has consistently found that an authorized ROE lower than the average authorized ROEs of all jurisdictions in the U.S. at that time was a fair and reasonable ROE for Spire Missouri.[29] In the 2017 Spire East and Spire West Cases, the Commission found that 9.80% was a fair and reasonable ROE.[30] In the second half of 2017, the average fully litigated natural gas authorized ROE in the

[25] Page 15, lines 4-5, Woodard's Direct Testimony.
[26] Page 15, lines 14-17, Woodard's Direct Testimony.
[27] Page 16, lines 5-9, Woodard's Direct Testimony.
[28] S&P Capital IQ Pro, Retrieved on March 2, 2025.
[29] The most recent Spire Missouri rate case was settled without an authorized ROE being determined by the Commission. Page 3, *Order Approving Stipulation and Agreement* issued November 30, 2022, in Case No. GR-2022-0179.
[30] Page 35, *Amended Report and Order* issued March 17, 2018, in Case Nos. GR-2017-0215 and GR 2017-0216.

US was 10.32%, making the Commission authorized ROE for Spire Missouri 52 basis points lower than the average authorized ROE.[31] In the 2021 Spire Missouri Case, the Commission found the appropriate ROE was 9.37%.[32] In the first half of 2021, the average fully litigated natural gas authorized ROE in the U.S. was 9.68%, making the Commission authorized ROE of Spire Missouri 31 basis points lower than the average authorized ROE.[33] The proposed ROE of 10.50% by Mr. Woodard is 78 basis points higher than the current average authorized ROE of 9.72%. Therefore, in this regard Mr. Woodard's proposed ROE of 10.50% is inconsistent with the past Commission decisions. As Mr. Woodard recognized, ** [redacted] . **[34]

Additionally, when considering the relatively lower living costs of Missouri in historical data, the Commission's past decisions on authorized ROE for Spire Missouri compared to national average authorized levels were reasonable and consistent with investors' expectations of the financial market. For example, Missouri had the sixth lowest cost of living in the US in 2024.[35]

Q. What is your response to Mr. Woodard's statement, "The recommended rate of return of 7.689% would yield just above a 20% FFO to Debt, as shown in Schedule AWW-D-22"?[36]

A. Mr. Woodard's statement is clear evidence that his requested ROR of 7.689%, based on his proposed ROE of 10.50% and an equity ratio of 55%, is not just and reasonable when compared to other comparable utilities in the U.S. As he mentioned, his requested return would

[31] RRA, S&P Capital IQ.
[32] Page 97, *Amended Report and Order* issued November 12, 2021, in Case No. GR-2021-0108.
[33] RRA, S&P Capital IQ.
[34] Page 18, lines 12-19, Woodard's Direct Testimony, Case No. GR-2021-0108.
[35] Missouri Economic Research and Information Center, retrieved in March 31, 2025, https://meric.mo.gov/data/cost-living-data-series.
[36] Page 41, lines 6-8, Woodard Direct Testimony.

yield a Funds From Operations ("FFO") to Debt ratio above 20%, which is too high compared to the average FFO to Debt ratio of utilities in the U.S., which is about 13.5%.[37] FFO is typically calculated as:

FFO = Net Income + Depreciation & Amortization ± Gains/Losses from Asset Sales

The implication of the FFO to Debt ratio of 20%, based on Mr. Woodard's proposed ROE and capital structure, being higher than the average utilities' FFO to Debt ratio of 13.5%, is that Spire would have more than 40% higher net earnings from its operations for the same level of debt if the Commission were to approve his proposal.

3. Proxy Groups

Q. Please provide an overview of Mr. Woodard's approach to estimating Spire Missouri's COE in this proceeding.

A. Mr. Woodard's approach to estimating Spire Missouri's COE in this proceeding employed DCF and CAPM using two sets of proxy groups.[38] The first proxy group, the 'base' group, consisted of utilities primarily focused on natural gas distribution in their operations.[39] The base group included eight (8) natural gas distribution utilities.[40] However, Mr. Woodard did not provide any additional criteria regarding how his selected companies are comparable to Spire Missouri.

The following is the list of utilities within Mr. Woodard's proxy group, associated ticker symbols and Standard & Poor's ("S&P") and Moody's credit ratings:

[37] S&P Global Rating, North America Regulated Utilities, Industry Credit Outlook 2025, Published January 14, 2025.
[38] Pages 20-21 and 28, Woodard's Direct Testimony.
[39] Page 21, lines 7-8, Woodard's Direct Testimony.
[40] Schedule AWW-D-4 and Schedule AWW-D-9, Woodard's Direct Testimony.

Table 1. Base and Extended Proxy Group and Ticker[41]

Index	Company	Ticker	S&P	Moody's
	Base Proxy Group			
1	Atmos Energy Corporation	ATO	A-	A1
2	Chesapeake Utilities Corporation	CPK	NA	NA
3	New Jersey Resources Corp.	NJR	NA	A1
4	NiSource Inc.	NI	BBB+	Baa1
5	Northwest Natural Holding Company	NWN	A	A2
6	ONE Gas, Inc.	OGS	A-	A3
7	Southwest Gas Holdings, Inc.	SWX	BBB	Baa1
8	UGI Corporation	UGI	A-	A3
	Only Extended Proxy Group			
9	National Fuel Gas Company	NFG	BBB-	Baa3
10	ALLETE, Inc.	ALE	BBB	A2
11	Alliant Energy Corporation	LNT	A-	Baa1
12	Ameren Corporation	AEE	A	A2
13	Avista Corporation	AVA	BBB	Baa2
14	Black Hills Corporation	BKH	BBB+	Baa2
15	CenterPoint Energy, Inc.	CNP	BBB+	A2
16	Evergy, Inc.	EVRG	BBB+	Baa2
17	IDACORP, Inc.	IDA	BBB	Baa1
18	MDU Resources Group, Inc.	MDU	BBB+	NA
19	MGE Energy, Inc.	MGEE	AA-	Aa2
20	NorthWestern Energy Group, Inc.	NWE	BBB	Baa2
21	OGE Energy Corp.	OGE	A-	A3
22	Pinnacle West Capital Corporation	PNW	BBB+	Baa1
23	Portland General Electric Company	POR	A3	BBB+
24	TXNM Energy, Inc.	TXNM	BBB+	Baa1
25	American Water Works Company	AWK	A	A3
26	Essential Utilities, Inc.	WTRG	A-	Baa2
	Spire, Inc.	SR	BBB+	Baa2
	Spire Missouri		BBB+	A1

[41] Schedule AWW-D-3, Woodard's Direct Testimony and S&P RatingsDirect.

The second proxy group, the 'expanded' group, was larger and consisted of gas, electric, and water utilities.[42] The extended group included twenty-six (26) utilities, consisting of eight (8) companies in the base group and eighteen (18) companies for which natural gas distribution is not a major operation.[43] Among the eighteen (18) companies in the extended group that are not in the base group, Value Line classified fourteen (14) as electric utility companies and two (2) as water utility companies. For the remaining two companies, National Fuel Gas Company ("NFG") and MDU Resources Group, Inc. ("MDU"), Value Line did not even classify them as utility companies.

Q. What is Staff's concern regarding the proxy group used for Mr. Woodard's COE estimation?

A. Mr. Woodard ignored the most fundamental principle of comparative COE analysis for rate-making purposes: using a proxy group in which the companies should be comparable to the target company to estimate a just and reasonable ROE. In both the base group and the extended group, Mr. Woodard included some companies that are not comparable to Spire Missouri, which prevented him from properly estimating COEs using his proxy group and from proposing a just and reasonable ROE in this proceeding.

Q. What is Staff's concern regarding Mr. Woodard's base proxy group?

A. While his base group consisted of gas companies, Mr. Woodard included companies such as Chesapeake Utilities Corporation ("CPK"), NiSource Inc. ("NI"), and UGI Corporation ("UGI") that are not of commensurate risk with Spire Missouri.[44] First, as Mr. Woodard recognized, CPK does not have any credit rating from either S&P or Moody's.[45]

[42] Page 21, lines 1-3, Woodard's Direct Testimony.
[43] Schedule AWW-D-5 and Schedule AWW-D-10, Woodard's Direct Testimony.
[44] Page 21, lines 8-10, Woodard's Direct Testimony.
[45] Schedule AWW-D-3, Woodard's Direct Testimony and S&P RatingDirect.

In many cases, a company might not be rated because it has a risk profile that rating agencies are unwilling to assess, such as an unstable financial position or a speculative business model. Credit ratings evaluated by reliable rating agencies are the most objective method for comparing the financial risk of companies.[46] This is why credit ratings are used to select comparable companies for COE estimation in a standard ROR analysis. Spire Missouri's S&P Issuer Credit Rating is "BBB+" with a "Stable" outlook, and Moody's long-term rating of Spire Missouri's First Mortgage Bonds is "A1".[47]

Second, NI is not a comparable risk company with Spire Missouri because NI has dividend reductions in two consecutive years, 2015 and 2016, as well as a negative book value and dividend growth rates of -3.0% and -0.5%, respectively.[48] One of the necessary assumptions of the constant-growth DCF model is that the company's dividends or cash flows increase at a constant rate forever.[49] Mr. Woodard utilized the DCF model for COE estimation, but NI had financial records showing several instances of decreased revenue per share and dividend per share over the past ten years.[50] In addition, the risk factor considered in CAPM is also not comparable to Spire Missouri, which has not experienced dividend reductions.

Third, UGI is not comparable to Spire Missouri because its major business is not natural gas distribution. Less than 30% of UGI revenues are utility revenue and more than 50% of revenues are related to propane and other internal business in 2024.[51] One of UGI's subsidiaries,

[46] S&P, A Credit Rating is an Informed Opinion, Retrieved February 22, 2025, https://www.spglobal.com/ratings/en/about/understanding-credit-ratings?utm_source=chatgpt.com.
[47] Credit Ratings, S&P Capital IQ Pro., Retrieved February 22, 2025.
[48] Value Line Report, Published November 22, 2024.
[49] Koller, T., Goedhart, M., & Wessels, D. (2010). Valuation: measuring and managing the value of companies. John Wiley & Sons.
[50] Value Line Report, Published November 22, 2024.
[51] SEC 10-Q Form, Filed February 6, 2025.

AmeriGas Partners, L.P. is the largest retail propane distributor in the United States based on the volume of propane gallons distributed annually.[52] A propane gas company is generally not comparable to a natural gas distribution utility for COE analysis in a proxy group for many reasons. For example, business risks are different. Natural gas distribution utilities operate in a regulated environment, with revenue stability and rate-setting oversight from regulatory agencies. Propane companies operate in a competitive, unregulated market, where prices fluctuate based on supply and demand. FERC and state utility commissions typically require proxy groups to consist of companies with similar regulatory environments. Including a propane company in a natural gas utility proxy group could inflate the estimated COE due to higher risk exposure. Therefore, propane gas companies like AmeriGas and UGI are not an appropriate proxy for a natural gas distribution utility in COE estimation due to fundamental differences in regulation, risk, and business model.

Q. What is Staff's concern regarding Mr. Woodard's extended proxy group?

A. The primary fundamental problem with Mr. Woodard's extended proxy group is that it includes non-natural gas utilities, such as electric and water utilities, as well as non-utilities. Specifically, the primary business of more than half of the companies in the extended proxy group is electric utilities. Using utilities other than natural gas utilities, such as electric utilities, as proxies when estimating the COE for the ROR analysis of a natural gas utility is inappropriate due to key differences between the two industries in terms of risk profiles, regulatory environments, capital structures, and business models.

[52] UGI Corporation, https://www.ugicorp.com/news-releases/news-release-details/ugi-corporation-names-michael-sharp-president-ceo-amerigas.

First, there are significant differences in business risk. Electric utilities and natural gas utilities operate under different regulatory and market conditions. Electric utilities typically have higher capital intensity due to power generation assets, whereas natural gas utilities primarily focus on distribution and transmission, which involves different operational risks.

Second, regulatory and revenue structures differ. While both industries are regulated, natural gas utilities often have distinct rate-setting mechanisms, cost structures, and revenue models. The demand for electricity and natural gas also responds differently to economic cycles, leading to variations in revenue stability.

Third, market and fuel price sensitivities differ significantly between the two industries. Electric utilities are more exposed to fuel price volatility, including fossil fuels and renewables, whereas natural gas utilities primarily deal with natural gas, as well as its transportation and distribution, rather than other commodity price risks. This difference influences investor expectations and required returns.

Fourth, due to these differences, investors perceive risk differently between the two sectors. Since investors assess sector-specific risks when determining required returns, using electric utilities as comparable companies in the proxy group could lead to a mispricing of the natural gas utility's COE, potentially underestimating or overestimating the appropriate return required by equity investors.

Considering these facts, if electric or water utilities are used as proxy companies, the recommended ROE may not be just and reasonable in the ratemaking process for a natural gas utility. Therefore, a COE estimation for a natural gas utility should rely on comparable companies within the natural gas distribution industry or use sector-specific betas when applying models such as the DCF and the CAPM.

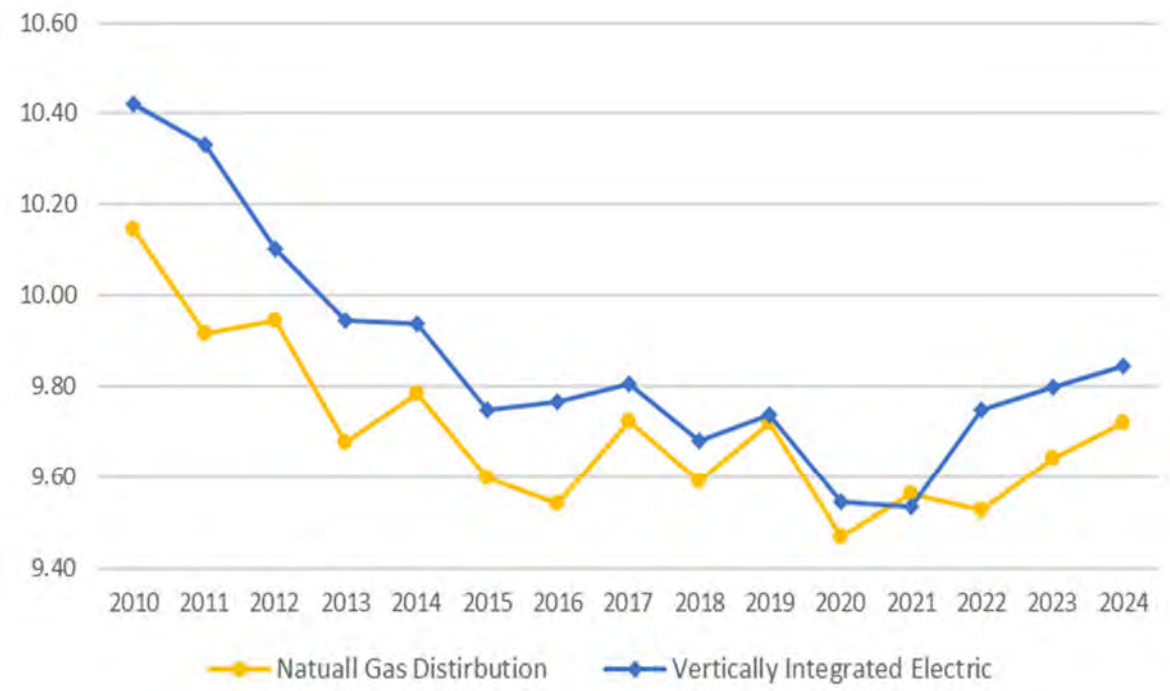
A. Is there evidence of a difference in authorized ROEs between natural gas utilities and electric utilities?

Q. Yes, there is. According to past records of authorized ROEs in the U.S., there is a clear difference between natural gas distribution utilities and electric utilities. For most of the past fifteen years (2010 to 2024), the average authorized ROE of vertically integrated electric utilities, at 9.86%, has been higher than that of natural gas distribution utilities, at 9.71%. In 2024, the average authorized ROE of vertically integrated electric utilities, at 9.84%, remains higher than that of natural gas distribution utilities, at 9.72%. The comparison of the annual average authorized ROEs for natural gas distribution utilities and vertically integrated electric utilities from 2010 to 2024 is shown in Table 2.

Table 2. The Comparison of Authorized ROEs: Natural Gas vs. Electric[53]

Year	Natural Gas Distribution	Vertically Integrated Electric	Difference
2010	10.15	10.42	0.28
2011	9.92	10.33	0.42
2012	9.94	10.10	0.16
2013	9.68	9.95	0.27
2014	9.78	9.94	0.16
2015	9.60	9.75	0.15
2016	9.54	9.77	0.23
2017	9.72	9.80	0.08
2018	9.59	9.68	0.09
2019	9.72	9.74	0.02
2020	9.47	9.55	0.08
2021	9.56	9.53	-0.03
2022	9.53	9.75	0.22
2023	9.64	9.80	0.16
2024	9.72	9.84	0.09
Average	9.71	9.86	0.16

[53] S&P Global Market Intelligence, Retrieved in January 2, 2025.



4. Growth Rates and Discounted Cash Flow Model

Q. Why is the choice of growth rates an important matter in COE estimation using the DCF analysis that Mr. Woodard utilized in his direct testimony?

A. The choice of growth rates is crucial in DCF COE estimation because they directly impact projected cash flows and terminal value, which are key components in estimating a company's intrinsic value of COE as an investor's expected return on their equity investment. The DCF model relies on forecasting future dividends and dividend yields. An overestimated dividend growth rate can lead to inflated company valuations and an overstated COE. When estimating the DCF COE, Mr. Woodard utilized the Gordon Growth Model ("GGM") formula:[54]

[54] Pages 17-18, Woodard's Direct Testimony.

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

where, K_e = investor's expected return on equity;[55]

D_1 = expected dividend at the end of the year;

P_0 = current stock price; and

g = expected growth rate of dividends, earnings, and stock price.

As shown in the GGM formula of DCF, an investor's expected return on equity (i.e., COE) is highly sensitive to the long-term growth rate assumption. While Mr. Woodard did not include it in his list of assumptions,[56] the assumption that the growth rate in the DCF model should be a perpetual growth rate is crucial for the validity of the GGM formula.[57] If the perpetual growth rate is too high (e.g., exceeding GDP growth), the estimated COE may become unrealistic. In general, assuming a perpetual growth rate exceeding 5% suggests the company's growth will surpass the economy's growth forever, an improbable scenario. Therefore, it is crucial to align the perpetual growth rate with sustainable economic growth rates to maintain realistic valuations.

Q. What is Staff's concern regarding Mr. Woodard's growth rates in his DCF model?

A. Mr. Woodard used unreasonably high growth rates in his constant-growth DCF model using GGM formula, which overstated his COE estimates. While Mr. Woodard utilized two sources of projected earnings per share ("EPS") growth rates - consensus equity research analyst growth forecasts ("Consensus") and Value Line - he exclusively used projected EPS

[55] Investor's expected return on equity should be COE. According to response to Staff's Data Request No. 0228, Mr. Woodard stated "ROE and cost of equity are different concepts." and "The cost of equity is the return required by equity investors to invest in a company given the level of risk of the company."
[56] Page 18, lines 5-9, Woodard's Direct Testimony.
[57] Gordon, M. J., & Shapiro, E. (1956). Capital equipment analysis: the required rate of profit. Management science, 3(1), 102-110.

growth rates, which he erroneously referred to as long-term earnings growth rates.[58] Analysts' projected EPS growth rates are for periods of three to five years, which is considered short given the infinite investment horizon assumed in the DCF.[59] Because of the overstated growth rates, Mr. Woodard's DCF COE estimates are unreasonably upward biased.

Q. Do you agree with Mr. Woodard on using Consensus data for projected EPS growth rates?

A. No, I do not. While Mr. Woodard considers the Consensus provided by FactSet, which aggregates various earnings forecasts from equity research analysts, to be a reliable data source,[60] Staff's major concern is how he utilized it as a spot estimate for calculating projected EPS growth rates. According to Mr. Woodard' response to Staff's Data Request No. 0240.1,

> It should be noted that the original source of the information is not the FactSet output, but the estimates provided by each reporting analyst. FactSet is simply compiling them into an accepted consensus estimate. It should be noted **that the dating of the date and time reference is important as this information can change intraday as analysts update their estimates**. [Emphasis added.]

As Mr. Woodard stated, the results of analysts' projected EPS keep changing when data is retrieved from the FactSet website. As clearly stated in FactSet website,[61]

> FactSet aggregates and redistributes estimates data and does not conduct any independent research. Nothing in our service constitutes investment advice or FactSet recommendations of any kind. Estimates data is provided for information purpose only.

[58] Pages 19-20, and Schedule AWW-D-4, Woodard's Direct Testimony.
[59] Value Line, Inc., How to Read a Value Line Report (2017).
[60] Staff Data Request No. 0240.1.
[61] Staff's Data Request No. 0240.1 "FactSet screenshot pulled 3_19_2025 around 8_30AM".

Therefore, the Consensus projected EPS data may provide valuable information for expert spot traders in the stock market, considering the market's time-to-time responses to new information. However, the volatility of projected EPS values makes them unsuitable for use as a stable long-term projection in DCF COE estimates for ratemaking regulatory purposes.

Q. What is wrong with using exclusively projected earnings growth rates for Mr. Woodard's constant-growth DCF COE estimates?

A. Analysts' projected earnings growth rates are not suitable for use, exclusively, in the constant-growth DCF model because the projected earnings growth rates, including those utilized by Mr. Woodard, are not perpetual growth rates and are often shorter than five-year projected growth rates. The constant-growth DCF model assumes a perpetual investment horizon.[62] By exclusively using these analysts' projected earnings growth rates in the context of the constant-growth DCF model, Mr. Woodard makes an unreasonable assumption that NGS utilities will grow, at these often high and precarious shorter-term growth rates, in perpetuity. For example, Mr. Woodard utilized an unreasonably high Consensus growth rate of 12.85% in Southwest Gas Holdings, Inc. ("SWX")'s DCF COE estimation.[63]

Analysts are of the concurring opinion that long-term growth rates for utilities will eventually converge to the level of long-term gross domestic product ("GDP").[64] Staff has consistently held the view that while it is possible that a company or industry may grow at a rate faster than the GDP in the short to medium term, no company or industry will do so in perpetuity. Currently, the nominal GDP is projected to grow at a longer run rate of 3.80% and 3.90% as

[62] Page 129, David C. Parcell in The Cost of Capital – A Practitioner's Guide prepared for SURFA.
[63] Schedule AWW-D-4, Woodard's Direct Testimony.
[64] Page 302, Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports.

reported by the Federal Open Market Committee ("FOMC") and the Congressional Budget Office ("CBO"), respectively.[65] An example of Mr. Woodard's unreasonably high growth rates is the Consensus EPS growth rate of 12.85%, which was used to produce SWX's high DCF COE estimate of 16.51% - 692 basis points greater than his Spire Inc. DCF COE estimate of 9.59%.[66] Such high growth rates should not be used in constant-growth DCF COE estimates because no NGS utility can sustain a growth rate of 12.85% in perpetuity.

Q. What growth rates should Mr. Woodard have used?

A. As Staff alluded to above, appropriate growth rates for use in the constant-growth DCF model should give consideration to the long-term growth rates, represented by the projected long-term nominal GDP growth rates of 3.90%.[67] For example, the Federal Energy Regulatory Commission ("FERC") incorporates long-term GDP growth rates into calculations within the constant-growth DCF by using a ratio of 80% analyst projected long-term growth rates to 20% long-term GDP growth rates.[68] If Mr. Woodard had used a similar approach with an appropriate GDP growth rate in the constant-growth DCF model - relying on reasonable Value Line growth rates and only comparable base proxy utilities - the average of his DCF COE estimates for the average growth rate would have been 9.64% instead of 10.65%, which was based on Consensus growth rates.[69] Therefore, reasonable DCF COE results are lower than Mr. Woodard's estimations.

[65] Federal Open Market Committee, Summary of Economic Projections, Published on March 19, 2025, (https://www.federalreserve.gov/newsevents/pressreleases/monetary20250319b.htm).
An Update to the Economic Outlook: 2025 to 2035, Congressional Budget Office, January 2025, (https://www.cbo.gov/publication/61172).
[66] Schedule AWW-D-4, Woodard's Direct Testimony.
[67] Page 37, Table 2-3, An Update to the Economic Outlook: 2024 to 2034, Congressional Budget Office, June 2024, (https://www.cbo.gov/publication/60419).
[68] *Entergy Arkansas, Inc*., Opinion No. 575, 175 FERC ¶ 61,136 (2021).
[69] Schedule AWW-D-4, Woodard's Direct Testimony and 1 Summary, Won's Rebuttal Workpaper.

5. Capital Asset Pricing Models

Q. Please explain Mr. Woodard's CAPM COE estimation methods.

A. Mr. Woodard employed the traditional CAPM and the Empirical CAPM ("ECAPM"), using Value Line Beta averages of 0.93 and 0.96 for the base and extended proxy groups, respectively.[70] He applied a risk-free rate of 4.62%,[71] corresponding to the 30-year U.S. Treasury bond yield at the close of November 15, 2024, and a market risk premium ("MRP") of 6.80%,[72] calculated as the historical difference between the total return of the S&P 500 and the 10-year U.S. Treasury bond from 1927 to 2023.[73] For his base proxy group, Mr. Woodard's average CAPM and ECAPM COE estimates are 10.91% and 11.04%, respectively; for his extended proxy group, the average CAPM and ECAPM COE estimates are 11.15% and 11.22%, respectively.[74]

Q. What is Staff's concern with Mr. Woodard's CAPM and ECAPM COE estimates?

A. Due to the use of overstated input variables, Mr. Woodard's CAPM and ECAPM COE estimates are too high. Even compared to his DCF COE estimate of 9.59% for Spire Inc., using the Value Line EPS growth rate, Mr. Woodard's average CAPM and ECAPM COE estimates are too high.[75] Staff found that Mr. Woodard's CAPM COE estimates are too high due to input values, such as a risk-free rate of 4.62% and an MRP of 6.8%, as well as the inclusion of inappropriate companies in his proxy groups.[76]

Q. What is Staff's concern with Mr. Woodard's risk-free rate for his CAPM analysis?

[70] Schedule AWW-D-9 and Schedule AWW-D-10, Woodard's Direct Testimony.
[71] Page 16, line 22, Woodard's Direct Testimony.
[72] Page 26, lines 16-17, Woodard's Direct Testimony.
[73] Schedule AWW-D-8, Woodard's Direct Testimony.
[74] Page 29, lines 9-10, Woodard's Direct Testimony.
[75] Schedule AWW-D-4, Woodard's Direct Testimony.
[76] Schedule AWW-D-9, Woodard's Direct Testimony.

A. Mr. Woodard insisted that the yield on the current 30-year U.S. Treasury bond represents the most up-to-date expression of investors' future expectations of the risk-free rate.[77] In his CAPM COE estimation, Mr. Woodard utilized a spot rate of 4.62% on 30-year U.S. Treasury Bond at the end of the day November 15, 2024.[78] If it is true, as he insisted, that "This current spot rate is the most appropriate as it is easily observable and available and provides a relatively non-controversial and accurate input to the CAPM",[79] then a more recent spot rate of the 30-year U.S. Treasury bond yield, 4.41% as of April 4, 2025,[80] or any other more recent spot rate could be used in Mr. Woodard's CAPM COE estimation. Since using a spot rate could cause the COE estimation to be either under- or overestimated, it is reasonable to use an average over an appropriate time period, such as 90 or 180 days, to prevent cherry-picking input values, especially considering the reporting periods of other input data in the analysis. For example, in his CAPM analysis, Mr. Woodard used Value Line reports, which are published quarterly.[81] Therefore, a quarterly average of the 30-year U.S. Treasury bond yield is a more appropriate risk-free rate for the CAPM COE estimation. For example, the average of the 30-year U.S. Treasury bond yield in the fourth quarter of 2024 is 4.50%, which is more proper than a spot rate of 4.62% in November 15, 2024.[82]

Q. What is Staff's concern with Mr. Woodard's MRP for his CAPM analysis?

[77] Page 25, lines 11-12, Woodard's Direct Testimony.
[78] Schedule AWW-D-9, Woodard's Direct Testimony.
[79] Page 25, lines 14-16, Woodard's Direct Testimony.
[80] Board of Governors of the Federal Reserve System (US), Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis [DGS30], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/DGS30.
[81] Page 26, lines 11-13, and Schedule AWW-D-9, Woodard's Direct Testimony. (https://valueline.com).
[82] Schedule AWW-D-9 , Woodard's Direct Testimony, and FRED, https://fred.stlouisfed.org/series/DGS30.

A. Mr. Woodard utilized an MRP of 6.80%, estimated by subtracting the average return of 10-year U.S. Treasury bonds (4.86%) from the average return of the S&P 500 during this time period (11.66%), based on an examination of historical data from 1928 to 2023.[83] While this estimation using the arithmetic mean to calculate the average returns is fine, Staff has concerns that Mr. Woodard solely relied on this particular estimation method using arithmetic mean returns. Because using only the arithmetic mean produces higher-end estimates compared to other reasonable methods, Mr. Woodard's MRP estimate of 6.80% is greater than other reasonable MRP estimates. In its most recent publication, Kroll recommended that the U.S. equity risk premium (i.e., MRP) decrease from 5.5% to 5.0% when developing the COE in the context of the CAPM and other models.[84] The MRP is the difference between the expected return on a market portfolio and the risk-free rate, and there are other reasonable estimation methods. For example, it is a well-known fact that many theoretical and empirical studies support the use of geometric means to calculate the MRP.

Q. What theoretical and empirical research supports the use of geometric means to calculate MRP?

A. A prominent MRP expert and the Kerschner Family chair professor of Finance at the Stern School of Business at New York University, Aswath Damodaran, stated that conventional wisdom argues for the use of the arithmetic average to calculate MRP, but, in reality, the argument for geometric average premiums is stronger.[85] Dr. Damodaran also stated that there are strong arguments that can be made for the use of geometric average in both empirical studies

[83] Page 26, lines 16-20, Woodard's Direct Testimony.
[84] Kroll, Kroll Lowers its Recommended U.S. Equity Risk Premium to 5.0%, Effective June 5, 2024.
[85] Damodaran, A. (1999). Estimating Equity Risk Premiums.

and the asset pricing model theory.[86] In addition, research sponsored by the Society of Actuaries' Pension Section Research Committee found that the geometric mean was superior to arithmetic in predicting long-term returns for calculating equity risk premium, and the arithmetic mean produces forecasts much higher than actual returns over most time-periods.[87] Moreover, many other theoretical and empirical studies support the use of geometric means to calculate MRP.[88]

Q. What is Staff's method to calculate the MRP in the CAPM analysis?

A. Staff calculated MRP by subtracting the risk-free rate from the expected market return. For the risk-free rate, Staff used the average yield on 30-year U.S. Treasury bonds for the first quarter of 2025, which was 4.71%.[89] For the MRP estimate, Staff used the average of long-term geometric mean and arithmetic mean from two data sets: (1) the long-term historical return differences between large company stocks and long-term government bonds from 1926-2024,[90] and (2) the long-term historical return differences between S&P 500 and long-term government bonds from 1928-2024.[91]

Q. Why do you use the averaging of both arithmetic and geometric means when calculating the MRP in the CAPM analysis instead of just using geometric means?

A. Whether to use "arithmetic" or "geometric" mean returns when calculating the average return for calculating the MRP in the CAPM analysis is one of many on-going controversial research topics in financial analysis.[92] Many theoretical and empirical studies and

[86] Ibid.
[87] Modugno, V. (2012). Estimating Equity Risk Premiums.
[88] Sadler, R. (2017). Estimation of the Market Risk Premium: A review of weighting of arithmetic and geometric means, Report to the ERA on Gas Rate of Return Guidelines.
[89] FRED, [DGS30], https://fred.stlouisfed.org/series/DGS30.
[90] Duff & Phelps, the Stocks, Bonds, Bills, and Inflation (SBBI®) Monthly Dataset.
[91] Risk Premium, Damodaran Online, Stern School of Business, NYU.
[92] Sadler, R. (2017). Estimation of the Market Risk Premium: A review of weighting of arithmetic and geometric means, Report to the ERA on Gas Rate of Return Guidelines.

financial reports present MRP estimates using both arithmetic means and geometric means.[93] The geometric mean return is a multi-period rate of return so it should be used in the CAPM together with the yield on a long-term government security. In contrast, the arithmetic mean return is a single period rate of return and therefore it should be used in association with a short-term risk-free rate in the CAPM.[94] For typical investment horizons, the proper compounding rate for forecasting returns is in between the arithmetic and geometric means.[95] Many financial analysts use a compromise of the two: a weighted average of arithmetic and geometric mean.[96] Therefore, Staff's method to consider both arithmetic and geometric means when calculating the MRP in the CAPM analysis is a widely accepted approach in financial analysis.[97]

Q. What is your concern with Mr. Woodard's ECAPM model?

A. Like his average CAPM COE estimate of 10.91% for his base proxy group, Mr. Woodard's average ECAPM COE estimate of 11.04% for his base proxy group is unreasonably high because he assumes excessively high input values.[98] In addition, the ECAPM model itself overestimates COE because of an adjustment to account for the supposed tendency of the CAPM method to underestimate COE for companies with low Beta coefficients.

Q. How did Mr. Woodard adjust his CAPM COE to ECAPM COE?

[93] Ibbotson, R. G. (2011). The equity risk premium. Rethinking the Equity Risk Premium, CFA Research Foundation Publications, 4, 18-26.
[94] Soenen, L., & Johnson, R. (2008). The equity market risk premium and the valuation of overseas investments. Journal of Applied Corporate Finance, 20(2), 113-121.
[95] Jacquier, E., Kane, A., & Marcus, A. J. (2003). Geometric or arithmetic mean: A reconsideration. Financial Analysts Journal, 59(6), 46-53.
[96] Blume, M. E. (1974). Unbiased estimators of long-run expected rates of return. Journal of the American Statistical Association, 69(347), 634-638.
[97] Hammond, B., & Leibowitz, M. (2011). Rethinking the equity risk premium: An overview and some new ideas. Rethinking the Equity Risk Premium, 1-17.
[98] Schedule AWW-D-11, Woodard' Direct Testimony.

A. Mr. Woodard multiplied 75% of his MRPs by the Beta coefficient and added the remaining 25% MRPs, unadjusted.[99] This adjustment is consistent with Dr. Roger Morin's formula. Dr. Morin's formula was based on his finding, with data between 1926 and 1984, that the regular CAPM underestimated returns by about 2.00%.[100] The academic literature has estimated a fairly wide range of adjustment parameters, with much of the variation between studies arising from differences in methodology and time periods, so the alpha estimates are not strictly comparable.[101] Furthermore, Dr. Morin also cited other studies that found that the CAPM produced returns between -9.61% and 13.56%, meaning that the CAPM actually overestimated COE in some instances.[102] Such variations in findings do not lend credibility to Mr. Woodard's use of the ECAPM. Given the lack of consensus among researchers on a reliable adjustment factor for ECAPM, Staff has shown that Mr. Woodard's ECAPM COE estimation method is based on an unreliable opinion. Staff recommends that the Commission not consider Mr. Woodard's ECAPM COE estimation method as reliable information for determining a just and reasonable authorized ROE.

6. Risk Premium Analysis

Q. Please describe Mr. Woodard's historical risk premium analysis for estimating Spire Missouri's COE.

A. Mr. Woodard estimated Spire Missouri's ROE by adding a risk premium, derived from historical authorized ROEs for natural gas utilities set by regulatory commissions,

[99] Page 28, lines 19-23, Woodard's Direct Testimony. Original CAPM COE estimate equals Risk-Free Rate + Beta × MRP but ECAMP COE estimate equals Risk Free Rate + 0.25 × MRP + 0.75 × Beta × MRP or Risk-Free Rate + Alpha + Beta × (MRP – Alpha) where Alpha = 0.25 × MRP.
[100] Page 190, Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports.
[101] Page 20, The Brattle Group, Estimating the Cost of Equity for Regulated Companies.
[102] Page 190, Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports.

to the 30-year U.S. Treasury bond yield as the risk-free rate, using annual average data from 1981 to 2023.[103]

Q. Do you agree with Mr. Woodard's statement, "A similar technique was offered by Staff in the recent Evergy Missouri West Inc. general rate case, Case No. ER-2024-0189"?[104]

A. No, I do not. In past and current rate proceedings, including the recent Evergy Missouri West Inc. general rate case, Case No. ER-2024-0189, Staff has utilized the conventional Bond Yield Plus Risk Premium ("BYPRP") analysis using public utility bond rates. This approach is based on the idea that since investors in stocks take greater risks than investors in bonds, unlike the risk-free rate used in Mr. Woodard's risk premium analysis,[105] they expect to earn a return on a stock investment that includes a premium over and above the return they expect to earn on a bond investment.[106] This premium required by investors for an investment in common stock over an investment in corresponding debt is called the risk premium.[107] Multiple approaches have been developed to determine the risk-premium for a utility. Mr. Woodard's risk premium analysis is different from the conventional method.

Q. Please explain Mr. Woodard's risk premium analysis and Staff's concerns in greater detail.

A. Mr. Woodard's risk premium analysis used a regression analysis based on authorized ROEs for utility companies relative to risk-free rates (30-year Treasury bond yields).[108] Mr. Woodard used annual average data of risk-free rates and authorized ROEs derived from natural

[103] Schedule AWW-D-15 and Pages 30-31, Woodard's Direct Testimony.
[104] Page 30, lines 8-9, Woodard's Direct Testimony.
[105] Page 30, lines 1-5, Woodard's Direct Testimony.
[106] Brigham, E. F., Shome, D. K., & Vinson, S. R. (1985). The risk premium approach to measuring a utility's cost of equity. Financial Management, 33-45.
[107] Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports, page 108.
[108] Schedule AWW-D-14, Woodard's Direct Testimony.

gas utility rate cases from 1980 through 2023 as reported by Regulatory Research Associates ("RRA").[109] Mr. Woodard's regression analysis results in the following equation:

Risk Premium (%) = 7.86017% – 0.42335 Risk-Free Rate (%).[110]

Because Mr. Woodard defined the risk premium as the authorized ROE minus the risk-free rate, his risk premium ROE estimates are determined solely by 30-year Treasury bond yields, which do not reflect the specific sector risk of natural gas utilities. While in contrast, DCF and CAPM are able to estimate COE using multiple input variables. For example, Mr. Woodard's CAPM COE estimates are determined by not only the risk-free rate (30-year Treasury bond yield) but also the total market risk (i.e. MRP) and a stock's risk (i.e. Beta).[111] The major determinant of 30-year Treasury bond yields is government intervention through the Federal Reserve's ("Fed") monetary policy, not solely the financial market. Therefore, Mr. Woodard's risk premium method is inappropriate for estimating a fair ROE, considering that 30-year Treasury bond yields have fluctuated significantly in recent years without properly reflecting natural gas risk.[112]

Q. Do you have any empirical evidence that Mr. Woodard's risk premium analysis is too sensitive to changes in 30-year Treasury bond yields to estimate a proper authorized ROE and that his estimated ROE is inappropriate in this proceeding?

A. Yes, I do. In the past five years, since the COVID-19 pandemic, 30-year Treasury bond yields have experienced unusually large fluctuations of 412 basis points, ranging from a low

[109] Schedule AWW-D-12, Woodard's Direct Testimony.
[110] Page 33, line 7, Woodard's Direct Testimony.
[111] Page 18, lines 1-4, and Page 25, lines 1-6, Woodard's Direct Testimony.
[112] 30-year Treasury yields increased by 295 bps from 1.69% on December 3, 2021, to 4.64% on July 1, 2024.

of 0.99% on March 9, 2020, to a high of 5.11% on October 19, 2023.[113] If Mr. Woodard's risk premium analysis reliably estimates authorized ROEs, then (1) his ROE estimates should be similar to actual authorized ROEs, and (2) the sensitivity of his estimated ROE, defined as the extent of changes in estimated ROEs in response to changes in 30-year Treasury bond yields, should also be similar to the sensitivity of actual authorized ROEs. Table 2 compares Mr. Woodard's estimated ROE, derived from his risk premium analysis, with the average actual historical authorized ROE for U.S. natural gas utilities as reported by S&P RRA, which Mr. Woodard used in his regression model for his risk premium analysis.

Table 2. Comparison of Woodard' Estimates and Actual Authorized ROEs[114]

Year / Date	Average 30-Year U.S. Treasury Bond Yield	Woodard Estimated Risk Premium	Woodard Estimated Authorized ROE	Actual Natural Gas Authorized ROE
2020	1.56%	7.20%	8.76%	9.47%
2021	2.05%	6.99%	9.04%	9.56%
2022	3.12%	6.54%	9.66%	9.53%
2023	4.09%	6.13%	10.22%	9.64%
2024	4.26%	6.06%	10.32%	9.74%
2020-03-09	0.99%	7.44%	8.43%	
2023-10-19	5.11%	5.70%	10.81%	
2024-11-15	4.62%	5.90%	10.53%	

As shown in Table 2, given a 1.56% average 30-year Treasury bond yield in 2020, Mr. Woodard's estimated ROE of 8.76% is 71 basis points lower than the actual authorized ROE of 9.47%. In contrast, with a 4.26% average 30-year Treasury bond yield in 2024, Mr. Woodard's estimated ROE of 10.32% is 58 basis points higher than the actual authorized ROE of 9.74%.

[113] Board of Governors of the Federal Reserve System (US), Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis [DGS30], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/DGS30, February 28, 2025.
[114] Schedule AWW-D-15, Woodard's Direct Testimony, and Won's Rebuttal Workpaper.

These results show that (1) Mr. Woodard's risk premium analysis does not accurately estimate authorized ROEs, even though the historical data used for his regression model is itself reliable, and (2) Mr. Woodard's risk premium analysis is overly sensitive to changes in the 30-year Treasury bond yield. This is evident as Mr. Woodard's ROE estimates change by 156 basis points, from 8.76% to 10.32%, when 30-year Treasury bond yields change from 1.56% to 4.26%, while actual authorized ROEs change by only 27 basis points, from 9.47% to 9.74%.

Furthermore, the spot 30-year Treasury bond yields are more volatile than quarterly or yearly average bond yields, making Mr. Woodard's sensitivity analysis results more unstable. As shown in Table 2, a range of 30-year Treasury bond yields from 0.99% to 5.11% results in a corresponding range of Mr. Woodard's COE estimates from 8.43% to 10.81%. Since Mr. Woodard used a 30-year Treasury bond yield of 4.62% at the end of the day of November 15, 2024,[115] his COE estimate of 10.53% based on his risk premium analysis is unreliable. These facts clearly show that Mr. Woodard's risk premium estimation using the spot 30-year Treasury bond yield is inaccurate and unstable. Staff recommends that the Commission not consider Mr. Woodard's risk premium estimation method as reliable for determining a just and reasonable authorized ROE.

7. Credit Rating Agency

Q. Why are credit ratings important in regulatory ratemaking procedure?

A. In regulatory ratemaking procedure, credit rating agency opinions are important because they provide an independent assessment of a utility's creditworthiness, which directly affects its cost of capital and ability to raise funds for infrastructure investments from the investors.

[115] Schedule AWW-D-9, Woodard's Direct Testimony.

Based on the *Bluefield* and *Hope* decisions, the following principles guide Staff's recommendation of a just and reasonable ROR:[116]

1. A return consistent with returns on investments of comparable risk;
2. A return that allows the utility to attract capital on reasonable terms; and
3. A return sufficient to assure confidence in the utility's financial integrity.

All the information needed to properly follow these regulatory principles is provided by rating agencies. Investors in the capital market rely on credible rating agency reports for key information about individual companies, such as their risk profile, investment costs, and financial status. In other words, credit ratings reflect investor perceptions of the utility's financial stability. A downgrade can indicate higher financial risk, making it harder for the utility to attract investment. A utility's credit rating influences the interest rates it must pay on borrowed funds. Higher credit ratings typically lead to lower borrowing costs, while lower ratings result in higher interest expenses. Utilities require significant capital for maintenance and expansion. A strong credit rating ensures continued access to debt markets at reasonable costs, which ultimately benefits customers by keeping rates stable. A stable credit rating ensures the utility remains financially sound, reducing the risk of service disruptions or financial distress that could negatively impact customers.

Q. What was the impact of the Commission's past rate case decisions on Spire Missouri's credit rating?

A. There was no actual direct negative impact of the Commission's past rate case decisions on Spire Missouri's credit rating. After the business name changed to Spire Missouri in

[116] *Bluefield Waterworks & Improvement Co. v. Public Service Commission of West Virginia,* 262 U.S. 679, 43 S.Ct. 675, 67 L.Ed. 1176 (1923); *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 64 S.Ct. 281, 88 L.Ed. 333 (1944).

2016, the Commission issued four rate case decision orders: GR-2017-0215 and GR-2017-2016 ("2017 Spire Case") on March 7, 2018; GR-2021-0108 ("2021 Spire Missouri Case") on November 12, 2021; and GR-2022-0179 ("2022 Spire Missouri Case") on November 30, 2022.

In the 2017 case, the Commission determined an authorized ROE of 9.80% and an equity ratio of 54.20%.[117] In the 2021 Spire Missouri case, the Commission determined an authorized ROE of 9.37% and an equity ratio of 49.86%,[118] and there were no changes of credit ratings of both Spire Missouri and Spire Inc. and there were no changes in the credit ratings of either Spire Missouri or Spire Inc. after the Commission's decision. In the 2022 Spire Missouri Case, the Commission approved the stipulation and agreement without mentioning an authorized ROE or ratemaking capital structure,[119] and there were no changes in credit ratings until June 3, 2024.

Q. What happened to the credit rating of Spire Missouri on June 3, 2024?

A. S&P downgraded Spire Inc. and its subsidiaries, including Spire Missouri, from 'A-' to 'BBB+' due to weak financial measures, but this did not result from the Commission's decision.[120]

Q. How do you know that the downgraded credit rating on June 3, 2024, was not directly caused by the Commission's decision on an authorized ROE and ratemaking capital structure?

A. First, the most recent Commission decision before June 3, 2024, was the 2022 Spire Missouri Case, in which the Commission did not determine an authorized ROE or ratemaking capital structure for Spire Missouri. Second, S&P downgraded Spire Missouri's credit rating on

[117] Page 35 and Page 45, *Amended Report and Order*, GR-2017-0215 and GR-2017-0216.
[118] Accounting Schedule:12, *Staff Accounting Schedule*, (EFIS No, 456), GR-2021-0108.
[119] *Order Approving Stipulation and Agreement*, GR-2022-0179.
[120] S&P Research Update, Spire Inc. And Subsidiaries Downgraded To 'BBB+' From 'A-' On Weak Financial Measures; Outlook Stable, Published June 3, 2024.

June 3, 2024, approximately 18 months after the Commission's order approving the Stipulation and Agreement in the 2022 Spire Missouri Case on November 30, 2022. Given the timing, it is difficult to establish a direct causal relationship between the two events. Third, according to the S&P report, the Commission's rate case decision was not the reason S&P downgraded the credit rating of Spire Missouri. S&P summarized the reasons for the downgrade of Spire Inc. and its subsidiaries as follows:[121]

In summary, the main reason for the downgraded credit rating is Spire Inc.'s high ratio of long-term debt. As of December 31, 2024, Spire Inc.'s long-term debt ratio in its capital structure is 53.06%, which is much higher than Spire Missouri's long-term debt ratio of 46.81%.[122] Therefore, the main reason for the downgraded credit rating was not caused by Spire Missouri's authorized ROE and ratemaking capital structure determined by the Commission. In addition, Moody's assigned an 'A1' rating to Spire Missouri, which is two notches higher than the 'Baa2'

[121] S&P Research Update, Spire Inc. And Subsidiaries Downgraded To 'BBB+' From 'A-' On Weak Financial Measures; Outlook Stable, Published June 3, 2024.
[122] Staff's Data Request No. 0053.

rating assigned to Spire Inc., indicating that Spire Missouri is considered lower risk than Spire Inc. with regard to the long-term debt credit rating.[123]

8. Regulatory and Business Risks

Q. Do you agree with Mr. Woodard's statement, "While capital riders can, and do, mute some of the impact of regulatory lag, a company can expect at least 50 basis points of earned ROE deterioration in the first 12 months of new rates coming into effect under the current environment"?[124]

A. No, I do not. First of all, Mr. Woodard's statement is a baseless argument. In his direct testimony, Mr. Woodard did not provide any evidence supporting the claim of 'at least 50 basis points of earned ROE deterioration in the first 12 months of new rates,' nor did he explain how he calculated 50 basis points. In response to Staff's data request regarding evidence for the statement, Spire Missouri stated: "The statement made in Mr. Woodard's testimony was generic and presented as a hypothetical high-level example" and 'a high-level analysis' of 'ROE impacts and demonstration of ROE erosion' was provided, asserting that he discussed it in his testimony.[125] In addition, as an example of analysis, Mr. Woodard provided a comparison of the allowed ROE of 9.37% and an effective ROE of 8.37%, which was calculated as Net Income divided by Equity in 2023.[126] However, Staff found Mr. Woodard's analysis to be incorrect in several ways, as previously explained in this testimony. The Commission's authorized ROE does not guarantee a specific level of actual net income for the utility business, which depends on many

[123] According to S&P Capital IQ Pro, the most recent dates for the long-term issuer ratings of Spire Inc. and Spire Missouri are May 2, 2013.
[124] Page 6, lines 19-21, Woodard's Direct Testimony.
[125] Staff Data Request No. 0276.
[126] Ibid.

factors.[127] Mr. Woodard's calculation of Equity also includes an unusually high level of accumulated retained earnings.[128]

Second, when estimating the COE and recommending an ROE, both Mr. Woodard and Staff are supposed to use a proxy group consisting of companies with comparable risk, as measured by credit rating. Mr. Woodard stated, "Almost all local gas distribution (operating) companies have Moody's debt ratings between 'Baa1" on the low side and "A1" on the high side."[129] In addition, as Mr. Woodard acknowledged, credit rating agencies already consider regulatory lag in their rating procedures. He stated, "Regulatory recovery mechanisms and their track record are important considerations as both rating agencies recognize the value these provide and could allow for lower financial metric thresholds at the same rating."[130]

Third, all U.S. utility ratemaking processes involve some degree of regulatory lag, so Spire Missouri is not uniquely affected. Accordingly, there is no justification for applying a special adjustment of at least 50 basis points to Spire Missouri's ROE relative to the authorized ROEs of comparable natural gas utilities, including those in the proxy group. Such an adjustment would constitute a double consideration of Spire Missouri's regulatory risk.

Q. What are your concerns with Mr. Woodard's consideration of Spire Missouri's business and regulatory risks for his recommendation of ROE in this proceeding?

A. Mr. Woodard's proposed ROE of 10.50% is too high considering Spire Missouri's business and regulatory risks. Spire Missouri is currently rated by Moody's and S&P and is assigned corresponding ratings of 'A1' and 'BBB+'.[131] These ratings are higher than or equal to

[127] Page 6, Won's Rebuttal Testimony.
[128] Page 8, Won's Rebuttal Testimony.
[129] Page 8, lines 10-11, Woodard's Direct Testimony.
[130] Page 8, lines 7-9, Woodard's Direct Testimony.
[131] Rating Direct, S&P Capital IQ.

natural gas utilities' average bond ratings A3 and BBB+ characterized by Moody's and S&P, respectively.[132] Spire Missouri's credit rating is determined by considering its risks, including its business, regulatory and financial risks.[133] For example, Moody's assigns regulatory risk a 50% weighting in the overall assessment of business and financial risk for regulated utilities.[134] All other things being equal, credit ratings higher than or equal to the average indicate lower or equal risks and therefore should require a lower or equal rate of return for investors.

In addition, Mr. Woodard proposed an authorized ROE of 10.50%, which is significantly higher than the average authorized ROE of 9.72% in natural gas utility rate cases completed in 2024, and 9.73% in cases completed in the first quarter of 2025 in the U.S.[135] Furthermore, Spire Missouri's stand-alone credit rating of 'a-' is higher than its group credit rating of 'bbb+', which reflects the consideration of its parent company, Spire Inc.'s, consolidated financial and business risk profile. As Mr. Woodard reported, Spire Inc.'s COE estimates (e.g., Value Line DCF COE is 9.59%) are lower than the COE estimates of both his base and extended proxy groups.[136] Therefore, all of these facts indicate that Mr. Woodard's proposed ROE of 10.50% is too high.

9. Capital Structure

Q. What is Mr. Woodard's proposed ratemaking capital structure in this proceeding?

A. Mr. Woodard proposed a hypothetical capital structure consisting of 55.0% common equity and 45.0% long-term debt.[137] Mr. Woodard stated, "The actual equity layer at the

[132] S&P Capital IQ Pro.
[133] Corporate Rating Methodology, S&P.
[134] Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, (June 23, 2017).
[135] S&P Capital IQ Pro, Retrieved on July 2, 2022.
[136] Schedules AWW-D-4, AWW-D-5, and AWW-D-9, Woodard's Direct Testimony.
[137] Page 10, lines 11-13, and Schedule AWW-D-21, Woodard's Direct Testimony.

filing of this review is below 55% but this is the level that has been maintained by the Company for a long period of time and where it intends to build back up to in the future."[138]

Q. What are your concerns regarding Mr. Woodard's proposed hypothetical capital structure for Spire Missouri, consisting of 55% common equity and 45% long-term debt?[139]

A. There is no reason to use a hypothetical capital structure for the purpose of ratemaking in this proceeding. Hypothetical capital structures may be imposed when "[t]he utility's capital structure is deemed to be substantially different from the typical or 'proper' utility capital structure"[140] or when "[t]he utility is funded as part of a diversified organization whose overall capital structure reflects its diversified nature rather than its utility operations only."[141] Spire Missouri is neither of these cases. As of March 31, 2025, Spire Missouri's actual capital structure consists of 50.69% common equity, 41.47% long-term debt, and 7.84% short-term debt.[142] Without first finding that the operating company's actual standalone capital structure is unreasonable or imprudent, there is no reason to use a hypothetical capital structure.[143]

Mr. Woodard stated, "The actual equity layer at the filing of this review is below 55% but this is the level that has been maintained by the Company for a long period of time and where it intends to build back up to in the future. The Commission can assist in the recovery of Spire Missouri's capital structure by authorizing 55% equity to total long-term capitalization in this proceeding."[144] However, he did not provide any valid reason to use a hypothetical capital structure. Equity is typically far more expensive than long-term debt, so a higher equity ratio based

[138] Page 38, lines 19-21, Woodard's Direct Testimony.
[139] Page 10, lines 11-13, Woodard's Direct Testimony.
[140] Page 47, David C. Parnell, *The Cost of Capital – A Practitioner's Guide* (2020 ed.).
[141] Page 391, Charles F. Phillips, Jr., *The Regulation of Public Utilities. – Theory and Practice* (1993).
[142] Staff's Data Request No. 0053 and Confidential Schedule SJW-r1.
[143] *South Cent. Bell Tel. Co. v. Louisiana Pub. Serv. Comm'n*, 594 So. 2d 357, 366 (La. 1992).
[144] Page 38, lines 19-23, Woodard's Direct Testimony.

on a hypothetical capital structure that disadvantages ratepayers without providing a public benefit could not be considered just and reasonable. Therefore, there is no valid reason to use Mr. Woodard's proposed hypothetical capital structure of 55% common equity and 45% long-term debt in this proceeding instead of Spire Missouri's actual capital structure.

Q. Do you recommend that the Commission assist in the recovery of Spire Missouri's capital structure by authorizing 55% equity to total long-term capitalization in this proceeding?

A. No, I do not. As explained above, S&P downgraded Spire Missouri not because of its financial risk profile, but due to its parent company, Spire Inc.'s, high level of long-term debt, which contributed to Spire Missouri's high equity ratio.[145] It is obvious that a lower credit rating results in a higher cost of capital. To prevent any detriment to the public interest, Spire Inc. should not increase long-term debt to raise Spire Missouri's equity ratio. Once again, Staff emphasizes that Moody's assigned a 'Baa2' rating assigned to Spire Inc, which is two notches lower than the 'A1' rating to Spire Missouri.[146] In other words, Spire Inc. is riskier than Spire Missouri in terms of its long-term debt ratio capacity. Therefore, Staff recommends against assisting in the recovery of Spire Missouri's capital structure by authorizing 55% equity.

Q. What was the Commission's order regarding short-term debt included in Spire Missouri's ratemaking capital structure?

A. As the Commission ordered in the 2021 Spire Missouri Case, the amount of short-term debt included in Spire Missouri's ratemaking capital structure should be determined by the average short-term debt in excess of short-term assets over a 13-month period, excluding both

[145] S&P Research Update, Spire Inc. And Subsidiaries Downgraded To 'BBB+' From 'A-' On Weak Financial Measures; Outlook Stable, Published June 3, 2024.
[146] S&P Capital IQ. Retrieved March 17, 2025.

short-term assets and short-term debt related to Winter Storm Uri.[147] This excess should then be considered for inclusion in the ratemaking capital structure. As of March 31, 2025, the 13-month average of short-term debt exceeds the 13-month average balance of short-term assets by ** [redacted] **.[148]

Q. Does Staff recommend including the amount of short-term debt that exceeds short-term assets in Spire Missouri's ratemaking capital structure as of March 31, 2025?

A. No. At this time, Staff does not recommend including short-term debt in Spire Missouri's ratemaking capital structure, as explained in the direct testimony of Staff witness Kimberly K. Bolin. Ms. Bolin will continue to examine the amount of short-term assets and short-term debt through the true-up period ending May 31, 2025. Based on the results of the true-up analysis, Staff may revise its position on the inclusion of short-term debt in Spire Missouri's ratemaking capital structure.

continued on next page

[147] On page 96, Amended Report and Order issued November 12, 2021, in Case No. GR-2021-0108.
[148] Page 4, lines 8-10, Kimberly K. Bolin's Rebuttal Testimony.

III. RESPONSE TO TESTIMONY OF OPC WITNESS

Q. What are the specific areas in which Staff is responding to OPC's witness, Mr. Murray?

A. The areas in which Staff addresses issues of Mr. Murray's direct testimony include:

- Recommended ROE, and
- Capital Structure.

Staff will discuss each, in turn, below.

1. Recommended ROE

Q. What is Mr. Murray's recommended ROE for use in this proceeding?

A. Mr. Murray recommended that the Commission set Spire Missouri's authorized ROE at 9.50% within a range of 9.00% to 9.50%.[149] Using a multi-stage DCF approach, a CAPM analysis, and a straightforward bond-yield-plus-risk-premium ("BYPRP") method,[150] Mr. Murray estimated the current COE for regulated local natural gas distribution ("LDC") utilities to be in the range of 7.8% to 8.3%,[151] which is higher than the 7.25% to 7.50% he estimated in Spire Missouri's last general rate case, Case No. GR-2022-0179.[152]

Q. What are Staff's concerns with Mr. Murray's recommended ROE?

A. Staff does not have any major concerns with Mr. Murray's recommended ROE of 9.50% because it is within Staff's recommended range of ROE of 9.38% to 9.88%.[153] Although Staff does not agree with Mr. Murray's detailed estimation procedures for his recommended ROE, Staff found no substantial deficiency in Mr. Murray's ROE recommendation.

[149] On Page 2, lines 3-5, and Schedule DM-D-9, Murray's Direct Testimony.
[150] On Page 7, lines 12-21, Murray's Direct Testimony.
[151] On Page 2, lines 12-13, Murray's Direct Testimony.
[152] On Page 5, lines 15-16, Murray's Direct Testimony, GR-2022-0179.
[153] Schedule SJW-d16, Won's Direct Testimony.

2. Capital Structure

Q. What is Mr. Murray's recommended capital structure for use in this proceeding?

A. Mr. Murray recommended a hypothetical capital structure that consists of 41.5% common equity, 51.5% long-term debt and 7.0% short-term debt based on his consideration of Spire Inc.'s consolidated capital structure as of September 30, 2024.[154] Mr. Murray insisted his recommended capital structure is consistent with Spire Inc.'s consolidated capital structure ratios with an adjustment to short-term debt based on the percentage of Spire Missouri's short-term debt which is attributed to CWIP and deferred gas cost balances.[155] However, this is only partly true because his recommended ratemaking capital structure excludes Spire Inc.'s preferred stock.[156] For the period September 30, 2023 through September 30, 2024, Mr. Murray determined Spire Missouri's CWIP and deferred gas cost balances consisted of a weighted-average of 41.17% of Spire Missouri's outstanding short-term debt.[157]

Q. What is Staff's concern with Mr. Murray's capital structure recommendation?

A. Staff's concern is that Mr. Murray's recommended equity ratio of 41.5% is too low compared to the average equity ratio of 51.97% for natural gas utility rate cases determined in 2024 in the US. Furthermore, in his direct testimony in the last Spire Missouri rate case, Mr. Murray stated, "a common equity ratio of around 50% is entirely reasonable."[158] Therefore, Mr. Murray's recommended equity ratio of 41.5%, which is based on the equity ratio of its parent company, Spire Inc., is unreasonably low - even compared to his own reasonable ratemaking equity ratio.

[154] On Page 36, lines 3-6, and Schedule DM-D-9, Murray's Direct Testimony.
[155] On Page 36, lines 13-15, Murray's Direct Testimony.
[156] Staff Data Request No. 0053.
[157] On Page 36, lines 15-18, Murray's Direct Testimony.
[158] On Page 49, lines 18-19, Murray's Direct Testimony, GR-2022-0179.

Q. What equity ratios were used in NGS utility rate cases on a national basis?

A. In 2024, the average equity ratios from fully litigated and settled rate cases are 50.91% and 52.72%, respectively. The total average equity ratio of all forty-four (44) NGS utility rate cases in 2024 is 51.97%. In the first quarter of 2025, the average equity ratios from fully litigated and settled rate cases are 50.00% and 50.16%, respectively. The total average equity ratio of all six (6) NGS utility rate cases in the first quarter of 2025 is 50.13%. Considering the historical average equity ratio of approximately 51% used for calculating the allowed ROR for natural gas utility rate cases, Mr. Murray's recommended equity ratio of 41.5% appears to be low. Table 3 presents information compiled and published by RRA, which details the average equity ratios from Commissions around the US in the years 2010 to the first quarter of 2025, along with the number of cases considered:

Table 3. Equity Ratios of NGS Utility Rate Cases (2010-2025Q1)[159]

	Fully Litigated		Settled		Natural Gas Total	
Year	Equity (%)	Case (No.)	Equity (%)	Case (No.)	Equity (%)	Case (No.)
2010	48.72	27	48.87	12	48.76	39
2011	52.64	8	51.82	8	52.33	16
2012	51.06	21	50.97	14	51.03	35
2013	51.98	12	48.53	9	50.60	21
2014	52.86	15	48.61	11	51.06	26
2015	51.17	5	49.32	11	49.94	16
2016	52.11	10	48.60	16	50.01	26
2017	50.39	7	50.63	17	50.55	24
2018	50.56	17	50.27	23	50.39	40
2019	52.00	12	52.47	21	52.29	33
2020	52.38	12	52.66	23	52.56	35
2021	50.59	13	51.02	30	50.89	43
2022	52.51	9	50.70	24	51.22	33
2023	53.37	21	51.01	22	52.19	43
2024	50.91	18	52.72	26	51.97	44
2025Q1	50.00	1	50.16	5	50.13	6

[159] S&P Capital IQ Pro, Retrieved on April 14, 2025.

Q. Does Mr. Murray's recommendation to use the parent company's capital structure meet the standard of generally-accepted utility ratemaking procedures?

A. No. Mr. Murray's recommendation is not compatible with typical regulatory practices on when to use a parent company's capital structure instead of a subsidiary's own capital structure for the subsidiary's ratemaking. The Society of Utility and Regulatory Financial Analysts ("SURFA") lists the following four guidelines for determining when to use a parent company's capital structure in its guidebook, The Cost of Capital – A Practitioner's Guide ("CRRA Guide"):

> 1. Whether the subsidiary utility obtains **all** of its capital from its parent, or issues its own debt and preferred stock;
> 2. Whether the parent guarantees **any** of the securities issued by the subsidiary;
> 3. Whether the subsidiary's capital structure is independent of its parent (i.e., existence of double leverage, absence of proper relationship between risk and leverage of utility and **non**-utility subsidiaries); and,
> 4. Whether the parent (or consolidated enterprise) is diversified into **non**-utility operations [Emphasis added.].[160]

There is nothing in these guidelines that suggests that it is appropriate to use a hypothetical capital structure based on Spire Inc.'s (the parent company of Spire Missouri) capital structure to set Spire Missouri's ROR.

For the first guideline, except for common stock and equity contributions, Spire Missouri has not received any other long-term financing or preferred stock from Spire Inc. since January 1, 2022.[161] Although Spire Inc. raises short-term funding through its commercial paper program and

[160] Page 46, David C. Parcell in The Cost of Capital – A Practitioner's Guide prepared for SURFA (2020 ed.).
[161] Staff's Data Request No. 0065 (1).

loans this funding to Spire Missouri, Spire Missouri has not provided short-term advances to Spire Inc.[162] This is a usual financial relationship between the holding company and its subsidiaries. In addition, Spire Missouri's standalone capital structure supports its own bond rating.[163] Spire Missouri and Spire Inc. are separately rated by S&P and Moody's based on its stand-alone credit quality.[164] Therefore, Spire Missouri meets the first criterion. For the second guideline, neither Spire Inc. nor Spire Inc.'s other subsidiaries guarantee the securities issued by Spire Missouri.[165] Also, Spire Missouri's assets have not secured Spire Inc. or its subsidiaries' debts, nor do they secure each other's debts.[166] For the third guideline, Staff has not found the existence of double leverage, or an absence of a proper relationship between risk and leverage of utility and non-utility subsidiaries.[167] For the fourth guideline, according to Spire Inc.'s Investor Presentation in 2024, Spire Inc.'s non-utility assets and revenue are less than 10% of Spire Inc.'s total business mix.[168] This is not concerning because Spire Inc.'s non-utility operations are insignificant.

As another example, the FERC adopted a similar test to determine whether the ratemaking capital structure should deviate from the actual standalone capital structure. While the standalone capital structure is consistently and universally appropriate for ratemaking, a consolidated capital structure is appropriate only in special cases.[169] The actual standalone capital structure is used for ratemaking if the utility satisfies three conditions: (1) it issues its own non-guaranteed debt,

[162] Staff's Data Request No. 0065 (2) and (3).
[163] Ratings Score Snapshot, RatingsDirect, S&P Global Ratings.
[164] S&P Capital IQ Pro, and Staff's Data Request No. 0065 (4).
[165] Staff's Data Request No. 0065 (5).
[166] Staff's Data Request No. 0065 (6).
[167] Staff's Data Request No. 0067.
[168] Staff's Data Request No. 0066.
[169] Pettway, R. H., & Jordan, B. D. (1983). Diversification, double leverage, and the cost of capital. Journal of Financial Research, 6(4), 289-300.

(2) it has its own bond rating, and (3) it has an equity ratio within the historical range approved by the Commission.[170] As previously explained, Spire Missouri satisfies all three of these conditions.[171] Therefore, Mr. Murray's recommendation to use the parent company's capital structure does not meet the standard of generally-accepted utility ratemaking procedures.

Q. Do you agree with Mr. Murray that a 7% short-term debt should be included in Spire Missouri's ratemaking capital structure?[172]

A. No, I do not. The 7% short-term debt recommended by Mr. Murray is based on his analysis in the 2021 Spire Missouri Case.[173] As the Commission ordered in the 2021 Spire Missouri Case, the amount of short-term debt included in Spire Missouri's ratemaking capital structure should be determined by the average short-term debt in excess of short-term assets over a 13-month period ended September 30, 2022, the true-up date of in that proceeding.[174] As explained above, Staff does not recommend including short-term debt in Spire Missouri's ratemaking capital structure at this time. As explained in her direct testimony, Staff witness Kimberly K. Bolin will continue to examine the amount of short-term assets and short-term debt through the true-up period ending May 31, 2025, and will recommend an appropriate amount of short-term debt to be included in Spire Missouri's ratemaking capital structure in this proceeding. Based on the results of the true-up analysis, Staff may revise its position on the inclusion of short-term debt in Spire Missouri's ratemaking capital structure.

[170] Attachment A, Docket No. 25-EKCE-294-RTS.
[171] Staff's Data Request No. 0065.
[172] On Page 44, lines 17-18, Murray's Direct Testimony.
[173] Pages 44-45, Murray's Direct Testimony.
[174] On Page 96, Amended Report and Order issued November 12, 2021, in Case No. GR-2021-0108.

IV. SUMMARY AND CONCLUSIONS

Q. What is your summary of the conclusions of your rebuttal testimony?

A. Staff continues to recommend that the reasonable authorized ROE to use in this proceeding is 9.63%, in a reasonable range of 9.38% to 9.88%.[175] Mr. Woodard's proposed ROE of 10.50% for Spire Missouri is not just and reasonable considering his misuse of Staff's comparative COE analysis and inappropriate adjustments.[176] Staff has no major concerns with OPC witness Mr. Murray's recommended ROE of 9.50% and Mr. Walters' recommended ROE of 9.45% because these ROEs are in the Staff's reasonable rage of authorized ROE of 9.38% to 9.88%.[177]

For Spire Missouri's ratemaking capital structure, Mr. Woodard and Mr. Murray did not propose actual capital structures. Mr. Woodard proposed a non-actual capital structure consisting of 55% common equity and 45% long-term debt.[178] Mr. Murray proposed a hypothetical capital structure that consists of 41.5% common equity, 51.5% long-term debt and 7.0% short-term debt based on his consideration of Spire Inc.'s consolidated capital structure.[179]

Currently, Staff is monitoring the changes of Spire Inc. and Spire Missouri's actual capital structure and cost of debt. Staff will make its final recommendation of ROR in its true-up testimony in this proceeding after investigating the reason for any material changes in Spire Missouri's actual capital structure over the duration of this case.

Q. Does this conclude your rebuttal testimony?

A. Yes.

[175] Schedule SJW-d16, Won's Direct Testimony.
[176] Schedule AWW-D-21, Woodard's Direct Testimony.
[177] Schedule SJW-d16, Won's Direct Testimony.
[178] Schedule AWW-D-21, Woodard's Direct Testimony.
[179] Schedule DM-D-9, Murray's Direct Testimony.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Spire Missouri Inc. d/b/a Spire's Request for Authority to Implement a General Rate Increase for Natural Gas Service Provided in the Company's Missouri Service Areas	))))	Case No. GR-2025-0107

AFFIDAVIT OF SEOUNG JOUN WON, PhD

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW SEOUNG JOUN WON, PhD and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of Seoung Joun Won, PhD*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

SEOUNG JOUN WON, PhD

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 23rd day of May 2025.

Notary Public

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2029
Commission Number: 12412070

Spire Missouri, Inc., d/b/a Spire
Case No. GR-2025-0107

Capital Structure as of March 31, 2025

Capital Component	Dollars in Millions of Capital		Percentage of Capital
Common Stock Equity	** $ [redacted]	** [1]	50.69%
Preferred Stock	** $ -	**	0.00%
Long-Term Debt	** $ [redacted]	** [2]	41.47%
Short-Term Debt	** $ [redacted]	** [3]	7.84%
Total	** **$** [redacted]	**	**100.0%**

Note:

[1] Staff Data Request No. 0053

[2] Staff Data Request No. 0055

[3] Kimbery K. Bolin's Rebuttal Testimony