Direct Testimony and Schedules
Joshua C. Nowak

Before the South Dakota Public Utilities Commission
State of South Dakota

In the Matter of the Application of Northern States Power Company dba Xcel Energy for Authority to Increase its Electric Rates

Docket No. EL25-___
Exhibit___(JCN-1)

Return on Equity

June 30, 2025

Table of Contents

Schedules

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND OCCUPATION.

A. My name is Joshua C. Nowak. I am employed by Concentric Energy Advisors, Inc. (Concentric) as a Vice President. Concentric is a management consulting and economic advisory firm, focused on the North American energy and water industries. Based in Marlborough, Massachusetts and Washington, D.C., Concentric specializes in regulatory and litigation support, financial advisory services, energy market strategies, market assessments, energy commodity contracting and procurement, economic feasibility studies, and capital market analyses. My business address is 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts 01752.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. I am submitting this testimony to the South Dakota Public Utilities Commission (the Commission) on behalf of Northern States Power Company, a Minnesota corporation (NSP or the Company), and wholly owned subsidiary of Xcel Energy Inc. (XEI).

Q. PLEASE DESCRIBE YOUR EXPERIENCE IN THE ENERGY AND UTILITY INDUSTRIES AND YOUR EDUCATIONAL AND PROFESSIONAL QUALIFICATIONS.

A. I hold a Bachelor's degree in Economics from Boston College, and have more than 15 years of experience in providing economic, financial, and strategic advisory services. As a consultant, I primarily advise clients in regulated utility industries and have provided testimony regarding financial matters before multiple regulatory agencies. I have advised numerous energy and utility clients on a wide range of financial and economic issues with primary concentrations

in valuation and utility rate matters. Many of these assignments have included the determination of the cost of capital for valuation and ratemaking purposes. I have provided testimony before the Federal Energy Regulatory Commission (FERC) as well as state and provincial jurisdictions in the U.S. and Canada. Prior to joining Concentric in 2018, I was employed by National Grid USA where I was responsible for regulatory filings related to the cost of capital across the company's multiple U.S. operating companies and service territories. A summary of my professional and educational background is presented in Exhibit___(JCN-1), Schedule 1.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my Direct Testimony is to present evidence and provide a recommendation for the return on equity (ROE) for NSP. My Direct Testimony also discusses the Company's capital structure in comparison to the proxy group of companies supporting my analysis.

Q. ARE YOU SPONSORING ANY SCHEDULES IN THIS PROCEEDING?

A. Yes. My analyses and recommendations are supported by the data presented in Exhibit___(JCN-1), Schedules 2 through 12, which have been prepared by me or under my direction. I sponsor the following schedules:

- Schedule 2 – Comprehensive Summary of ROE Results
- Schedule 3 – Proxy Group Screening Analysis
- Schedule 4 – Constant Growth Discounted Cash Flow (DCF) Analysis
- Schedule 5 – Market Risk Premium (MRP) Estimate
- Schedule 6 – Capital Asset Pricing Model (CAPM) Analysis
- Schedule 7 – Bond Yield Plus Risk Premium (Risk Premium) Analysis
- Schedule 8 – Expected Earnings Analysis

- Schedule 9 – Flotation Cost Analysis
- Schedule 10 – Regulatory Framework Comparison
- Schedule 11 – Weighted Average Cost of Capital
- Schedule 12 – Capital Structure Analysis

II. SUMMARY OF TESTIMONY

Q. WHAT IS YOUR CONCLUSION REGARDING THE APPROPRIATE COST OF EQUITY AND CAPITAL STRUCTURE FOR NSP?

A. I have estimated NSP's ROE based on the results of the DCF model, the CAPM, and the Bond Yield Plus Risk Premium model and the general economic and capital market environment and the influence such conditions exert over the results. To assess the reasonableness of the DCF, CAPM, and Risk Premium results and evaluate the available returns for alternative investments, I also considered the Expected Earnings analysis. In addition, I analyzed the Company's business and regulatory risk profile that must be considered in determining where the Company's cost of equity falls within the range of analytical results. A summary of the results of my analyses are shown below in Table 1.

Table 1
Summary of Results

	Average	Median
Primary Analyses		
Constant Growth DCF	10.31%	10.26%
CAPM	11.75%	11.54%
Risk Premium	10.53%	10.53%
Average	**10.86%**	**10.79%**
Benchmark Analyses		
Expected Earnings	11.15%	10.29%
Other Considerations		
Flotation Costs	0.07%	0.07%

The DCF, CAPM, and Risk Premium, and the Expected Earnings analysis produce a range of estimates of the Company's cost of equity of 10.26 percent to 11.75 percent, before considering the effect of flotation costs (an incremental 7 basis points). Based on these analyses, I consider an ROE range of 10.25 percent to 11.25 percent to be reasonable, albeit conservative. From within that range, I recommend an ROE of 10.30 percent. This is consistent with NSP's recent ROE requests in other jurisdictions, and moderates the overall request as compared to the rate of return agreed upon in the Company's last rate case. My recommendation is at the low end of the range and 56 basis points below the average of the DCF, CAPM, and Risk Premium analyses and therefore represents a conservative estimate of NSP's cost of equity. Additionally, NSP's

requested capital structure of 52.87 percent equity and 47.13 percent long-term debt is not only aligned with how the Company's actual capital structure has been managed but also well-within the range of actual common equity ratios of 45.62 percent to 59.89 percent for the operating companies held by the proxy group, and, therefore, reasonable. Finally, I support NSP's proposed 4.48 percent cost of long-term debt, which is reasonable.

Q. HOW IS THE COST OF EQUITY DETERMINED?

A. Unlike the cost of long-term debt, for example, the cost of equity cannot be directly observed. Therefore, the cost of equity is estimated by using analytical techniques that rely on market-based data to quantify investor expectations regarding required equity returns, adjusted for certain incremental costs and risks. Based on the results of those analyses and considering other qualitative factors, informed judgment is used to determine where within the range of results the cost of equity for the Company should rightly fall. The resulting estimate of the cost of equity serves as the recommended ROE for ratemaking purposes.

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE ANALYSES THAT YOU CONDUCTED TO SUPPORT YOUR ROE RECOMMENDATION.

A. As mentioned, my ROE recommendation is based on the range of results produced from four modeling methodologies. Analysts and academics understand that ROE models are tools to be used in the ROE estimation process, and that strict adherence to any single approach, or the specific results of any single approach, can lead to flawed conclusions. No model can consistently and exactly pinpoint the correct cost of equity, but each is designed to provide a unique estimate of the return required to attract equity investment.

Therefore, my analysis considers the range of results produced by these different analyses. The DCF analysis estimates the cost of equity based on market data on dividend yields and analysts' projected earnings per share growth rates from reputable third-party sources. The CAPM analysis is based on both current and forecasted interest rates and a forward-looking market risk premium. The Risk Premium approach calculates the risk premium as the spread between authorized ROEs for vertically-integrated electric utilities and Treasury bond yields. The Expected Earnings approach is based on projected returns on book equity that investors expect to receive over the next three to five years. My ROE recommendation is ultimately based on the range of results produced by these methodologies.

My testimony also considers the general economic and capital market environment, and the influence capital market conditions exert over the results of the DCF, CAPM, and Risk Premium models. In addition, I consider the Company's business and regulatory risks in relation to a set of proxy companies to assist in the determination of the appropriate ROE from within the range of my analytical results.

Q. HOW IS THE REMAINDER OF YOUR DIRECT TESTIMONY ORGANIZED?

A. The remainder of my Direct Testimony is organized as follows:

- Section III provides background on the regulatory principles that guide the determination of ROE.
- Section IV presents a review of current and prospective economic and capital market conditions and the implications on the cost of capital for utilities.

- Section V describes the criteria and approach for the selection of a proxy group of comparable companies.
- Section VI provides a description of the data and methodologies used to estimate the cost of equity, as well as the results of the various ROE estimation models and concludes with my recommendation and an assessment of its reasonableness under the *Hope* test.
- Section VII discusses NSP's business risks relative to the proxy group and other considerations relevant to determining the Company's allowed ROE.
- Section VIII reviews NSP's capital structure in the context of the proxy group.
- Section IX discusses NSP's proposed cost of debt.
- Finally, Section X summarizes my results, conclusions, and recommendation.

III. REGULATORY PRINCIPLES

Q. PLEASE DESCRIBE THE GUIDING PRINCIPLES USED IN ESTABLISHING THE COST OF CAPITAL FOR A REGULATED UTILITY.

A. The foundations of public utility regulation require that utilities receive a fair rate of return sufficient to attract needed capital to maintain important infrastructure for customers at reasonable rates. The basic tenets of this regulatory doctrine originate from several bellwether decisions by the United States Supreme Court, notably *Bluefield Waterworks and Improvement Company v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) (*Bluefield*), and

Federal Power Commission v. Hope Natural Gas Company, 320 U.S. 591 (1944) (*Hope*).

In *Bluefield*, the Court stated:

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

Later, in *Hope*, the Court expanded on the standard for setting an appropriate ROE:

> [T]he return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.

Q. PLEASE EXPLAIN HOW THESE PRINCIPLES APPLY IN THE CONTEXT OF THE REGULATED RATE OF RETURN.

A. Regulated utilities rely primarily on common stock and long-term debt to finance permanent property, plant, equipment, and other investments. The allowed rate of return for a regulated utility is based on its weighted average cost of capital, where the costs of the individual sources of capital (*i.e.*, debt and equity) are weighted by their respective book values. The ROE represents the cost of raising and retaining equity capital and is estimated by using one or more analytical techniques that use market data to quantify investor requirements for equity returns. However, the ROE cannot be derived through quantitative

metrics and models alone. To properly estimate the ROE, the financial, regulatory, and economic context must also be considered.

Based on these widely recognized standards, the Commission's order in this case should provide NSP with the opportunity to earn a return on equity that is:

- Adequate to allow the Company to attract the capital that is necessary to provide safe and reliable service (the capital attraction standard);
- Sufficient to ensure the Company's ability to maintain its financial integrity (the financial integrity standard); and
- At a level that is comparable to returns required on investments of similar risk (the comparability standard).

Importantly, a fair return must satisfy *all three* of these standards established under *Hope* and *Bluefield*. The allowed ROE should enable the Company to finance capital expenditures on reasonable terms and provide it with the ability to raise capital under a full range of capital market circumstances to serve its customers. The DCF, CAPM, Risk Premium, and Expected Earnings approaches, while fundamental to the ROE determination, are still only models. The results of these models cannot be mechanically applied without also using informed judgment to consider economic and capital market conditions and the relative risk of NSP as compared to the proxy group companies.

Q. HAS THE COMMISSION RECOGNIZED THE IMPORTANCE OF THE *HOPE* AND *BLUEFIELD* PRINCIPLES?

A. Yes, the Commission has. In its most recent Order on the topic, citing *Hope*, the Commission emphasized that "rates set in this proceeding must be just and

reasonable,"[1] and "'it is the result reached, not the method employed that is controlling' and 'the impact of the rate order which counts.'"[2]

Q. HOW DO THESE PRINCIPLES SERVE CUSTOMER INTERESTS?

A. Because utility operations are capital intensive, regulatory decisions, including the determination of the cost of equity, should enable the utility to attract capital at reasonable terms. Doing so balances the long-term interests of investors and customers. In particular, a fair return significantly contributes to the Company's overall financial integrity. A strong financial profile is necessary to maintain access to capital markets at reasonable terms. This helps to ensure that the Company is able to access lower borrowing costs for the investments necessary to provide safe and reliable service and meet customers' evolving needs.

Q. IS NSP'S ABILITY TO ATTRACT EQUITY CAPITAL AFFECTED BY ROES THAT ARE AUTHORIZED FOR OTHER UTILITIES?

A. Yes, it is. NSP competes with other investments of similar risk for equity capital from the market. In addition, NSP competes with other investments within XEI for equity capital from its parent company. Therefore, the ROE awarded to a utility sends an important signal to investors and management regarding whether there is regulatory support for financial integrity, dividends, growth, and fair compensation for business and financial risk.

[1] *In the Matter of the Application of Otter Tail Power Company for Authority to Increase its Electric Rates,* Docket No. EL18-021, FINAL DECISION AND ORDER; NOTICE OF ENTRY, at 3.
[2] *Id.*, at 3-4, quoting *Hope* 320 U.S. at 602.

Q. WHAT ARE YOUR CONCLUSIONS REGARDING REGULATORY PRINCIPLES?

A. The ratemaking process is premised on the principle that, in order for investors and companies to commit the capital needed to provide safe and reliable utility services, the utility must have the opportunity to recover invested capital and the market-required return on that capital. Because utility operations are capital intensive, regulatory decisions should enable the utility to attract capital at a reasonable cost. The financial community carefully monitors the current and expected financial condition of utility companies as well as the regulatory environment in which they operate. In that respect, the regulatory environment is one of the most important factors considered by both debt and equity investors in their assessments of risk. It is therefore essential that the ROE authorized in this proceeding take into consideration the current and expected capital market conditions that NSP faces, as well as investors' expectations and requirements regarding both risks and returns. A reasonable ROE is required both for continued capital investment by the Company and to maintain confidence in South Dakota's regulatory environment among credit rating agencies and investors.

IV. ECONOMIC AND CAPITAL MARKET CONDITIONS

Q. WHY IS IT IMPORTANT TO CONSIDER THE EFFECTS OF CURRENT AND EXPECTED ECONOMIC AND FINANCIAL MARKET CONDITIONS WHEN SETTING THE APPROPRIATE ROE?

A. It is important to consider current and expected conditions in the general economy and financial markets because the authorized ROE for a public utility should allow the utility to attract investor capital at a reasonable cost under current and foreseeable economic and financial conditions as underscored by

the *Hope* and *Bluefield* decisions discussed previously. The standard ROE estimation tools, such as the DCF, CAPM, Risk Premium, and Expected Earnings models, each reflect the state of the general economy and financial markets by incorporating specific economic and financial data. These inputs are, however, only samples of the various economic and market forces that determine a utility's required return. Consideration must also be given to whether the assumptions relied on in the current or projected market data are appropriate. If investors do not expect current market conditions to continue in the future, it is possible that the ROE estimation models will not provide an accurate estimate of investors' forward-looking required return. Therefore, an assessment of current *and projected* market conditions is integral to any ROE recommendation.

Q. WHAT ARE THE KEY MACROECONOMIC FACTORS AFFECTING THE COST OF EQUITY FOR REGULATED UTILITIES IN THE CURRENT AND PROSPECTIVE CAPITAL MARKETS?

A. The cost of equity for regulated utility companies is affected by several factors, including macroeconomic conditions. Other factors include business risk and regulatory risk, which are discussed in more detail in Section VII. However, the macroeconomic environment and capital markets are an important consideration as utilities compete with other industries for capital. In particular, key factors in the current and prospective capital markets include the uncertainty regarding the economy, the impacts of the Federal Reserve's approach to interest rates and inflation, concerns over the ongoing elevated interest rates, U.S. foreign trade policy, and the heightened uncertainty and volatility in equity markets and resulting utility performance, which has lagged the broader market. Collectively, these factors contribute to heightened market

risk and an increase in investor-required returns, relative to capital markets circumstances in place during the Company's last rate case. In this section, I discuss these factors and how they affect the models used to estimate the cost of equity for regulated utilities.

A. Monetary Policy

Q. HOW DO THE NATION'S MONETARY POLICY ACTIONS AFFECT CAPITAL MARKETS AND THE U.S. ECONOMY?

A. The Federal Reserve is responsible for "conducting the nation's monetary policy by influencing money and credit conditions in the economy in pursuit of full employment and stable prices."[3] The Federal Reserve implements monetary policy through raising or lowering interest rates, which impacts the demand for goods and services. This, in turn, impacts employment and inflation. Monetary policy has shifted dramatically over the past several years, in response first to COVID-19, and then to record high inflation. The capital markets are significantly affected by the Federal Reserve's policy. While the primary monetary policy tool used by the Federal Reserve is the short-term interest rate for overnight interbank loans, it has far-reaching consequences for capital markets and significantly influences long-term interest rates and the cost of equity. As discussed in more detail below, current Federal Reserve policy continues to be focused on inflationary concerns, but it is important to note, even if inflation moderates, the current monetary policy stance is likely to have a long-lasting effect on capital market conditions.

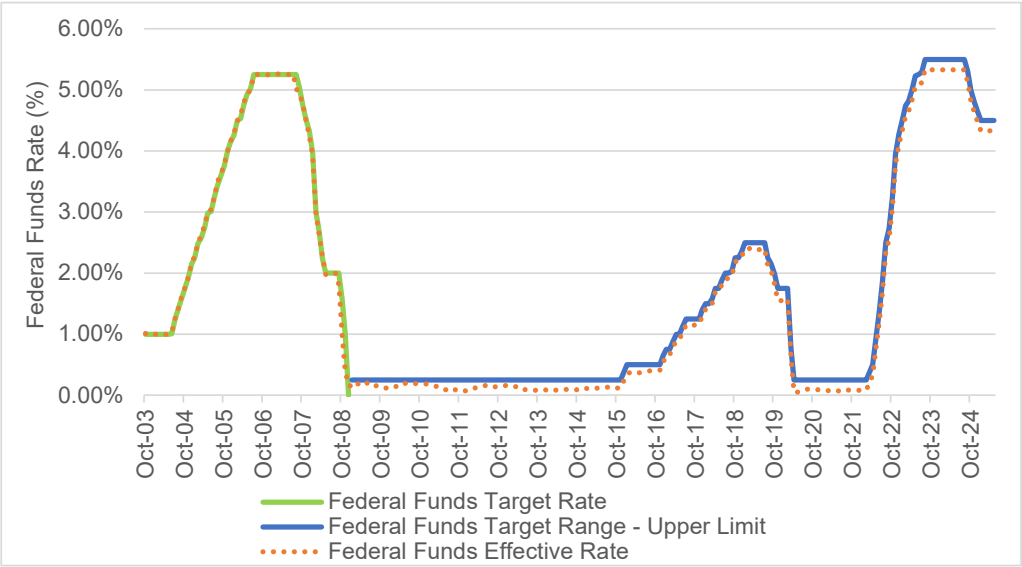
[3] Federal Reserve, "The Fed - What is the purpose of the Federal Reserve System?" available at https://www.federalreserve.gov/faqs/about_12594.htm.

Q. WHAT STEPS DID THE FEDERAL RESERVE TAKE TO STABILIZE FINANCIAL MARKETS AND SUPPORT THE ECONOMY IN RESPONSE TO PERSISTENT INFLATION?

A. Beginning in 2022, inflation surged to levels not seen since the late-1970s and early-1980s, and the Federal Reserve had little choice but to aggressively battle inflation through raising interest rates. Previously, in response to the economic effects of COVID-19, the Federal Reserve decreased the federal funds rate in March 2020 to a target range of 0.00 percent to 0.25 percent (which remained in effect until March 2022) in addition to other stimulus measures that increased the supply of money in the economy. The Federal Reserve began unwinding its quantitative easing program[4] in 2022 and had increased the target rate 11 times to a target rate of 5.25 percent to 5.50 percent through August 2024 (the highest level in the last 20 years). As shown in Figure 1 below, the Federal Reserve only recently began reducing the federal funds rate by 50 basis points in September 2024 and then by 25 basis points in each of November 2024 and December 2024 to a target rate of 4.25 percent to 4.50 percent.

[4] Quantitative easing refers to a monetary policy tool in which the Federal Reserve attempts to increase liquidity in the financial system by purchasing long-term government bonds from large banks in an attempt to encourage banks to lend more funds out, which is intended to stimulate economic growth. In June 2022, The Federal Reserve ended its quantitative easing program, instead engaging in quantitative tightening, which is to gradually reduce its asset purchases.

Figure 1
FOMC Federal Funds Rates



Despite the recent rate reduction, the Federal Reserve indicated that inflation remains a key consideration for the Committee. In its May 7, 2025 decision to not change the federal funds rate target, the Federal Open Market Committee (FOMC) noted that "[i]nflation remains somewhat elevated" and it "judges that the risks of higher unemployment and higher inflation have risen."[5]

While inflation is still down from the high of 9.10 percent in June 2022, as measured by the Consumer Price Index (CPI), it continues to be above the Federal Reserve's 2 percent target, having increased 2.30 percent from April 2024 to April 2025, in line with the March 2024 to March 2025 2.40 percent increase.[6]

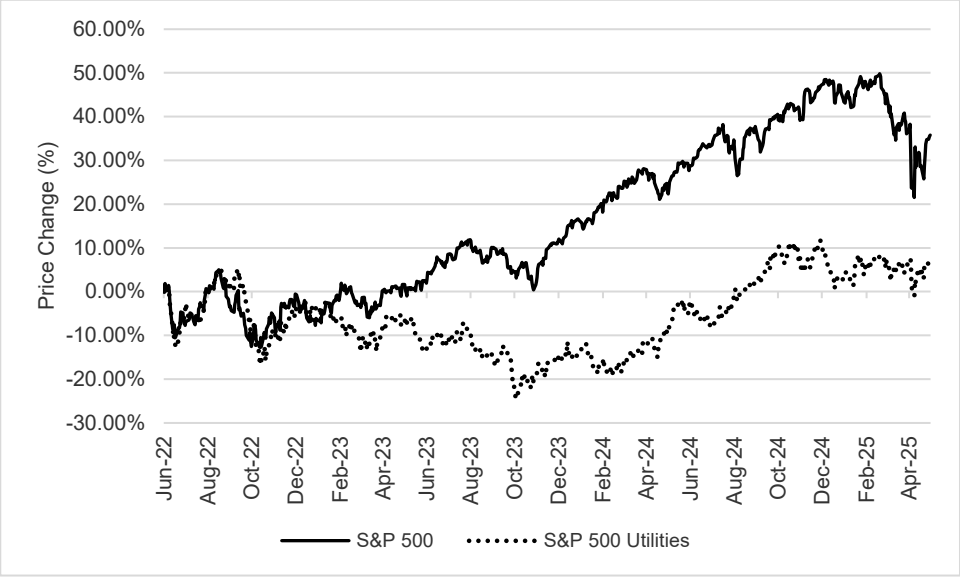
[5] FOMC Press Release (May 7, 2025). Available here: https://www.federalreserve.gov/newsevents/pressreleases/monetary20250507a.htm.
[6] Source: Bureau of Labor Statistics, https://www.bls.gov/cpi/tables/supplemental-files/home.htm

Q. HOW HAVE CAPITAL MARKETS RESPONDED?

A. In response to monetary policy, high inflation and disappointing earnings reports, capital markets over the past several years have been volatile, and the stock market lost substantial value in 2022. While the S&P 500 closed at record highs on the first trading day of 2022,[7] by mid-June of that year, the S&P 500 was down more than 21 percent, at that time wiping out all of 2021's gains.

And although the S&P 500 has steadily gained ground since that time, the utility sector has fared far worse. From June 2022, at the peak of inflation, through April 2025, the S&P 500 Index increased nearly 36 percent, but the S&P Utilities Index increased by less than 7 percent as shown in Figure 2.

Figure 2
S&P 500 and S&P 500 Utilities Indices Performance
(6/1/2022 to 4/30/2025)



[7] CNBC, "The Dow Jones Industrial Average rose 246.76 points, or 0.6%, to close at 36,585.06. The S&P 500 also rose 0.6%, to close at 4,796.56," January 2, 2022, available at https://www.cnbc.com/2022/01/02/futures-stock-market-news-open-to-close.html.

Q. WAS THE FEDERAL RESERVE'S RECENT RATE CUT CONSISTENT WITH INVESTORS' EXPECTATIONS?

A. Yes, investors generally expected the Federal Reserve to reduce interest rates in September, November, and December 2024. For example, according to CME Group's FedWatch Tool,[8] as of September 17, 2024 (the day before the Federal Reserve announced a 50-basis-point interest rate cut), there was a 64-percent probability that the target rate would be cut 50 basis points to 4.75-5.00 percent (and another 36-percent probability that the cut would be 25 basis points to 5.00-5.25 percent). On November 6, 2024 (the day before the Federal Reserve announced a 25-basis-point interest rate cut) there was a 98 percent probability that the target rate would be cut 25 basis points to 4.50-4.75 percent. Similarly, on December 17, 2024 (the day before the Federal Reserve announced a 25-basis-point interest rate cut) there was a 98 percent probability that the target rate would be cut 25 basis points to 4.25-4.50 percent. As such, the effect of the decrease in near-term interest rates have had little effect on investors' long-term expectations. However, uncertainty over the economy and potential for a recession continue to prevail.

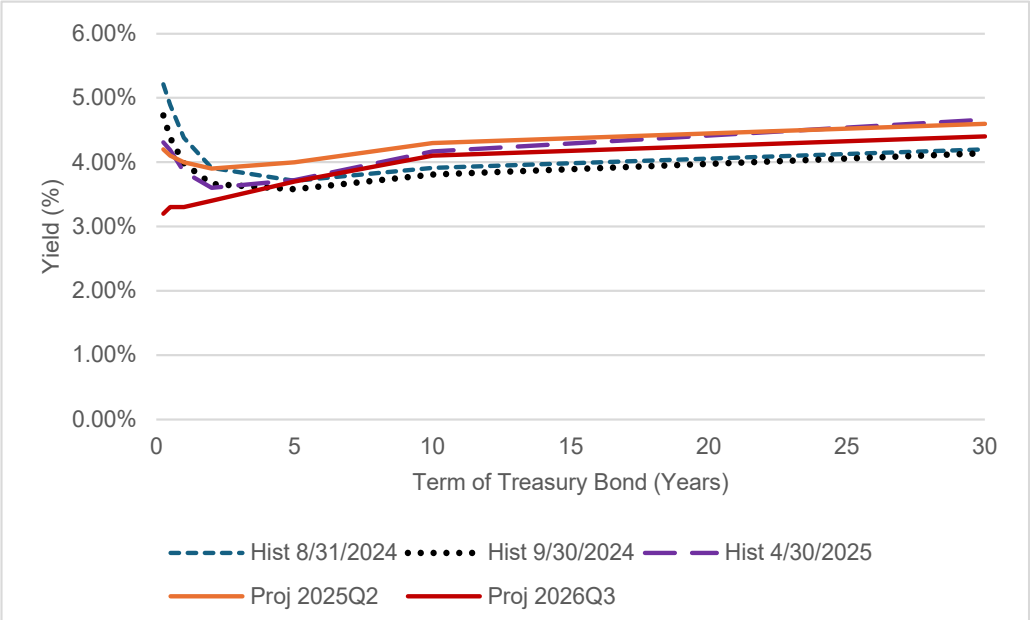
Q. WHAT ARE EXPECTATIONS FOR LONG-TERM INTEREST RATES?

A. Despite the recent 100-basis-point reduction of the federal funds rate long-term interest rates have not changed much, and are not expected to change significantly in the coming years. That is, the change in the federal funds rate is primarily affecting only short-term interest rates, as can be seen in Figure 3 below. Figure 3 includes the yield as of August 31, 2024, September 30, 2024, and April, 2025, for 3-month, 6-month, 1-year, 2-year, 5-year, 10-year, and 30-

[8] Source: https://www.cmegroup.com/markets/interest-rates/cme-fedwatch-tool.html.

year Treasury securities.[9] In addition, projections from Blue Chip Financial Forecasts demonstrate that the expectation for continued reductions in the federal funds rate will likely cause near-term yields to decline over the next year while long-term rates are expected to remain near current levels.[10]

Figure 3
Current and Projected Interest Rates



Q. PLEASE EXPLAIN WHY THESE ELEVATED INTEREST RATES ARE IMPORTANT TO THE ROE ANALYSIS.

A. In general, as interest rates on government bonds increase, the cost of capital also increases, as utilities—competing with interest rates on government bonds—must offer higher dividend yields to attract and retain investors. As dividend yields increase, however, the stock price declines (and, therefore, the cost of equity increases). The reason for this is that the stock price inherently

[9] Source: Treasury.gov.
[10] Blue Chip Financial Forecasts, Vol. 44, No. 5, May 1, 2025 at 2

reflects a company's future cash flows, thus, future dividends are factored into the share price. After an ex-dividend date (i.e., the date on which a dividend is paid), the share price often declines to reflect the dividend paid (i.e., distributing a proportion of profits to shareholders). As interest rates remain elevated, utilities must continue to pay high dividends to keep investors, which suggests that the stock price of these companies would decline (and the cost of equity increase) in response to interest rates. To reflect this correlation in ROE models, all else equal, higher dividend yields produce higher ROE estimates in DCF models. Interest rates also are a direct input to both the CAPM and the Risk Premium models.

Q. HOW HAVE CAPITAL MARKETS CHANGED SINCE THE COMPANY'S LAST FILED AND FULLY LITIGATED RATE CASES?

A. The Company filed its last general rate case on June 30, 2022,[11] and the Commission approved the settlement on June 6, 2023, without specifying the ROE.[12] A decade prior, the Commission authorized a 9.25 percent ROE on the Company's last fully litigated general rate case on June 19, 2012.[13] Interest rates have increased substantially since those dates. For example, as can be seen on Figure 4 below,[14] current 30-year Treasury bond yields have increased 189 basis points since the Commission last decided an ROE for NSP, 151 basis points

[11] *In the Matter of the Application of Northern States Power Company, doing business as Xcel Energy, for Authority to Increase its Electric Rates,* Docket No. EL22-017, APPLICATION FOR AUTHORITY TO INCREASE ELECTRIC RATES IN SOUTH DAKOTA (June 30, 2022).

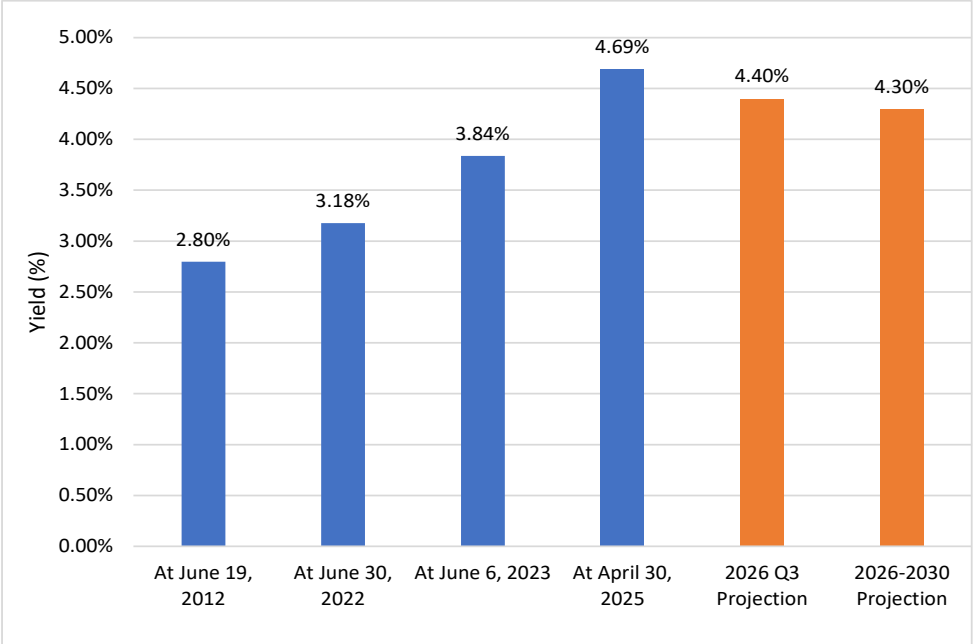
[12] Sources: https://puc.sd.gov/minutes/2023/0606.aspx; ORDER GRANTING JOINT MOTION FOR APPROVAL OF SETTLEMENT STIPULATION ORDER APPROVING REFUND PLAN, Docket No. EL22-017, (June 6, 2023).

[13] Sources: https://puc.sd.gov/minutes/2012/0619.aspx; FINAL DECISION AND ORDER; NOTICE OF ENTRY, Docket No. EL11-019, (June 19, 2012).

[14] Sources: Federal Reserve H15 interest rates, https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15.
Blue Chip Financial Forecasts, Vol. 44, No. 5, May 1, 2025 at 2. Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024, at 14.

since NSP had filed its last rate case, and 85 basis points since the Commission had authorized the last settlement. This further underscores the fact that capital markets have changed considerably since the last rate case, and ROEs must increase to reflect the increases in interest rates and upward pressure on the cost of equity capital.

Figure 4
30-Day Average 30-Year Treasury Bond Yields



Q. HAVE YOU FACTORED THESE CIRCUMSTANCES INTO YOUR UPDATED COST OF EQUITY ESTIMATES FOR NSP, AND, IF SO, WHAT CONCLUSIONS DO YOU DRAW?

A. Yes. I have relied on the most recent market data and forecasts available to me in my analysis and ROE recommendations. Long-term interest rates have increased substantially over the past few years and are expected to remain elevated as the Federal Reserve continues to focus on inflation and employment. As interest rates increase, the cost of capital generally increases. Interest rates are direct inputs to the CAPM and risk premium analyses and

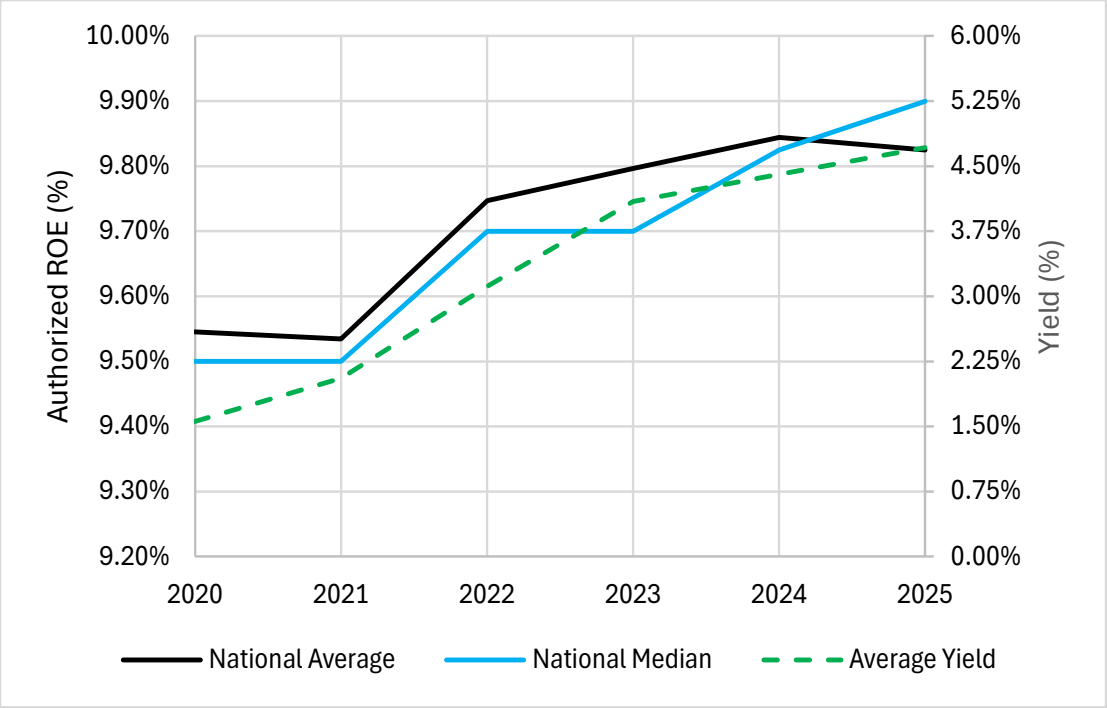
indirectly affect the DCF models, as increasing interest rates influence increases in dividend yields (and decreases in utility stock prices, which suggest an increase in the cost of equity).

Q. WHAT IS YOUR CONCLUSION REGARDING HOW MARKET CONDITIONS AFFECT THE COST OF EQUITY FOR UTILITIES SUCH AS NSP?

A. Market conditions have changed since the Company filed its last case in 2022, and the cost of equity capital has increased for all companies, including electric and gas utilities, along with interest rates. Interest rates on long-term government and utility bonds have increased substantially after reaching historic lows in July 2020, and inflation in 2022 reached levels not seen in 40 years. As shown in Figure 5 below,[15] consistent with the increase in long-term interest rates since 2020, the national average authorized ROE for vertically integrated electric utilities has also increased.

[15] Sources: S&P Capital IQ RRA. Federal Reserve H15 interest rates, https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15.

Figure 5
Authorized ROEs for Vertically-Integrated Electric Utilities and 30-Year Treasury Bond Yields 2020-2025



Further, while consensus expectations are for long-term inflation to continue to moderate and near-term interest rates to decline, long-term interest rates are expected to remain at an elevated level, relative to rates seen in recent years. As such, there is no indication that long-term interest rates or the cost of equity for utility companies will decline as inflation moderates and near-term interest rates decline.

B. Ongoing Uncertainty and Volatility in Capital Markets

Q. TO WHAT EXTENT ARE CONDITIONS EXPECTED TO STABILIZE IN THE NEAR TERM?

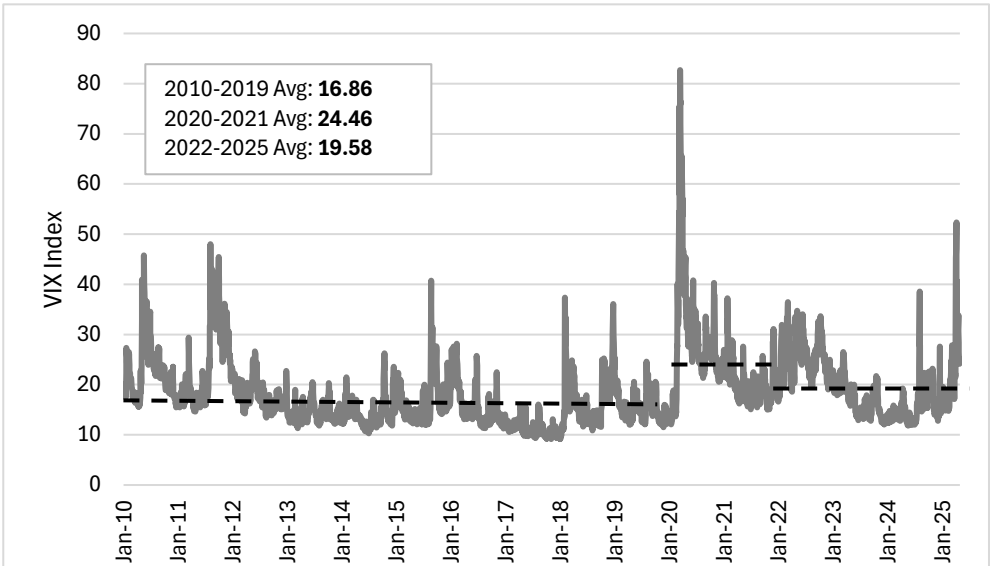
A. The economy remains in a tenuous phase of the business cycle with concerns over a potential recession, uncertainly regarding U.S. foreign trade policy,

persistent inflation, persistently high interest rates. As such, capital market conditions continue to be unstable as interest rates remain elevated. The Chicago Board Options Exchange (CBOE) Volatility Index (VIX) has remained above long-term historical levels, indicating stock investors remain anxious about the economy and company earnings. As shown in Figure 6, the average level in 2022-2025 has been 19.58 through April 30, 2025, compared to the average of 16.86 from 2010-2019.[16] This indicates that equity market volatility levels continue to remain above the historical mean. Importantly, in April 2025, the VIX reached levels above 50, which had not been seen since the COVID-19-related market selloff in 2020. This recent volatility impacted the utilities sector as well as the general market.[17] More volatile equity markets equate to a higher level of risk, which consequently implies that investors require a higher return, hence increasing the cost of equity capital, all else equal.

[16] Source: Chicago Board Options Exchange (CBOE). Available at https://www.cboe.com/tradable_products/vix/vix_historical_data/.

[17] As an example, on April 4, 2025, the UTY utility stock index dropped by 5.41%, in line with the broader market (S&P 500) decline. Source: Yahoo! Finance.

Figure 6
CBOE VIX – January 1, 2010 – April 30, 2025



Q. HOW HAVE RECENT CHANGES IN U.S. FOREIGN TRADE POLICY AFFECTED CAPITAL MARKETS?

A. At the start of his term, President Trump invoked several legal authorities to increase tariffs on U.S. imports. Most notably, these include tariffs on goods from Canada, Mexico and China. The magnitude of these tariffs is volatile as President Trump navigates reciprocal tariffs from key trade partners, and the courts deliberate the authority of the President to impose such tariffs. When coupled with the newly imposed tariffs on steel and aluminum there is a great deal of uncertainty in the market. Economists generally agree that higher tariffs increase inflation by increasing the cost of consumer goods. Higher inflation could complicate the Federal Reserve's unwinding of restrictive monetary policies, as well as increase long-term bond yields such as the 30-year Treasury. Longer-term bonds are more sensitive to inflation expectations because their value is eroded more by inflation; thus, as the value (price) of bonds decline due

to higher inflation expectations, the yield increases. Because utilities are capital intensive enterprises, higher inflation and interest rates tend to have a negative effect on utility stocks. If realized, all these factors would suggest that the cost of capital for utilities may increase in the future.

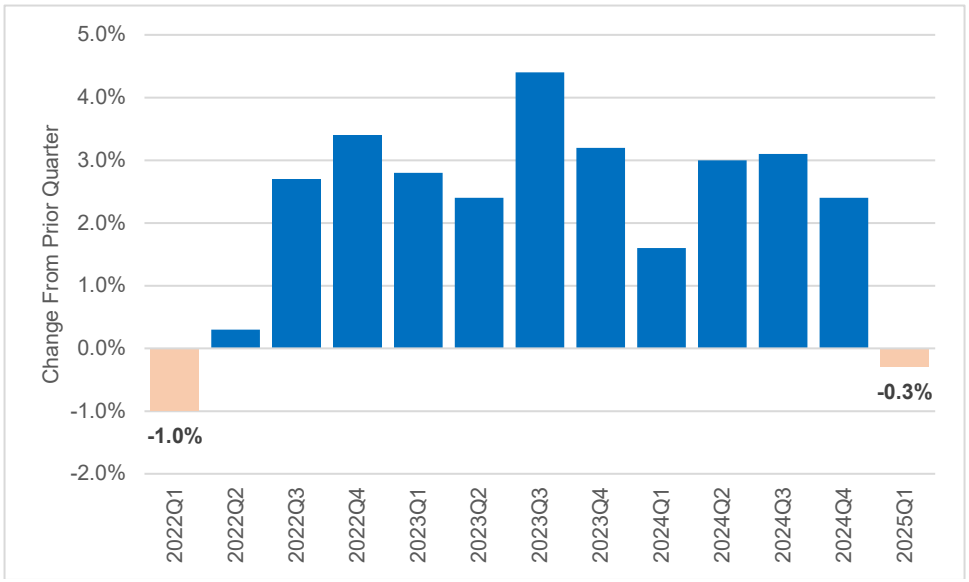
Q. HAS THE UNITED STATES SEEN EFFECTS FROM THE TARIFFS ALREADY?

A. Yes, it has. In addition to the upward pressure on inflation increase I noted earlier, in mid-April, in response to the tariffs, various international investors sold off U.S. Treasuries.[18] This reduced the price of treasuries, which increased the yields; the 30-year Treasury yield climbed above 4.80 percent on April 10, an increase of over 40 basis points from just a week earlier, and has remained elevated, averaging 4.78 percent for April 11 through 30.

In addition, the effects of these tariffs could be seen on the economy. "Fueled by a massive surge in imports,"[19] real gross domestic product (GDP) declined in the first quarter of 2025, the first quarter in three years to see a decline in real GDP, as can be seen in Figure 7[20] below.

[18] https://www.cnbc.com/2025/04/15/us-treasurys-selloff-what-happened-and-why.html?msockid=08590b60b8f5654c0ba11ec4b96c6435.
[19] https://www.nbcnews.com/business/economy/gdp-q1-us-economy-contracts-rcna203608.
[20] Source: U.S. Bureau of Economic Analysis.

Figure 7
Percent Change in Real GDP (From Previous Quarter)



Further, the full impact of these tariffs is uncertain, with potential volatility still to come. Depending on the scope and magnitude of tariffs, there could be meaningful supply chain disruptions, the full effect of which could lag as the costs associated with tariffs are passed through the supply chain. Recently, investors have been reducing exposure to the U.S. dollar by selling U.S. Treasuries, due to this volatility and uncertainty.[21]

Q. HAS THE COST OF EQUITY FOR UTILITY COMPANIES BEEN AFFECTED BY THESE CIRCUMSTANCES?

A. Yes, the cost of equity for regulated utility companies has been affected by the market conditions during this period. With interest rates at sustained, elevated levels, utility companies are no longer viewed as a safe haven. With Treasury

[21] https://apnews.com/article/treasurys-bond-market-yield-tariff-46b4818710f01b8cc93fd002081167b0.

yields in the range of 3.83 percent to 4.71 percent,[22] utility dividend yields in a range near 3.70 percent (*see* Schedule 4) fail to offer investors a sufficient risk premium relative to risk-free investments in Treasuries. For example, CFRA Research noted, "Many utilities currently offer forward yields near 5%. However, when investors can obtain risk-free Treasuries offering yields between 4.5% to 5.5%, depending on the maturity, the risk-reward trade off for holding utilities is much less attractive."[23] Further, the utility industry is capital-intensive, requiring significant investments, meaning that utility companies will also have to bear the costs of higher interest rates to access capital markets. The Federal Reserve's expectation for sustained higher interest rates will continue to put upward pressure on the cost of capital causing investors to continue to require higher returns for investments in the utility industry.

Q. HOW HAS THE CURRENT ECONOMIC ENVIRONMENT AFFECTED THE CREDIT RATINGS FOR UTILITIES?

A. Consistent with the underperformance of the utility industry relative to the broader equity market demonstrating higher relative risk for utilities, credit ratings have also declined across the utility industry. According to a recent report by S&P Global Ratings (S&P) on utilities, "In 2024, downgrades among North America's investor-owned regulated utilities outpaced upgrades for the fifth consecutive year" primarily due to rising wildfire risks, robust capital spending, and challenging regulatory constructs.[24] While the views of rating

[22] Source: Treasury.gov, Daily Treasury Par Yield Curve Rates. As of April 30, 2025, the 30-day average yield on the 2-year Treasury bond was 3.83 percent, and the 30-day average yield on the 20-year Treasury bond was 4.71 percent, with yields on other tenors between those.
[23] CFRA Research equity analyst Daniel Rich, as reported by Yahoo! Finance, October 3, 2023, https://finance.yahoo.com/news/utility-stocks-take-a-beating-amid-rising-rates-201913038.html.
[24] S&P Global Ratings, North America Regulated Utilities Industry Credit Outlook 2025, January 14, 2025, at 4, https://www.spglobal.com/_assets/documents/ratings/research/101611573.pdf.

agencies represent an important consideration, they are not the only factor that equity investors consider. The important distinction is that credit rating agencies are primarily focused on the ability of a utility to pay its debts, while equity analysts and institutional investors are more concerned with profitability and value creation.

Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE EFFECTS OF THE CURRENT MARKET ENVIRONMENT ON THE COST OF EQUITY FOR NSP?

A. The current capital market conditions continue to be heavily influenced by monetary policy aimed at mitigating inflationary pressures. This has caused both short-term and long-term interest rates to remain high. As a practical matter, investors consider a range of opportunities, which includes bonds. With the sustained elevated interest rates, utilities are less attractive absent a corresponding increase in returns. With the Federal Reserve's expectation for elevated interest rates for an extended period, this will continue to put upward pressure on the cost of capital for utilities. Further, the current U.S. foreign trade policy has introduced considerable volatility into capital markets. This volatility increases risk which, all else equal, puts upward pressure on the cost of capital for utilities, further increasing the likelihood of sustained elevated interest rates. Therefore, it is important that these factors are accounted for in the cost of equity models.

C. Conclusions

Q. WHAT CONCLUSIONS DO YOU DRAW FROM YOUR ANALYSIS OF CAPITAL MARKET CONDITIONS?

A. Investors continue to face interest rate pressures and uncertainty, as the Federal Reserve continues its response to broad economic concerns. Long-term interest rates remain substantially higher than the historical lows of 2020 and are expected to remain elevated looking forward. Importantly, this requires the use of both current and forecast bond yields in the CAPM and Risk Premium models. Fluctuations in utility valuations impact the results of the DCF model. The dividend yield is calculated using historical average stock prices, which may not fully reflect forward market expectations. These circumstances collectively reinforce the importance of using multiple models, as I have with the CAPM, DCF, Risk Premium, and Expected Earnings approaches.

V. PROXY GROUP SELECTION

Q. WHY IS IT NECESSARY TO SELECT A PROXY GROUP TO ESTIMATE THE COST OF EQUITY FOR NSP?

A. Since the ROE is a market-based concept and NSP is not publicly traded, it is necessary to establish a group of companies that is both publicly traded and comparable to NSP as a proxy. Even if NSP were a publicly traded entity, it is possible that transitory events could bias the Company's market value in one way or another in a given period. A significant benefit of using a proxy group is the ability to mitigate the effects of short-term events that may be associated with any one company. The proxy companies used in my ROE analyses possess a set of business and operating characteristics similar to the Company's electric

utility operations and thus provide a reasonable basis for estimating the Company's ROE.

Q. PLEASE PROVIDE A SUMMARY PROFILE OF NSP.

A. NSP provides electric generation, transmission, and distribution service to approximately 1.6 million retail electric customers and natural gas distribution service to approximately 600,000 natural gas customers in South Dakota, Minnesota, and North Dakota.[25] The Company has long-term issuer ratings from S&P of A- (Outlook: Negative), Moody's Investors Service (Moody's) of A2 (Outlook: Stable), and Fitch of A- (Outlook: Stable).[26]

Q. PLEASE DESCRIBE THE SPECIFIC SCREENING CRITERIA YOU HAVE UTILIZED TO SELECT A PROXY GROUP.

A. I began with the 36 investor-owned electric utility companies covered by Value Line and then screened companies according to the following criteria:

1. Consistently pays quarterly cash dividends because it is a necessary assumption in the DCF model;
2. Maintains an investment grade long-term issuer rating (BBB- or higher) from S&P to ensure the proxy companies have a comparable financial risk profile to that of the Company;
3. Is covered by more than one equity analyst to ensure that estimates are consensus-based;

[25] Xcel Energy Inc., SEC Form 10-K, for the fiscal year ended December 31, 2024, at 8.
[26] S&P Global Ratings. "Annual Review For Northern States Power Co." November 25, 2024; Moody's. "Moody's Ratings announces completion of a periodic review of ratings of Xcel Energy Inc., Northern States Power Company (Minnesota), Public Service Company of Colorado and Southwestern Public Service Company." December 11, 2024; Fitch Ratings. "Fitch Affirms Xcel Energy's and Subsidiaries' Ratings; Xcel's Outlook Remains Negative." January 28, 2025.

4. Has positive earnings growth rates, which is a necessary assumption in the DCF model, published by at least two of the following sources: Value Line, S&P Capital IQ,[27] and Zacks Investment Research (Zacks);
5. Has company-owned generation assets included in rate base;
6. Regulated net operating income makes up more than 80 percent of the consolidated company's net operating income (based on a 3-year average from 2021-2023) to ensure that the proxy companies are primarily regulated utilities;
7. Regulated electric net operating income makes up more than 80 percent of the consolidated company's regulated net operating income (based on a 3-year average from 2021-2023) to ensure the proxy companies have a comparable business risk profile to that of the Company; and
8. Is not involved in a significant merger, or other transformative transaction, as such activities may have a temporary effect on such companies' stock prices and projections unrelated to the overall cost of capital.
9. To avoid any circularity concerns, I have excluded NSP's parent company, XEI, from my proxy group.

Q. DOES YOUR SCREENING CRITERIA RESULT IN A GROUP OF COMPANIES THAT INVESTORS WOULD VIEW AS COMPARABLE TO NSP?

A. Yes. While no proxy group will be identical in risk to the Company, I believe this group of vertically-integrated electric utilities is reasonably comparable to the financial and operational characteristics of NSP's electric utility operations.

[27] In prior testimonies, I had relied on analysts' consensus long-term EPS projections from First Call as reported by Yahoo! Finance. As of November 2024, Yahoo! Finance no longer publishes consensus long-term projected EPS growth rates. Therefore, I now rely on analysts' consensus EPS growth rate projections reported by S&P Capital IQ as a third source.

The proxy group screening criterion requiring an investment grade credit rating ensures that the proxy group companies, like NSP, are in sound financial condition. Because credit ratings take into account business and financial risks, the ratings provide a broad measure of investment risk for investors. I have screened on the percentage contribution of the electric utility segment to regulated consolidated financial results to select companies that are focused on electric utility operations, since this proceeding is limited to determining the appropriate ROE for the stand-alone electric operations of NSP. These screens collectively reflect key risk factors that investors consider in making investments in electric utilities.

Q. WHAT IS THE COMPOSITION OF YOUR RESULTING PROXY GROUP?

A. Based on the screening criteria discussed above, and financial information through fiscal year 2023, I arrived at a proxy group consisting of the 17 companies shown in Table 2. The results of my screening process are shown in Schedule 3.

Table 2
Proxy Group

Company	Ticker
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Dominion Resources, Inc.	D
Duke Energy Corporation	DUK
Entergy Corporation	ETR
FirstEnergy Corporation	FE
Evergy, Inc.	EVRG
IDACORP, Inc.	IDA
NextEra Energy, Inc.	NEE
NorthWestern Corporation	NWE
OGE Energy Corporation	OGE
Pinnacle West Capital Corporation	PNW
TXNM Energy, Inc.	TXNM
Portland General Electric Company	POR
PPL Corporation	PPL
Southern Company	SO

Q. WHAT IS YOUR CONCLUSION WITH REGARD TO THE PROXY GROUP FOR NSP?

A. I conclude that my group of 17 companies with vertically-integrated electric utility operations adequately reflects the broad set of risks that investors consider when investing in a U.S. regulated vertically-integrated electric utility such as NSP.

VI. DETERMINATION OF THE APPROPRIATE COST OF EQUITY

Q. WHAT MODELS DID YOU USE IN YOUR ROE ANALYSES?

A. I have considered the results of several ROE estimation models, including the Constant Growth DCF model, the CAPM, the Bond Yield Plus Risk Premium approach, and an Expected Earnings analysis. Consistent with the practice of many analysts, when estimating the cost of equity, I gather and evaluate as much relevant data (both quantitative and qualitative) as can be reasonably obtained. This approach ensures that factors that may have an outsized impact on one particular model but not others, and therefore are potentially less relevant to the equity return required by investors, are appropriately contextualized.

A. Constant Growth DCF Model

Q. PLEASE DESCRIBE THE DCF APPROACH.

A. DCF analyses are a common method of valuation, used extensively by analysts across all industries, to estimate the value of future cash flows, adjusted for the time value of money. The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows, which for purposes of the model, are assumed to be equal to all expected future dividends. Thus, the return required by investors is implied by the per share price of a company's common stock. In its most general form, the DCF model is expressed as follows:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_\infty}{(1+k)^\infty} \qquad [1]$$

Where P_0 represents the current stock price, $D_1 \ldots D_\infty$ are all expected future dividends, and k is the discount rate, or required return. Equation [1] is a

standard present value calculation, which can be simplified and rearranged, to the Constant Growth form of the DCF model, expressed as the sum of the expected dividend yield and long-term growth rate:

$$k = \frac{D(1+g)}{P_0} + g \qquad [2]$$

Where "k" equals the required return, "D" is the current dividend, "g" is the expected growth rate, and "P_0" represents the current stock price. Stated in this manner, the cost of common equity is equal to the expected dividend yield plus the dividend growth rate.

Q. WHAT ARE THE ASSUMPTIONS UNDERLYING THE CONSTANT GROWTH DCF MODEL?

A. The Constant Growth DCF model is based on the following assumptions: (1) a constant average growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings multiple;[28] and (4) a discount rate greater than the expected growth rate.

Q. PLEASE SUMMARIZE YOUR APPLICATION OF THE CONSTANT GROWTH DCF MODEL.

A. I calculated DCF results for each of the proxy group companies using the following inputs:

- Average stock prices for the historical period, over 30, 90, and 180 trading days through April 30, 2025;

[28] The price-to-earning multiple, or P/E ratio, is a common valuation metric that evaluates a company's current stock price relative to its earnings per share (EPS).

- Annualized dividend per share as of April 30, 2025; and
- Company-specific earnings growth forecasts for the term *g*.

My application of the Constant Growth DCF model is provided in Schedule 4.

Q. WHY DID YOU USE AVERAGING PERIODS OF 30, 90, AND 180 TRADING DAYS?

A. It is important to use an average of recent trading days to calculate the term *P* in the DCF model to ensure that the calculated ROE is not skewed by anomalous events that may affect stock prices on any given trading day. At the same time, it is important to reflect the conditions that have defined the financial markets over the recent past. Therefore, in addition to considering the most recent 30-day period, I also consider 90-day and 180-day averaging periods. In my view, consideration of those three averaging periods reasonably balances these interests.

Q. DID YOU ADJUST THE DIVIDEND YIELD TO ACCOUNT FOR PERIODIC GROWTH IN DIVIDENDS?

A. Yes, I did. Utility companies tend to increase their quarterly dividends at different times throughout the year, so it is reasonable to assume that such increases will be evenly distributed over calendar quarters. Given that assumption, it is reasonable to apply one-half of the expected annual dividend growth rate for the purposes of calculating this component of the DCF model. This adjustment ensures that the expected dividend yield is representative of the coming 12-month period. Accordingly, the DCF estimates reflect one-half of the expected growth in the dividend yield.[29]

[29] The expected dividend yield is calculated as $d_1 = d_0 (1 + ½ g)$.

Q. WHAT SOURCES OF GROWTH HAVE YOU USED IN YOUR DCF ANALYSIS?

A. I have used the consensus analyst five-year growth estimates in earnings per share (EPS) from S&P Capital IQ and Zacks, as well as EPS growth rate estimates published by Value Line.

Q. WHY DID YOU FOCUS ON EPS GROWTH?

A. The Constant Growth DCF model assumes that dividends grow at a constant rate in perpetuity. Accordingly, in order to reduce the long-term growth rate to a single measure, one must assume a constant payout ratio, and that earnings per share, dividends per share, and book value per share all grow at the same constant rate. Over the long term, however, dividend growth can only be sustained by earnings growth. As noted by Brigham and Houston in their text, *Fundamentals of Financial Management*: "Growth in dividends occurs primarily as a result of growth in *earnings per share* (EPS)."[30] It is therefore important to focus on measures of long-term earnings growth from credible sources as an appropriate measure of long-term growth in the DCF model.

Q. ARE OTHER SOURCES OF DIVIDEND GROWTH AVAILABLE TO INVESTORS?

A. Yes, although that does not mean that investors incorporate such estimates into their investment decisions. Academic studies suggest that investors base their investment decisions on analysts' expectations of growth in earnings.[31] I am not aware of any similar findings regarding non-earnings-based growth estimates.

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[30] Eugene F. Brigham and Joel F. Houston, Fundamentals of Financial Management (Concise Fourth Edition, Thomson South-Western), at 317 (emphasis added).

[31] *See*, e.g., Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts Growth Forecasts*, Financial Management, Summer 1992, at 65; and Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management, Spring 1988, at 81. Please note that while the original study was published in 1988, it was updated in 2004 under the direction of Dr. Vander Weide. The results of that updated study are consistent with Vander Weide and Carleton's original conclusions.

In addition, the only forward-looking growth rates that are available on a consensus basis are analysts' EPS growth rates. The fact that earnings growth projections are the only widely accepted estimates of growth provides further support that earnings growth is the most meaningful measure of growth among the investment community.

Q. WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF ANALYSIS?

A. The results of my Constant Growth DCF analysis are provided in Schedule 4, and Schedule 2 includes my results (before considering the effect of flotation costs, discussed in Section VII), which are summarized in Table 3.

Table 3
Constant Growth DCF Results

	Mean Low	**Overall Mean**	**Mean High**
30-day average	8.98%	10.25%	11.26%
90-day average	9.06%	10.33%	11.35%
180-day average	9.08%	10.36%	11.37%

Q. HOW DID YOU CALCULATE THE MEAN HIGH, MEAN LOW, AND OVERALL MEAN DCF RESULTS?

A. I calculated the Mean High DCF result using the maximum growth rate (*i.e.*, the maximum of the S&P Capital IQ, Value Line, and Zacks EPS growth rates) in combination with the expected dividend yield for each of the proxy group companies. I used a similar method to calculate the Mean Low DCF results, using the minimum growth rate for each company. The Mean results reflect the

average growth rate from each source for each company in combination with the expected dividend yield.

B. CAPM Analysis

Q. PLEASE BRIEFLY DESCRIBE THE GENERAL FORM OF THE CAPITAL ASSET PRICING MODEL.

A. The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium (to compensate investors for the non-diversifiable or "systematic" risk of that security).[32] As shown in Equation [3], the CAPM is defined by four components, each of which must theoretically be a forward-looking estimate:

$$K_e = r_f + \beta(r_m - r_f) \qquad [3]$$

Where:

K_e = the required return for a given security;

r_f = the risk-free rate of return;

β = the Beta of an individual security; and

r_m = the required return for the market as a whole.

The term $(r_m - r_f)$ represents the Market Risk Premium. According to the theory underlying the CAPM, since unsystematic risk can be diversified away, investors should be concerned only with systematic or non-diversifiable risk. Non-diversifiable risk is measured by Beta, which is defined as:

[32] Systematic risks are fundamental market risks that reflect aggregate economic measures and therefore cannot be mitigated through diversification. Unsystematic risks reflect company-specific risks that can be mitigated and ultimately eliminated through investments in a portfolio of companies and/or market sectors.

$$\beta = \frac{Covariance(r_e, r_m)}{Variance(r_m)} \quad [4]$$

Where:

r_e = the rate of return for the individual security or portfolio.

The variance of the market return, noted in Equation [4], is a measure of the uncertainty of the general market, and the covariance between the return on a specific security and the market reflects the extent to which the return on that security will respond to a given change in the market return. Thus, Beta represents the risk that the selected security will not be effective in diversifying systematic market risks.

Q. HAVE ECONOMIC AND FINANCIAL MARKET CONDITIONS ALSO AFFECTED THE CAPM?

A. Yes. As the Federal Reserve reduces the federal funds rate, it is important to consider both current and projected bond yields. Using the five-year forecast of bond yields helps alleviate short-term market factors affecting the risk-free rate, or "*rf*" in the CAPM formula. As discussed in Section IV, interest rates continue to remain elevated. It is also important to recognize that NSP is financing long-lived assets, and the cost of capital should be forward looking to reflect that perspective.

Q. WHAT RISK-FREE RATE DID YOU USE IN YOUR CAPM ANALYSIS?

A. I considered three estimates of the expected risk-free rate: (1) the current 30-day average yield on 30-year U.S. Treasury bonds (*i.e.*, 4.69 percent);[33] (2) the

[33] Bloomberg Professional, as of April 30, 2025.

projected 30-year U.S. Treasury bond yield for Q3 2025 through Q3 2026 (*i.e.*, 4.44 percent);[34] and (3) the projected 30-year U.S. Treasury bond yield for 2026 through 2030 (*i.e.*, 4.30 percent).[35]

Q. WHAT MEASURES OF BETA DID YOU USE IN YOUR CAPM ANALYSIS?

A. As shown in Schedule 6, I applied two measures of Beta for the proxy group companies: (1) the reported Beta coefficients from Bloomberg (which are calculated using ten years of weekly data against the S&P 500 Index); and (2) the reported Beta coefficients from Value Line (which are calculated using five years of weekly data against the New York Stock Exchange Composite Index).

Q. WHAT MARKET RISK PREMIUM DID YOU USE IN YOUR CAPM ANALYSIS?

A. As shown in Schedule 5, consistent with the approach adopted by FERC, I used the Constant Growth DCF model to estimate the market capitalization-weighted total market return for the S&P 500 Index, using projected earnings growth rates and dividend yields. To calculate the Constant Growth DCF estimate for each company in the S&P 500 Index, I relied on dividend yields as of April 30, 2025, as reported by Bloomberg Professional, and projected EPS growth rates from Value Line. In my initial analysis, I included all companies in the S&P 500. When investors purchase the S&P 500 or a mutual fund or exchange traded fund that mirrors the S&P 500 Index, their total return is based on the returns for all 500 companies in the S&P Index. As such, this methodology provides the best indication as to the expected return for the overall market using the S&P 500 as a proxy. Applying this methodology

[34] Blue Chip Financial Forecasts, Vol. 44, No. 5, May 1, 2025 at 2.
[35] Blue Chip Financial Forecasts, Vol. 43, No. 12, November 27, 2024 at 14.

suggests an expected market return of 14.80 percent. However, I applied an average of both the Value Line-derived market return and FERC's more conservative convention to consider only a subset of S&P 500 companies with growth rates that are between 0 percent and 20 percent, or an expected market return of 11.53 percent.

Q. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSES?

A. The results of my CAPM analysis (before considering the effect of flotation costs) are provided in Schedule 6 and summarized in Table 4.

Table 4
Proxy Group Average CAPM Results

	CAPM Result
Value Line Beta Coefficients	
Current Risk-Free Rate	12.35%
2025-26 Projected Risk-Free Rate	12.32%
2026-30 Projected Risk-Free Rate	12.31%
Bloomberg Beta Coefficients	
Current Risk-Free Rate	11.22%
2025-26 Projected Risk-Free Rate	11.16%
2026-30 Projected Risk-Free Rate	11.13%

C. Bond Yield Plus Risk Premium Analysis

Q. PLEASE DESCRIBE THE RISK PREMIUM APPROACH THAT YOU USED.

A. In general terms, this approach recognizes that equity is riskier than debt because equity investors bear the residual risk associated with ownership. Equity investors, therefore, require a greater return (*i.e.*, a premium) than would a

bondholder. The Risk Premium approach estimates the cost of equity as the sum of the Equity Risk Premium and the yield on a particular class of bonds.

$$ROE = RP + Y \quad [5]$$

Where:

RP = Risk Premium (difference between allowed ROE and the 30-Year Treasury Yield); and

Y = Applicable bond yield.

Since the equity risk premium is not directly observable, it is typically estimated using a variety of approaches, some of which incorporate *ex-ante*, or forward-looking, estimates of the cost of equity and others that consider historical, or *ex-post*, estimates. For my Risk Premium analysis, I have relied on authorized returns from a large sample of vertically-integrated electric utility companies.

Q. WHAT DID YOUR RISK PREMIUM ANALYSIS REVEAL?

A. To estimate the relationship between risk premia and interest rates, I conducted a regression analysis using the following equation:

$$RP = a + (b \times Y) \quad [6]$$

Where:

RP = Risk Premium (difference between allowed ROEs and the 30-Year Treasury Yield);

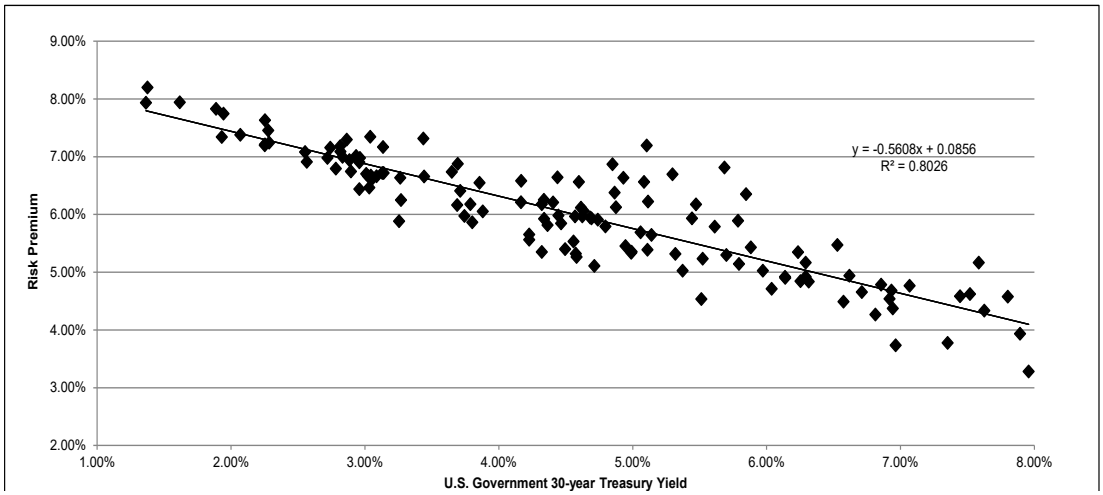
a = Intercept term;

b = Slope term; and

Y = 30-Year Treasury Yield.

Data regarding allowed ROEs were derived from 780 vertically-integrated electric utility company rate cases from January 1, 1992 through April 30, 2025, as reported by Regulatory Research Associates.

Figure 8
Risk Premium Results



As illustrated by Figure 8 (above), the risk premium varies with the level of bond yield, and generally increases as the bond yields decrease, and vice versa. In order to apply this relationship to current and expected bond yields, I consider three estimates of the 30-year Treasury yield, including the current 30-day average, a near-term Blue Chip consensus forecast for Q3 2025 – Q3 2026, and a Blue Chip consensus forecast for 2026–2030. I find the projected five-year result to be most applicable for the following reasons: (1) investors are expecting increases in government bond yields and (2) investors typically have a multi-year view of their required returns on equity. Based on the regression coefficients in Schedule 7, which allow for the estimation of the risk premium at varying bond yields, the results of my Risk Premium analysis (before considering the effect of flotation costs) are shown in Table 5 below.

Table 5
Risk Premium Results Using 30-Year Treasury Yield

	30-Day Average Yield on 30-Year Treasury Bond	Q3 2025–Q3 2026 Forecast for Yield on 30-Year Treasury Bond	2026-2030 Forecast for Yield 30-Year Treasury Bond
Yield	4.69%	4.44%	4.30%
Risk Premium	5.93%	6.07%	6.15%
Resulting ROE	10.62%	10.51%	10.45%

D. Expected Earnings Analysis

Q. HAVE YOU CONDUCTED ANY OTHER ANALYSIS TO ESTIMATE THE COST OF EQUITY FOR NSP?

A. Yes. I have also conducted an Expected Earnings analysis to estimate the cost of equity for NSP based on the projected ROEs for the proxy group companies.

Q. WHAT IS AN EXPECTED EARNINGS ANALYSIS?

A. The Expected Earnings methodology is a comparable earnings analysis that calculates the earnings that an investor expects to receive on the book value of a stock. The Expected Earnings analysis is a forward-looking estimate of investors' expected returns. The use of an Expected Earnings approach based on the proxy companies provides a range of the expected returns on a group of risk-comparable companies to the subject company. This range is useful in helping to determine the opportunity cost of investing in the subject company, which is relevant in determining a company's ROE. The Expected Earnings approach relying on expected returns for like-risk companies is a core strength of the model and consistent with the basic tenets of *Hope*: "the return to the

equity owner should be commensurate with returns on investments in other enterprises having corresponding risks." Since the Expected Earnings model provides an accounting-based approach that relies on investment analysts' projections of earnings on book equity, it affords the benefit of analyst insights, knowledge, and expertise in interpreting a given company's earnings prospects in the context of current market conditions. As such, the analysis is used by investors in determining return requirements, and an accounting-based approach provides a useful benchmark in evaluating the reasonableness of other market-derived analyses.

Q. HOW IS THE EXPECTED EARNINGS APPROACH CALCULATED?

A. I relied on the projected ROE for the proxy companies as reported by Value Line for the period from 2028-2030. I then adjusted those projected ROEs to account for the fact that the ROEs reported by Value Line are calculated on the basis of common shares outstanding at the end of the period, as opposed to average shares outstanding over the entire period. As shown in Table 6 below and Schedule 8, the Expected Earnings analysis (before considering the effect of flotation costs) results in a mean of 11.15 percent and a median of 10.29 percent.

Table 6
Expected Earnings Results excluding Flotation Costs

	ROE
Proxy Group Average	11.15%
Proxy Group Median	10.29%

Q. WHAT IS YOUR CONCLUSION REGARDING THE RESULTS OF THE EXPECTED EARNINGS MODEL?

A. The model captures investor expectations for ROEs for each company in the proxy group as estimated by impartial analysts. This is a valuable tool given the nature of the analysis in this proceeding is designed to measure required returns for NSP. It is reasonable to assume that investors would require returns from investment in NSP similar to those they could earn in comparable investments, so these results are informative and a reasonable check on the other model results discussed above.

E. Evaluating Model Results

Q. PLEASE EXPLAIN HOW YOU CONSIDERED THE RESULTS OF THE CONSTANT GROWTH DCF, CAPM, RISK PREMIUM, AND EXPECTED EARNINGS ANALYSIS TO ARRIVE AT YOUR ROE RECOMMENDATION.

A As shown in Table 7, I have considered the results of the Constant Growth DCF, CAPM, Risk Premium, and Expected Earnings analyses. For the DCF results, I included the average of the 30-day, 90-day, and 180-day analyses. For the CAPM result, I relied on the average of current and projected Treasury yields, the average of Value Line and Bloomberg Betas coefficients, and the MRP derived from the S&P 500 companies. For the Risk Premium analysis, I relied on the average of current and projected Treasury yields.

Table 7
Summary of ROE Results

	Average	Median
Primary Analyses		
Constant Growth DCF	10.31%	10.26%
CAPM	11.75%	11.54%
Risk Premium	10.53%	10.53%
Average	**10.86%**	**10.79%**
Benchmark Analyses		
Expected Earnings	11.15%	10.29%
Other Considerations		
Flotation Costs	0.07%	0.07%

As discussed in the next Section of my testimony, these estimates serve as a base prior to consideration of the relative business and financial risks of NSP as compared to the proxy companies.

VII. BUSINESS RISKS AND OTHER CONSIDERATIONS

Q ARE THERE FACTORS SPECIFIC TO NSP'S RISK PROFILE THAT YOU ALSO CONSIDERED IN DEVELOPING YOUR ROE RECOMMENDATION?

A. Notwithstanding the care taken to establish a risk-comparable group of companies and to consider multiple analyses, market expectations with respect to future risks and growth opportunities will vary from company to company.

Therefore, the Company's business and financial risks must also be taken into consideration when determining where the Company's cost of equity falls within the range of results. As discussed in more detail below, I considered NSP's regulatory risk relative to the proxy group companies, including the regulatory framework in which NSP operates and the regulatory mechanisms available to the Company relative to those available to the proxy companies. In addition, I considered the effect of flotation costs on the cost of equity.

A. Regulatory Framework and Relative Risk

Q. PLEASE EXPLAIN HOW CREDIT RATING AGENCIES CONSIDER THE REGULATORY FRAMEWORK IN ESTABLISHING A COMPANY'S CREDIT RATING.

A. Moody's and S&P both consider the overall regulatory framework in establishing credit ratings. As shown in Table 8, Moody's establishes credit ratings based on four key factors:

Table 8
Moody's Rating Factors

Factor	Weighting
Regulatory Framework	25%
Ability to Recover Costs and Earn Returns	25%
Diversification	10%
Financial Strength	40%
Total	100%

Two of these factors (*i.e.*, regulatory framework and the ability to recover costs and earn returns) are based on the regulatory environment such that half of Moody's overall assessment of business and financial risk for regulated utilities

is based upon the regulatory environment.[36] Similarly, S&P has identified the regulatory environment as an important factor, stating, "we believe the fundamental regulatory environment in the jurisdictions in which a utility operates often influence credit quality the most."[37]

Q. HOW DOES NSP'S REGULATORY FRAMEWORK COMPARE TO ITS PEER UTILITIES?

A. I have undertaken a review of regulatory mechanisms designed to mitigate certain business risks, and they support treating the results from the proxy group I selected as representative of the business risk of a prudently managed regulated vertically-integrated electric utility like NSP. The results of my analysis are presented in Schedule 10. Specifically, I examined the following elements of cost-recovery that affect the regulatory risk of the Company and the proxy group companies: (1) test year convention; (2) rate base convention; (3) revenue decoupling; and (4) capital cost recovery.

As shown in Schedule 10, approximately 60 percent of the operating companies in the proxy group like NSP provide service in jurisdictions that use a historical test year. Further, approximately 34 percent of the operating companies in the proxy group use average rate base like NSP, while approximately 59 percent are allowed to use year-end rate base. NSP has revenue adjustment mechanisms designed to recover costs associated with demand side management and energy efficiency programs. While not a decoupling mechanism, this mechanism mitigates some margin losses associated with volumetric losses, as decoupling does for other companies. Approximately 46 percent of the operating

[36] Moody's Investor Service, Rating Methodology, Regulated Electric and Gas Utilities, August 6, 2024, at 2.

[37] Standard & Poor's, *Assessing U.S. Utility Regulatory Environments*, March 11, 2010, at 2.

companies held by the proxy group that have either full or partial revenue decoupling mechanisms that protect against volumetric risk. While the Company has certain alternative cost recovery mechanisms (*e.g.*, Infrastructure Rider, Transmission Cost Recovery Rider), approximately 85 percent of the operating companies in the proxy group have a similar cost recovery mechanism for capital investment (*e.g.*, infrastructure replacement). As such, the regulatory mechanisms proposed by the Company and the regulatory mechanisms employed by the proxy group companies indicate that NSP and the proxy group have comparable regulatory mechanisms, and therefore similar regulatory risk profiles. As such, no adjustment to the Company's ROE would be appropriate.

Q. PLEASE EXPLAIN HOW THE REGULATORY FRAMEWORK AFFECTS INVESTORS RISK ASSESSMENTS.

A. Regulatory commissions recognize that, because utility operations are capital intensive, regulatory decisions should enable the utility to attract capital at reasonable terms, thereby balancing the long-term interests of investors and customers. The Company's authorized return must be adequate on a relative basis to help to ensure its ability to attract capital under a variety of economic and financial market conditions. As I noted with examples in Section III, if higher returns are available from other investments of comparable risk, investors (including parent companies) have an incentive to direct their capital to those investments.

Q. WHAT IS YOUR CONCLUSION REGARDING THE IMPORTANCE OF NSP'S AUTHORIZED ROE AS IT RELATES TO THE COMPANY'S ABILITY TO ACCESS CAPITAL ON REASONABLE TERMS?

A. The ROE allowed in this proceeding will send an important signal to investors and management. Utilities compete for capital with other investments of similar risk, including other electric utilities. The Company has to compete with a broad range of investments to obtain the capital necessary to deliver on its investment program. Therefore, the authorized ROE must be set at a level that helps NSP to continue to attract both debt and equity under favorable terms under a variety of economic and financial market conditions.

B. Flotation Cost Adjustment

Q WHAT ARE FLOTATION COSTS?

A. Flotation costs are the costs associated with the sale of new issues of common stock. These costs include out-of-pocket expenditures for preparation, filing, underwriting, and other costs of issuance of common stock. To the extent that a company is denied the opportunity to recover prudently incurred flotation costs, actual returns will fall short of expected (or required) returns, thereby diminishing the utility's ability to attract adequate capital on reasonable terms.

Q. WHY IS IT IMPORTANT TO RECOGNIZE FLOTATION COSTS IN THE ALLOWED ROE?

A. Allowed ROE is the only ratemaking mechanism through which these necessary costs are recovered. Flotation costs are reflected on the utility's balance sheet as "paid in capital" and are not expensed on the utility's income statement. When a company issues common stock, flotation costs are incurred and netted against the proceeds from the issuance reducing the amount available for investment in rate base by the amount of the flotation costs. If NSP is denied the opportunity to recover its prudently incurred flotation costs through its ROE, its allowed return will be insufficient, and equity share value will be diluted.

Q. DO ACADEMIC AND FINANCIAL EXPERTS RECOGNIZE THE NEED TO CONSIDER FLOTATION COSTS IN A UTILITY'S COST OF EQUITY?

A. Yes. Dr. Roger Morin, a recognized expert in regulatory economics and finance, summarizes:

> The costs of issuing these securities are just as real as operating and maintenance expenses or costs incurred to build utility plants, and fair regulatory treatment must permit recovery of these costs…. The simple fact of the matter is that common equity capital is not free…. [Flotation costs] must be recovered through a rate of return adjustment.[38]

According to Dr. Shannon Pratt, a published expert in cost of capital estimation:

> Flotation costs occur when new issues of stock or debt are sold to the public. The firm usually incurs several kinds of flotation or transaction costs, which reduce the actual proceeds received by the firm. Some of these are direct out-of-pocket outlays, such as fees paid to underwriters, legal expenses, and prospectus preparation costs. Because of this reduction in proceeds, the firm's required returns on these proceeds equate to a higher return to compensate for the additional costs. Flotation costs can be accounted for either by amortizing the cost, thus reducing the cash flow to discount, or by incorporating the cost into the cost of capital. Because flotation costs are not typically applied to operating cash flow, one must incorporate them into the cost of capital.[39]

Q. WHAT IS YOUR RECOMMENDED FLOTATION COST ADJUSTMENT AND HOW DID YOU CALCULATE IT?

A. Based on the XEI's costs shown in Schedule 9, I conclude that flotation costs for XEI have equaled roughly 1.83 percent of gross equity raised. To properly reflect these issuance costs in my cost of capital estimates, it would require a 7

[38] Roger A. Morin, New Regulatory Finance (Public Utility Reports, Inc., 2006), at 321.
[39] Shannon P. Pratt, Cost of Capital Estimation and Applications, Second Edition, at 220-221.

basis point addition to the ROE results produced by my ROE estimates for NSP, as shown in Schedule 2. While I have not made an explicit adjustment to my analytical results, I have considered the effect of flotation costs in my recommendation.

VIII. CAPITAL STRUCTURE

Q. WHAT IS NSP'S PROPOSED CAPITAL STRUCTURE?

A. As shown in Schedule 11, NSP is proposing a financial capital structure targeting a mix of 52.87 percent common equity and 47.13 percent debt.

Q. HOW HAVE YOU ASSESSED THE REASONABLENESS OF NSP'S PROPOSED CAPITAL STRUCTURE WITH RESPECT TO THE PROXY GROUP'S OPERATING UTILITIES?

A. The proxy group has been selected to reflect comparable companies in terms of business and financial risks. Therefore, it is appropriate to compare the financial capital structures of the operating utilities in the proxy group companies to the financial capital structure proposed by the Company in order to assess whether the Company's capital structure is reasonable and consistent with industry standards for companies with commensurate risk. I calculated the weighted average capital structures for each of the proxy group operating companies for the past eight quarters through Q4 2024. Schedule 12 shows that the Company's proposed common equity ratio of 52.87 percent is within the range of actual common equity ratios of 45.62 percent to 59.89 percent for the operating companies held by the proxy group over this period and is near the proxy group mean of 52.66 percent.

Q. WHAT IS YOUR CONCLUSION REGARDING THE APPROPRIATENESS OF NSP'S PROPOSED CAPITAL STRUCTURE IN THIS PROCEEDING?

A. Based on the analysis presented in Schedule 12, my conclusion is that NSP's proposed capital structure is reasonable. Sufficient equity in the capital structure is an important factor for maintaining NSP's financial integrity and investment grade credit rating, and it is an essential component of NSP's financial policies enabling access to capital on favorable terms in a variety of market circumstances.

IX. COST OF DEBT

Q. ON WHAT BASIS IS NSP PROPOSING TO SET ITS COST OF DEBT?

A. NSP is proposing to use its expected cost of debt for the test year.

Q. WHAT IS THE COMPANY'S PROPOSED LONG-TERM DEBT COST?

A. As shown in Schedule 11, the Company proposes using a long-term cost of debt of 4.48 percent. The cost of long-term debt for the test year includes the actual and forecasted coupon rate on all bonds expected to be outstanding for each month of the test year. In addition to the interest expense, the cost of long-term debt also includes actual amortization expenses for debt issuance costs, discounts or premiums, losses on reacquired debt, gains and losses from hedging transactions, and the annual amortization of the upfront fees associated with the Company's multi-year credit agreement.

Q. IS THE COMPANY'S PROPOSED LONG-TERM DEBT COST LOWER THAN THE CURRENT COST OF DEBT?

A. Yes, it is. As of April 30, 2025, the 30-day average yield on the Moody's A-rated utility bond index was 5.87 percent.[40] From 2011 through 2021, interest rates were considerably lower and NSP was able to issue debt to take advantage of these lower rates. Customers will continue to benefit from these lower yields for the life of these securities. As such, the Company's proposed cost of debt of 4.48 percent is 139 basis points below current interest rates for A-rated utilities.

Q. COULD THE COMPANY'S CREDIT METRICS BE PRESSURED WHEN IT HAS TO REFINANCE ITS DEBT OR ISSUE NEW DEBT IN THE FUTURE?

A. Yes, they could be. The Company has an obligation to serve and must continue to invest in its system. That will require NSP to access capital markets in the current interest rate environment. As I noted earlier in my testimony, long-term interest rates are projected to remain at elevated levels for the foreseeable future. As such, when the Company refinances its existing debt or issues new debt in the future, it will likely be at a higher interest rate than the proposed 4.48 percent long-term cost of debt. When that occurs, NSP's embedded cost of long-term debt would consequently be higher than 4.48 percent, even though its cash flow would only be reflective of the 4.48 percent cost of long-term debt. As such, NSP would be under-collecting its interest expense, and this lower cash flow could place additional pressure on its credit metrics.

Q. IS THE PROPOSED COST OF LONG-TERM DEBT REASONABLE?

A. Yes. The Company's approach is consistent with prior approved regulatory proceedings.

[40] Bloomberg Professional.

X. CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY AND RECOMMENDATIONS.

A. Based on the quantitative analyses provided in my Direct Testimony, I have established a range of ROE results shown previously in Table 1 (also see Schedule 2). The DCF, CAPM, Bond Yield Risk Premium, and Expected Earnings analysis produce a range of estimates of the Company's cost of equity of 10.26 percent to 11.75 percent, before considering the effect of flotation costs (an incremental 7 basis points). Based on these analyses, I consider an ROE range of 10.25 percent to 11.25 percent to be reasonable and somewhat conservative. I recommend an ROE of 10.30 percent, which is at the bottom of the range and 56 basis points below the average of the DCF, CAPM, and Risk Premium analyses and therefore represents a conservative estimate of NSP's cost of equity. In addition, I support NSP's actual capital structure of 52.87 percent common equity and 47.13 percent debt as reasonable relative to the range of capital structures for the operating companies held by the proxy group companies. I support NSP's proposed 4.48 percent cost of long-term debt, which is reasonable.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.