

BEFORE THE NORTH DAKOTA PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE APPLICATION
OF NORTHERN STATES POWER CO.
FOR AUTHORITY TO INCREASE RATES
FOR NATURAL GAS SERVICE
IN NORTH DAKOTA

DOCKET NO. PU-21-381

DIRECT TESTIMONY OF
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ON BEHALF OF
NORTH DAKOTA PUBLIC SERVICE COMMISSION ADVOCACY STAFF

MARCH 1, 2022

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1 **I. INTRODUCTION**

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

3 A. My name is Dr. Marlon F. Griffing. I am a Senior Consultant with the economic consulting
4 firm of PCMG & Associates Inc. (“PCMG”). My business address is 22 Brookes Drive,
5 Gaithersburg, MD 20785.

6 **Q. PLEASE DESCRIBE PCMG.**

7 A. PCMG was founded in 2015 to conduct research on a consulting basis into the rates,
8 revenues, costs, and economic performance of regulated firms and industries. The firm has
9 a professional staff of four with expertise in economics, accounting, and cost analysis. Most
10 of its work involves the development, preparation, and presentation of expert witness
11 testimony before federal and state regulatory agencies.

12 **Q. HAVE YOU PREPARED A SUMMARY OF YOUR QUALIFICATIONS AND**
13 **EXPERIENCE, INCLUDING COST-OF-CAPITAL TESTIMONY IN**
14 **REGULATORY PROCEEDINGS?**

15 A. Yes. Attachment ____ (MFG-1) is a summary of my qualifications, experience, and
16 testimony given before state and federal regulatory agencies regarding cost of capital.

17 **Q. FOR WHOM ARE YOU APPEARING IN THIS PROCEEDING?**

18 A. I am appearing on behalf of the North Dakota Public Service Commission (“Commission”)
19 Advocacy Staff in this proceeding.

20 **Q. WHAT ARE YOUR RESPONSIBILITIES IN THIS COMMISSION**
21 **PROCEEDING?**

22 A. My responsibility is to determine a fair rate of return on common equity capital and a fair
23 overall rate of return for Northern States Power, a Minnesota corporation (“NSP” or the

1 “Company”). NSP is a vertically integrated electric and natural gas utility. It is an
2 operating subsidiary of Xcel Energy Inc (“XEL”). Among its operations, NSP provides
3 natural gas distribution service in North Dakota.¹ NSP is seeking an increase in its North
4 Dakota natural gas rates in this docket. NSP witness Dylan W. D’Ascendis testifies
5 regarding cost of capital on behalf of the Company. I respond to the cost of capital
6 testimony of Mr. D’Ascendis.

7 **Q. HOW DO YOU DEVELOP A RECOMMENDED RATE OF RETURN FOR THE**
8 **COMPANY?**

9 A. To arrive at a recommended overall rate of return (“ROR”), I analyze the Company’s
10 requested capital structure and costs for each component of that structure.

11 **Q. HOW IS YOUR TESTIMONY ORGANIZED?**

12 A. My testimony is organized as follows:

- 13 • First, I discuss economic considerations and legal precedents underlying the cost
14 of equity in regulatory proceedings.
- 15 • Second, I explain how I selected the members of the Comparison Group of
16 companies used in my analysis.
- 17 • Third, I provide overviews of the Discounted Cash Flow (“DCF”) model and the
18 Capital Asset Pricing Model (“CAPM”) analyses.
- 19 • Fourth, I perform DCF model and CAPM analyses for the Comparison Group,
20 check them for reasonableness, and recommend a return on equity (“ROE”) for
21 the Company.
- 22 • Fifth, I recommend a return on equity (“ROE”) for the Company and check it for
23 reasonableness.
- 24 • Sixth, I recommend a capital structure and ROR for the Company.
- 25 • Seventh, I review the Company’s rate of return analysis.

¹ Direct Testimony of Dylan W. D’Ascendis on Behalf of Northern States Power Company (September 1, 2021) [hereinafter “D’Ascendis Direct”], page 16, lines 5-16.

1 • Eighth, I summarize my testimony and recommendations

2

3 **Q. PLEASE STATE YOUR CONCLUSIONS REGARDING THE COMPANY’S ROE**
4 **AND ROR.**

5 A. My ROE analysis for NSP produces a value of 9.40 percent. For NSP’s capital structure,
6 my analysis shows ratios of 47.57 percent long-term debt, 0.43 percent short-term debt,
7 and 52.00 percent common equity are appropriate. When the ROE of 9.40 percent is
8 included in the recommended capital structure with the Company’s costs of long-term debt
9 and short-term debt,² the result is an ROR of 6.84 percent.³

10 **II. THE COST OF EQUITY IN THE REGULATORY ENVIRONMENT**

11 **1. The Role of Economic Theory**

12 **Q. WHAT IS THE BASIS IN ECONOMIC THEORY FOR REGULATING CERTAIN**
13 **INDUSTRIES?**

14 A. According to economic theory, the forces of supply and demand interacting in a
15 competitive environment produce an allocation of resources that yields an optimal mix of
16 goods and services. Firms and individuals maximize profits and satisfaction given the
17 prices and incomes that the interplay of market forces generates. This outcome is described
18 as economically efficient. Put simply, there is no better output of goods and services that
19 can be produced with the available resources.

² NSP-MN Regulated Capital Structure, C1. Cost of Capital Schedule, Page 1 of 2.

³ Exhibit MFG-16 Schedule 3.

1 **Q. DOES THE ECONOMICALLY EFFICIENT OUTCOME OCCUR IN ALL**
2 **INDUSTRIES?**

3 A. No, several conditions must be present, including many buyers and sellers, identical
4 products, perfect information about prices, and so forth. If these conditions exist, then price
5 is the only way for providers of goods and services to compete in markets. If the conditions
6 for competition do not exist, however, then letting supply and demand work unfettered will
7 not produce the socially desired efficient outcome.

8 **Q. ARE THERE LEGAL OBSTACLES TO COMPETITION IN PUBLIC UTILITY**
9 **MARKETS?**

10 A. Yes. Even if a firm is willing and able to raise the capital needed to be a viable natural gas
11 distribution company, state and local governments typically have permitting processes that
12 govern where and when utilities can build facilities. Thus, high start-up costs are not the
13 only barrier that must be overcome.

14 **Q. ARE THERE OTHER ASPECTS OF AN ELECTRIC DISTRIBUTION UTILITY'S**
15 **COSTS THAT RESULT IN FEW SELLERS?**

16 A. Yes. The natural gas utility industry is what is typically known as a declining-cost industry.

17 **Q. WHAT IS A DECLINING-COST INDUSTRY?**

18 A. A declining-cost industry is one where the average cost of service declines over the range
19 of effective demand.

20 **Q. IS A DECLINING AVERAGE COST OF SERVICE SUFFICIENT FOR AN**
21 **INDUSTRY TO BE TERMED "DECLINING COST?"**

22 A. No. In fact, average costs decline in most industries as production and sales increase.
23 However, in these industries, average cost eventually rises and does so at a sales level that

1 is smaller than the total demand for the product in a given industry. As a consequence, a
2 few too many firms share the market because, beyond the sales volume at which average
3 costs rise, firms lose, rather than gain, cost advantage.

4 **Q. ARE PUBLIC UTILITIES DECLINING-COST INDUSTRIES?**

5 A. Yes. With their high fixed costs, public utilities have high initial average costs, but as their
6 sales increase, the average cost drops. What qualifies public utilities as a declining-cost
7 industry is that their average costs continue to decline over very high volumes of sales, up
8 to and beyond total, or effective, market demand for the product. This condition creates
9 market failure (when the market produces an outcome that is inefficient). As a natural gas
10 distribution firm increases its sales and market share, its average costs decline, and continue
11 to do so. Thus, the firm with the largest market share has an increasing cost advantage over
12 competitors. In effect, there is not enough room in the market for another distributor. The
13 logical result is a market with one distributor—often referred to as a natural monopoly—
14 not the many firms envisioned in the theory of competition.

15 **Q. HOW HAS SOCIETY RESPONDED TO THE ABSENCE OF COMPETITION IN**
16 **PUBLIC UTILITY MARKETS?**

17 A. Since sufficient competition does not exist in the markets for public utilities to ensure low
18 prices and adequate service, society has typically turned to regulation to achieve these
19 goals. Firms are granted exclusive franchises to serve areas in return for accepting
20 government regulation of their prices. The government regulators generally are charged
21 with pursuing an outcome that approximates the efficient outcome of the competitive
22 model. Regulation is viewed as a way to decrease prices and increase services provided by
23 a natural monopoly. A challenge for regulators is to set policies that ensure that the

1 regulated firm provides an appropriate supply of services at reasonable rates. A reasonable
2 rate enables a public utility not only to recover its operating expenses, depreciation, and
3 taxes, but also to compete for funds in capital markets.

4 **2. Standards for Finding a Fair Rate of Return**

5 **Q. DO STANDARDS EXIST FOR DETERMINING A FAIR RATE OF RETURN?**

6 A. Yes. Two United States Supreme Court (“Court”) cases are the basis for rate of return
7 regulation in the United States. They are the *Bluefield Water Works*⁴ and the *Hope Natural*
8 *Gas*⁵ cases. In *Hope*, the Court established the following standards for the return on equity
9 that must be allowed a regulated public utility to provide for a “reasonable return”:

10 [T]he return to the equity owner should be commensurate with the
11 returns on investments in other enterprises having corresponding
12 risks. That return, moreover, should be sufficient to assure
13 confidence in the financial integrity of the enterprise, so as to
14 maintain its credit and to attract capital.⁶

15 It can be seen from this excerpt that there are essentially three standards for determining
16 an appropriate return on equity from the standpoint of the equity owners of a regulated
17 utility. The first is the “comparable earnings” standard—the earnings must be
18 “commensurate with the returns on investments in other enterprises having corresponding
19 risks.” The second is that earnings must be sufficient to assure “confidence in the financial
20 integrity of the enterprise.” The third is that earnings must allow the utility to “attract
21 capital.”

⁴ *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923).

⁵ *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

⁶ *Id.* at 603.

1 **Q. CAN THE COMPARABLE EARNINGS STANDARD BE APPLIED IN**
2 **ESTIMATING THE RATE OF RETURN ON EQUITY CAPITAL?**

3 A. No. There is circularity to the comparable earnings standard because the competitive nature
4 of the capital markets virtually ensures that the returns to all enterprises are comparable
5 with each other. Investors establish the price of each traded stock in capital markets based
6 on prospective earnings and perceived risk. The prices for common equity for companies
7 with high earnings are bid up, while the prices for companies with low earnings are bid
8 down. If earnings were the only concern, the ratio of earnings to share prices, the return for
9 investors, would become equal for all companies. However, investors recognize relative
10 risk as they buy and sell common equity shares. For companies with high risk, share prices
11 will be lower; for companies with low risk, share prices will be higher. Thus, the
12 comparable earnings test becomes a nullity: All returns, because they are adjusted for risk,
13 are comparable with all other returns.

14 **Q. HOW IS THIS CIRCULARITY TYPICALLY RESOLVED IN PUBLIC UTILITY**
15 **REGULATION?**

16 A. In public utility regulation, the conventional procedure for resolving this circularity is to
17 identify the required equity return based on the market value of a utility's stock. That return
18 is combined with the cost of debt, and the blended return to total capital is then applied to
19 a rate base reflective of the book value of the utility's investment. The book value is the
20 accountant's quantification of the depreciated original cost of the utility's assets adjusted
21 for ratepayer contributions such as deposits and deferred taxes. Under this procedure, the
22 market price of a stock is used only to determine the return that investors expect from that
23 stock. That expectation is then applied to the book value of the utility's investment to

1 identify the level of earnings that regulation will allow the utility's common shareholders
2 to recover.

3 **Q. HOW CAN THE FINANCIAL INTEGRITY AND CAPITAL ATTRACTION**
4 **STANDARDS ENUNCIATED IN *HOPE* BE APPLIED IN ESTIMATING THE**
5 **RATE OF RETURN ON EQUITY CAPITAL?**

6 A. If a utility can earn a return on its investment comparable to that required by enterprises of
7 comparable risk, then it should have no difficulty in attracting capital and maintaining
8 credit. Investors would have no reason to pass on purchasing the common equity of such a
9 utility in favor of other investment opportunities. Thus, if the comparable earnings test is
10 met, then the financial integrity and capital attraction standards are met as well.

11 **Q. WHAT IS RISK?**

12 A. Risk is the chance that an investment will lose value. A business, for example, may
13 introduce a new product, supporting it with investment in plant and equipment. There is,
14 of course, no guarantee that consumers will purchase the product, putting the investment
15 in the plant and equipment at risk. The risk investors attach to the company varies inversely
16 with their view as to the probability of the product doing well. In general, the greater the
17 risk of an investment, the greater the return required to attract investors, and vice versa.

18 **Q. DOES SETTING AN ALLOWED RATE OF RETURN MEAN THAT THE**
19 **UTILITY WILL EARN THAT RETURN?**

20 A. No. There is no guarantee that the utility will earn the allowed rate of return. The utility
21 has the reasonable *opportunity* to earn the allowed rate of return; in practice, the utility may
22 earn more or less than this return, depending on whether and how its management responds
23 to technological and market developments, among other matters.

1 **Q. WHAT SHOULD THE COMMISSION CONSIDER IN SETTING AN**
2 **APPROPRIATE RATE OF RETURN?**

3 A. The Commission should look to current market conditions as it balances investor and
4 consumer interests. In this case, the rate of return should reflect the condition of the capital
5 markets in which NSP will have to compete with other firms for funding. Historically
6 allowed rates and historical performances are not appropriate inputs in this forward-looking
7 approach. This statement, however, does not mean that historical rates and performance
8 are irrelevant. They are factors because they affect investors' views of a company's
9 prospects and, therefore, the investors' willingness to purchase its common equity shares.

10 **Q. PLEASE EXPLAIN HOW THE METHODS YOU HAVE USED TO DETERMINE**
11 **THE COST OF COMMON EQUITY CAPITAL FOR THE COMPANY REFLECT**
12 **CURRENT MARKET CONDITIONS.**

13 A. I used a market-oriented approach to determine the common equity cost for the Company.
14 I analyzed the equity return that investors currently expect to receive from investing in
15 companies with risks similar to the risk of the Company. Many factors influence these
16 investor expectations, among them: past performance of the companies, estimates of how
17 the companies will perform in the future, possible technological change, tax rates, and
18 predicted general economic conditions. As investors decide where to place their funds
19 among the investment options available to them, they weigh the information they have.
20 Then they decide how much to pay to acquire common equity shares, or to turn to the other
21 side of the question, what price will lead them to sell the shares. Either way, the factors are
22 reflected in current prices in capital markets. Thus, my analysis is forward-looking because
23 it relies on investors' current assessment of what is likely to happen with their investments.

1 **Q. WHAT IS THE ROLE OF OPPORTUNITY COSTS IN YOUR ANALYSIS?**

2 A. An opportunity cost is the value of the next best choice forgone as the result of making a
3 decision. Opportunity costs are central to my analysis. As investors decide where to place
4 their assets, they have many opportunities from which to choose in the financial markets.
5 Economic theory says they will choose the opportunity they think will provide them the
6 best return, taking into account the level of risk with which they are comfortable. Thus, for
7 a company to attract capital, its forward-looking fair rate of return must at least equal the
8 expected rate of return for the best alternative opportunity with similar risk.

9 **III. OVERVIEW OF THE RETURN ON EQUITY ANALYSIS**

10 **Q. HOW DO YOU KNOW WHAT EQUITY RATE OF RETURN THE COMPANY**
11 **MUST OFFER TO INVESTORS TO BE AN ATTRACTIVE OPPORTUNITY?**

12 A. No one knows with certainty what specific rate of return the Company must offer to
13 investors that is just sufficient to make the Company an attractive opportunity. However,
14 various methods based on finance theory have been derived for reliably estimating what
15 investors currently think that rate is.

16 **Q. PLEASE IDENTIFY THE METHODS YOU HAVE ADOPTED IN YOUR ROE**
17 **ANALYSIS.**

18 A. I use the Discounted Cash Flow (DCF) method, which is widely used in utility general rate
19 cases, and is a method relied on by the MPUC in determining rate of return. I also include
20 the results of the Capital Asset Pricing Model (CAPM), combining them with the DCF
21 results for my recommended ROE. I use recently authorized returns for natural gas utility
22 operating companies in U.S. jurisdictions as a check on the reasonableness of the ROE
23 outcome.

1 **Q. PLEASE SUMMARIZE THE DCF METHOD.**

2 A. The DCF model uses the current dividend yield and the expected growth rate of this yield
3 to determine a required rate of return on an investment opportunity. The required rate of
4 return from a DCF analysis is derived from a formula for determining the net present value,
5 or price, of a share of stock. There are several variations of the DCF, but the constant-
6 growth form I have selected assumes that dividends (D) are received at the end of each
7 year, the annual growth rate of dividends (g) is constant forever, and the discount rate for
8 dividends (k) is constant forever. The equation form of this constant-growth DCF model is
9 the following:

10

$$11 \quad k = \frac{D_1}{P_0} + g$$

12

13 Where:

14 k is the discount rate, which also is the fair rate of return for equity;

15 D₁ is the annual dividend one year from the present;

16 P₀ is the current price of a stock share; and

17 g is the expected growth rate of the dividend.

18

19 **Q. HOW IS THE ANNUAL DIVIDEND ONE YEAR FROM THE PRESENT**
20 **CALCULATED?**

21 A. The annual dividend one year from now is derived by applying the growth-rate estimate
22 (g) to the actual current annual dividend (D₀). The equation form is:

$$23 \quad D_1 = D_0 * (1 + g)$$

24

1 **Q. PLEASE DESCRIBE THE ELEMENTS OF THE DCF MODEL.**

2 A. The first element of the DCF model is the dividend-yield component, while the second
3 element is the dividend growth-rate component. The sum of these two components
4 produces the required ROE for a company.

5 **Q. PLEASE DISCUSS THE CAPM METHOD.**

6 A. The premise of the CAPM method is that any risk which is company-specific can be
7 diversified away by investors. Therefore, the only risk that matters is the systematic risk of
8 the stock. This systematic risk is measured by beta (β). Expressed simply, the CAPM
9 assumes the following form:

10

$$11 \quad k = r + \beta (k_m - r)$$

12

13 Where:

14 k is the required rate of return for the subject stock;

15 β is beta, the measure of systematic risk;

16 r is the rate of return on a riskless asset; and

17 k_m is the required rate of return on the broad market.

18 $[(k_m - r)$ is known as the “market risk premium”]

19

20 **Q. PLEASE CHARACTERIZE THE CAPM METHOD.**

21 A. In the CAPM the required ROE for a company also is the sum of two components. The
22 first of these is the return on a riskless asset. To this base value, a return is added that
23 reflects the additional rate of return earned by other companies in the broad equity market

1 adjusted for the risk of the subject company relative to the risk of an average company in
2 the market. The subsequent amount thus reflects the risk of the subject company.

3 **Q. DOES YOUR EQUITY RATE OF RETURN ANALYSIS USE FINANCIAL**
4 **INFORMATION FOR NSP?**

5 A. No. As noted, NSP is an operating subsidiary of XEL. NSP is not publicly traded, so
6 common equity share price information is unavailable. Therefore, a direct DCF analysis
7 cannot be performed on the Company.

8 **Q. DOES YOUR EQUITY RATE OF RETURN ANALYSIS USE OTHER NSP**
9 **INFORMATION?**

10 A. Yes. NSP has a Standard & Poor's ("S&P") credit rating of A-.⁷ This credit rating reflects
11 S&P's evaluation of the risk for the company. It is identical to the S&P credit rating for
12 XEL, but is determined separately. The Company credit rating is one criterion that was
13 applied in selecting natural gas utilities that are similar in risk to NSP.

14 **Q. HOW DO YOU USE THE ROE ANALYSIS TO ESTIMATE THE COMPANY'S**
15 **REQUIRED RATE OF RETURN?**

16 A. I performed an ROE analysis on a group of natural gas utilities comparable to NSP that are
17 publicly traded and have similar investment risk, as discussed below. The estimated rates
18 of return for members of this group form the basis for my estimate of a fair rate of return
19 for the Company.

⁷ Exhibit MFG-2.

1 **IV. SELECTING THE COMPARISON GROUP**

2 **Q. PLEASE DISCUSS YOUR PROCEDURE FOR SELECTING THE COMPARISON**
3 **GROUP.**

4 A. I set out to find a group of companies that are, from the perspective of investors, like NSP.
5 Thus, I wanted firms that are natural gas utility companies that represent approximately the
6 same investment risk as the Company.

7 **Q. PLEASE DESCRIBE HOW YOU FOUND SUITABLE CANDIDATE COMPANIES**
8 **FOR THE COMPARISON GROUP.**

9 A. I looked at Value Line, a widely used investor service, for companies that Value Line
10 classifies as members of the Natural Gas Utility Industry. The February 25, 2022, edition
11 of the *Value Line Investment Survey* available at the Value Line website included 15
12 companies in this category.⁸

13 **Q. WAS XCEL ENERGY INC. ONE OF THE 15 COMPANIES IN THE VALUE LINE**
14 **NATURAL GAS INDUSTRY?**

15 A. No.

16 **Q. WHAT WAS THE NEXT STEP IN YOUR SELECTION PROCESS?**

17 A. I applied screens to the initial set of Value Line Electric Utility companies to ensure that
18 the companies included in my Comparison Group were similar in risk to the risk of the
19 Company.⁹

20 **Q. PLEASE LIST THE CRITERIA YOU APPLIED IN THE SELECTION OF THE**
21 **COMPARISON GROUP.**

22 A. I applied the following screens to the initial set of Electric Utility companies:

⁸ Exhibit MFG-3.

⁹ Exhibit MFG-4.

- 1 1. U.S.-based firm;
- 2 2. shares publicly traded on a stock exchange;
- 3 3. a stable record of paying dividends;
- 4 4. not be expected to sell, merge into or be acquired by another company, or
- 5 be engaged in an unusual regulatory proceeding;
- 6 5. have a Standard & Poor's ("S&P") credit rating of BBB- (investment
- 7 grade) or better;
- 8 6. have positive growth-rate projections from expert analysts; and
- 9 7. have 60 percent or more of the three-year average of net operating income,
- 10 net income, or operating revenue be derived from regulated natural gas
- 11 operations.

12 **Q. WHAT IS THE PURPOSE OF APPLYING THE CRITERION THAT THE**
13 **COMPANIES BE BASED IN THE CONTINENTAL UNITED STATES?**

14 A. I sought companies that face a business environment like that in which NSP operates. The
15 Company's operating utility in this case is in North Dakota and subject to state regulation,
16 statutes, and rules that are similar to those found in the rest of the United States. China
17 Natural Gas was excluded for not being U.S.-based.

18 **Q. WHAT PURPOSE IS SERVED BY REQUIRING THAT THE COMPANIES BE**
19 **PUBLICLY TRADED?**

20 A. One analytical tool that I used for finding a company's ROE, the DCF model,¹⁰ requires
21 information about common equity share prices, dividends, and growth-rate projections.

22 The requirement that companies be publicly traded ensures that their common equity share

¹⁰ As will be seen in a later section, the forward-looking CAPM as I have applied it incorporates a DCF analysis and, thus, also relies on publicly traded companies.

1 prices are available. All the Value Line Natural Gas Utility companies were publicly
2 traded.¹¹

3 **Q. WHAT PURPOSE IS SERVED BY REQUIRING THAT THE COMPANIES HAVE**
4 **A STABLE RECORD OF PAYING DIVIDENDS?**

5 A. The DCF model requires dividends as an input. If a company is not paying dividends or
6 has a record of cutting dividends, then its DCF analysis is not reliable. All the companies
7 still under consideration have been consistently paying dividends.¹²

8 **Q. WHY IS IT IMPORTANT THAT COMPANIES INVOLVED IN SALES,**
9 **MERGERS, OR ACQUISITIONS, USUALLY BE EXCLUDED FROM YOUR**
10 **ANALYSIS?**

11 A. The share prices of companies involved in sales, mergers or acquisitions can be volatile.
12 Extreme increases in the share prices of companies that are part of sales, mergers, or
13 acquisitions drive down the ROE results in DCF analysis, while extreme decreases in the
14 share prices drive up the ROE results. Neither outcome yields meaningful DCF results.
15 Therefore, it is usually appropriate to exclude such companies from the analysis.

16 **Q. WERE ANY COMPANIES IN THE INITIAL SET INVOLVED IN SALES,**
17 **MERGERS, OR ACQUISITIONS?**

18 A. Yes. Corning Natural Gas Holding was involved in a merger.¹³ In addition, South Jersey
19 Industries (“SJI”) announced on February 24, 2022, that it is being acquired by
20 Infrastructure Investments Fund, a unit of J.P. Morgan Investment Management Inc.¹⁴
21 Therefore, I excluded SJI from the Comparison Group. The announcement of the

¹¹ Exhibit MFG-3.

¹² China Natural Gas is not paying dividends, but it is already eliminated from consideration.

¹³ Exhibit MFG-4.

¹⁴ Exhibit MFG-5.

1 acquisition came after I performed my ROE analysis, so SJI is shown as part of the
2 Comparison Group.¹⁵ However, its data is not included in the calculations. SJI would not
3 be eligible for the Comparison Group in any analysis conducted after this Direct Testimony
4 is filed, such as Surrebuttal Testimony in this docket, which also was a factor in my
5 decision to exclude it from the current analysis.

6 **Q. WERE ANY COMPANIES IN THE INITIAL SET INVOLVED IN UNUSUAL**
7 **CIRCUMSTANCES?**

8 A. No.

9 **Q. WHAT IS THE PURPOSE OF USING THE S&P CREDIT RATING AS A**
10 **SCREEN?**

11 A. S&P's experts incorporate financial risk and business risk into a firm's credit rating. Within
12 these risk categories, S&P assesses such factors for public utilities as competitive
13 advantage, operating efficiency, and scale, scope, and diversity. This last set of factors
14 includes the effects of a utility's markets, service territories, and customer diversity on the
15 company's cash-flow stability, and in turn on its risk level. After considering all the factors,
16 S&P assigns a credit rating to a company. If companies have identical or similar credit
17 ratings as determined by expert analysts, then their relative risks are similar. As S&P states:

18 Creditworthiness is a multi-faceted phenomenon. Although there is
19 no "formula" for combining the various facets, our credit ratings
20 attempt to condense their combined effects into rating symbols
21 along a simple, one-dimensional scale. Indeed, as discussed below,
22 the relative importance of the various factors may change in
23 different situations.¹⁶

¹⁵ Exhibit MFG-13, Schedule 1, and others.

¹⁶ Exhibit MFG-6.

1 **Q. PLEASE DESCRIBE YOUR APPLICATION OF THE S&P CREDIT RATING**
2 **SCREEN.**

3 A. Regardless of the utility type, I start with the credit rating of the subject company and work
4 out a step at a time from that rating until I found enough companies that meet the other
5 screens to make a group large enough that the results for one company do not dominate the
6 ROE analysis. Please note that the credit rating screen does not require that companies
7 have exactly the same credit rating as the subject company. The credit rating need only be
8 similar to that of the subject company. The narrower the range of the credit rating, the
9 more like the subject company's risk are the risk profiles of the companies within the range.
10 However, the goal of having companies with risk similar to that of the operating company
11 has to be balanced with the goal of having a reasonable number of companies in the
12 Comparison Group so that no one company's result strongly influences the outcome.

13 **Q. WHAT WAS THE RESULT OF YOUR APPLICATION OF THE CREDIT**
14 **RATING SCREEN IN THIS DOCKET?**

15 A. There were 12 companies remaining from the original group of 15 after the previous
16 screens were applied. Of these utilities, Adams Resources & Energy, RGC Resources Inc.,
17 Star Group L.P, and UGI Corp. did not have an S&P credit rating and were excluded.¹⁷ All
18 these natural gas utilities have investment-grade credit ratings from S&P (or an equivalent
19 credit rating). Many large institutional investors require that a company have an S&P
20 investment-grade credit rating to be considered for inclusion in their portfolios. Therefore,
21 companies that do not have investment-grade ratings are excluded by a large share of
22 buyers and are not comparable with companies that do.

¹⁷ China Natural Gas and Corning Natural Gas Holding, already excluded, also did not have S&P credit ratings.

1 **Q. PLEASE DISCUSS THE CREDIT RATINGS OF CHESAPEAKE UTILITIES AND**
2 **NEW JERSEY RESOURCES.**

3 A. Neither Chesapeake Utilities nor New Jersey Resources has a credit rating from S&P.
4 Chesapeake Utilities does have a rating of “1” from the National Association of Insurance
5 Commissioners. This rating is equivalent to an A- credit rating (or higher) from S&P.¹⁸ As
6 for New Jersey Resources, Moody’s has a credit rating for New Jersey Natural Gas, a
7 subsidiary of New Jersey Resources, of A1.¹⁹ This Moody’s credit rating is equivalent to
8 an S&P credit rating of A+.

9 **Q. WHAT IS THE RANGE OF THE CREDIT RATINGS FOR THE REMAINING**
10 **COMPANIES?**

11 A. The eight remaining companies have S&P credit ratings (or an equivalent rating) ranging
12 from BBB- to A+.

13 **Q. YOU REQUIRED THAT ELECTRIC UTILITIES HAVE POSITIVE EARNINGS**
14 **PER SHARE (“EPS”) GROWTH-RATE FORECASTS TO BE INCLUDED IN THE**
15 **COMPARISON GROUP. WHAT PURPOSE DOES THIS SCREEN SERVE?**

16 A. If the growth-rate projections are negative or missing, then any DCF analysis performed
17 on them is not meaningful. All eight companies still under consideration for the
18 Comparison Group have at least two positive EPS growth-rate forecasts.²⁰

19 **Q. FINALLY, YOU REQUIRED THAT MORE THAN 60 PERCENT OF A**
20 **COMPANY’S THREE-YEAR AVERAGE OF AN INCOME OR REVENUE**
21 **INDICATOR BE DERIVED FROM REGULATED ELECTRIC UTILITY**

¹⁸ Exhibit MFG-7, Schedule 1.

¹⁹ Exhibit MFG-7, Schedule 2.

²⁰ Exhibit MFG-4.

1 **OPERATIONS TO BE INCLUDED IN THE COMPARISON GROUP. PLEASE**
2 **EXPLAIN THE PURPOSE OF THIS CRITERION.**

3 A. For the firms to have similar risks, they must operate in similar business environments. The
4 Company is predominantly a regulated natural gas utility operation, so the firms considered
5 for the Comparison Group also must have predominantly regulated operations. This
6 criterion ensures that most of the Comparison Group firms' operations are in the same
7 environment as that of the Company.

8 **Q. WHAT WAS THE OUTCOME OF YOUR APPLICATION OF THIS SCREEN?**

9 A. I included all eight companies in the Comparison Group after applying the operating
10 income/net income/operating revenue screen.²¹ One natural gas utility, Chesapeake
11 Utilities, did not strictly meet the 60 percent screen. However, I included it in the
12 Comparison Group because it fell just short of the cutoff. Chesapeake Utilities' regulated
13 income share was 59.4 percent.²²

14 **Q. PLEASE DESCRIBE THE COMPARISON GROUP AFTER YOUR SCREENING.**

15 A. The Comparison Group is composed of Atmos Energy, Chesapeake Utilities, New Jersey
16 Resources, NiSource, Northwest Natural Holding Company, ONE Gas, Southwest Gas
17 Holdings, and Spire, Inc.²³

18 **Q. PLEASE COMPARE THE MEMBERSHIP OF MR. D'ASCENDIS'S PROXY**
19 **GROUP WITH THE MEMBERSHIP OF YOUR COMPARISON GROUP.**

20 A. Mr. D'Ascendis's Proxy Group was composed of seven natural gas utilities. Those
21 companies, including SJI, were members of the Comparison Group. The announcement

²¹ Exhibit MFG-8.

²² Exhibit MFG-9.

²³ Exhibit MFG-10.

1 regarding SJI came well after D'Ascendis Direct was filed in this proceeding, meaning Mr.
2 D'Ascendis did not have a chance to include that fact in the selection of his proxy group. I
3 included two natural gas utilities that Mr. D'Ascendis did not, Chesapeake Utilities and
4 NISource. I stand by the screens I applied in selecting the Comparison Group and the
5 natural gas utilities included.

6 **V. DCF MODEL OVERVIEW**

7 **Q. WHAT IS THE PURPOSE OF A DCF ANALYSIS?**

8 A. The goal of this analysis was to estimate an appropriate, forward-looking rate of return on
9 equity. A DCF analysis requires a determination of expected growth rates and dividend
10 yields in order to estimate this return.

11 **Q. PLEASE DISCUSS EXPECTED GROWTH RATES.**

12 A. Because a DCF analysis is forward-looking, I want to estimate the expected growth rate of
13 dividends. Historical growth rates would be good indicators of the expected growth rate if
14 both of the following are true:

- 15 • the dividend payout ratio and the realized rate of return on equity capital
16 were constant in the past and could be assumed to remain constant in the
17 future; and
- 18 • any growth in book equity was attributable solely to retained earnings.

19 If, in practice, these conditions held, then earnings per share ("EPS"), dividends per share
20 ("DPS"), and book value per share ("BPS") would all grow at the same rate, and the past
21 growth rates for these factors would be the rate at which they would grow in the future.

22 **Q. DID YOU USE HISTORICAL GROWTH RATES IN YOUR ANALYSIS?**

23 A. No. The conditions necessary for historical growth rates to be good indicators of future
24 growth rates are rarely satisfied. Most utilities' returns on equity and payout ratios have
25 not remained constant over time. Further, growth in book value has occurred not only due

1 to retained earnings, but also due to the issuance of new shares of common stock.
2 Consequently, past growth rates of earnings, dividends, and book equity are frequently
3 unequal. Moreover, an industry may face a changed business environment, thereby making
4 the past a poor basis for projecting the future. Historical growth rates can differ
5 significantly from forward-looking projected growth rates due to such factors as inflation
6 rates, tax rates, the role of an industry in the economy, and the regulatory environment. In
7 view of these limitations of using historical growth rates, I based my estimated growth rates
8 on projected growth rates as publicly provided by “Zacks Investment Research,” a
9 respected investor services company, Thomson Financial Network estimates provided on
10 Yahoo! Finance, and “The Value Line Investment Survey.”

11 **Q. PLEASE DISCUSS THE DIVIDEND YIELDS USED IN YOUR DCF ANALYSIS.**

12 A. To estimate the required rate of return on equity capital today, I estimated the expected
13 dividend yield, D_1/P_0 where P_0 is the price of a share of common equity today and D_1 is
14 the dividend in the next period. To find the dividends expected a year from now, I
15 multiplied the current annual dividends paid by 1 plus the EPS growth rates for each
16 company. The use of this dividend yield assumes that dividends are distributed at the end
17 of each period (year). Since the current equity share price incorporates all market
18 information considered relevant by investors, generally speaking, non-recent historical
19 prices should be avoided in calculating the dividend yield. However, since share prices are
20 volatile in the short run, it is desirable to use a period long enough to avoid short-term
21 aberrations in the capital market.

1 **Q. WHAT COMMON EQUITY SHARE PRICES DID YOU USE IN YOUR DCF**
2 **ANALYSIS?**

3 A. I used the average of four weeks of share prices for each natural gas utility. This period
4 achieves the goals of using current information and avoiding cases where short-run
5 volatility causes common-equity share prices to be unrepresentative of the value investors
6 place on a company.

7 **VI. DCF ANALYSIS FOR THE COMPARISON GROUP**

8 **1. Constant-Growth DCF Analysis**

9 **Q. PLEASE DISCUSS THE REQUIRED RATE OF RETURN FOR THE**
10 **COMPARISON GROUP.**

11 A. To estimate the required rate of return for the group, I found the expected growth rate, g ,
12 and the expected dividend yield, D_1/P_0 for each Comparison Group company. I applied
13 the DCF model to the inputs to find an ROE for each natural gas utility. Finally, I averaged
14 the ROEs to find my DCF ROE for NSP.

15 **Q. WHAT PERIOD DID YOU USE TO ESTABLISH AVERAGE COMMON EQUITY**
16 **SHARE PRICES FOR THE COMPANIES IN THE COMPARISON GROUP?**

17 A. I used the trading period of January 31, February 25, 2022, to find average common equity
18 share prices. This four-week period is long enough to dampen any short-term aberrations
19 in the capital market. It was also close to the March 1, 2022, date of this Testimony, thus
20 making the results timely. I used closing prices for the Comparison Group member
21 companies obtained at Yahoo! Finance.²⁴

²⁴ Exhibit MFG-11, Pages 1-3.

1 **Q. HOW DID YOU DETERMINE THE DIVIDENDS FOR THE COMPARISON**
2 **GROUP COMPANIES?**

3 A. I used the dividends that each Comparison Group member company is currently paying as
4 reported by Value Line on February 25, 2022, and by Zacks on February 22, 2022. I used
5 the greater of these two options in my DCF analysis. The dividends were equal from the
6 two sources except that Zacks reported a slightly higher dividend for SJI. (As noted, SJI
7 data is excluded from my ROE analysis).²⁵

8 **Q. WHAT ASSUMPTION IS MADE ABOUT THE EXPECTED GROWTH RATE IN**
9 **THE CONSTANT-GROWTH DCF MODEL?**

10 A. In the constant-growth DCF model, it is assumed that current EPS growth rates continue
11 to infinity. I used, as is commonly done, forecasts of EPS growth rates for five years and
12 assumed those growth rates will continue.

13 **Q. PLEASE DISCUSS THE EXPECTED GROWTH RATE FOR THE COMPARISON**
14 **GROUP.**

15 A. As noted above, it is appropriate in this proceeding to use only the forecasted growth rates
16 to estimate the expected growth rate to be used in the DCF analysis. Zacks and Yahoo!
17 Finance provide five-year growth-rate projections for EPS and Value Line provides five-
18 year growth rate projections for EPS, DPS, and BPS. To maintain consistency across the
19 sources, I used only the EPS estimates from Value Line.

²⁵ Exhibit MFG-12.

1 **Q. WHAT INFORMATION DID YOU USE FROM VALUE LINE?**

2 A. I used the Value Line EPS five-year growth projections for the individual firms in the
3 Comparison Group as reported by Value Line in its Investment Surveys of February 25,
4 2022.²⁶

5 **Q. WHAT INFORMATION DID YOU USE FROM ZACKS?**

6 A. I used the Zacks EPS five-year growth projections available February 20, 2022, for the
7 individual firms in the Comparison Group.²⁷

8 **Q. WHAT INFORMATION DID YOU USE FROM YAHOO! FINANCE?**

9 A. I used the Yahoo! Finance EPS five-year growth projections available February 20, 2022,
10 for the individual firms in the Comparison Group.²⁸

11 **Q. HOW DID YOU COMBINE THE ZACKS, YAHOO! FINANCE, AND VALUE**
12 **LINE ESTIMATES?**

13 A. I weighted the Zacks, Yahoo! Finance, and Value Line EPS values equally to find my best
14 estimate of the expected growth rate for each company in the Comparison Group.

15 **Q. PLEASE DISCUSS YOUR CALCULATION OF THE EXPECTED DIVIDEND**
16 **YIELD FOR THE COMPARISON GROUP.**

17 A. The appropriate dividend to use in the constant-growth DCF model is the annual dividend
18 rate at the beginning of the next period (year). I began my estimation of the expected
19 dividend yield by finding the dividends that each Comparison Group member company
20 was currently paying, as noted above.

²⁶ Exhibit MFG-13, Schedule 1.

²⁷ *Id.*

²⁸ *Id.*

1 **Q. PLEASE CONTINUE.**

2 A. Next, I adjusted the annualized dividends for expected growth. The dividends of all the
3 companies in the Comparison Group are expected to increase over the next year. I applied
4 a full year's growth rate for a firm to the annualized dividend and added the product to the
5 annualized dividend yield to transform it into the expected dividend yield.²⁹ The equation
6 for this operation is:

7
$$\frac{D_1}{P_0} = \frac{D_0}{P_0} (1 + g)$$

8 Applying this equation to the dividend yield for each company yielded the D_1 values that I
9 use in my estimates.³⁰

10 **2. Flotation Costs Adjustment**

11 **Q. PLEASE DEFINE FLOTATION COSTS.**

12 A. When companies issue equity, the price paid by investors for the new shares is higher than
13 the revenues per share received by the company. The difference is issuance, or flotation,
14 costs. These costs are the fees and expenses the company must pay as part of the issuance.
15 The return on equity must be adjusted to recognize this difference, or a company will be
16 denied the reasonable opportunity to earn its required rate of return.

17 **Q. DID YOU MAKE A FLOTATION COST ADJUSTMENT FOR THE COMPANY?**

18 A. Yes. My recommended flotation cost adjustment was 0.925 percent. I calculated this value
19 using information from Mr. D'Ascendis.³¹ I used the most recent four issuances made by

²⁹ I followed this rule of applying a full year's growth to the current dividend in my CAPM analysis as well as in this DCF model analysis. My adjustment is larger than that of Mr. D'Ascendis.

³⁰ Exhibit MFG-13, Schedule 1.

³¹ Exhibit ____ (DWD-1), Schedule 12, Page 1 of 1.

1 XEL, between 2013-2019.³² The issuance costs for XEL were markedly lower for these
2 four transactions than they were for prior issuances. Therefore, the recent issuance costs
3 are a better indicator of Xcel's current costs than the set of costs dating back to 1949 that
4 Mr. D'Ascendis used.

5 **Q. HOW WAS THE FLOTATION-COST ADJUSTMENT INCORPORATED INTO**
6 **YOUR DCF ANALYSIS?**

7 A. The DCF return on equity was modified in the following way to incorporate the adjustment
8 for flotation cost.³³

9

$$10 \quad k = \frac{D_1}{P_0} \left(\frac{1}{1-f} \right) + g$$

11
12 Where:

13 f is the flotation-cost percentage;

14 and all the other elements of the equation retain their previous meanings.

15
16 With the flotation cost of 0.925 percent incorporated, the expected dividend yield becomes
17 the flotation adjusted dividend yield. The adjustment increases the expected dividend yield
18 by about 3.4 basis points.³⁴

³² The four cost percentages were 1.179 percent, 1.097 percent, 1.002 percent, and 0.420 percent. The sum of the four is 3.698 percent, which yields an average of 0.925 percent.

³³ Exhibit MFG-13, Schedule 2. Morin, Roger, *New Regulatory Finance (2006)*, Public Utilities Reports, Inc., Vienna, Virginia, page 328.

³⁴ Exhibit MFG-13, Schedule 1.

1 **Q. DID YOU INCLUDE A FLOTATION COST ADJUSTMENT IN ALL OF YOUR**
2 **ROE ANALYSES?**

3 A. Yes. All subsequent ROE analyses presented in this testimony included a flotation cost
4 adjustment.

5 **Q. IS IT APPROPRIATE TO APPLY A MINIMUM STANDARD TO ROE RESULTS**
6 **PRODUCED BY THE ROE MODELS?**

7 A. Yes. Investors demand a higher return from common equity than from debt to compensate
8 for the greater risk of common equity. The Federal Energy Regulatory Commission
9 (“FERC”) uses a minimum standard of the yield for Moody’s 10-Year Baa Corporate
10 Bonds plus 20 percent of the CAPM risk premium as a minimum ROE threshold. Investors
11 faced with an ROE for a company below that threshold would choose the less-risky debt
12 over common equity investment in the company. Thus, NSP would not be competing with
13 these companies for capital.

14 **Q. DID YOU REMOVE ANY COMPANIES FROM THE DCF ANALYSIS BECAUSE**
15 **THEY HAD ROE RESULTS THAT WERE UNREASONABLY LOW?**

16 A. No. The average yield for the Moody’s 10-year Baa Corporate Bond Yield Index was 3.58
17 percent over January 1-28, 2022,³⁵ while the mean of 20 percent of the CAPM risk
18 premium was 1.95 percent.³⁶ The sum of the two components of the minimum threshold
19 was 5.53 percent. All the ROEs in the analysis exceeded that value.

³⁵ Exhibit MFG-14 Schedule 5.

³⁶ Exhibit MFG-14, Schedule 8.

1 **Q. WHAT ROE DID YOU FIND FOR YOUR CONSTANT-GROWTH DCF**
2 **ANALYSIS?**

3 A. For the eight companies (SJI excluded), the ROE was 9.53 percent. The median ROE was
4 9.79 percent.³⁷

5

³⁷ Exhibit MFG-13, Schedule 1.

1 **2. Multistage DCF Analysis**

2 **Q. WHAT ASSUMPTION IS MADE ABOUT THE EXPECTED GROWTH RATE IN**
3 **THE MULTISTAGE DCF MODEL?**

4 A. In the multistage DCF model it is assumed that the current growth rates are replaced by
5 other growth rates in intervals subsequent to the present period. There are several possible
6 approaches to a multistage analysis, but in many of the variations a long-run gross domestic
7 product (“GDP”) growth rate is adopted after the first stage.

8 **Q. WHAT LOGIC SUPPORTS ADOPTING GDP GROWTH RATES AFTER THE**
9 **FIRST STAGE OF A MULTISTAGE DCF ANALYSIS?**

10 A. The logic for adopting a long-run GDP growth rate after the first stage of a multistage
11 analysis is that a company cannot sustain growth faster than the growth rate of the economy
12 as a whole over the long run.

13 **Q. WHAT WAS YOUR BASIS FOR ASSUMING THAT CURRENT FORECASTED**
14 **EPS GROWTH RATES WILL NOT CONTINUE AFTER FIVE YEARS?**

15 A. The current five-year EPS growth-rate forecasts reflect growth expected as the U.S.
16 economy rebounds from the recession caused by the COVID-19 pandemic. These growth
17 rates are unsustainable because the economy is making use of productive capacity that was
18 idled by the recession. Once the slack is restored to use, the potential growth level returns
19 to long-run capacity growth rates.

20 **Q. IS THERE ECONOMIC DATA THAT SUPPORT THIS HYPOTHESIS?**

21 A. Yes. The U.S. economy turned sharply downward from long-term trends in the first quarter
22 of 2020 as the pandemic took hold. In 2019, Bureau of Economic Analysis year-over-year

1 quarterly growth rates for U.S. GDP ranged between 2.1 percent and 2.6 percent.³⁸ The
2 U.S. GDP growth rates for 2020 were 0.6 percent in the first quarter, -9.1 percent in the
3 second quarter, -2.9 percent in the third quarter, and -2.3 percent in the fourth quarter³⁹

4 **Q. PLEASE CONTINUE.**

5 A. Federal Reserve Board projections of annual GDP growth are 5.9 percent for 2021, 3.8
6 percent for 2022, and 2.5 percent for 2023.⁴⁰ These data are consistent with growth rates
7 returning to long-term norms of about 2.0 percent as the U.S. economy climbs out of the
8 pandemic-induced trough. It is reasonable, therefore, to assume that current five-year EPS
9 growth-rate forecasts are pushed above sustainable levels by the burst in economic activity
10 associated with the recovery. For example, the year-over-year GDP real growth rate in the
11 second quarter of 2021 was 12.2 percent.⁴¹ This rate represents recovery from the 9.1
12 percent decline in GDP that occurred in the second quarter a year earlier. It is not a rate of
13 growth that can be expected to continue. Therefore, long-term GDP growth rates better
14 reflect the long-term trend in EPS growth rates than do current 3- to 5-year EPS projections
15 that reflect the 2021 second-quarter GDP growth rate and near-term projected growth rates.

16 **Q. PLEASE IDENTIFY YOUR LONG-RUN GDP GROWTH RATES.**

17 A. It was my opinion that the second-stage EPS growth rates will be similar to the long-run
18 GDP growth rate forecasts of the Social Security Administration (“SSA”) and the Energy
19 Information Administration (“EIA”). I calculated long run GDP growth rates from 2027-
20 2050 from information published by these two agencies.⁴² The SSA rate is 3.95 percent,⁴³

³⁸ The BEA and Federal Reserve Board GDP growth rates are “real,” inflation-adjusted rates.

³⁹ Exhibit MFG-13, Schedule 3.

⁴⁰ Exhibit MFG-13, Schedule 4.

⁴¹ Exhibit MFG-13, Schedule 3.

⁴² The SSA and EIA GDP growth rates are “nominal.” They reflect current prices and include inflation.

⁴³ Exhibit MFG-13, Schedule 5.

1 while the EIA rate is 4.35 percent.⁴⁴ The weighted rate of the two growth rates is 4.20
2 percent.⁴⁵

3 **Q. PLEASE DISCUSS THE USE OF REAL GDP GROWTH RATES AND NOMINAL**
4 **GDP GROWTH RATES.**

5 A. I used real and nominal GDP growth rates because that is how the agencies report them.
6 The real rates could be converted to nominal rates by adding inflation rates to them. Doing
7 so would not change the range of change in the rates, which is the important point about
8 the rates. For example, there would still be a nearly 9 percent decrease in GDP from the
9 first quarter of 2020 to the second quarter of 2020 as the inflation rates added would be
10 similar, if not identical. Moreover, the difference between the actual GDP contraction rate
11 in second quarter of 2020 and the projected growth rate for 2021 would also be about the
12 same as inflation would be added to both sets of numbers. It is the large difference between
13 these rates that indicate the room for short-run growth in the U.S. economy, a spurt that is
14 not sustainable in the long run. Further, the long-term GDP growth rates that I used in my
15 multistage ROE analysis are nominal rates, as are the forecasted EPS growth rates with
16 which they are blended.

17 **Q. PLEASE DESCRIBE YOUR MULTISTAGE DCF ANALYSIS.**

18 A. I applied what is sometimes called a blended approach as my multistage DCF analysis. In
19 this approach, all inputs other than the EPS growth rates are the same as in the constant-
20 growth DCF analysis. I continued to use the five-year EPS forecasts in the first stage but
21 used the weighted long-run GDP growth rate as my second-stage EPS input. At that point
22 I blended the two growth rates by weighting the average of the five-year EPS forecasts

⁴⁴ Exhibit MFG-13, Schedule 6.

⁴⁵ Exhibit MFG-13, Schedule 8.

1 two-thirds and the long-run weighted GDP growth rate one-third. This approach is set
2 forth in a widely used regulatory handbook.⁴⁶

3 **Q. WHAT IS THE RESULT OF YOUR MULTISTAGE DCF ANALYSIS?**

4 A. For the eight companies (SJI excluded), the ROE was 8.90 percent. The median ROE was
5 9.09 percent.⁴⁷

6 **Q. HAVE YOU ADJUSTED YOUR DCF ROE TO ACCOMMODATE FACTORS
7 OTHER THAN EPS GROWTH RATE CHANGES?**

8 A. No. The DCF model incorporates factors that affect investors' view of the world. The
9 share price of common equity is the mechanism through which these influences are
10 translated. For example, investors' beliefs about the effect of a pandemic on the economy
11 are translated into common equity share prices. The same is true of the effect on those
12 prices of changes in federal income tax and depreciation rates, such as those implemented
13 in the United States under the 2017 Tax Cut and Jobs Act. Either case affects the ROE of
14 the company. Other factors that are incorporated into share prices are environmental
15 regulations, interest-rate expectations, market volatility, and leverage of companies.
16 Investors will ask for common equity prices that compensate them for the degree of risk
17 that they believe these factors create.

18 **VII. CAPM ANALYSIS FOR THE COMPARISON GROUP**

19 **Q. WHAT ARE THE STRENGTHS AND WEAKNESSES OF THE CAPM?**

20 A. The CAPM is theoretically sound, but its application raises some issues. The analysis using
21 CAPM selects a riskless asset, beta, and market risk premium. The ROE analysis can vary

⁴⁶ Exhibit MFG-13, Schedule 7; Morin, Roger, *New Regulatory Finance (2006)*, Public Utilities Reports, Inc., Vienna, Virginia, page 309.

⁴⁷ Exhibit MFG-13, Schedule 8.

1 considerably depending on the analyst’s choices for these variables. Thus, what at first may
2 seem like a model that is straightforward depends heavily on the particular input values
3 used by an analyst.

4 **Q. PLEASE DESCRIBE THE CAPM VERSION THAT YOU EMPLOYED IN YOUR**
5 **ROE ANALYSIS.**

6 A. I based my CAPM analysis on the version that the Federal Energy Regulatory Commission
7 (“FERC”) first adopted in Opinion 569.⁴⁸ This approach addresses potential flaws in the
8 CAPM. The FERC model is forward-looking and includes rules and methods that remove
9 analyst judgment that can cause CAPM analyses conducted at the same time to vary widely.
10 I do not adopt all the FERC procedures, but I follow its outline.

11 **Q. PLEASE IDENTIFY THE RULES FERC APPLIES FOR INCLUDING**
12 **COMPANIES IN A CAPM ANALYSIS.**

13 A. Starting with the S&P 500 as its base for determining the broad market return, FERC
14 requires that companies included in the market return analysis be paying dividends, an
15 essential part of any DCF analysis. Companies with EPS estimates less than 0 percent and
16 greater than 20 percent are excluded, thereby handling the problem of outliers at either end
17 of the spectrum.

18 **Q. WHAT SOURCE FOR SHORT-TERM EPS FORECASTS FOR S&P 500**
19 **COMPANIES DID FERC SPECIFY BE USED IN A CAPM ANALYSIS?**

20 A. FERC specified that the EPS forecasts for S&P 500 companies be from Yahoo! Finance.
21 I included the Yahoo! Finance EPS forecasts in my analysis in this docket.⁴⁹

⁴⁸ *Ass’n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569, 169 FERC ¶ 61,129 (2019). Issued November 21, 2019, pages 134, 138, 184-185.

⁴⁹ The Yahoo! Finance EPS forecasts are IBES EPS forecast values. Yahoo! Finance and IBES are used interchangeably in this testimony.

1 **Q. HAS FERC ADDED A SOURCE FOR SHORT-TERM EPS FORECASTS IN**
2 **CAPM ANALYSIS IN A SUBSEQUENT OPINION?**

3 A. Yes. In Opinion 569-A, FERC stated that it would consider the use of Value Line short-
4 term EPS forecasts in the CAPM in future proceedings.⁵⁰ I included the Value Line EPS
5 forecasts in my analysis in this docket.

6 **Q. PLEASE DISCUSS THE RISK-FREE RATE THAT YOU USED.**

7 A. For the risk-free rate, FERC uses a six-month average of 30-year Treasury bond yields,
8 not forecasts of those bond yields. I departed from this aspect of the FERC analysis. I use
9 an average of 30-year Treasury bond yields like FERC, but for a four-week period, not
10 six months. This treatment of average yields is consistent with how I find average equity
11 prices within the DCF model.

12 **Q. PLEASE EXPLAIN THE CALCULATION OF A CAPM ROE.**

13 A. First, the analyst must select the rate of return for a riskless asset. Short-term assets such
14 as 90-day Treasury Bills are considered to be virtually riskless; the default risk is next to
15 nothing, and the inflation risk is negligible. Equity investors, however, typically have a
16 longer planning horizon than the 90-day maturity of these instruments, so the return on
17 these bills is not suitable for this CAPM process. Long-Term Treasury bonds, on the other
18 hand, match the planning horizon and have yields that are closer to common equity returns.
19 But these instruments are subject to substantial inflation risk and, therefore, are not strictly
20 riskless. Nevertheless, I adopted the 30-year U.S. Treasury yield as my risk-free rate. Its
21 favorable characteristics outweigh its unfavorable characteristics.

⁵⁰ See *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569-A, 171 FERC ¶ 61,154, ¶¶ 58 (2020).

1 **Q. WHAT PERIOD DID YOU USE FOR THE 30-YEAR TREASURY YIELD IN**
2 **YOUR CAPM ANALYSIS?**

3 A. I used the average yield on a 30-year Treasury bond for January 1-28, 2022, as my riskless
4 asset rate. This average yield was 2.07 percent.⁵¹ As noted above, I departed from the
5 FERC approach by using a four-week average of recent yields. The six-month period
6 FERC uses includes data that is stale and, therefore, does not reflect investors' current
7 views regarding the future of the economy.

8 **Q. WHY DID YOU USE THE RECENT 30-YEAR TREASURY YIELD IN YOUR**
9 **CAPM ANALYSIS?**

10 A. Current yields on the 30-year Treasury bond are the best risk-free rate for the CAPM
11 analysis. Much like current common equity share prices reflect all information about
12 factors affecting the value of the shares, so too do current bond yields capture the beliefs
13 of investors as to where yields on the instruments are headed.

14 **Q. WHAT VALUES DID YOU USE FOR BETA (β)?**

15 A. I used the betas for each company in the Comparison Group taken from the Value Line
16 website on February 25, 2022.⁵² These beta values are Value Line's latest assessment for
17 each company.

18 **Q. HOW IS BETA (β) INTERPRETED?**

19 A. A beta of 1 indicates that a company's share price will move with the market, while a beta
20 higher than 1 indicates that a stock will be more volatile than the market, and a beta lower
21 than 1 indicates that a stock will be less volatile than the market.

⁵¹ Exhibit MFG-14, Schedule 1.

⁵² Exhibit MFG-14, Schedule 2.

1 **Q. WHAT ELSE WAS INVOLVED IN YOUR CALCULATION?**

2 A. The term within parentheses in the CAPM equation is called the “market risk premium
3 (MRP).” It is the difference between the return on a broad market measure and the risk-
4 free rate of return. In other words, the premium that investors require in order to take on
5 risk. As noted above, I already had the risk-free rate. Therefore, I needed to calculate a
6 market rate of return.

7 **Q. WHAT METHOD DID YOU USE TO FIND THE MARKET RETURN?**

8 A. As stated, I use the S&P 500 inputs in finding my market risk premium. FERC prescribes
9 the I/B/E/S EPS forecasts published by Yahoo! Finance, and as noted above, added the
10 Value Line EPS forecasts as an additional source. I downloaded these values from the
11 respective sources on February 7, 2022, and February 8, 2022. I downloaded the dividend
12 yields for the S&P 500 companies from Value Line, also on February 8, 2022. I applied
13 the I/B/E/S EPS growth rates⁵³ and Value Line growth rates⁵⁴ to the dividend yields to find
14 the expected dividend yield, adding a full year’s growth.

15 **Q. WHAT WERE THE NEXT STEPS IN FINDING THE CAPM RETURN ON**
16 **EQUITY?**

17 A. I applied the dividend-paying rule, and the minimum and maximum threshold rules of less
18 than 0 percent and greater than 20 percent to the set of S&P 500 companies. The companies
19 that met the screens in the IBES and Value Line S&P 500 sets are different from one
20 another because the EPS forecasts vary from company to company within the sets.⁵⁵

⁵³ Exhibit MFG-14, Schedule 3.

⁵⁴ Exhibit MFG-14, Schedule 4.

⁵⁵ Exhibit MFG-14, Schedule 3 and Exhibit MFG-14, Schedule 4.

1 **Q. WHAT WAS THE FOLLOWING STEP?**

2 A. I weighted the remaining ROEs by the market capitalization for each company. The sum
3 of those individual ROEs is the market return. The value for the IBES set was 14.02
4 percent.⁵⁶ The market risk premium was calculated by subtracting the 2.07 percent return
5 on the 30-year Treasury from the market return. The result of this operation was 11.95
6 percent for the IBES set. This amount is multiplied by the beta for each Comparison Group
7 company to find that company's CAPM ROE.⁵⁷ The corresponding values for the Value
8 Line set are a market return of 9.61 percent,⁵⁸ the same 2.07 percent risk-free rate of return,
9 and a market risk premium of 7.54 percent. This amount is multiplied by the beta for each
10 Comparison Group company to find that company's CAPM ROE.⁵⁹

11 **Q. DOES FERC HAVE SCREENS FOR OUTLIER CAPM ROES?**

12 A. Yes. FERC applies Low-End and High-End Test to the CAPM adjusted ROEs. My Low-
13 End Test is the same as the minimum threshold for the DCF ROEs, the four-week average
14 of the Moody's 10-year Baa Corporate Bond Yield Index value of 3.58 percent plus 20
15 percent of the CAPM risk premium. The High-End Test is 200 percent of the median value
16 of all companies included in the analysis. The values of the outlier tests are different in the
17 IBES and Value Line analyses because of the different market risk premiums produced.
18 However, no CAPM ROEs were removed due to the Low-End or High-End Tests in either
19 of my analyses. I combined the two analyses to find a mean Low-End Test of 5.53 percent.

20 ⁶⁰ I note again that SJI is excluded from the CAPM ROE analyses.

⁵⁶ Exhibit MFG-14, Schedule 3.

⁵⁷ Exhibit MFG-14, Schedule 6.

⁵⁸ Exhibit MFG-14, Schedule 4.

⁵⁹ Exhibit MFG-14, Schedule 7.

⁶⁰ Exhibit MFG-14, Schedule 8.

1 **Q. WHAT WAS THE RESULT OF YOUR CAPM ANALYSIS?**

2 A. The mean ROE for my IBES CAPM analysis was 12.34 percent and the median ROE
3 was 11.96 percent.⁶¹ The mean ROE for my Value Line CAPM analysis was 8.56 percent
4 and the median ROE was 8.32 percent.⁶² These values include a flotation-cost adjustment
5 of 3.4 basis points.

6 **Q. HAVE YOU INCLUDED A SIZE ADJUSTMENT IN YOUR CAPM ANALYSES?**

7 A. No. I did not include a size adjustment. There are studies that indicate the size adjustment
8 is not appropriate for the CAPM. The studies show that the effect disappears for years at a
9 time and does not manifest itself in the prices investors pay for smaller and larger stocks.⁶³
10 Further, the studies that have shown a size effect may be examples of data mining: e.g.,
11 start and stop periods for the data to be studied that show a size effect, but the finding
12 cannot be replicated when the span of the study has different beginnings and ends.⁶⁴ The
13 studies recommend not making adjustments for an effect that may be transitory, at best,
14 and not one that investors demand in the prices they pay for common equity.

15

⁶¹ Exhibit MFG-14, Schedule 6.

⁶² Exhibit MFG-14, Schedule 7.

⁶³ Damodaran, Aswath, "The Small Cap Premium: Where is the Beef?" Business Valuation Review, Volume 34, Number 4 (2015).

⁶⁴ Ang, Clifford S., "The Absence of a Size Effect Relevant to the Cost of Equity." Business Valuation Review, Volume 37, Number 3 (2018).

1 **VIII. RECOMMENDED ROE**

2 **Q. PLEASE SUMMARIZE YOUR ROE RESULTS.**

3 A. I performed four ROE analyses, constant-growth and multistage DCF, and S&P 500 market
4 return constant-growth and multistage CAPM. Those ROE values are:

5 **DCF ROE Mean and Median Results (Without SJI)**

	Constant growth	Multistage
Mean	9.53%	8.90%
Median	9.79%	9.09%

6
7 **CAPM ROE Mean and Median Results (Without SJI)**

	IBES	Value Line
Mean	12.34%	8.56%
Mean	11.96%	8.32%

8
9 **Q. PLEASE COMMENT ON THE DCF ROE RESULTS.**

10 A. The DCF constant-growth ROE result was higher than the multistage counterpart ROE.
11 This outcome is to be expected given the recent history for GDP of sharply negative growth
12 rates, followed by further negative growth rates (though not as severe), and above-average
13 growth rates. The constant-growth model reflects the short-lived sharp upward bursts in
14 the growth rates as the economy recovers from the contraction. The multistage approach,
15 on the other hand, moderates the influence of these recent negative growth rates by
16 incorporating the lower, steadier positive long-run growth rates.

1 **Q. PLEASE COMMENT ON THE CAPM ROE RESULTS.**

2 A. The CAPM ROE results show greater variability than the DCF ROE results. Whereas the
3 difference between the DCF ROE results from the different approaches is about 1 percent,
4 the difference in the CAPM ROE results from the two sources of EPS growth-rate forecasts
5 is more than 3.60 percent whether comparing the means or the medians. This range of
6 results is common to CAPM analyses.

7 **Q. WHAT WEIGHTS DID YOU ASSIGN TO THE FOUR ROE ANALYSES?**

8 A. The DCF model constant-growth and multistage results were within the range of
9 authorized ROEs from 2019-2021 for U.S. natural gas utilities as reported by Regulatory
10 Research Associates (“RRA”) a unit of S&P Global IQ Pro.⁶⁵ For this reason, I gave
11 these ROE results the most weight, 37.5 percent each. The IBES S&P 500 CAPM result
12 received the lowest weight, 10 percent. The result of 12.34 percent is more than 2
13 percent greater than the single highest authorized ROE in the 2019-2021 period. Being
14 outside the range does automatically mean a result is suspect, but such a large
15 discrepancy is an indication the value is not in step with current ROEs. The Value Line
16 S&P 500 CAPM result of 8.56 percent also was outside the range, being 24 basis points
17 lower than the single lowest authorized ROE in the RRA report. Therefore, this CAPM
18 ROE result received a weight of 15 percent. This weight recognizes that the Value Line
19 S&P 500 value was outside the range, but not by as much as the IBES S&P 500 result.⁶⁶

20 **Q. WHAT WAS THE WEIGHTED AVERAGE OF THE FOUR ROE ANALYSES?**

21 A. The weighted average of the four models’ means was 9.43 percent.⁶⁷

⁶⁵ Exhibit MFG-15.

⁶⁶ Exhibit MFG-16, Schedule 1.

⁶⁷ *Ibid.*

1 **Q. HOW DID YOU ARRIVE AT A RECOMMENDED ROE FOR NSP?**

2 A. In the present circumstances, recent U.S. economic performance and short-run forecasts
3 support the narrative that EPS forecasts for the next five years are temporarily high and can
4 be expected to decline as growth in the domestic economy returns to typical levels. This
5 scenario does not mean that the U.S. economy is headed for a period of poor performance.
6 Rather, it means that the opportunities for large growth rates due to the presence of unused
7 resources caused by the economic downturn will taper off as the economy returns to greater
8 use of its economic potential. My weighted-average NSP ROE of 9.43 percent fits this
9 scenario.

10 **IX. REASONABLENESS CHECK OF THE RECOMMENDED ROE**

11 **Q. HAVE YOU CHECKED THE REASONABLENESS OF YOUR ROE RESULTS?**

12 A. Yes. I checked the reasonableness of my analyses' outcomes by comparing the ROEs with
13 recent ROEs authorized in natural gas rate cases across the United States.

14 **Q. PLEASE EXPLAIN WHICH AUTHORIZED ROES YOU USED TO CHECK THE**
15 **REASONABLENESS OF YOUR DCF AND CAPM ROES.**

16 A. I collected the set of 2019-2021 authorized ROEs from U.S. natural gas rate cases from
17 S&P Global Market Intelligence's Regulatory Research Associates (RRA).⁶⁸

18 **Q. HOW DO YOU USE THIS SET OF AUTHORIZED ROES?**

19 A. I use the recent authorized ROEs as a basis for evaluating the reasonableness of my ROE
20 results. I did not use it as a substitute for those analyses.

⁶⁸ Exhibit MFG-15.

1 **Q. WHY ARE AUTHORIZED ROES NOT A GOOD SUBSTITUTE FOR CURRENT,**
2 **FORWARD-LOOKING ROE ANALYSES?**

3 A. Recently authorized ROEs reflect the results of rate cases conducted in a variety of
4 environments and at different times. Test years, conditions in capital markets, general
5 economic indicators such as inflation rates, and so forth for previous rate cases can be
6 different and become outdated when compared with these factors for a current rate case.
7 Therefore, recently authorized ROEs should serve only to establish whether a current ROE
8 result is reasonably close to what has happened, not be a substitute for forward-looking
9 analysis based on current conditions.

10 **Q. PLEASE DESCRIBE THE SET OF AUTHORIZED ROES YOU COLLECTED.**

11 A. RRA listed 30 cases for 2019, 34 for 2020, and 42 for 2021 for which an ROE was
12 provided.

13 **Q. PLEASE DISCUSS THE ROE AWARDS MADE IN 2019, 2020, AND 2021.**

14 A. The following table summarizes the authorized ROE results for the cases in 2019, 2020,
15 and 2021.

16 **Summary of ROE Awards for 2019-2021**

Year	No. of Cases	Mean ROE	Median ROE	ROE Range
2021	42	9.56	9.60	8.80-10.24
2020	34	9.46	9.50	8.80-10.00
2019	30	9.72	9.72	9.00-10.25

17
18 My recommended ROE of 9.43 percent is within the range of each year and slightly below
19 the means and medians for the years. Therefore, I conclude that this ROE is reasonable.

1 **X. RECOMMENDED CAPITAL STRUCTURE AND OVERALL RATE OF**
2 **RETURN**

3 **Q. WHAT DID YOU INCLUDE IN YOUR OVERALL RETURN ANALYSIS AS THE**
4 **COSTS OF CAPITAL FOR NSP?**

5 A. I accepted the Company's proposed cost of long-term debt of 4.10 percent and short-term
6 debt cost of 1.09 percent as presented in NSP-MN Regulated Capital Structure, C1. Cost
7 of Capital Schedule, Page 1 of 2.

8 **Q. WHAT WAS THE CAPITAL STRUCTURE YOU RECOMMENDED FOR THE**
9 **NSP?**

10 A. I recommended a capital structure of 47.57 percent long-term debt, 0.43 percent short-term
11 debt, and 52.00 percent common equity.

12 **Q. HOW DID YOU DETERMINE YOUR RECOMMENDED CAPITAL**
13 **STRUCTURE?**

14 A. To find my recommended capital structure, I calculated the average long-term debt, short-
15 term debt, and common equity ratios for the eight natural gas utilities in the Comparison
16 Group. These average ratios reflected the dollar amount by company for each of the eight
17 quarters from the first quarter of 2020 to the fourth quarter of 2021. The source of the
18 amounts upon which the company ratios were based is S&P Global Market Intelligence.⁶⁹

19 **Q. WHY DID YOU SELECT THESE EIGHT QUARTERS FOR YOUR CAPITAL-**
20 **STRUCTURE ANALYSIS?**

21 A. I used two years of data to smooth the effects of any quarter that was an outlier. Using two
22 years of data also mitigated any seasonal effects on the capital structures. The fourth

⁶⁹ Exhibit MFG-16, Schedule 2.

1 quarter of 2021 is the most recent quarter for which data were available. Therefore, I began
2 my analysis with data from the first quarter of 2020.

3 **Q. DID YOU MAKE ANY ADJUSTMENTS IN YOUR CAPITAL-STRUCTURE**
4 **ANALYSIS?**

5 A. Yes. First, I excluded SJI because it is about to be acquired by a unit of J. P. Morgan and
6 Co. Then I excluded the fourth quarter 2021 results because they were available for only
7 three companies. I also calculated the ratios with New Jersey Natural Gas's capital
8 structure substituted for NJR's capital structure to test the effect. I further calculated the
9 ratios with companies with low common-equity ratios or exceptionally high short-term
10 debt ratios excluded. Finally, I calculated long-term debt and common-equity ratios with
11 short-term debt excluded because the high short-term debt ratios might be distorting the
12 outcome.⁷⁰

13 **Q. PLEASE SUMMARIZE THE CAPITAL-STRUCTURE RATIOS IN YOUR**
14 **ANALYSIS.**

15 A. In all cases but the situation excluding short-term debt, the long-term debt and common-
16 equity ratios were less than 50 percent, usually significantly so. The short-term debt ratios
17 for the companies were unusually high, much higher than NSP's requested short-term ratio
18 of 0.43 percent. This mismatch between the other natural gas companies' short-term debt
19 ratios and NSP's requested short-term debt ratio was the impetus for my analysis excluding
20 short-term debt. In one of the scenarios the ratios were 48.01 percent long-term debt and
21 51.99 percent common equity. This common-equity ratio is the highest in my analysis.
22 This outcome is what supports my recommended capital structure for NSP.

⁷⁰ Exhibit MFG-16, Schedule 2.

1 **Q. WHAT WAS YOUR RECOMMENDED CAPITAL-STRUCTURE RATIOS FOR**
2 **NSP?**

3 A. My recommended capital-structure ratios were 47.57 percent long-term debt, 0.43 percent
4 short-term debt, and 52.00 percent common equity.⁷¹ These recommended ratios reflect
5 the ratios I found in my analysis for the Comparison Group and the Company's requested
6 ratios. I adopted NSP's 0.43 percent requested short-term debt ratio. The 51.99 percent
7 common-equity ratio was the highest I found in my analysis, so rounded it to 52.00 percent.
8 I increased the long-term debt ratio to 47.57 percent because that value is close to both the
9 Company's request and the average for the proxy group companies. The Company's
10 requested 52.54 percent common equity was greater than any ratio I found for the
11 Comparison Group, even adjusting for extreme values. Therefore, I recommended
12 reducing the ratio from 52.54 percent to fit better with the mean ratio for the peer
13 companies and moving the 0.54 percent to long-term debt.

14 **Q. WHAT IS THE OVERALL ROR THAT YOU RECOMMENDED FOR THE**
15 **COMPANY?**

16 A. When my estimated ROE of 9.43 percent was included with the proposed capital structure
17 and the Company's costs for the other capital-structure elements, the ROR is 6.86
18 percent.⁷²

⁷¹ Exhibit MFG-16, Schedule 3.

⁷² Exhibit MFG-16, Schedule 3.

1 **XI. REVIEW OF THE COMPANY'S ROE ANALYSIS**

2 **1. Comparison Group vs. Proxy Group**

3 **Q. PLEASE COMPARE THE MEMBERSHIP OF YOUR COMPARISON GROUP**
4 **WITH THE MEMBERSHIP OF MR. D'ASCENDIS'S PROXY GROUP.**

5 A. As noted previously, Mr. D'Ascendis's Proxy Group had seven members to my
6 Comparison Group's eight members. There was an overlap of six natural gas utilities.

7 **Q. WHAT EXPLAINS THE DIFFERENCES IN THE MEMBERSHIP OF THE TWO**
8 **GROUPS?**

9 A. The difference is I included Chesapeake Utilities and NiSource in the Combination Group,
10 while Mr. D'Ascendis did not include them in his Proxy Group.⁷³ I do not know which of
11 his screens the companies failed.

12 **Q. WHAT FACTORS ACCOUNT FOR THE DIFFERENCES IN THE ROE**
13 **ANALYSES VALUES?**

14 A. The different dates of the analyses account for some of the difference. EPS growth rates,
15 share prices, dividend amounts, beta values, and risk-free rates can change substantially in
16 a few months. These changes cause ROEs for individual proxy group member companies
17 to be different from what they were a few months before. Thus, even when group
18 memberships overlap, differences occur.

19

⁷³ This assumes Mr. D'Ascendis will remove SJI from his group because it is involved in a merger or acquisition. I think it is likely that he will as he has applied that screen in the past.

1 **2. CAPM Analysis**

2 **Q. WHAT SOURCES DID MR. D’ASCENDIS USE TO CALCULATE MARKET**
3 **RETURNS FOR HIS CAPM ANALYSES?**

4 A. Mr. D’Ascendis used estimates provided by Value Line and Bloomberg as proxies for the
5 market index.

6 **Q. DID MR. D’ASCENDIS EXCLUDE COMPANIES NOT PAYING DIVIDENDS**
7 **FROM HIS BROAD MARKET RETURN ANALYSES?**

8 A. It appears that Mr. D’Ascendis did not exclude companies not paying dividends from his
9 three broad market return analyses. His descriptions of the sources for his market returns
10 do not mention such an exclusion.⁷⁴

11 **Q. PLEASE EXPLAIN WHY MR. D’ASCENDIS’ BROAD MARKET RETURN**
12 **RESULTS WERE FLAWED IF THEY INCLUDED COMPANIES NOT PAYING**
13 **DIVIDENDS.**

14 A. The constant-growth rate DCF model calculates the price of a dividend-paying stock
15 growing at a constant rate per the following expression:⁷⁵

16
$$P = \frac{D_1}{1 + K} / \left(1 - \frac{1 + g}{1 + K}\right)$$

17 If the stock pays no dividends, D₁ is zero, and the price of the stock is zero, according to
18 the model. Investors cannot purchase equities for this price. Therefore, the DCF model
19 results are not reliable for non-dividend paying companies.

⁷⁴ D’Ascendis Direct, page 44, line 17-page 46, line 8.

⁷⁵ Roger A. Morin, *New Regulatory Finance*, Public Utilities Reports, Inc., Vienna, Virginia (2006), page 273.

1 **Q. IS THERE SUPPORT FOR THE PROPOSITION THAT THE DCF MODEL**
2 **CANNOT BE APPLIED TO COMPANIES NOT PAYING DIVIDENDS?**

3 A. Yes. The following passage is from FERC Opinion No. 569, cited earlier.

4 **f. Commission Determination**

5 “260. We continue to find reasonable the MISO TOs’
6 proposal to estimate the CAPM expected market return using
7 a forward-looking approach, based on applying the DCF
8 model to the dividend-paying members of the S&P 500. Using
9 a DCF analysis of the dividend-paying members of the S&P
10 500 is a well-recognized method of estimating the expected
11 market return for purposes of the CAPM model.⁵⁶³ *The DCF*
12 *analysis must be limited to the dividend-paying members of*
13 *the S&P 500, rather than using all companies in the S&P 500,*
14 *because a DCF analysis can only be performed on companies*
15 *that pay dividends.”⁷⁶ [Emphasis added]*

16
17 **Q. WHAT IS THE CONSEQUENCE OF INCLUDING NON-DIVIDEND PAYING**
18 **COMPANIES IN A DCF ANALYSIS?**

19 A. The consequence of including non-dividend paying companies in a DCF analysis is that
20 the market return value is tainted.⁷⁷ As shown, the application of the DCF model to such
21 companies yields ROE results that cannot be defended. Therefore, Mr. D’Ascendis’s three
22 broad market returns were flawed, as were the ROE approaches in which they are applied.
23 These included his CAPM analysis as applied to his proxy group and to the set of
24 unregulated companies Mr. D’Ascendis asserts have the same risk level as NSP.

⁷⁶ *Ass’n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569, 169 FERC ¶ 61,129 (2019), page 134.

⁷⁷ Dr. Griffing’s calculation of the S&P 500 market return shows that many of the initial sets of companies were not paying dividends. (See Exhibit MFG-14, Schedules 3-4). Thus, the inclusion of these companies in calculating the S&P market return is not a minor matter.

1 **Q. PLEASE IDENTIFY ANOTHER DIFFERENCE BETWEEN YOUR**
2 **APPLICATION OF THE CAPM AND MR. D’ASCENDIS’S APPLICATION OF**
3 **THE CAPM.**

4 A. Mr. D’Ascendis used forecasted yields for the 30-year U.S. Treasury bond from *Blue Chip*
5 *Economic Indicators* as his risk-free rate for some versions of his CAPM analysis.⁷⁸ My
6 risk-free rate was based on current yields for the 30-year U.S. Treasury bond.

7 **Q. WHAT IS THE RECORD OF *BLUE CHIP* IN FORECASTING ACTUAL 30-**
8 **YEAR U.S. TREASURY BOND YIELDS?**

9 A. *Blue Chip* forecasts of the 30-year U.S. Treasury bond consistently overstated the actual
10 yields from 2010 until a recent forecast covering the second quarter of 2021 through the
11 first quarter of 2022. With one quarter of results yet to come, that forecast of an average
12 yield of 1.98 percent over the span is 6 basis points less than the running average for three
13 calendar quarters. The previous forecasts, apart from one that was 9 basis points over the
14 actual average yield, ranged from 39 basis points to 146 basis points above the actual
15 average yields.^{79 80}

16 **Q. DO INVESTORS BELIEVE THAT *BLUE CHIP* FORECASTS ARE ACCURATE**
17 **PREDICTORS OF BOND YIELDS?**

18 A. Given the prolonged period where *Blue Chip* yield forecasts exceeded the actual yields that
19 transpired, it is questionable that investors accept *Blue Chip* forecasts without reservation.
20 Utility company witnesses frequently state that studies show investors do accept the *Blue*
21 *Chip* forecasts as accurate. However, those studies pre-date the 2009 start of the period

⁷⁸ D’Ascendis Direct, page 36, lines 2-20.

⁷⁹ Exhibit MFG-17.

⁸⁰ Exhibit MFG-18.

1 where the forecasts have overstated the actual yields. I have looked in an online website,
2 *JSTOR*, that provides access to leading academic journals, including those in economics
3 and finance, for studies that ask investors their beliefs about the accuracy of bond yield
4 forecasts after the forecasts have proved inaccurate for so long. I have not been able to find
5 such a study. The absence of such studies incorporating the poor performance of *Blue Chip*
6 forecasts since 2009 in the record in this docket mean that Mr. D'Ascendis's use of a bond-
7 yield forecast likely overstates what investors believe about the forecasts. Thus, his
8 forecasted risk-free rate of 2.88 percent for his CAPM analysis also was overstated.⁸¹

9 **Q. WHAT IS THE EFFECT ON CAPM RESULTS OF USING AN OVERSTATED**
10 **RISK-FREE RATE?**

11 A. An overstated risk-free-rate causes CAPM ROE results to be higher than for applications
12 of the model that use current yields on 30-Year U.S. Treasuries as the risk-free rate.

13 **3. Non-Price Regulated Companies Analysis**

14 **Q. PLEASE DESCRIBE MR. D'ASCENDIS'S COMPARABLE RISK ANALYSIS.**

15 A. Mr. D'Ascendis asserted that the comparable risk standard for determining an ROE for a
16 regulated utility such as NPSM can be applied to non-price regulated companies if they are
17 comparable in risk to the subject utility. He formed a proxy group for such companies
18 using Value Line betas and standard errors as screening criteria. The betas and standard
19 errors had to fall within two standard deviations of the values of the same parameters for
20 the natural gas utility Proxy Group companies. He then applied the DCF model, risk
21 premium model, and CAPM to the resulting proxy group of 48 companies. He argued that

⁸¹ D'Ascendis Direct, page 36, lines 14-20.

1 the ROEs derived were indicators of the level of return required by NSP because the risks
2 were similar.⁸²

3 **Q. WHAT ROLE DOES VOLATILITY OF CASH FLOW PLAY IN THE CREDIT**
4 **RATINGS THAT COMPANIES RECEIVE?**

5 A. Price regulated companies such as the natural gas utilities used by Mr. D’Ascendis and me
6 in our proxy groups tend to have cash flow that is less volatile than the cash flow of non-
7 price regulated companies. S&P considers both level and volatility of profits as it assigns
8 leverage ratings to companies. Firms with lower leverage ratings receive better credit
9 ratings. Therefore, companies with less volatile cash flow receive better credit ratings.

10 **Q. PLEASE ELABORATE.**

11 A. S&P explains in an excerpt from its publication “Key Credit Factors for the Regulated
12 Public Utilities Industry” that in assessing the adequacy of cash flow of a regulated utility
13 that S&P analysts take into account volatility of cash flow, just as they do for other
14 corporate issuers. One measure of volatility is the percentage of cash flow from regulated
15 activities. Utilities, with a higher percentage of their cash flow coming from regulated
16 activities, typically are regarded as less volatile.⁸³

17 **Q. PLEASE EXPLAIN HOW S&P COMBINES VOLATILITY RATINGS WITH**
18 **CASH FLOW IN RATING COMPANIES.**

19 A. S&P includes three tables of different volatility ratings in its credit rating discussion
20 publication “General: Corporate Methodology.” The tables show that for a company,
21 regulated or not, to receive a certain leverage rating, it must demonstrate that it meets
22 certain thresholds for core ratios, coverage ratios, and payback ratios. Companies rated

⁸² D’Ascendis Direct, page 59, line 4-page 60, line 21.

⁸³ Exhibit MFG-19, Schedule 1, Pages 1-2.

1 low in volatility do not have to meet levels as stringent as companies rated medial or
2 standard in volatility do to receive the same leverage rating.⁸⁴

3 **Q. PLEASE PROVIDE AN EXAMPLE.**

4 A. The standard for a company with a low volatility rating to receive a “minimal leverage”
5 rating for the funds from operations (“FFO”)-to-debt ratio is 35 percent or better. In
6 contrast, a company with a standard volatility rating has to have an FFO-to-debt ratio of 60
7 percent or better to receive the same “minimal leverage” rating.⁸⁵ Recall that lower
8 volatility is associated with better credit ratings.

9 **Q. PLEASE DESCRIBE HOW HAVING TO MEET A LOWER RATIO TO RECEIVE**
10 **THE SAME LEVERAGE RATING ADDRESSES RISK LEVELS OF PRICE**
11 **REGULATED.**

12 A. The FFO-to-debt ratio is one of seven indicators that S&P considers in assigning an overall
13 leverage rating in its credit rating process. A “minimal leverage” rating is associated with
14 higher credit ratings. Thus, a price regulated public utility with its tendency to receive a
15 low volatility rating because a “vast majority”⁸⁶ of its cash flow comes from regulated
16 activities will, all other things equal, receive a better leverage rating and better credit rating
17 than will a non-price regulated company. A non-price regulated company by definition
18 does not have a substantial percentage of cash flow coming from regulated activities.

⁸⁴ See paragraphs 76-77 of Exhibit MFG-19, Schedule 2, Pages 1-2.

⁸⁵ See the shaded areas in the FFO/Debt columns of Table 17 and Table 19 in Exhibit MFG-19, Schedule 2, pages 1-2.

⁸⁶ See paragraph 78 of Exhibit MFG-19, Schedule 1, page 2.

1 **Q. HOW CAN NON-PRICE REGULATED FIRMS RECEIVE A CREDIT RATING**
2 **IDENTICAL TO THAT OF PRICE REGULATED UTILITIES?**

3 A. Firms with less desirable volatility ratings, such as the volatility rating a typical non-price
4 regulated firm is likely to receive, can make up for their greater cash flow uncertainty with
5 higher FFO-to-debt ratios, to name one compensating factor. These firms can achieve
6 higher ratios if they have greater cash flow than price regulated firms. Higher rates of
7 return to equity can produce greater cash flow. Hence, higher return to equity enables the
8 non-price regulated firms to receive credit ratings equal to the credit ratings of their price
9 regulated counterparts.

10 **Q. DOES IT FOLLOW THAT A NON-PRICE REGULATED COMPANY WITH THE**
11 **SAME CREDIT RATING AS A PRICE REGULATED UTILITY IS A GOOD**
12 **PROXY FOR THE PRICE REGULATED UTILITY?**

13 A. No. Non-price regulated companies with greater cash flow volatility tend to require greater
14 return on equities than their price-regulated counterparts. As shown above, greater return
15 on equity is a way non-price regulated firms can attain equality in S&P volatility ratings
16 with price regulated utilities and take a step toward the same credit rating. Hence, the non-
17 price regulated firms do not make good proxies for price regulated utilities because of their
18 tendency toward higher rates of return.

19 **Q. DO THESE OBSERVATIONS ABOUT CREDIT RATINGS AND RETURN ON**
20 **EQUITY ALSO APPLY TO BETA VALUES?**

21 A. Yes. Mr. D'Ascendis states that beta coefficients reflect the market's assessment of
22 market/systematic risk. Further, he says that beta coefficients are derived from regression
23 analyses of market prices. If a non-price regulated firm and a price regulated firm with the

1 same beta value are alike in all operational aspects other than volatility of earnings, logic
2 indicates that the non-price regulated firm must be equally appealing to investors due to a
3 higher rate of return. Therefore, the ROEs for the companies in Mr. D'Ascendis's proxy
4 group of 48 non-price regulated companies are biased upward relative to the ROEs for
5 natural gas utilities in proxy groups. It is not surprising that they are higher.

6 **XII. SUMMARY**

7 **Q. WHAT ARE THE CRITERIA THE COMMISSION SHOULD CONSIDER IN** 8 **SETTING THE COMPANY'S ROE AND ROR?**

9 A. The Commission should only consider whether the ROE and ROR meet the *Bluefield* and
10 *Hope* criteria for a fair return. Recounting, these criteria include returns that are
11 commensurate with returns being earned on other investments with equivalent risks, a rate
12 of return sufficient to enable the utility to attract capital, and returns sufficient to enable the
13 regulated company to maintain its credit rating and financial integrity. The interpretation of
14 the *Hope* and *Bluefield* criteria is that a company should be given the opportunity to earn an
15 ROE and ROR sufficient to meet these standards.

16 **Q. PLEASE STATE YOUR RECOMMENDED RETURN ON EQUITY AND** 17 **OVERALL COST OF CAPITAL FOR NSPM?**

18 A. I estimated an ROE of 9.43 percent and an ROR of 6.86 percent.

19 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

20 A. Yes.

21

MARLON GRIFFING, Ph.D.

Education

Ph.D., M.A., B.A., Economics, University of Nebraska-Lincoln

Position

Senior Consultant – PCMG and Associates	2015 – present
Senior Consultant – Snavely King Majoros and Associates	2013 – 2014
Utilities Financial Analyst – Minnesota Department of Commerce	2003 – 2013
Senior Consultant – QSI Consulting	2000 – 2002
Economic Analyst – Nebraska Public Service Commission	1998 – 2000

Professional Experience

Dr. Griffing holds bachelors, masters, and doctoral degrees in economics. Dr. Griffing is well versed in microeconomics, cost/benefit analysis and econometric analysis. He has 21 years' experience as an expert witness and consultant, primarily addressing the cost of capital and capital structure for electric, natural gas, and water utilities. He has also made appearances regarding rate design, competitive effect of mergers, reliability and supply adequacy, and oil-pipeline companies in certificate of need cases. In addition, he managed testimony in two oil-pipeline certificate-of-need cases and arbitrated a telecommunications dispute for the Nebraska Public Service Commission. Dr. Griffing has appeared more than 50 times in cost of capital dockets and other matters before the regulatory agencies of Arkansas, Maine, Maryland, Minnesota, Nebraska, New Jersey, New Mexico, North Dakota, Oklahoma, Pennsylvania, and South Dakota, and the Federal Energy Regulatory Commission.

Cost of Capital

1. In the Matter of the Application of Oklahoma Gas and Electric Company for an Order of the Commission Authorizing Applicant to Modify Its Rates, Charges, and Tariffs for Retail Electric Service in Oklahoma (2021) - (Appearance: return on equity, cost of capital on behalf of the Office of the Oklahoma Attorney General)
Oklahoma Commerce Commission Cause No. PUD 202100164
2. In the Matter of the Application of Hawaii-American Water Company for Approval of Rate Increases and Revised Rate Schedules and Rules (2021) - (Appearance: return on equity, cost of capital on behalf of the Division of Consumer Advocate)
Hawaii Public Utilities Commission Docket No. 2021-0063
3. Application of San Diego Gas & Electric Company (U902M) for Authority to Establish Its Authorized Cost of Capital for Utility Operations for 2022 and to Reset the Annual Cost of Capital Mechanism (2021) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the United Consumer Action Network)
California Public Utilities Commission Proceeding A.21-08-014

4. In the Matter of the Petition of New Jersey Natural Gas Company for Approval of an Increase in Gas Base Rates and for Changes in its Tariff for Gas Service Pursuant to N.J.S.A. 48:2-21 and N.J.S.A. 48:2-21.1, and for Changes to Depreciation Rates for Gas Property Pursuant to N.J.S.A. 48:2-18 (2021) – (Appearance: cost of capital on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. ER21030679
5. In the Matter of the Application of Oklahoma Natural Gas Company, a Division of ONE Gas, Inc., for a Review and Change or Modification in Its Rates, Charges, Tariffs and Terms and Conditions of Service (2021) - (Appearance: return on equity, cost of capital on behalf of the Office of the Oklahoma Attorney General)
Oklahoma Commerce Commission Cause No. PUD 202100063
6. Application of Public Service Company of Oklahoma, An Oklahoma Corporation, for An Adjustment in Its Rates and Charges and the Electric Service Rules, Regulations and Conditions for Service in the State of Oklahoma and to Approve a Performance-Based Rate Proposal (2021) - (Appearance: return on equity, cost of capital on behalf of the Office of the Oklahoma Attorney General)
Oklahoma Commerce Commission Cause No. PUD 202100055
7. Versant Power f/k/a Emera Maine, Proposed Increase in Distribution Rates (2021) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Maine Office of the Public Advocate)
Maine Public Utilities Commission Docket No. 2020-00316
8. In the Matter of the Verified Petition of Atlantic City Electric Company for Approval of Amendments to its Tariff to Provide for an Increase in Rates and Charges for Electric Service Pursuant to N.J.S.A. 48:2-21 and N.J.S.A. 48:2-21.1, and for Other Appropriate Relief (2021) – (Appearance: cost of capital on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. ER201020746
9. In the Matter of the Petition of Elizabethtown Gas Company to Issue Long-Term Debt and Security Therefor and for Authority to Issue and Sell Short-Term Indebtedness, all through December 31, 2023 (2021) – (Appearance: debt issuance petition on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. GF20120749
10. Northern States Power Minnesota 2021 Electric Rate Increase Application (2021) – (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the North Dakota Public Service Commission Staff)
ND Public Service Commission Case No. PU-20-441

11. Pike County Light & Power Company 2020 General Base Rate Increase (2020) – (Appearance: Cost of Capital on behalf of the Pennsylvania Office of Consumer Advocate) Pennsylvania Public Utility Commission – Docket Nos. R-2020-3022134 (Gas) and R-2020-3022135 (Electric)
12. Water Rate Case Consultant for the Maine Public Advocate (2020) – (Appearance: cost of capital on behalf of the Maine Office of Public Advocate in selected cases) Docket No. 2021-00053
13. In the Matter of the Petition of South Jersey Gas Company for Approval of Increased Base Tariff Rates and Charges for Gas Service, Changes to Depreciation Rates and Other Tariff Revisions (2020) – (Appearance: cost of capital on behalf of the New Jersey Division of Rate Counsel) New Jersey Board of Public Utilities Docket No. GR20030243
14. In the Matter of the Verified Petition of Jersey Central Power & Light Company for Review and Approval of Increases in, and Other Adjustments to, its Rates and Charges for Electric Service, and for Approval of Other Proposed Tariff Revisions in Connection Therewith (2020) – (Appearance: cost of equity on behalf of the New Jersey Division of Rate Counsel) New Jersey Board of Public Utilities Docket No. ER20020146
15. In the Matter of the Federal Power Act Rule 206 Complaint Against Public Service Electric and Gas Company (2020) – (Appearance: cost of equity on behalf of the New Jersey Division of Rate Counsel) Federal Energy Regulatory Commission Docket No. ER09-1257-000
16. In the Matter of the Petition of New Jersey-American Water Company for Approval of Increase Base Tariff Rates and Charges for Water and Wastewater Service and Other Tariff Changes (2019) – (Appearance: cost of equity on behalf of the New Jersey Division of Rate Counsel) New Jersey Board of Public Utilities Docket No. WR19121516
17. In the Matter of the Petition of Jersey Central Power & Light Company for Approval of Its Transmission Rates and Transmission Enhancement Charge for Interconnection with PJM Interconnection, L.L.C. (2019) – (Appearance: cost of equity on behalf of the New Jersey Division of Rate Counsel) Federal Energy Regulatory Commission Docket No. ER20-227-000
18. Request for Approval of Rate Change, Northern Utilities, Inc. (2019) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Maine Office of the Public Advocate) Maine Public Utilities Commission Docket No. 2019-00092

19. Application of San Diego Gas & Electric Company (U902M) for Authority to: (i) Adjust its Authorized Return on Common Equity, (ii) Adjust its Authorized Embedded Costs of Debt and Preferred Stock, (iii) Adjust its Authorized Capital Structure; (iv) Modify its Adopted Cost of Capital Mechanism Structure, and (v) Revise its Electric Distribution and Gas Rates Accordingly, and for Related Substantive and Procedural Relief (2019) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the United Consumer Action Network)
California Public Utilities Commission Proceeding A.19-04-017
20. In the Matter of the Application of the Empire District Electric Company, a Kansas Corporation, for an Adjustment in its Rates and Charges for Electric Service in the State of Oklahoma (2019) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Office of the Oklahoma Attorney General)
Oklahoma Commerce Commission Cause No. PUD 201800133
21. In the Matter of the Petition of New Jersey Natural Gas Company for Approval of an Increase in Gas Base Rates and for Changes in its Tariff for Gas Service, Pursuant to **N.J.S.A. 48:2-21** and **48:2-21.1** and for Changes to Depreciation Rates for Gas Property Pursuant to **N.J.S.A. 48:2-18** (2019) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. GR19030420
22. In the Matter of the Petition of Pivotal Utility Holdings d/b/a Elizabethtown Gas Company to Implement an Infrastructure Investment Program (IIP) and Associated Recovery Mechanism (2019) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. GR18011197
23. Commission-Initiated Investigation into Rates and Revenue Requirements Pertaining to Emera Maine, Inc. (2019) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Maine Office of the Public Advocate)
Maine Public Utilities Commission Docket No. 2019-00019
24. In the Matter of Petition of Aqua New Jersey, Inc. for Approval of an Increase in Rates for Water Service and Other Tariff Changes (2018) - (Appearance: return on equity, cost of capital on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. WR18121351
25. Application of Oklahoma Gas and Electric Company for an Order of the Commission Authorizing Applicant to Modify Its Rates, Charges, and Tariffs for Retail Electric Service in the State of Oklahoma (2018) - (Appearance: return on equity, cost of capital on behalf of the Office of the Oklahoma Attorney General)
Oklahoma Commerce Commission Cause No. PUD 201800140

26. Commission-Initiated Investigation into Rates and Revenue Requirements Pertaining to Central Maine Power Company (2018) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Maine Office of the Public Advocate)
Maine Public Utilities Commission Docket No. 2018-00194
27. Application of Public Service Company of Oklahoma, An Oklahoma Corporation, for An Adjustment in Its Rates and Charges and the Electric Service Rules, Regulations and Conditions for Service in the State of Oklahoma and to Approve a Performance-Based Rate Proposal (2018) - (Appearance: return on equity, cost of capital on behalf of the Office of the Oklahoma Attorney General)
Oklahoma Commerce Commission Cause No. PUD 201800097
28. In Re: The Matter of the Application of Maryland American Water Co. for Authority to Increase Rates and Charges (2018) – (Appearance: Cost of capital on behalf of the Maryland Office of the People’s Counsel)
Maryland Public Service Commission – Case No. 9487
29. In the Matter of Petition of Atlantic City Electric Co. for Approval of Amendments to Its Tariff to Provide for an Increase in Rates and Charges for Electric Service and for Other Appropriate Relief (2018) - (Appearance: return on equity, cost of capital on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. ER18060638
30. In the Matter of Petition of SUEZ Water New Jersey, Inc. for Approval of an Increase in Rates for Water/Sewer Service and Other Tariff Changes (2018) - (Appearance: return on equity, cost of capital on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. WR18050593
31. In Re: The Matter of the Application of Columbia Gas of Maryland, Inc. for Authority to Increase Rates and Charges (2018) – (Appearance: Cost of capital on behalf of the Maryland Office of the People’s Counsel)
Maryland Public Service Commission – Case No. 9480
32. In Re: The Matter of the Columbia Gas of Pennsylvania for a General Rate Increase in Distribution Gas Service (2018) – (Appearance: Cost of Capital on behalf of the Pennsylvania Office of Consumer Advocate)
Pennsylvania Public Utility Commission – Docket No. R-2018-2647577
33. In the Matter of the Application of Black Hills Energy Arkansas, Inc. for Approval of a General Tariff Change in Rates and Tariffs (2018) – (Appearance: return on equity, cost of capital on behalf of the Office of the Arkansas Attorney General)
Arkansas Public Service Commission Docket 17-071-U

34. In the Matter of the Petition of Atlantic City Electric Company for Approval of an Infrastructure Investment Program and Related Cost Recovery Mechanism (2018) – (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. EO18020196
35. In the Matter of the Application of Oklahoma Gas and Electric Company for an Order of the Commission Authorizing Applicant to Modify Its Rates, Charges, and Tariffs for Retail Electric Service in Oklahoma (2018) - (Appearance: return on equity, cost of capital on behalf of the Office of the Oklahoma Attorney General)
Oklahoma Commerce Commission Cause No. PUD 201700496
36. Application of Fayson Lake Water Company for the Approval of an Increase in Rates and Other Appropriate Relief (2017) – (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. WR17101041
37. Petition of Middlesex Water Company for Approval of an Increase in its Rates for Water Service and Other Tariff Changes, and an Order Authorizing Special Accounting Treatment of Income Tax Refund Proceeds and Future Income Tax Deductions (2017) – (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. WR17101049
38. In the Matter of the Petition of New Jersey-American Water Company, Inc. for Approval of an Increased Tariff Rates and Charges for Water and Sewer Service, Change in Depreciation Rates, and Other Tariff Modifications (2017) – (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. WR17090985
39. Montana-Dakota Utilities Co., Application to Increase Natural Gas Rates (2017) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the North Dakota Public Service Commission Staff)
ND Public Service Commission Case No. PU-17-295
40. In the Matter of the Petition of Andover Utility Company, Inc. for Approval of an Increase in Rates for Wastewater Service (2017) – (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. WR17070726

41. Application of Public Service Company of Oklahoma, An Oklahoma Corporation, for An Adjustment in Its Rates and Charges and the Electric Service Rules, Regulations and Conditions for Service in the State of Oklahoma (2017) - (Appearance: return on equity, cost of capital on behalf of the Office of the Oklahoma Attorney General)
Oklahoma Commerce Commission Cause No. PUD 201700151
42. In the Matter of the Petition of SUEZ Water Arlington Hills, Inc. for Approval of an Increase in Rates for Wastewater Service and Other Tariffs (2016) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the New Jersey Division of Rate Counsel)
New Jersey Board of Public Utilities Docket No. WR16060510
43. In the Matter of Request by Emera Maine for Approval of a Rate Change (2016) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Maine Office of the Public Advocate)
Maine Public Utilities Commission Docket No. 15-00360
44. ENMAX Energy Corporation (EEC) Regulated Rate Option Non-Energy Tariff Application (2015-2016) - (Analysis: cost of capital, risk element identification on behalf of the Alberta Utilities Consumer Advocate)
Alberta Utilities Commission Proceeding 20480
45. Pennsylvania Public Utilities Commission vs. West Penn Power Co., Pennsylvania Electric Co., Pennsylvania Power Co., and Metropolitan Edison Co. (2014-2015) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return behalf of the Office of the Pennsylvania Consumer Advocate)
PA Docket Nos. R-2014-2428742-R-2014-2428745
46. In the Matter of the Application of Minnesota Energy Resources Corporation for Authority to Increase Rates for Natural Gas Service in Minnesota (2010-2012) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
MN Docket No. G007,011/GR-10-977
47. In the Matter of the Application of Otter Tail Power Company for Authority to Increase Rates for Electric Utility Service in Minnesota (2010-2011) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
MN Docket No. E017/GR-10-239
48. In the Matter of the Petition of Northern States Power Company, a Minnesota Corporation, for Authority to Increase Rates for Natural Gas Service in Minnesota (2009-2010) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
MN Docket No. G002/GR-09-1153

49. In the Matter of an Application by CenterPoint Energy Resources Corp., D/B/A CenterPoint Minnesota Gas to Increase Natural Gas Rates in Minnesota (2008-2009) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
MN Docket No. G008/GR-08-1075
50. In the Matter of Minnesota Energy Resources Corporation's Application for Authority to Increase Natural Gas Rates in Minnesota (2008-2009) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
MN Docket No. G007,011/GR-08-835
51. In the Matter of the Petition of Northern States Power Company, a Minnesota Corporation and Wholly Owned Subsidiary of Xcel Energy Inc., for Authority to Increase Rates for Natural Gas Service in Minnesota (2006-2007) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
MN Docket No. G002/GR-06-1429
52. In the Matter of the Application of CenterPoint Energy Resources Corp., D/B/A CenterPoint Energy Minnesota Gas, for Authority to Increase Natural Gas Rates in Minnesota (2005-2006) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
MN Docket No. G008/GR-05-1380
53. In the Matter of a Petition by Interstate Power and Light Company for Authority to Increase Electric Rates in Minnesota (2005) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
MN Docket No. E001/GR-05-748
54. In the Matter of the Petition of Northern States Power Company dba Xcel Energy Request for General Rate Increase (2004-2005) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
MN Docket No. G002/GR-04-1511
55. In the Matter of the Petition of Great Plains Natural Gas Company's Request for General Rate Increase (2004-2005) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
MN Docket No. G004/GR-04-1487

56. In the Matter of the Petition of CenterPoint Energy Minnegasco, A Division of CenterPoint Resources Corp. for Authority to Increase Natural Gas Rates in Minnesota (2004-2005) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)

Docket No. G008/GR-04-901

Regulatory Projects and Appearances

57. In Re: Township of East Brunswick – Sewer Rate Study – (2017) - (Evaluation of the existing sewer rate structure and examining and quantify costs for future expansion).
58. In re: Petition of NSTAR Gas Company d/b/a Eversource Energy for Approval of its 2016 Gas System Enhancement Plan Reconciliation Filing (2017) - (Appearance: prudence/used and useful and plant accounting on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
MA Department of Public Utilities Docket No. D.P.U. 17-GREC-06
59. In re: Petition of Bay State Gas Company d/b/a Columbia Gas of Massachusetts for Approval of its 2016 Gas System Enhancement Plan Reconciliation Filing (2017) - (Appearance: prudence/used and useful and plant accounting on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
MA Department of Public Utilities Docket No. D.P.U. 17-GREC-05
60. In re: Northern Illinois Gas Company d/b/a Nicor Gas Company Proposed General Increase in Gas Rates (2017) – (Appearance: prudence/used and useful and plant accounting on behalf of the Citizens Utility Board of Illinois)
IL Commerce Commission Docket No. 17-0124
61. In re: The Application of Potomac Electric Power Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2017) – (Appearance: cost of service and rate design on behalf of the Maryland Office of People’s Counsel)
MD Public Service Commission Case No. 9443
62. In re: The Application of Delmarva Power and Light Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2016) – (Analysis and Assistance to Counsel: cost of service and rate design on behalf of the Maryland Office of People’s Counsel)
MD Public Service Commission Case No. 9424
63. In re: The Application of Potomac Electric Power Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2016) – (Analysis and Assistance to Counsel: cost of service and rate design on behalf of the Maryland Office of People’s Counsel)
MD Public Service Commission Case No. 9418

64. In re: Petition of Fitchburg Gas and Electric Light Company d/b/a Unitil for Approval of its 2015 Gas System Enhancement Plan Reconciliation Filing (2016) - (Analysis and Assistance to Counsel: prudence/used and useful and plant accounting on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
MA Department of Public Utilities Docket No. D.P.U. 16-GREC-01
65. In re: Petition of Bay State Gas Company d/b/a Columbia Gas of Massachusetts for Approval of its 2015 Gas System Enhancement Plan Reconciliation Filing (2016) - (Analysis and Assistance to Counsel: prudence/used and useful and plant accounting on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
MA Department of Public Utilities Docket No. D.P.U. 16-GREC-05
66. In re: Petition for Approval of Gas Infrastructure Contract Between Public Service Company of New Hampshire d/b/a Eversource Energy and Algonquin Gas Transmission, LLC (2016) - (Analysis and Advice to Counsel: forecasting and cost/benefit on behalf of the New Hampshire Office of Consumer Advocate)
NH Public Utilities Commission Docket No. DE 16-241
67. In re: Bulletin 2015-10 Generic Proceeding to Establish Parameters for the Next Generation PBR Plans (Appearance: productivity adjustments/performance based ratemaking on behalf of the Alberta Utilities Consumer Advocate)
Alberta Utilities Commission Proceeding 20414
68. In. re: The Merger of the Southern Company and AGL Resources Inc. - Joint Application of the Southern Company, AGL Resources Inc., and Pivotal Utility Holdings, Inc., d/b/a Elkton Gas (2015-2016) - (Analysis: cost of capital, credit ratings, affiliate relationships on behalf of the Maryland Office of People's Counsel)
MD Public Service Commission Case No. 9404
69. In re: Petition of Boston Gas Company and Colonial Gas Company d/b/a National Grid for Approval of Precedent Agreements with Millennium Pipeline Company, LLC (2015-2016) - (Analysis: gas-supply model review, forecasting on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
MA D.P.U. 15-130
70. In re: Petition of Boston Gas Company and Colonial Gas Company d/b/a National Grid for Approval of Agreements for LNG or Liquefaction Services with GDF Suez Gas NA, LLC; Northeast Energy Center, LLC; Gaz Metro LNG, L.P.; and National Grid LNG (2015-2016) - (Analysis: gas-supply model review, forecasting, large customer loss and retention on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
MA D.P.U. 15-129

Rate Design

71. In the Matter of Otter Tail Corporation dba Otter Tail Power Company's Application for Authority to Increase Rates for Electric Service in Minnesota (2007-2008) - (Appearance: rate design, revenue requirement on behalf of the Minnesota Department of Commerce)
MN Docket No. E017/GR-07-1178

Capital Structure

72. In the Matter of the Petition of Greater Minnesota Gas Inc. for Approval of 2011 Capital Structure Petition and Permission to Issue Securities (2011) - (Appearance: capital structure on behalf of the Minnesota Department of Commerce)
MN Docket No. G022/S-11-535
73. In the Matter of the Petition of Otter Tail Power Company for Approval of 2011 Capital Structure and Permission to Issue Securities (2011) - (Appearance: capital structure on behalf of the Minnesota Department of Commerce)
MN Docket No. G007,011/S-11-392
74. The Petition of Otter Tail Power Company for Approval of 2010 Capital Structure and Permission to Issue Securities (2010) - (Appearance: capital structure on behalf of the Minnesota Department of Commerce)
MN Docket No. E017/S-10-292
75. In the Matter of the Greater Minnesota Gas Inc.'s Capital Structure Petition and Compliance with Financial Integrity Order (2010) - (Appearance: capital structure on behalf of the Minnesota Department of Commerce)
MN Docket No. G022/S-10-281
76. Interstate Power and Light Company's petition for approval of its proposed capital structure (2009) - (Appearance: capital structure on behalf of the Minnesota Department of Commerce)
MN Docket No. E,G001/S-09-607
77. A petition of Interstate Power and Light Company for approval of its proposed capital structure (2008) - (Appearance: capital structure on behalf of the Minnesota Department of Commerce)
MN Docket No. E,G001/S-08-540
78. In the Matter of the Annual Capital Structure Filing of Minnesota Energy Resources Corporation (2008) - (Appearance: capital structure on behalf of the Minnesota Department of Commerce)
MN Docket No. G007,011/SA-08-329

79. In the Matter of the Annual Capital Structure Filing of Minnesota Energy Resources Corporation (2007) - (Appearance: capital structure on behalf of the Minnesota Department of Commerce)
Docket No. G007,011/S-07-352
80. In the Matter of the Annual Capital Structure Filing of Minnesota Energy Resources Corporation (2006-2007) - (Appearance: capital structure on behalf of the Minnesota Department of Commerce)
MN Docket No. G007,011/S-06-1013
81. Northern States Power Company's request for approval of its 2006 Capital Structure Prior to Issuing Securities (2005) - (Appearance: capital structure on behalf of the Minnesota Department of Commerce)
MN Docket No. E,G002/S-05-1583
82. A petition of Interstate Power and Light Company for approval of its proposed capital structure for calendar year 2005, ending March 31, 2006 (2005) - (Appearance: capital structure on behalf of the Minnesota Department of Commerce)
MN Docket No. E,G001/S-05-151

Affiliated Interest

83. Petition of Greater Minnesota Gas, Inc. for Approval of an Affiliated Interest Agreement (2010-2011) - (Appearance: analysis of affiliated interests of closely held company, some owners also suppliers on behalf of the Minnesota Department of Commerce)
MN Docket No. G022/AI-10-1160
84. In the Matter of the Petition of Minnesota Energy Resources Corporation for Approval of Affiliated Interest Agreement (2010-2013) - (Appearance: analysis of affiliated interests agreement post-merger on behalf of the Minnesota Department of Commerce)
MN Docket No. G007,011/AI-10-783
85. In the Matter of the Annual Capital Structure Filing of Minnesota Energy Resources Corporation and Request for Approval of Affiliated Interest Agreement (2009-2010) - (Appearance: capital structure, affiliated interest lending on behalf of the Minnesota Department of Commerce)
MN Docket No. G007,011/SAI-09-1108
86. Petition for Approval of a Lending Agreement Between Interstate Power and Light Company and Alliant Energy Corporation Pursuant to Section 216B.48 of the Minnesota Statutes and Minnesota Rule 7825.2200 (2008-2009) - (Appearance: intercompany lending on behalf of the Minnesota Department of Commerce)
MN Docket No. E,G001/AI-08-1323

87. A Petition for Approval of Affiliated Services Agreement Between Interstate Power and Light Company and RMT, Inc. Pursuant to Section 216.48 of the Minnesota Statutes and Minnesota Rule 7825.2200 (2007-2008) - (Appearance: affiliated interests, engineering services on behalf of the Minnesota Department of Commerce)
MN Docket No. E,G001/AI-07-941

Depreciation

88. Otter Tail Power Company's Request for Approval of its Five-Year Depreciation Study (2008-2009) - (Appearance: depreciation analysis on behalf of the Minnesota Department of Commerce)
MN Docket No. E017/D-08-1042
89. In the Matter of the Petition of Great Plains Natural Gas Company's Request for Approval of its Five-Year Depreciation Study for 2007 (2007-2008) - (Appearance: depreciation analysis on behalf of the Minnesota Department of Commerce)
MN Docket No. G004/D-07-740
90. In the Matter of the Petition of Great Plains Natural Gas Company's Request for Approval of its Proposed Remaining Lives, Salvage Rates, and Resulting Depreciation Rates (2006-2007) - (Appearance: depreciation analysis on behalf of the Minnesota Department of Commerce)
MN Docket No. G004/D-06-700

Certificate of Need

91. In the Matter of the Application of Minnesota Pipeline Company for a Certificate of Need for a Crude Oil Pipeline (2006-2007) - (Appearance: economic impact on behalf of the Minnesota Department of Commerce)
MN Docket No. PL-5/CN-06-02
92. In the Matter of the Petition of Northern States Power Company dba Xcel Energy dba Xcel Energy Certificate Need to Establish an Independent Spent Fuel Storage Installation at the Monticello Generating Plant (2005-2006) - (Appearance: license renewal, economic impact on behalf of the Minnesota Department of Commerce)
MN Docket No. E002/CN-05-123
93. In the Matter of a Certificate of Need Application for Great River Energy's Cambridge Station (2005) - (Appearance: economic impact on behalf of the Minnesota Department of Commerce)
MN Docket No. ET2/CN-05-347

Mergers

94. In the Matter of a Request of Great Plains Natural Gas Co. for the Approval of the Acquisition by MDU Resources Group, Inc., of Intermountain Gas Company (2008) (Appearance: rule variance, sharing savings, regulatory authority, cost of capital on behalf of the Minnesota Department of Commerce)
MN Docket No. G004/PA-08-813
95. In the Matter of a Request for the Approval of the Acquisition by MDU Resources Group, Inc., and Its Division, Great Plains Natural Gas Co., of Cascade Natural Gas Corporation (2006-2007) (Appearance: sharing savings, regulatory authority, cost of capital on behalf of the Minnesota Department of Commerce)
MN Docket No. G004/PA-06-1585

Performance-Based Regulation

96. Xcel Energy, Purchased Gas Adjustments compliance filings, 2011-2013 (Assistance: compliance with price-adjustment order on behalf of the Minnesota Department of Commerce)
MN Docket Nos. monthly
97. Interstate Power and Light, Purchased Gas Adjustment compliance filings, 2004-2006 (Assistance: compliance with price-adjustment order on behalf of the Minnesota Department of Commerce)
MN Docket Nos. monthly

Manager of Contested-Case Proceedings

98. In the Matter of the Application of Enbridge Energy, Limited Partnership and Enbridge Pipelines (Southern Lights) LLC for a Certificate of Need for the Alberta Clipper and Southern Lights Diluent Pipeline Projects (2007-2008) - (Case Manager: economic impact, public interest and impact on society, advice to counsel, assist on brief on behalf of the Minnesota Department of Commerce)
MN Docket No. PL-9/CN-07-465
99. In the Matter of the Application of Enbridge Energy (Southern Lights) LLC for a Certificate of Need for a Crude Oil Pipeline for the Southern Lights Project (2007-2008) - (Case Manager: economic impact, public interest and impact on society, advice to counsel, assist on brief on behalf of the Minnesota Department of Commerce)
MN Docket No. PL-9/CN-07-464

Telecommunications

100. In the Matter of the Petition of Great Plains Communications, Inc. for Arbitration to Resolve Issues Relating to an Interconnection Agreement with WWC License L.L.C. (2003) – (Arbitrator: arbitrated interconnection agreement disputes on behalf of the Nebraska Public Service Commission)
NE Application No. C-2872

101. In the Matter of the Analysis of Qwest Corporation’s Compliance with Section 271(c) of the Telecommunications Act of 1999 (1999-2002) – (Appearances: evaluation of Qwest Corporation’s opening its operational support systems (OSS) to competitive local exchange carriers on behalf of the Nebraska Public Service Commission, New Mexico Public Regulation Commission Advocacy Staff, and South Dakota Public Utilities Commission Staff)
NE Application No. C-1830, NM Case No. 3269, SD Docket No. TC01-165

