

**STATE OF NORTH DAKOTA**  
**PUBLIC SERVICE COMMISSION**

**Northern States Power Company  
2024 Natural Gas Rate Increase  
Application**

**Case No. PU-23-367**

**AFFIDAVIT OF SERVICE BY ELECTRONIC MAIL**

**STATE OF NORTH DAKOTA  
COUNTY OF BURLEIGH**

**Erica Getz** deposes and says that:

she is over the age of 18 years and not a party to this action and, on the **3rd day of July 2024**, she sent an electronic message to **six** addresses, each including an electronic copy in portable document format of:

- **Revised Prefiled Direct Testimony of Marlon F. Griffing**
- **Revised Prefiled Direct Testimony of Karl R. Pavlovic**

The electronic mail was addressed as follows:

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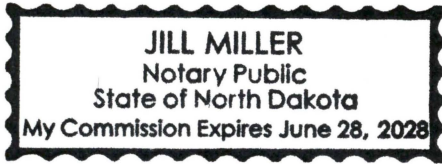
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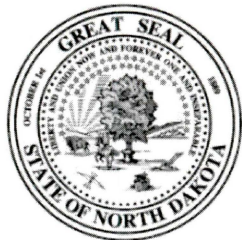
Subscribed and sworn to before me  
this **3rd day of July 2024**.



SEAL

*Erica J Getz*  
\_\_\_\_\_

*Jill Miller*  
\_\_\_\_\_  
Notary Public



# Public Service Commission

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July 3, 2024

Public Service Commission  
Attention: Steve Kahl  
600 East Boulevard Avenue, Dept 408  
Bismarck, ND 58505-0480

In re: Northern States Power Company  
2024 Natural Gas Rate Increase  
Application  
Case No. PU-23-367

Dear Mr. Kahl,

Enclosed for filing in the above referenced matter please find the original copy of the following public document:

1. Revised Prefiled Direct Testimony of Marlon F. Griffing.

Respectfully,

A handwritten signature in black ink, appearing to read "Brian Johnson".

Brian Johnson  
Special Assistant Attorney General Bar ID 07397  
North Dakota Public Service Commission  
600 East Boulevard Avenue Dept. 408  
Bismarck, ND 58505  
701-328-2407

**BEFORE THE NORTH DAKOTA  
PUBLIC SERVICE COMMISSION**

**IN THE MATTER OF THE APPLICATION )  
OF NORTHERN STATES POWER COMPANY )  
FOR AUTHORITY TO INCREASE RATES )  
FOR NATURAL GAS SERVICE )  
IN NORTH DAKOTA )**

**DOCKET NO. PU-23-367**

**DIRECT TESTIMONY  
OF  
MARLON F. GRIFFING, PH.D.**

**ON BEHALF OF**

**THE ADVOCACY STAFF OF THE  
NORTH DAKOTA PUBLIC SERVICE COMMISSION**

**July 8, 2024**

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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  
4 consulting firm of PCMG & Associates Inc. (“PCMG”). My business address is 22  
5 Brookes Drive, Gaithersburg, MD 20877.

6 **Q. WHAT DOES PCMG DO?**

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.  
10 Most 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. Exhibit MFG-1 is a summary of my qualifications, experience, and testimony given  
16 before state regulatory agencies regarding cost of capital.

17 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE NORTH DAKOTA**  
18 **PUBLIC SERVICE COMMISSION (“NDPSC” OR “COMMISSION”)?**

19 A. Yes. I submitted written testimony in the prior NDPSC general rate cases of Northern  
20 States Power Minnesota (“NSPM”) in Docket No. PU-21-381, Northern States Power  
21 Minnesota in Docket No. PU-20-441, and Montana-Dakota Utilities Co. in Docket No.  
22 PU-17-295. I am currently engaged in the general rate case of Otter Tail Power Company  
23 before the Commission in Docket No. PU-23-342.

1 **Q. ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?**

2 A. I am appearing on behalf of the Advocacy Staff of the NDPSA.

3 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

4 A. My responsibility is to determine a fair rate of return on common equity capital and a fair  
5 overall cost of capital for Northern States Power (“NSP” or “Company”). NSP is a wholly  
6 owned subsidiary of Xcel Energy, Inc. (“Xcel”).<sup>1</sup> NSP provides natural gas distribution  
7 service in North Dakota. The Company is seeking an increase in its North Dakota natural  
8 gas rates in this docket. NSP witness Joshua C. Nowak testifies regarding return on equity  
9 (“ROE”), cost of long-term debt, cost of short-term debt, capital structure, and rate of return  
10 (“ROR”).<sup>2</sup> I respond to Mr. Nowak’s Direct Testimony.

11 **Q. HOW DO YOU PREPARE RECOMMENDED RATES FOR THE COMPANY?**

12 A. To arrive at recommended rates for common equity capital and overall cost of capital, I  
13 analyze the Company’s capital structure and the costs for each component of that structure,  
14 including the return on equity and cost of debt.

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

16 A. My testimony is organized in the following way:

- 17 • First, I discuss economic considerations and legal precedents underlying the cost of  
18 equity in regulatory proceedings.
- 19 • Second, I provide an overview of the return on equity analysis.

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<sup>1</sup> Direct Testimony of Joshua C. Nowak on Behalf of Northern States Power Company, December 29, 2023, page 1 [hereinafter “Nowak Direct”].

<sup>2</sup> Nowak Direct, page 2, lines 1-5.

- 1 • Third, I explain how I selected the members of the Comparison Group of companies  
2 used in my analysis.
- 3 • Fourth, I perform discounted cash flow (“DCF”) model analysis and Capital Asset  
4 Pricing Model (“CAPM”) analysis for the Comparison Group, recommended an ROE  
5 for the Company, and checked the ROE for reasonableness.
- 6 • Fifth, I recommend a capital structure and overall cost of capital for the Company.
- 7 • Sixth, I critique the Company’s cost of capital analysis.
- 8 • Seventh, I summarize my testimony and recommendations.

9 **Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE COMPANY’S ROE AND**  
10 **OVERALL COST OF CAPITAL?**

11 A. I recommend an ROE of 9.80 percent for the Company. For NSP’s capital structure, I used  
12 a hypothetical capital structure. My analysis shows ratios of 47.5 percent long-term debt,  
13 2.5 percent short-term debt, and 50 percent common equity are appropriate. When my  
14 recommended ROE is incorporated into the foregoing capital structure along with NSP’s  
15 proposed cost of long-term debt of 4.54 percent and cost of short-term debt of 7.72 percent,  
16 the result is an overall rate of return of 7.26 percent for NSP.

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

18 **A. The Role of Economic Theory**

19 **Q. WHAT IS THE BASIS IN ECONOMIC THEORY FOR REGULATING CERTAIN**  
20 **INDUSTRIES?**

21 A. According to economic theory, the forces of supply and demand interacting in a competitive  
22 environment produce an allocation of resources that yields an optimal mix of goods and

1 services. Firms and individuals maximize profits and satisfaction given the prices and incomes  
2 that the interplay of market forces generates. This outcome is described as economically  
3 efficient. Put simply, there is no better output of goods and services that can be produced  
4 with the available resources.

5 **Q. DOES THE ECONOMICALLY EFFICIENT OUTCOME OCCUR IN ALL**  
6 **INDUSTRIES?**

7 A. No. Several conditions must be present for the economically efficient outcome to occur in  
8 an industry. These conditions include many buyers and sellers, identical products, perfect  
9 information about prices, and so forth. If these conditions exist, then price is the only way  
10 for providers of goods and services to compete in markets. If the conditions for competition  
11 do not exist, however, then letting supply and demand work unfettered will not produce the  
12 socially desired efficient outcome.

13 **Q. ARE THERE LEGAL OBSTACLES TO COMPETITION IN PUBLIC UTILITY**  
14 **MARKETS?**

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

19 **Q. ARE THERE OTHER ASPECTS OF A NATURAL GAS DISTRIBUTION**  
20 **UTILITY'S COSTS THAT RESULT IN FEW SELLERS?**

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

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

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

4 **Q. IS A DECLINING AVERAGE COST OF SERVICE SUFFICIENT FOR AN  
5 INDUSTRY TO BE TERMED “DECLINING COST?”**

6 A. No. In fact, average costs decline in most industries as production and sales increase.  
7 However, in the typical industry, the average cost eventually rises and does so at a sales  
8 level that is smaller than the total demand for the product in a given industry. As a  
9 consequence, a few to several firms share the market because beyond the sales volume at  
10 which average costs rise, firms lose, rather than gain, cost advantage.

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

12 A. Yes. With their high fixed costs, public utilities have high initial average costs, but as their  
13 sales increase, the average cost drops. This fact alone does not make public utilities  
14 declining-cost industries. In most industries, average costs fall as sales increase. However,  
15 in most industries, average costs start to rise at sales levels that are much less than the total  
16 demand for the product produced in any given industry. Therefore, the number of firms  
17 sharing the market ranges from a few to many. What sets public utilities apart is that their  
18 average costs continue to decline over very high volumes of sales, up to and beyond total,  
19 or effective, market demand. A declining-cost industry creates market failure—that is,  
20 when the market produces an outcome that is inefficient. In this case, the inefficiency is  
21 caused by the market leading to a monopoly provider.

1 **Q. HOW DOES BEING A DECLINING-COST INDUSTRY CREATE A MARKET**  
2 **FAILURE?**

3 A. As an utility increases its sales and market share, its average costs decline, and continue to  
4 do so. Thus, the firm with the largest market share has an increasing advantage over  
5 competitors. In effect, there is not enough room in the market for another distributor. The  
6 logical result is a market with one producer—often referred to as a natural monopoly—not  
7 the many firms envisioned in the theory of competition.

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

10 A. Because sufficient competition does not exist in the markets for public utilities, including  
11 the gas utility industry, to ensure low prices and adequate service, society has typically  
12 turned to regulation to achieve these goals. The government regulators generally are  
13 charged with pursuing an outcome that approximates the efficient outcome of the  
14 competitive model. Regulation thus is viewed as a way to decrease prices and increase  
15 services provided by a natural monopoly. A challenge for regulators is to set policies which  
16 ensure that the regulated firm provides an appropriate supply of services at reasonable  
17 rates. A reasonable rate enables a public utility not only to recover its operating expenses,  
18 depreciation, and taxes, but also to earn a reasonable rate of return on its capital.

1 **B. Standards for Finding a Fair Rate of Return**

2 **Q. DO ANY STANDARDS EXIST FOR DETERMINING A REASONABLE RATE OF**  
3 **RETURN?**

4 A. Yes. Two United States Supreme Court cases are the basis for rate of return regulation in  
5 the United States. They are the *Bluefield Water Works*<sup>3</sup> and the *Hope Natural Gas*<sup>4</sup> cases.  
6 In *Hope*, the Court established the following standards for the return on equity that must  
7 be allowed a regulated public utility to provide for a reasonable return:

8 ...[T]he return to the equity owner should be commensurate with the returns  
9 on investments in other enterprises having corresponding risks. That return,  
10 moreover, should be sufficient to assure confidence in the financial integrity  
11 of the enterprise, so as to maintain its credit and to attract capital.<sup>5</sup>

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

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

20 A. No. There is circularity to the comparable earnings standard because the competitive nature  
21 of the capital markets virtually ensures that the returns to *all* enterprises are comparable  
22 with each other. Investors establish the price of each traded stock based on that stock’s

---

<sup>3</sup> *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm’n of W. Va.*, 262 U.S. 679 (1923).

<sup>4</sup> *Fed. Power Comm’n v. Hope Nat. Gas Co.*, 320 U.S. 591 (1944).

<sup>5</sup> *Hope*, 320 U.S. at 603.

1 present and prospective earnings and perceived risk. The prices for common equity for  
2 companies with high earnings are bid up, while the prices for companies with low earnings  
3 are bid down. If earnings were the only concern, the ratio of earnings to share prices, the  
4 return for investors, would become equal for all companies. However, investors recognize  
5 relative risk as they buy and sell common equity shares. For companies with high risk,  
6 share prices will be lower; for companies with low risk, share prices will be higher. Thus,  
7 the comparable earnings test becomes a nullity. All returns, because they are adjusted for  
8 risk, are comparable with all other returns.

9 **Q. HOW IS THIS CIRCULARITY TYPICALLY RESOLVED IN PUBLIC UTILITY**  
10 **REGULATION?**

11 A. In public utility regulation, the conventional procedure for resolving this circularity is to  
12 identify the required equity return for a utility's stock. That return is combined with the  
13 cost of debt, and the blended return to total capital is then applied to a rate base reflective  
14 of the book value of the utility's investment. The book value is the accountant's  
15 quantification of the depreciated original cost of the utility's assets adjusted for ratepayer  
16 contributions such as deposits and deferred taxes. Under this procedure, the market price  
17 of a stock is used only to determine the return that investors expect from that stock. That  
18 expectation is then applied to the book value of the utility's investment to identify the level  
19 of earnings that regulation will allow the utility's common shareholders to recover.

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

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

9 **Q. WHAT IS RISK?**

10 A. Risk is the chance of a loss or less-than-expected return on an investment. A business, for  
11 example, may introduce a new product with the expectation that it will sell well. There is,  
12 of course, no guarantee that consumers will purchase the product. The risk investors attach  
13 to the company varies inversely with their view as to the probability of the product doing  
14 well. In general, the greater the risk of an investment, the greater the return required to  
15 attract investors, and vice versa.

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

18 A. The Commission should look to current market conditions as it balances investor and  
19 consumer interests. The rate of return should reflect the condition of the capital markets in  
20 which NSP will have to compete with other firms for funding. Historically allowed rates  
21 and historical performances are not the most reliable inputs in this forward-looking  
22 approach. This statement does not mean that historical rates and performance are irrelevant.

1 They are factors because they affect investors' views of a company's prospects and,  
2 therefore, the investors' willingness to purchase its common equity shares.

3 **Q. HOW DO THE METHODS YOU USED TO DETERMINE THE COST OF**  
4 **COMMON EQUITY CAPITAL REFLECT CURRENT MARKET CONDITIONS?**

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

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

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

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

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

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

8 **Q. WHAT METHODS HAVE YOU ADOPTED IN YOUR ROE ANALYSIS?**

9 A. I use the Discounted Cash Flow (DCF) method, which is widely used in utility general rate  
10 cases in determining rate of return. I also include the results of the Capital Asset Pricing  
11 Model (“CAPM”), combining them with the DCF results for my recommended ROE. I  
12 use recently authorized returns for natural gas utility operating companies in U.S.  
13 jurisdictions as a check on the reasonableness of the ROE outcome.

14 **Q. WHAT IS THE DCF METHOD?**

15 A. The DCF method uses the current dividend yield and the expected growth rate of this yield  
16 to determine a required rate of return on an investment opportunity. The required rate of  
17 return from a DCF analysis is derived from a formula for determining the net present value,  
18 or price, of a share of stock. There are several variations of DCF, but the constant-growth  
19 form I have selected assumes that dividends (D) are received at the end of each year, the  
20 annual growth rate of dividends (g) is constant to forever, and the discount rate for  
21 dividends (k) is constant to infinity. The equation form of this constant-growth DCF model  
22 is the following:

1 
$$k = \frac{D_1}{P_0} + g$$

2 Where:

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

4  $D_1$  is the annual dividend one year from the present;

5  $P_0$  is the current price of a stock share; and

6 g is the expected growth rate of the dividend.

7 **Q. HOW IS THE ANNUAL DIVIDEND ONE YEAR FROM THE PRESENT**  
8 **CALCULATED?**

9 A. The annual dividend one year from now is derived by applying the growth-rate estimate  
10 (g) to the actual current annual dividend ( $D_0$ ). The equation form is:

11 
$$D_1 = D_0 * (1 + g)$$

12 **Q. WHAT ARE THE ELEMENTS OF THE DCF MODEL?**

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

16 **Q. WHAT IS THE CAPM METHOD?**

17 A. The premise of the CAPM method is that any risk which is company-specific can be  
18 diversified away by investors. Therefore, the only risk that matters is the systematic risk of  
19 the stock. This systematic risk is measured by beta ( $\beta$ ). Expressed simply, the CAPM  
20 assumes the following form:

1            $k = r + \beta (k_m - r)$

2           Where:

3            $k$  is the required rate of return for the subject stock;

4            $\beta$  is beta, the measure of systematic risk;

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

6            $k_m$  is the required rate of return on the broad market.

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

8   **Q.   HOW WOULD YOU CHARACTERIZE THE CAPM METHOD?**

9   A.   In the CAPM, the required ROE for a company also is the sum of two components. The  
10   first of these is the return on a riskless asset. To this base value, a return is added that  
11   reflects the additional rate of return earned by other companies in the broad equity market  
12   adjusted for the risk of the subject company relative to the risk of an average company in  
13   the market. The subsequent amount thus reflects the risk of the subject company.

14   **Q.   DOES YOUR EQUITY RATE OF RETURN ANALYSIS USE DCF  
15   INFORMATION FOR NSP?**

16   A.   No. As noted, NSP is an operating subsidiary of Xcel Energy. NSP is not publicly traded,  
17   so common equity share price information is unavailable. Therefore, a direct DCF analysis  
18   cannot be performed on the Company.

1 **Q. DOES YOUR EQUITY RATE OF RETURN ANALYSIS USE OTHER COMPANY**  
2 **INFORMATION?**

3 A. Yes. NSP has its own credit rating from Standard & Poor's ("S&P"). That rating is A-, one  
4 notch above the BBB+ S&P rating for XEI.<sup>6</sup> These credit ratings reflect S&P's evaluation  
5 of the risk for the Company and XEI. I considered both credit ratings as I set the credit  
6 rating criterion for inclusion in my proxy group.

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

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

13 **IV. SELECTING THE COMPARISON GROUP**

14 **Q. WHAT PROCEDURE DID YOU USE FOR SELECTING THE COMPARISON**  
15 **GROUP?**

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

---

<sup>6</sup> Exhibit MFG-2.

1 **Q. HOW DID YOU FIND SUITABLE CANDIDATE COMPANIES FOR THE**  
2 **COMPARISON GROUP?**

3 A. I looked at Value Line, a widely used investor service, for companies that Value Line  
4 classifies as part of the Natural Gas Utility Industry. The edition of the *Value Line*  
5 *Investment Survey* available at the Value Line website on June 17, 2024, included 12  
6 companies in this category.<sup>7</sup>

7 **Q. WAS NSP OR XEI ONE OF THE 12 COMPANIES IN THE VALUE LINE**  
8 **NATURAL GAS INDUSTRY?**

9 A. No.

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

11 A. I applied screens to the initial set of Value Line natural gas utility companies to ensure that  
12 the companies included in my Comparison Group were similar in risk to the risk of the  
13 Company.<sup>8</sup>

14 **Q. PLEASE LIST THE CRITERIA YOU APPLIED IN THE SELECTION OF THE**  
15 **COMPARISON GROUP.**

16 A. I applied the following screens to the initial set of natural gas utility companies:

- 17 1. U.S.-based firm;
- 18 2. shares publicly traded on a stock exchange;
- 19 3. a stable record of paying dividends;
- 20 4. not be expected to sell, merge into or be acquired by another company, or
- 21 be engaged in an unusual regulatory proceeding;

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<sup>7</sup> Exhibit MFG-3.

<sup>8</sup> Exhibit MFG-4.

- 1                   5. have a Standard & Poor's ("S&P") credit rating of BBB- (investment
- 2                   grade) or better;
- 3                   6. have positive growth-rate projections from expert analysts; and
- 4                   7. have 65 percent or more of the three-year average of net operating income,
- 5                   net income, or operating revenue be derived from regulated natural gas
- 6                   operations.

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

9 A. I sought companies that face a business environment like that in which NSP operates. The  
10 Company's operating utility in this case is in North Dakota and subject to state regulation,  
11 statutes, and rules that are similar to those found in the rest of the United States. All the  
12 companies are U.S.-based.

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

15 A. One analytical tool that I used for finding a company's ROE, the DCF model,<sup>9</sup> requires  
16 information about common equity share prices, dividends, and growth-rate projections.  
17 The requirement that companies be publicly traded ensures that their common equity share  
18 prices are available. All the Value Line Natural Gas Utility companies were publicly  
19 traded.<sup>10</sup>

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<sup>9</sup> As will be seen in a later section, the forward-looking Value-Line-based CAPM I have applied incorporates a DCF analysis and, thus, also relies on publicly traded companies.

<sup>10</sup> Exhibit MFG-4.

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

3 A. The DCF model requires dividends as an input. If a company is not paying dividends or  
4 has a record of cutting dividends, then its DCF analysis is not reliable. All the companies  
5 still under consideration have been consistently paying dividends.<sup>11</sup>

6 **Q. WHY IS IT IMPORTANT THAT COMPANIES INVOLVED IN SALES,**  
7 **MERGERS, OR ACQUISITIONS BE EXCLUDED FROM YOUR ANALYSIS?**

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

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

15 A. Yes. Southwest Gas Holdings is in the process of spinning off its Centuri infrastructure  
16 construction unit. The transaction has reached the stage where shares in Centuri Group, the  
17 name of the new company, were sold in an April 18, 2024, public offering.<sup>12</sup> Southwest  
18 Gas Holdings common equity share prices surged upward after the offering but stabilized  
19 thereafter. The company's shares no longer are volatile because uncertainty about the  
20 spinoff has been removed and investors have internalized the spinoff in their decisions.  
21 Therefore, I continued to consider the company for the Comparison Group.<sup>13</sup>

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<sup>11</sup> Exhibit MFG-4.

<sup>12</sup> Exhibit MFG-5, page 1

<sup>13</sup> Exhibit MFG-5, page 2.

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

3 A. S&P’s experts incorporate financial risk and business risk into a firm’s credit rating. Within  
4 these risk categories, S&P assesses such factors for public utilities as competitive  
5 advantage and operating efficiency. S&P also assesses scale, scope, and diversity which  
6 include the effects of a utility’s markets, service territories, and customer diversity on the  
7 company’s cash-flow stability, and in turn on its risk level. After considering all the factors,  
8 S&P assigns a credit rating to a company. If companies have identical or similar credit  
9 ratings as determined by expert analysts, then their relative risks are similar. As S&P states:

10 Creditworthiness is a multi-faceted phenomenon. Although there is  
11 no “formula” for combining the various facets, our credit ratings  
12 attempt to condense their combined effects into rating symbols  
13 along a simple, one-dimensional scale. Indeed, as discussed below,  
14 the relative importance of the various factors may change in  
15 different situations.<sup>14</sup>

16 **Q. HOW DID YOU APPLY THE S&P CREDIT RATING SCREEN?**

17 A. A credit rating of BBB- or better is termed “investment grade.” This level rating is an  
18 important threshold and gets its name from the fact that some institutional investors will  
19 not purchase the stock of a company if it does not have an investment-grade credit rating.  
20 By applying this screen, I ensure that there is a robust market for the common equity of  
21 companies. Please note that the credit rating screen does not require that companies have  
22 a credit rating identical to that of the subject company. The credit rating need only be  
23 similar to that of the subject company.

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<sup>14</sup> Exhibit MFG-6.

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

3 A. Of the remaining utilities, Adams Resources & Energy, RGC Resources Inc., Star Group  
4 L.P, and UGI Corp. did not have an S&P credit rating, nor did any of their units or  
5 subsidiaries. Hence, the four companies were excluded.

6 **Q. ARE THERE NATURAL GAS UTILITIES WITHOUT S&P CREDIT RATINGS**  
7 **THAT YOU DID CONTINUE TO CONSIDER?**

8 A. Yes. Neither Chesapeake Utilities nor New Jersey Resources has a credit rating from S&P.  
9 They qualify for retention through equivalent ratings. Chesapeake Utilities has ratings of  
10 “2B” and “2A” from the National Association of Insurance Commissioners.<sup>15</sup> These ratings  
11 are equivalent to a BBB credit rating (or higher) from S&P.<sup>16</sup> As for New Jersey Resources,  
12 Moody’s has a credit rating for New Jersey Natural Gas, a subsidiary of New Jersey  
13 Resources, of A1.<sup>17</sup> This Moody’s credit rating is equivalent to an S&P credit rating of  
14 A+.<sup>18</sup>

15 **Q. WHAT IS THE RANGE OF THE CREDIT RATINGS FOR THE QUALIFYING**  
16 **COMPANIES?**

17 A. The eight remaining companies have S&P credit ratings (or an equivalent rating) ranging  
18 from BBB to A+. Thus, the credit ratings of these public utilities are investment grade.

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<sup>15</sup> See, Annual Statement of the Metropolitan Life Insurance Company (December 31, 2023), Schedule D, Part 1, (e.g.) at 1334.  
[https://s201.q4cdn.com/280976757/files/doc\\_downloads/statutory-filings/metropolitan/2023/2023-mlic-annual-statement-includes-investment-schedules.pdf](https://s201.q4cdn.com/280976757/files/doc_downloads/statutory-filings/metropolitan/2023/2023-mlic-annual-statement-includes-investment-schedules.pdf)

<sup>16</sup> Exhibit MFG-7.

<sup>17</sup> Exhibit MFG-8.

<sup>18</sup> Exhibit MFG-7.

1 **Q. YOU REQUIRED THAT THE NATURAL GAS UTILITIES HAVE POSITIVE**  
2 **EARNINGS PER SHARE (“EPS”) GROWTH-RATE FORECASTS TO BE**  
3 **INCLUDED IN THE COMPARISON GROUP. WHAT PURPOSE DOES THIS**  
4 **SCREEN SERVE?**

5 A. If the growth-rate projections are negative or missing, then any DCF analysis performed  
6 on them is not meaningful. All eight companies still under consideration for the  
7 Comparison Group had at least two positive EPS growth-rate forecasts.<sup>19</sup>

8 **Q. WHAT IS THE PURPOSE OF THE SCREEN REQUIRING MORE THAN 65**  
9 **PERCENT OF A COMPANY’S THREE-YEAR AVERAGE OF AN INCOME OR**  
10 **REVENUE INDICATOR BE DERIVED FROM REGULATED NATURAL GAS**  
11 **UTILITY OPERATIONS?**

12 A. For the firms to have similar risks, they must operate in similar business environments. The  
13 Company is predominantly a regulated natural gas utility operation, so the firms considered  
14 for the Comparison Group also must have predominantly regulated operations. This  
15 criterion ensures that most of the Comparison Group firms’ operations are in the same  
16 environment as that of the Company.

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

18 A. I included seven of the remaining companies in the Comparison Group after applying the  
19 operating income/net income/operating revenue screen.<sup>20</sup> New Jersey Resources is  
20 eliminated with a natural gas operating income ratio of 52.2 percent.<sup>21</sup>

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<sup>19</sup> Exhibit MFG-4.

<sup>20</sup> Exhibit MFG-9.

<sup>21</sup> Exhibit MFG-10.

1 **Q. WHAT WAS THE COMPOSITION OF THE COMPARISON GROUP AFTER**  
2 **YOUR SCREENING?**

3 A. The Comparison Group is composed of Atmos Energy, Chesapeake Utilities, NiSource,  
4 Northwest Natural Holding Co., ONE Gas, Southwest Gas Holdings, and Spire, Inc.<sup>22</sup>

5 **Q. HOW DOES THE MEMBERSHIP OF MR. NOWAK'S PROXY GROUP**  
6 **COMPARE WITH THE MEMBERSHIP OF YOUR COMPARISON GROUP?**

7 A. Mr. Nowak's Proxy Group includes five of the seven natural gas utilities in my Comparison  
8 Group. He does not include Chesapeake Utilities or Southwest Gas Holdings.<sup>23</sup>

9 **V. DCF MODEL OVERVIEW**

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

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

14 **Q. HOW ARE EXPECTED GROWTH RATES USED?**

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

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

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<sup>22</sup> Exhibit MFG-11.

<sup>23</sup> Nowak Direct, page 14.

1 If, in practice, these conditions held, then EPS, dividends per share (“DPS”), and book  
2 value per share (“BPS”) would all grow at the same rate, and the past growth rates for these  
3 factors would be the rate at which they would grow in the future.

4 **Q. DO YOU USE HISTORICAL GROWTH RATES IN YOUR ANALYSIS?**

5 A. No. The conditions necessary for historical growth rates to be good indicators of future  
6 growth rates are rarely satisfied. Most utilities’ returns on equity and payout ratios have not  
7 remained constant over time. Further, growth in book value has occurred not only due to  
8 retained earnings, but also due to the issuance of new shares of common stock.  
9 Consequently, past growth rates of earnings, dividends, and book equity are frequently  
10 unequal. Moreover, an industry may face a changed business environment, thereby making  
11 the past a poor basis for projecting the future. Historical growth rates can differ significantly  
12 from forward-looking projected growth rates due to such factors as inflation rates, tax rates,  
13 the role of an industry in the economy, and the regulatory environment.

14 **Q. WHAT ESTIMATES OF GROWTH RATES DO YOU RELY ON RATHER THAN**  
15 **USING HISTORICAL GROWTH RATES?**

16 A. In view of the limitations of using historical growth rates, I based my estimated growth rates  
17 on projected growth rates as publicly provided by (1) Zacks Investment Research (“Zacks”),  
18 a respected investor services company, (2) Thomson Financial Network estimates provided  
19 on Yahoo! Finance, and (3) The Value Line Investment Survey.

20 **Q. WHAT DIVIDEND YIELDS WERE USED IN YOUR DCF ANALYSIS?**

21 A. To estimate the required rate of return on equity capital today, I estimated the expected  
22 dividend yield,  $D_1/P_0$  where  $P_0$  is the price of a share of common equity today and  $D_1$  is  
23 the dividend in the next period. To find the dividends expected a year from now, I

1 multiplied the current annual dividends paid by one plus the EPS growth rates for each  
2 company. The use of this dividend yield assumes that dividends are distributed at the end  
3 of each period (year). Since the current equity share price incorporates all market  
4 information considered relevant by investors, generally speaking, non-recent historical  
5 prices should be avoided in calculating the dividend yield. However, since share prices are  
6 volatile in the short run, it is desirable to use a period long enough to avoid short-term  
7 aberrations in the capital market.

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

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

## 14 **VI. DCF ANALYSIS FOR THE COMPARISON GROUP**

### 15 **A. Constant-Growth DCF Analysis**

16 **Q. HOW WAS THE REQUIRED RATE OF RETURN FOR THE COMPARISON**  
17 **GROUP DETERMINED?**

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

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

3 A. I used the average common equity share prices from May 6, 2024, through May 31, 2024.<sup>24</sup>  
4 This four-week period is long enough to dampen any short-term aberrations in the capital  
5 market. It was also close to the July 8, 2024, date of this Testimony, thus making the results  
6 timely. I used closing prices for the Comparison Group member companies obtained at  
7 Yahoo! Finance.<sup>25</sup>

8 **Q. HOW DID YOU DETERMINE THE DIVIDENDS FOR THE COMPARISON**  
9 **GROUP COMPANIES?**

10 A. I used the dividends that each Comparison Group member company is currently paying as  
11 reported by Value Line on May 24, 2024, and by Zacks on June 20, 2024. I used the greater  
12 of these two options in my DCF analysis. The dividends were equal from the two sources.<sup>26</sup>

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

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

18 **Q. WHAT DID YOU USE TO DETERMINE THE EXPECTED GROWTH RATE FOR**  
19 **THE COMPARISON GROUP?**

20 A. As noted above, it is appropriate in this proceeding to use only the forecasted growth rates  
21 to estimate the expected growth rate to be used in the DCF analysis. Zacks and Yahoo!

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<sup>24</sup> There are 19 days of price observations in the four weeks. Financial markets were closed May 27, 2024.

<sup>25</sup> Exhibit MFG-12, pages 1-2.

<sup>26</sup> Exhibit MFG-13.

1 Finance provide five-year growth-rate projections for EPS, and Value Line provides five-  
2 year growth rate projections for EPS, DPS, and BPS. To maintain consistency across the  
3 sources, I used only the EPS estimates from Value Line.

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

5 A. I used the Value Line EPS five-year growth projections for the individual firms in the  
6 Comparison Group as reported by Value Line in its Investment Surveys of May 24, 2024.<sup>27</sup>

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

8 A. I used the Zacks EPS five-year growth projections available June 20, 2024, for the  
9 individual firms in the Comparison Group.<sup>28</sup>

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

11 A. I used the Yahoo! Finance EPS five-year growth projections available June 20, 2024, for  
12 the individual firms in the Comparison Group.<sup>29</sup>

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

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

17 **Q. HOW DID YOU CALCULATE THE EXPECTED DIVIDEND YIELD FOR THE**  
18 **COMPARISON GROUP?**

19 A. The appropriate dividend to use in the constant-growth DCF model is the annual dividend  
20 rate at the beginning of the next period (year). I began my estimation of the expected

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<sup>27</sup> Exhibit MFG-14, Schedule 1.

<sup>28</sup> *Id.*

<sup>29</sup> *Id.*

1 dividend yield by finding the dividends that each Comparison Group member company  
2 was currently paying, as noted above.

3 Next, I adjusted the annualized dividends for expected growth. The dividends of all  
4 the companies in the Comparison Group are expected to increase over the next year. I  
5 applied a full year's growth rate for a firm to the annualized dividend and added the product  
6 to the annualized dividend yield to transform it into the expected dividend yield.<sup>30</sup> The  
7 equation for this operation is:

$$8 \quad \frac{D_1}{P_0} = \frac{D_0}{P_0} (1 + g)$$

9 Applying this equation to the dividend yield for each company yielded the D<sub>1</sub> values that I  
10 used in my estimates.<sup>31</sup>

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

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

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<sup>30</sup> I also followed this rule of applying a full year's growth to the current dividend in my CAPM analysis.

<sup>31</sup> Exhibit MFG-14, Schedule 1.

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

3 A. No. The average yield for the Moody's 10-year Baa Corporate Bond Yield Index was 5.94  
4 percent over May 6, 2024-May 31, 2024,<sup>32</sup> while the mean of 20 percent of the CAPM risk  
5 premium for the two CAPM approaches was 1.21 percent.<sup>33</sup> The sum of the two  
6 components of the minimum threshold was 7.15 percent. All the ROEs in the analysis  
7 exceeded that value.

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

10 A. For the seven companies, the mean ROE was 10.09 percent. The median ROE also was  
11 10.09 percent.<sup>34</sup>

12 **B. Multistage DCF Analysis**

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

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

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<sup>32</sup> Exhibit MFG-15 Schedule 5.

<sup>33</sup> Exhibit MFG-15, Schedule 8.

<sup>34</sup> Exhibit MFG-14, Schedule 1.

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

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

6 **Q. WHAT LONG-RUN GDP GROWTH RATES DID YOU USE?**

7 A. It was my opinion that the second-stage EPS growth rates will be similar to the long-run  
8 GDP growth rate forecasts of the Social Security Administration (“SSA”) and the Energy  
9 Information Administration (“EIA”). I calculated long-run GDP growth rates from 2030-  
10 2050 from information published by these two agencies.<sup>35</sup> The SSA rate was 4.04  
11 percent,<sup>36</sup> while the EIA rate was 4.33 percent.<sup>37</sup>

12 **Q. WHAT TYPE OF MULTISTAGE DCF ANALYSIS DID YOU USE?**

13 A. I applied what is sometimes called a blended approach as my multistage DCF analysis. In  
14 this approach, all inputs other than the EPS growth rates are the same as in the constant-  
15 growth DCF analysis. I continued to use the five-year EPS forecasts in the first stage but  
16 used the weighted long-run GDP growth rate as my second-stage EPS input. At that point  
17 I blended the two growth rates by weighting the average of the five-year EPS forecasts  
18 two-thirds and the long-run weighted GDP growth rate one-third. This approach is set  
19 forth in a widely used regulatory handbook.<sup>38</sup>

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<sup>35</sup> The SSA and EIA GDP growth rates include inflation.

<sup>36</sup> Exhibit MFG-14, Schedule 2.

<sup>37</sup> Exhibit MFG-14, Schedule 3.

<sup>38</sup> Exhibit MFG-14, Schedule 4; Morin, Roger, *New Regulatory Finance (2006)*, Public Utilities Reports, Inc., Vienna, Virginia, page 309.

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

2 A. For the seven companies, the mean ROE was 9.45 percent. The median ROE was 9.30  
3 percent.<sup>39</sup>

4 **Q. PLEASE DISCUSS FLOTATION ADJUSTMENTS.**

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

10 **Q. HAVE YOU MADE A FLOTATION ADJUSTMENT FOR THE COMPANY?**

11 A. No. I have not included a flotation adjustment in my ROE values. The Commission can  
12 decide to add an adjustment relying on the following analysis.

13 **Q. FINDING AN APPROPRIATE FLOTATION ADJUSTMENT FOR NSP.**

14 A. Mr. Nowak determines that the flotation cost for NSP is 2.09 percent, the average of  
15 issuance expenses for NSP and Xcel Energy from 1949 to 2023. There is a notable break  
16 in the issuance expenses percentage starting in 2013.<sup>40</sup> The percentages after that date  
17 never exceed 1.179 percent. The average for the ten transactions is 0.927 percent. This  
18 value is representative of what Xcel is paying for issuances now. When applied, the  
19 flotation adjustment is 3.7 basis points.<sup>41</sup> This adjustment can be added to any of the ROE  
20 recommendations in this testimony if the Commission chooses.

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<sup>39</sup> Exhibit MFG-14, Schedule 5.

<sup>40</sup> Exhibit (JCN-1), Schedule 9, page 1 of 2.

<sup>41</sup> Exhibit MFG-14, Schedule 1.

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

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

3 A. The CAPM is theoretically sound, but its application raises some issues. The analysis using  
4 CAPM selects a riskless asset, beta, and market risk premium. The ROE analysis can vary  
5 considerably depending on the analyst's choices for these variables. Thus, what at first may  
6 seem like a model that is straightforward depends heavily on the particular input values  
7 used by an analyst.

8 **Q. WHAT INSTRUMENT DID YOU USE AS YOUR RISKLESS ASSET?**

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

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

20 A. I used the average yield on a 30-year Treasury bond for May 6, 2024, to May 31, 2024, as  
21 my riskless asset rate. This average yield was 4.60 percent.<sup>42</sup> This approach to calculating

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<sup>42</sup> Exhibit MFG-15, Schedule 1.

1 the risk-free rate is consistent with how I found common-equity share prices within the  
2 DCF model.

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

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

9 **Q. WHAT VALUES DID YOU USE FOR BETA ( $\beta$ )?**

10 A. I used the betas for each company in the Comparison Group taken from *The Value Line*  
11 *Investment Survey* reports of May 24, 2024.<sup>43</sup> These beta values are Value Line's latest  
12 assessment for each company.

13 **Q. HOW IS BETA ( $\beta$ ) INTERPRETED?**

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

17 **Q. WHAT DID YOU USE AS THE MARKET RISK PREMIUM?**

18 A. I used two approaches to determine the market risk premium. In one case, I adopted the  
19 estimate of the risk premium that companies currently require as they consider future  
20 returns on investment. In the other case I used S&P 500 inputs to find the market return  
21 for that broad market return.

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<sup>43</sup> Exhibit MFG-15, Schedule 2.

1 **Q. WHAT SOURCE DID YOU USE FOR AN EXPERT ESTIMATE OF THE**  
2 **CURRENT MARKET RISK PREMIUM?**

3 A. I used Kroll's equity risk premium (equivalent to the MRP) estimate of 5.5 percent.<sup>44</sup> Kroll  
4 is currently publisher of a financial statistical volume<sup>45</sup> previously published by Duff &  
5 Phelps and before that by Ibbotson and Associates. The company also provides financial  
6 advice. This value reflects the opinion of the company's corporate risk experts.

7 **Q. WHAT WAS THE NEXT STEP IN CALCULATING THE KROLL CAPM ROE?**

8 A. I multiplied the MRP by the beta for each Comparison Group company to find that  
9 company's risk premium (RP).<sup>46</sup>

10 **Q. WHAT WAS THE FINAL STEP IN CALCULATING THE KROLL CAPM ROE?**

11 A. I added the RP for each Comparison Group company to the risk-free rate to find a specific  
12 company's CAPM ROE.<sup>47</sup>

13 **Q. WHAT WAS THE RESULT OF THE KROLL CAPM ANALYSIS?**

14 A. The mean ROE for my Kroll CAPM analysis was 9.35 percent and the median ROE was  
15 9.28 percent.<sup>48</sup>

16 **Q. PLEASE DESCRIBE THE CONSTRAINTS THAT APPLY TO YOUR**  
17 **CALCULATION OF THE S&P 500 MARKET RISK RETURN?**

18 A. Under Opinion 569, FERC starts with the S&P 500 as its base for determining the broad  
19 market return. FERC requires that companies included in the market return analysis be  
20 paying dividends, an essential part of any DCF analysis. Companies with EPS estimates

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<sup>44</sup> Exhibit MFG-18, Schedule 4, Kroll, *Cost of Capital in the Current Environment*, June 2023 Update.

<sup>45</sup> *Stocks, Bonds, Bills, and Inflation*.

<sup>46</sup> Exhibit MFG-18, Schedule 5.

<sup>47</sup> *Id.*

<sup>48</sup> *Id.*

1 less than zero percent and greater than 20 percent are excluded, thereby handling the  
2 problem of outliers at either end of the spectrum.

3 **Q. WHAT DID YOU USE AS THE SOURCE OF DIVIDENDS AND SHORT-TERM**  
4 **EPS FORECASTS?**

5 A. FERC has accepted Value Line short-term EPS forecasts in the CAPM.<sup>49</sup> Therefore, I  
6 used Value Line's EPS forecasts for the companies in Value Line's S&P 500. Value  
7 Line also provides dividend yields for S&P 500 companies.

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

9 A. The term within parentheses in the CAPM equation is called the "market risk premium."  
10 It is the difference between the return on a broad market measure and the risk-free rate of  
11 return. In other words, the premium that investors require in order to take on risk. As  
12 noted above, I already had the risk-free rate. Therefore, I needed to calculate a market rate  
13 of return.

14 **Q. WHAT PROCEDURE DID YOU USE TO FIND THE MARKET RETURN?**

15 A. As stated, I use the S&P 500 inputs in finding my market risk premium. I downloaded these  
16 values on April 1, 2024.<sup>50</sup> I applied Value Line growth rates<sup>51</sup> to the dividend yields to  
17 find the expected dividend yield, adding a full year's growth.

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<sup>49</sup> See *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569-A, 171 FERC ¶ 61,154, ¶¶ 58 (2020).

<sup>50</sup> Exhibit MFG-15, Schedule 6.

<sup>51</sup> Exhibit MFG-15, Schedule 7.

1 **Q. WHAT WERE THE NEXT STEPS IN FINDING THE S&P CAPM RETURN ON**  
2 **EQUITY?**

3 A. I applied the dividend-paying rule, and the minimum and maximum threshold rules of less  
4 than or equal to zero percent and greater than 20 percent to the set of S&P 500 companies.<sup>52</sup>  
5 I then weighted the remaining ROEs by the market capitalization for each company. The  
6 sum of those individual ROEs is the market return. The value for the Value Line set was  
7 11.24 percent.<sup>53</sup> The market risk premium was calculated by subtracting the 4.60 percent  
8 return on the 30-year Treasury from the market return. The result was 6.64 percent. This  
9 amount is multiplied by the beta for each Comparison Group company to find that  
10 company's CAPM ROE.<sup>54</sup>

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 5.94 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 Kroll 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 7.15  
20 percent.<sup>55</sup>

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<sup>52</sup> Exhibit MFG-15, Schedule 6.

<sup>53</sup> Exhibit MFG-15, Schedule 3.

<sup>54</sup> Exhibit MFG-15, Schedule 7.

<sup>55</sup> Exhibit MFG-15, Schedule 8.

1 **Q. DID YOU INCLUDE A SIZE ADJUSTMENT IN YOUR CAPM ANALYSES?**

2 A. No. I did not include a size adjustment. There are studies that indicate the size adjustment  
3 is not appropriate for the CAPM. The studies show that the effect disappears for years at a  
4 time and does not manifest itself in the prices investors pay for smaller and larger stocks.<sup>56</sup>  
5 Further, the studies that have shown a size effect may be examples of data mining: e.g.,  
6 start and stop periods for the data to be studied that show a size effect, but the finding  
7 cannot be replicated when the span of the study has different beginnings and ends.<sup>57</sup> The  
8 studies recommend not making adjustments for an effect that may be transitory, at best,  
9 and not one that investors demand in the prices they pay for common equity.

10 **Q. DID YOU INCLUDE A CREDIT-RISK ADJUSTMENT IN YOUR CAPM**  
11 **ANALYSIS?**

12 A. No. By using credit rating as one of the proxy group selection criteria, I accounted for  
13 different credit risks. The companies selected for the proxy group range from A+ to BBB-  
14 , a relatively tight grouping. As noted previously, companies that are close in credit rating  
15 have similar risk, so no credit-rating adjustment is necessary.

## 16 **VIII. RECOMMENDED ROE**

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

18 A. I performed four ROE analyses: (1) constant-growth DCF, (2) multistage DCF, (3) Kroll  
19 MRP estimate CAPM, and (4) S&P 500 CAPM for Value Line. The resulting ROE values  
20 are:

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<sup>56</sup> Damodaran, Aswath, “The Small Cap Premium: Where is the Beef?” Business Valuation Review, Volume 34, Number 4 (2015).

<sup>57</sup> Ang, Clifford S., “The Absence of a Size Effect Relevant to the Cost of Equity.” Business Valuation Review, Volume 37, Number 3 (2018).

1

**DCF ROE Mean and Median Results**

	<b>Constant growth</b>	<b>Multistage</b>
<b>Mean</b>	<b>10.09%</b>	<b>9.45%</b>
<b>Median</b>	<b>10.09%</b>	<b>9.30%</b>

2

**CAPM ROE Mean and Median Results**

	<b>Kroll</b>	<b>Value Line</b>
<b>Mean</b>	<b>9.35%</b>	<b>10.34%</b>
<b>Median</b>	<b>9.28%</b>	<b>10.24%</b>

3 **Q. PLEASE COMMENT ON THE DCF ROE RESULTS.**

4 A. The DCF constant-growth ROE result was higher than the multistage counterpart ROE.  
5 The multistage approach incorporates the steadier long-run growth rates. Both results were  
6 within the 8.80-10.50 percent range of authorized ROEs from January 1, 2021, to  
7 December 31, 2023, for U.S. natural gas utilities as reported by Regulatory Research  
8 Associates (“RRA”), a unit of S&P Global IQ Pro.<sup>58</sup>

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

10 A. The Value Line CAPM ROE was the highest of the results. On the other hand, the Kroll  
11 CAPM ROE was the lowest of the four results. Both analyses produced results at least  
12 within the edge of the range of recent authorized ROEs.

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<sup>58</sup> Exhibit MFG-16.

1 **Summary of ROE Awards for 2021-2023**

<b>Year</b>	<b>No. of Cases</b>	<b>Mean ROE</b>	<b>Median ROE</b>	<b>ROE Range</b>
<b>2021</b>	43	9.56	9.60	8.80-10.24
<b>2022</b>	33	9.53	9.60	9.20-10.20
<b>2023</b>	37	9.60	9.55	9.25-10.50

2  
3 **Q. HOW DID YOU ARRIVE AT A RECOMMENDED ROE FOR NSP?**

4 A. The four ROE results, as noted, do lie within the U.S. authorized ROEs range of 8.80  
5 percent to 10.50 percent. Therefore, I weighted these four results equally, producing a mean  
6 ROE of 9.81 percent and a median ROE of 9.73 percent. My recommended ROE for NSP  
7 is 9.80 percent, reflecting the mean and median ROEs.<sup>59</sup>

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

9 **Q. HOW DID YOU CHECK THE REASONABLENESS OF YOUR ROE RESULTS?**

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

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

13 A. I use the recently authorized ROEs as a basis for evaluating the reasonableness of my ROE  
14 results. I did not use it as a substitute for those analyses.

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

17 A. Recently authorized ROEs reflect the results of rate cases conducted in a variety of  
18 environments and at different times. Test years, conditions in capital markets, general

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<sup>59</sup> Exhibit MFG-17, Schedule 1.

1 economic indicators such as inflation rates, and so forth for previous rate cases can be  
2 different and become outdated when compared with these factors for a current rate case.  
3 Therefore, recently authorized ROEs should serve only to establish whether a current ROE  
4 result is reasonably close to what has happened, not be a substitute for forward-looking  
5 analysis based on current conditions.

6 **Q. WHAT DID YOU CONCLUDE REGARDING YOUR ROE ANALYSIS AND THE**  
7 **RESULTS FOR THE 2021-2023 AUTHORIZED NATURAL GAS ROES?**

8 A. My recommended ROE of 9.80 percent marginally exceeds the annual mean ROEs (9.53  
9 percent to 9.60 percent) and median ROEs (9.55 percent to 9.60 percent) for the 2021-2023  
10 authorized natural gas ROEs.<sup>60</sup> My analysis reflects the most recent trends in common  
11 equity prices, dividends, EPS growth rate estimates, beta values, and U.S. Treasury bond  
12 yields. The 9.80 percent ROE reflects these trends.

13 **X. RECOMMENDED CAPITAL STRUCTURE AND**  
14 **OVERALL RATE OF RETURN**

15 **Q. WHAT DEBT COSTS DID NSP PROPOSE IN THIS DOCKET?**

16 A. NSP proposed a cost of long-term debt of 4.54 percent. This cost of long-term debt is based  
17 on the NSP's Test Year period ending December 31, 2024.<sup>61</sup> NSP proposed a cost of short-  
18 term debt of 7.72 percent. The NSP short-term debt cost also is based on the Test Year.<sup>62</sup>

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<sup>60</sup> Exhibit MFG-17, Schedule 1.

<sup>61</sup> Nowak Direct, Exhibit (JCN-1), Schedule 13, page 2 of 2.

<sup>62</sup> Nowak Direct, Exhibit (JCN-1), Schedule 13, page 1 of 2.

1 **Q. WHAT IS YOUR POSITION REGARDING NSP'S PROPOSED LONG-TERM**  
2 **DEBT COST?**

3 A. I accepted the proposed 4.54 percent long-term debt cost for this docket. This debt cost is  
4 reasonable.

5 **Q. WHAT IS YOUR POSITION REGARDING NSP'S PROPOSED SHORT-TERM**  
6 **DEBT COST?**

7 A. I accepted the proposed 7.72 percent long-term debt cost for this docket. This debt cost is  
8 reasonable.

9 **Q. WHAT CAPITAL STRUCTURE DID YOU RECOMMEND FOR NSP?**

10 A. I recommended a capital structure of 47.50 percent long-term debt, 2.50 percent short-term  
11 debt, and 50.00 percent common equity.<sup>63</sup>

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

14 A. To find a recommended capital structure for NSP, I turned to the Comparison Group  
15 companies. Recall that they have risk profiles similar to that of NSP. Therefore, The  
16 Company's capital structure ratios should be, not identical, but close to the average ratio  
17 values for the group. To that end, I calculated the average long-term debt, short-term debt,  
18 and common equity proportions for the seven natural gas utilities in the Comparison Group.  
19 These average ratios reflected the dollar amount by company for each of the eight quarters  
20 from the second quarter of 2022 to the first quarter of 2024. The source of the amounts  
21 upon which the company ratios were based is S&P Global Market Intelligence.

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<sup>63</sup> Exhibit MFG-16, Schedule 2.

1 **Q. WHY DID YOU SELECT THESE EIGHT QUARTERS FOR YOUR CAPITAL**  
2 **STRUCTURE ANALYSIS?**

3 A. I used two years of data to smooth the effects of any quarter that was an outlier. Using two  
4 years of data also mitigated any seasonal effects on the capital structures. The first quarter  
5 of 2024 is the most recent quarter for which data were available. Therefore, I began my  
6 analysis with data from the second quarter of 2022.

7 **Q. WHAT WAS THE OUTCOME OF YOUR CAPITAL STRUCTURE ANALYSIS?**

8 A. For the Comparison Group set of seven natural gas utilities over the eight quarters, the  
9 long-term debt proportion was 45.95 percent, the short-term debt proportion was 10.80  
10 percent, and the common-equity proportion was 43.24 percent. NSP requested a capital  
11 structure of 47.38 percent long-term debt, 0.12 percent short-term debt, and common equity  
12 of 52.50 percent.<sup>64</sup>

13 **Q. DID YOU PERFORM AN ADDITIONAL CAPITAL STRUCTURE ANALYSIS?**

14 A. Yes. I removed ONE Gas and Spire Inc. from the analysis. These public utilities have,  
15 respectively, short-term debt averages of 18.56 percent and 15.41 percent. The values are  
16 outliers. The capital structure that resulted from these deletions is 47.55 percent long-term  
17 debt, 8.33 percent short-term debt, and 44.11 percent common equity.

18 **Q. PLEASE DISCUSS YOUR CAPITAL STRUCTURE ANALYSIS.**

19 A. The Comparison Group's common-equity ratio with the ONE Gas and Spire values  
20 remains more than 8 percent percent below the NSP request of a ratio of 52.50 percent.

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<sup>64</sup> Nowak Direct, Schedule DWD-1

1 This disparity indicates that NSP's requested capital structure includes an excessive  
2 amount of common equity.

3 **Q. WHAT IS YOUR RESPONSE TO THE COMPANY'S CAPITAL STRUXTURE**  
4 **REQUEST IN LIGHT OF THE MEAN CAPITAL STRUCTURE RATIOS FOR**  
5 **THE COMPARISON GROUP?**

6 A. The long-term debt ratios of the Company and the group average are close to one another,  
7 so I made 47.50 percent my recommended proportion. On the other hand, the Company is  
8 requesting virtually no short-term debt, which is well below the mean ratio for the group,  
9 and a much higher proportion of common equity than the group mean. The NSP request  
10 would mean higher rates for its ratepayers if granted. Considering these factors, I set my  
11 recommended capital structure proportions at 2.50 percent for short-term debt and 50.00  
12 percent for common equity.

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

15 A. When my recommended ROE of 9.80 percent is included with my recommended capital  
16 structure and the Company's debt costs in the modified balance sheet, the ROR is 7.25  
17 percent.<sup>65</sup>

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<sup>65</sup> Exhibit MFG-17, Schedule 3.

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

2 **A. Summary of NSP ROE Analysis**

3 **Q. WHAT METHODS DID MR. NOWAK USE TO ARRIVE AT HIS**  
4 **RECOMMENDED ROE?**

5 A. Mr. Nowak used a constant-growth DCF model, the CAPM, and a risk premium approach.  
6 He further supported his utility quantitative analyses by applying an expected earnings  
7 analysis to the proxy group.<sup>66</sup>

8 **Q. WHAT WAS THE ROE RECOMMENDED BY MR. NOWAK FOR NSP?**

9 A. Mr. Nowak recommended an ROE of 10.20 percent. He identified a range of 9.90 percent  
10 to 10.90 percent for NSP by his application of the various ROE methods. From this range  
11 he stated that 10.20 percent is appropriate for NSP.<sup>67</sup>

12 **B. DCF Analysis**

13 **Q. DID MR. NOWAK APPLY THE DCF MODEL IN HIS ROE ANALYSIS?**

14 A. Yes. Mr. Nowak followed the same approach I did for the constant-growth DCF model.  
15 However, he used 90-day average prices and 180-day average prices in addition to a 30-  
16 day average price for each company. Further, he presented DCF ROE results for low and  
17 high EPS values for the proxy group members in addition to mean values, giving him a set  
18 of nine DCF results.<sup>68</sup>

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<sup>66</sup> Nowak Direct, page 29.

<sup>67</sup> *Id.*, page 4.

<sup>68</sup> *Id.*, page 34.

1 **Q. PLEASE COMMENT ON MR. NOWAK'S USE OF THREE PERIODS TO**  
2 **DEVELOP AVERAGE PRICE INPUT VALUES FOR THE DCF MODEL.**

3 A. The 90-day and 180-day average price periods at first glance might seem to increase the  
4 variety of inputs for the DCF model. Additional examination shows that they give older  
5 price information equal weight to the more recent information provided by the 30-day  
6 average prices, a weighting that is not desirable and is unnecessary. The 30-day average  
7 price values reflect all the information available to investors in the 90-day and 180-day  
8 values. However, it allows the investors to give that older information the weight the  
9 investors believe it deserves rather than treating it equally. The equal weighting approach  
10 means that stale price values are incorporated into the analysis.

11 **Q. DID MR. NOWAK ADJUST HIS DCF ROES FOR GROWTH?**

12 A. Yes. Mr. Nowak adjusted the dividends in his DCF model analysis for growth. He applied  
13 a half year's growth,<sup>69</sup> whereas I applied a full year's growth. Thus, my adjustment was  
14 larger than his adjustment.

15 **Q. WHAT WAS THE RESULT OF MR. NOWAK'S DCF ANALYSIS?**

16 A. Mr. Nowak's constant-growth DCF ROE results ranged in value from 9.02 percent to 11.92  
17 percent.<sup>70</sup>

18 **C. CAPM Analysis**

19 **Q. DID MR. NOWAK APPLY THE CAPM IN HIS ROE ANALYSIS?**

20 A. Yes. Mr. Nowak applied the CAPM in his ROE analysis.<sup>71</sup>

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<sup>69</sup> Nowak Direct, page 32.

<sup>70</sup> *Id.*, page 34.

<sup>71</sup> *Id.*, page 35.

1 **Q. DID MR. NOWAK USE DIFFERENT INPUT VALUES FOR THE VARIABLES IN**  
2 **HIS CAPM ANALYSES?**

3 A. Yes. Mr. Nowak used three risk-free rate values, two beta values, and two versions of the  
4 S&P 500 market return in his CAPM analyses. He did average the S&P market returns so  
5 the number of ROE outputs from his CAPM analysis is six.<sup>72</sup>

6 **Q. WHAT WERE THE RESULTS OF MR. NOWAK’S CAPM ANALYSES?**

7 A. The results for Mr. Nowak’s CAPM ROE analyses ranged from 11.14 percent to 12.10  
8 percent.<sup>73</sup>

9 **Q. PLEASE COMMENT ON MR. NOWAK’S USE OF THREE RISK-FREE RATES**  
10 **IN HIS APPLICATION OF THE CAPM MODEL.**

11 A. Mr. Nowak uses the 30-day average yield on the 30-Year Treasury Bond , the forecasted  
12 rate over the next year, and a five-year forecasted rate. Current yields on the 30-year  
13 Treasury bond are the appropriate risk-free rate for this situation. Much like current  
14 common equity share prices reflect all information about factors affecting the value of the  
15 shares, so too do current bond yields capture the beliefs of investors as to where yields on  
16 the instruments are headed. Recent yields are a better indicator of what investors believe  
17 long-term interest rates are going to be than forecasts because investors are speaking  
18 through their participation in the bond market as to what future yields will be.

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<sup>72</sup> Nowak Direct, pages 36-38.

<sup>73</sup> *Id.*, page 38

1 **D. Risk-Premium Approach**

2 **Q. PLEASE BRIEFLY DISCUSS THE RISK-PREMIUM METHOD.**

3 A. The risk-premium method is a historical approach to ROE analysis. The inputs to the  
4 method are authorized ROEs and U.S. Treasury yields from the past. Thus, the regression  
5 model developed by Mr. Nowak finds only what has happened in certain circumstances,  
6 not what investors, signaling through their willingness to pay certain prices for common-  
7 equity shares, tell the market they expect will happen. The DCF model and the CAPM, as  
8 applied by both Mr. Nowak and me, are forward-looking models and are preferred to the  
9 risk-premium method for that reason.

10 **Q. PLEASE DISCUSS THE RISK-PREMIUM METHOD'S CALCULATIONS.**

11 A. Prior authorized utility ROEs and the bond yields in effect at the time the authorized ROEs  
12 are ordered are inputs into the risk-premium method. The values for the variables are used  
13 in statistical analysis that develops a relationship between the risk-free bonds and the  
14 authorized ROEs. The differences between the two variables' values when aggregated in  
15 the statistical analysis produce a risk premium. The outcome of the analysis is an equation  
16 in which current bond values are used to produce a risk premium and a current ROE for a  
17 public utility in a base rate case.

18 **Q. PLEASE DISCUSS HOW THE RISK-PREMIUM METHOD INTRODUCES**  
19 **CIRCULARITY INTO ROE ANALYSIS.**

20 A. The ROE for a current case becomes an input in any following risk-premium approach  
21 ROE analyses, setting up a circularity loop of references from one rate case to the next.  
22 Eventually, the current authorized ROE becomes part of the set of historical authorized  
23 ROEs that serve as inputs into the risk-premium analysis that can be part of the ROE

1 analysis for the subject utility. The current views of investors regarding the subject  
2 company are not part of the risk-premium approach.

3 **Q. DO INVESTORS TAKE PREVIOUS AUTHORIZED ROES INTO ACCOUNT AS**  
4 **THEY MAKE DECISIONS ABOUT BUYING AND SELLING NATURAL GAS**  
5 **UTILITY COMMON-EQUITY SHARES?**

6 A. Yes. Previous authorized ROEs for a subject utility and other companies are an element  
7 that investors consider in making decisions.

8 **Q. HOW IS THIS CONSIDERATION OF PREVIOUS AUTHORIZED ROES BY**  
9 **INVESTORS DIFFERENT THAN USING PREVIOUS AUTHORIZED ROES IN**  
10 **THE RISK-PREMIUM METHOD?**

11 A. When investors include previous authorized ROEs, and other inputs into their decisions,  
12 they make judgments as to how much weight to give to each variable. Further, they also  
13 include their assessments of the future prospects of a subject utility and other companies  
14 in the same industry in their process. These expectations of the future are not part of the  
15 risk-premium method. As for the previous authorized ROEs, the relationship between them  
16 and bond yield values is rigid in risk-premium analysis.

17 **Q. WHAT WAS THE RESULT OF MR. NOWAK'S RISK-PREMIUM ANALYSIS?**

18 A. The results for Mr. Nowak's risk-premium ROE analyses ranged from 10.18 percent to  
19 10.62 percent.

20 **E. Expected Earnings Analysis**

1 **Q. PLEASE DESCRIBE MR. NOWAK'S EXPECTED EARNINGS ANALYSIS.**

2 A. Mr. Nowak correctly stated that the Expected Earnings approach measures the return that  
3 investors expect to earn on book value.<sup>74</sup> The approach is flawed for this very reason:  
4 investors cannot expect to purchase shares of common equity in a utility, or any company,  
5 for its book value. Investors must pay market price for common-equity shares. When  
6 market price exceeds book value, as it generally does for utilities, the expected earnings  
7 approach overstates the return to investors.

8 **Q. HOW DOES USING BOOK VALUE OVERSTATE THE ROE INVESTORS CAN**  
9 **OBTAIN?**

10 A. Applying the expected earnings approach requires a departure from the reality of the  
11 market. For example, it is as though in finding the dividend-yield component of the DCF  
12 model, an analyst is forced to use book value in place of market price in the denominator.  
13 The lower book value pushes up the yield, but it is not a yield that investors can obtain.  
14 Only in the rare instance that book value equals market price of common-equity shares will  
15 the book-value return and the market-value return be the same. Thus, Mr. Nowak's  
16 Expected Earnings analysis overstated the ROE that investors can expect.

17 **F. Summary of Mr. Nowak's ROE Analyses**

18 **Q. PLEASE CHARACTERIZE MR. NOWAK'S ROE RESULTS.**

19 A. Mr. Nowak takes DCF approaches, then multiplies the ROE results from each model by  
20 using different input values for the variables. From the nine DCF model ROEs, the six  
21 CAPM ROE values, and the three risk-premium approach ROEs, Mr. Nowak concludes

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<sup>74</sup> Nowak Direct, page 42.

1 that 9.90 percent to 10.90 percent is a reasonable range for NSP's ROE. There is no  
2 explanation as to why these values are reasonable. The same holds true for Mr. Nowak's  
3 choice of 10.20 percent as the correct ROE for the Company. He states that this ROE value  
4 is below the midpoint of the range and 56 basis points below the average of the DCF,  
5 CAPM, and risk-premium approaches. Therefore, the value is conservative.<sup>75</sup>

6 **Q. DO YOU AGREE WITH MR. NOWAK'S EXPLANATION?**

7 A. No. Mr. Nowak's statements regarding the relationship of his ROE recommendation to  
8 other ROE numbers are descriptions, not the basis for a choice of ROE. While being 100  
9 percent true, they are not the product of analysis. His 10.20 percent ROE recommendation,  
10 therefore, is not sound.

11 **XII. CONCLUSION**

12 **Q. WHAT ARE THE CRITERIA THE COMMISSION SHOULD CONSIDER IN**  
13 **SETTING THE COMPANY'S ROE AND COST OF CAPITAL?**

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

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<sup>75</sup> Nowak Direct, page 4.

1 **Q. WHAT IS YOUR RECOMMENDED RETURN ON EQUITY AND OVERALL**  
2 **COST OF CAPITAL FOR NSP?**

3 A. I recommend an ROE of 9.80 percent and an overall cost of capital of 7.26 percent for  
4 NSP.

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

6 A. Yes. However, I reserve the right to update this testimony as may be necessary.

**PCMG and Associates LLC**

**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 – Snaveley 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 23 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, the 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 60 times in cost of capital dockets and other matters before the regulatory agencies of Arkansas, California, Hawaii, Maine, Maryland, Minnesota, Nebraska, New Jersey, New Mexico, North Dakota, Oklahoma, Pennsylvania, South Dakota, Wyoming, and the Federal Energy Regulatory Commission.

**PCMG and Associates LLC**

***Regulatory Projects and Appearances***

1. In the Matter of the FirstEnergy Pennsylvania Base Rate Case (2024) (Appearance: cost of capital on behalf of the Pennsylvania Office of Consumer Advocate)  
Pennsylvania Public Utility Commission – Docket No. R-2024-3047068
2. Application of Northern States Power Company for Authority to Increase Rates for Natural Gas Service in North Dakota (2024) – (Appearance: cost of capital on behalf of the North Dakota Public Service Commission Advocacy Staff)  
North Dakota Public Service Commission Docket No. PU-23-367
3. Application of Otter Tail Power Company for Authority to Increase Electric Rates in North Dakota (2024) – (Appearance: cost of capital on behalf of the North Dakota Public Service Commission Advocacy Staff)  
North Dakota Public Service Commission Docket No. PU-23-342
4. Application of Montana-Dakota Utilities Company for Authority to Increase Rates for Natural Gas Service in North Dakota (2024) – (Appearance: cost of capital on behalf of the North Dakota Public Service Commission Advocacy Staff)  
North Dakota Public Service Commission Docket No. PU-23-341
5. In the Matter of the Verified Petition of Jersey Central Power & Light Company for Approval of an Infrastructure Investment Program II (“EnergizeNJ”) (2023) – (Appearance: cost of capital on behalf of the New Jersey Division of Rate Counsel)  
New Jersey Board of Public Utilities Docket No. EO23110793
6. In the Matter of the Petition of Veolia Water New Jersey Inc. for Approval of an Increase in Rates for Water/Sewer Service and Other Tariff Changes (2023) – (Appearance: rate of return and cost of capital on behalf of the New Jersey Division of Rate Counsel)  
New Jersey Board of Public Utilities Docket No. WR23110790
7. In the Matter of the Petition of the Application of Black Hills Wyoming Gas, LLC d/b/a Black Hills Energy for Approval of a General Rate Increase of \$19,262,41 to the Retail Gas Rates Effective for Usage on and After February 1, 2023 and Extension of the Wyoming Integrity Rider (2023) – (Appearance: cost of capital on behalf of the Wyoming Office of Consumer Advocate)  
Wyoming Public Service Commission Docket No. 30026-78-GR-23
8. In the Matter of the Petition of Middlesex Water Company for Approval of an Increase in Rates for Water Service and Other Tariff Services (2023) – (Appearance: cost of capital on behalf of the New Jersey Division of Rate Counsel)  
New Jersey Board of Public Utilities Docket No. WR23050292

**PCMG and Associates LLC**

9. In the Matter of the Petition of Jersey Central Power and Light Company for Authority to Issue and Sell Up to \$700,000,000 Aggregate Principal Amount of Senior Notes in One or More Series and to Make, Execute and Deliver One or More Supplemental Indentures in Connection Therewith (2023) – (Appearance: debt issuance petition on behalf of the New Jersey Division of Rate Counsel)  
New Jersey Board of Public Utilities Docket No. EF23060339  
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10. In the Matter of the Pittsburgh Water and Sewer Authority Base Rate Case (2023) (Appearance: Cash Flow and Bond Ratings on behalf of the Pennsylvania Office of Consumer Advocate)  
Pennsylvania Public Utility Commission – Docket Nos. R-2023-3039920, R-2023-3039921, R-2023-303991
11. In the Matter of the Application of Hawaii Water Service Co. for Approval of a General Rate Increase for Its Pukalani Wastewater Division and Certain Tariff Changes (2022) (Appearance: Cost of Capital on behalf of the Hawaii Division of Consumer Advocacy)  
Hawaii Public Service Commission – Case No. 2022-0186
12. In the Matter of the Philadelphia Gas Works Base Rate Case (2023) (Appearance: Cash Flow and Bond Ratings on behalf of the Pennsylvania Office of Consumer Advocate)  
Pennsylvania Public Utility Commission – Docket No. R-2023-3037933
13. In the Matter of the Application of Lanai Water Company, Inc. for Review and Approval of Rate Increases; Revised Rate Schedules; and Changes to its Tariff (2022) (Appearance: Cost of Capital on behalf of the Hawaii Division of Consumer Advocacy)  
Hawaii Public Service Commission – Case No. 2022-0233
14. Application of Southern Maryland Electric Cooperative, Inc., for Authority to Revise Its Rates and Charges for Electric Service and Certain Rate Design Changes (2023) – (Appearance: cost of capital on behalf of the Maryland Office of the People’s Counsel)  
Maryland Public Service Commission Case No. 9688
15. In the Matter of Petition of Atlantic City Electric Company for Approval of Powering the Future, an Infrastructure Investment Program and Related Cost Recovery Mechanism, Pursuant to *N.J.A.C. 14:3-2A.1 et. seq.* (2022) – (Appearance: cost of capital on behalf of the New Jersey Division of Rate Counsel)  
New Jersey Board of Public Utilities Docket No. ER22100666

**PCMG and Associates LLC**

16. Application of San Diego Gas & Electric Company (U902M) for Authority to Establish Its Authorized Cost of Capital for Utility Operations for 2023 and to Reset the Annual Cost of Capital Mechanism (2022) - (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.22-04-008
17. In the Matter of the Petition of Rockland Electric Company for Approval of an Infrastructure Investment Program, and Related Cost Recovery Mechanism (2022) – (Appearance: cost of capital on behalf of the New Jersey Division of Rate Counsel)  
New Jersey Board of Public Utilities Docket No. ER22030198
18. 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 (2021) – (Appearance: return on equity, cost of capital on behalf of the Office of the Oklahoma Attorney General)  
Oklahoma Commerce Commission Cause No. PUD 202100163
19. 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 (2022) - (Appearance: return on equity, cost of capital on behalf of the Office of the Oklahoma Attorney General)  
Oklahoma Commerce Commission Cause No. PUD 202100164
20. In the Matter of the Application of Northern States Power Co. for Authority to Increase Rates for Natural Gas Service in North Dakota (2022) – (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the North Dakota Public Service Commission Advocacy Staff)  
ND Public Service Commission Case No. PU-21-381
21. In the Matter of the Petition of Public Service Electric and Gas Company for Approval of an Infrastructure Advancement Program Pursuant to N.J.A.C. 14:3-2A.1 et. seq. (2021) – (Appearance: cost of capital on behalf of the New Jersey Division of Rate Counsel)  
New Jersey Board of Public Utilities Docket Nos. EO21111211 and GO21111212
22. In Re: Hawaii-American Water Company – Approval of Rate Increases and Revised Rate Schedules for Wastewater Services (2021) (Appearances: Cost of Capital on behalf of the Hawaii Division of Consumer Advocacy)  
Hawaii Public Service Commission – Case No. 2021-0063

**PCMG and Associates LLC**

23. In Re: Kalaeloa Water Company – Approval of a General Rate Increase / Adjustments for Water and Wastewater Services (2021) (Appearance: Cost of Capital on behalf of the Hawaii Division of Consumer Advocacy)  
Hawaii Public Service Commission – Case No. 2021-0005
24. In the Matter of Application of San Diego Gas & Electric Company 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 Utility Consumers’ Action Network)  
CA Public Utilities Commission Application 21-08-014
25. In the Matter of the Petition of Gordon’s Corner Water Company for an Increase in Rates and Charges for Water Service (2021) – (Appearance: cost of capital on behalf of the New Jersey Division of Rate Counsel)  
New Jersey Board of Public Utilities Docket No. WR21070979
26. Maine Water Company, Application for Approval of Rate Increase and Rate Smoothing Mechanism for the Biddeford and Saco Division (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. 2021-00289
27. 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
28. 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
29. 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

**PCMG and Associates LLC**

30. 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
31. 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
32. 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
33. 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
34. 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)
35. 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)  
Maine Public Utilities Commission Docket No. 2021-00053
36. 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

**PCMG and Associates LLC**

37. 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
38. 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
39. 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
40. 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
41. 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
42. 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 Utility Consumers' Action Network)  
California Public Utilities Commission Proceeding A.19-04-017

**PCMG and Associates LLC**

43. 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
44. 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
45. 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
46. 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
47. 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
48. 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
49. 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

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50. 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
51. 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
52. 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
53. 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
54. 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
55. 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
56. 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

**PCMG and Associates LLC**

57. 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
58. 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
59. 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
60. 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
61. 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
62. 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
63. 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

**PCMG and Associates LLC**

64. 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
65. 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
66. 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
67. 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
68. 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
69. 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
70. 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

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71. 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
72. 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
73. 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
74. 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
75. 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
76. 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
77. 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

**PCMG and Associates LLC**

78. 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
79. 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

***Advance Prudence/Certificates of Need***

80. In the Matter of the Application Northern States Power Company for an Advance Determination of Prudence for the Big Stone South – Alexandria – Big Oaks 345 kV Transmission Line Project (2023) – (Appearance: Need, necessity and conformance with North Dakota Statutes and Regulation on behalf of the North Dakota Public Service Commission Advocacy Staff)  
North Dakota Public Service Commission Docket No. PU-23-329
81. In the Matter of the Application Northern States Power Company for an Advance Determination of Prudence for the Proposed 345 kV Brookings County – Lyon County and Helena – Hampton Second-Circuit Project (2023) – (Appearance: Need, necessity and conformance with North Dakota Statutes and Regulation on behalf of the North Dakota Public Service Commission Advocacy Staff)  
North Dakota Public Service Commission Docket No. PU-23-295
82. In the Matter of the Application Northern States Power Company for an Advance Determination of Prudence for the Lyon County to Sherburne County 345 kV Transmission Line (2023) – (Appearance: Need, necessity and conformance with North Dakota Statutes and Regulation on behalf of the North Dakota Public Service Commission Advocacy Staff)  
North Dakota Public Service Commission Docket No. PU-23-142
83. 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

**PCMG and Associates LLC**

84. 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
85. 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
86. 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
87. 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
88. 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
89. 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

**PCMG and Associates LLC**

90. 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
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. 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
95. 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
96. 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

**PCMG and Associates LLC**

***Regulatory Projects and Appearances***

97. Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid: Storm Cost Recovery for Fourteen 2020 Qualifying Events (2022) (Appearance: prudence/used and useful on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
Massachusetts Department of Public Utilities – Docket No. D.P.U. 22-43
98. 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).
99. 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
100. 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
101. 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***

102. 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

**PCMG and Associates LLC**

103. 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
104. 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
105. 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***

106. 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
107. 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
108. 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
109. 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

**PCMG and Associates LLC**

110. 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
111. 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
112. 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
113. 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
114. 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
115. 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
116. 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***

117. 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

**PCMG and Associates LLC**

118. 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
119. 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
120. 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
121. 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**

122. 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
123. 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
124. 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

**PCMG and Associates LLC**

**Telecommunications**

125. 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
  
126. 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



## Xcel Energy Inc. | Credit Ratings

NASDAQGS: XEL (MI KEY: 4025308; SPCIQ KEY: 527542)

Agency All

# BBB+

### S&P Global Ratings

Issuer Credit Rating (Foreign Currency LT)  
3/13/2024

Downgrade | CreditWatch/Outlook: Negative  
3/13/2024

# Baa1

### Moody's

Long Term Rating (LT Issuer Rating )  
12/22/2023

### Current Ratings

#### S&P GLOBAL RATINGS (S&P Entity Name:Xcel Energy Inc.)

RATING TYPE	RATING	RATING DATE	LAST REVIEW DATE	PREVIOUS RATING	ACTION	CREDITWATCH/ OUTLOOK	CREDITWATCH/ OUTLOOK DATE
<b>Issuer Credit Rating</b>							
Foreign Currency LT	BBB+	3/13/2024	3/13/2024	A-	Downgrade   CreditWatch/Outlook	Negative	3/13/2024
Local Currency LT	BBB+	3/13/2024	3/13/2024	A-	Downgrade   CreditWatch/Outlook	Negative	3/13/2024
Foreign Currency ST	A-2	6/8/2005	3/13/2024	NR	New Rating		
Local Currency ST	A-2	6/8/2005	3/13/2024	NR	New Rating		

### MOODY'S

RATING TYPE	RATING	DATE	ACTION	OUTLOOK
<b>Ratings Summary</b>				
Long Term Rating (LT Issuer Rating )	Baa1	12/22/2023		
Short Term Rating (Commercial Paper Domestic)	P-2	12/22/2023		
Outlook		12/22/2023		Stable
<b>Ratings Detail</b>				
Commercial Paper (Domestic)	P-2	12/22/2023		
Senior Unsecured (Domestic)	Baa1	12/22/2023		
Senior Unsecured Bank Credit Facility (Domestic)	Baa1	12/22/2023		
LT Issuer Rating	Baa1	12/22/2023		
Senior Unsec. Shelf (Domestic)	WR	4/21/2024	Withdrawn	
Subordinate Shelf (Domestic)	WR	4/17/2021	Withdrawn	
Junior Subord. Shelf (Domestic)	WR	4/17/2021	Withdrawn	
Pref. Shelf (Domestic)	WR	4/17/2021	Withdrawn	
Junior Subordinate (Domestic)	WR	5/30/2013	Withdrawn	
Pref. Stock	WR	10/30/2011	Withdrawn	

### Ratings History

#### S&P GLOBAL RATINGS (S&P Entity Name:Xcel Energy Inc.)

RATING TYPE	RATING	RATING DATE	ACTION	CREDITWATCH/ OUTLOOK	CREDITWATCH/ OUTLOOK DATE
<b>Foreign Currency LT</b>					
Issuer Credit Rating	BBB+	3/13/2024	Downgrade   CreditWatch/Outlook	Negative	3/13/2024
Issuer Credit Rating	A-	6/23/2010	CreditWatch/Outlook	Negative	3/1/2024



## Northern States Power Company | Credit Ratings

(MI KEY: 4057754; SPCIQ KEY: 12040739)

Agency All

# A-

**S&P Global Ratings**

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Issuer Credit Rating (Foreign Currency LT)  
3/13/2024

Downgrade | CreditWatch/Outlook: Negative  
3/13/2024

# A2

**Moody's**

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Long Term Rating (LT Issuer Rating )  
12/12/2023

### Current Ratings

#### S&P GLOBAL RATINGS (S&P Entity Name:Northern States Power Co.)

RATING TYPE	RATING	RATING DATE	LAST REVIEW DATE	PREVIOUS RATING	ACTION	CREDITWATCH/ OUTLOOK	CREDITWATCH/ OUTLOOK DATE
<b>Issuer Credit Rating</b>							
Foreign Currency LT	A-	3/13/2024	3/13/2024	A	Downgrade   CreditWatch/Outlook	Negative	3/13/2024
Local Currency LT	A-	3/13/2024	3/13/2024	A	Downgrade   CreditWatch/Outlook	Negative	3/13/2024
Foreign Currency ST	A-2	3/13/2024	3/13/2024	A-1	Downgrade		
Local Currency ST	A-2	3/13/2024	3/13/2024	A-1	Downgrade		

#### MOODY'S

RATING TYPE	RATING	DATE	ACTION	OUTLOOK
<b>Ratings Summary</b>				
Long Term Rating (LT Issuer Rating )	A2	12/12/2023		
Short Term Rating (Commercial Paper Domestic)	P-1	12/12/2023		
Outlook		12/12/2023		Stable

#### Ratings Detail

**ROE and ROR Analysis for NSP Gas  
Comparison Group  
Value Line Investment Survey Natural Gas Utility  
Industry  
Value Line Website June 17, 2024**

**Docket No. PU-23-367  
Exhibit MFG-3**

<b>Company</b>	<b>Ticker</b>	<b>Exchange where Publicly Traded</b>
Adams Resources & Energy	AE	AMS
Atmos Energy	ATO	NYS
Chesapeake Utilities	CPK	NYS
New Jersey Resources	NJR	NYS
NiSource Inc.	NI	NYS
Northwest Natural	NWN	NYS
ONE Gas, Inc.	OGS	NYS
RGC Resources Inc	RGCO	NDQ
Southwest Gas Holdings	SWX	NYS
Spire Inc.	SR	NYS
Star Group L.P.	SGU	NYS
UGI Corp.	UGI	NYS

Northern States Power

**ROE and ROR Analysis for NSP Gas  
Comparison Group  
Value Line Natural Gas Utilities  
S&P Capital IQ Pro Database, June 17, 2024**

**Docket No. PU-23-367  
Exhibit MFG-4**

Company	Exchange	U.S.-Based	Merger or Acquisition/Sale	S&P Credit Rating BBB- or better	Paying Dividends	Postive EPS Growth Rates
Adams Resources & Energy	AMS	Yes	No	None	Yes	Yes
Atmos Energy	NYS	Yes	No	A-	Yes	Yes
Chesapeake Utilities*	NYS	Yes	No	2A, 2B	Yes	Yes
New Jersey Resources**	NYS	Yes	No	A1	Yes	Yes
NiSource Inc.	NYS	Yes	No	BBB+	Yes	Yes
Northwest Natural Holding Co.	NYS	Yes	No	A	Yes	Yes
ONE Gas, Inc.	NYS	Yes	No	A-	Yes	Yes
RGC Resources Inc.	NDQ	Yes	No	None	Yes	No
Southwest Gas Holdings***	NYS	Yes	Yes	BBB-	Yes	Yes
Spire Inc.	NYS	Yes	No	BBB+	Yes	Yes
Star Group L.P.	NYS	Yes	No	None	Yes	NA
UGI Corp.	NYS	Yes	No	None	Yes	Yes

NSP Yes No A- Yes

\*-National Association of Insurance Commissioners rating. "2A" is equivalent to a BBB+ rating and "2B" is equivalent to a BBB rating from Standard & Poor's.

\*\*.-The rating for New Jersey Resources is the Moody's rating for New New Jersey Natural Gas (NJNG), a New Jersey Resources (NJR) subsidiary. NJNG issues its own bonds. NJR does not issue bonds. Standard & Poor's (S&P) currently has No Rating for NJNG, but Moody's A1 is equivalent to an S&P rating of A+.

\*\*\*.-Southwest Gas Holdings recently completed its first public offering of common equity shares in the Centuri Group, the infrastructure services company it is spinning off. This step signifies that the transaction is on track and investors can build it into their assessments of Southwest Gas Holdings with confidence. Therefore, Southwest Gas Holdings stock price will not be volatile due to the spin-off allowing it to be considered for the Comparison Group.

**Indicates not passing a screen**

**ROE and ROR Analysis for NSP Gas  
Comparison Group  
Natural Gas Distribution Company 10Ks  
Operating Income unless noted otherwise**

**Docket No. PU-23-367  
Exhibit MFG-9**

Name	Operating Income for Natural Gas Utilities (In thousands of dollars)						Regulated Natural Gas as % of Company				
	Regulated Natural Gas Unit			Company			2023*	2022	2021	3-Year Average	10K Sources
Atmos Energy Corp.--Distribution Regulated	692,626	604,545	618,514	1,067,147	920,982	904,998	64.9%	65.6%	68.3%	66.3%	Pages 4, 26, 38
Chesapeake Utilities**	126,199	115,317	106,174	150,803	142,933	131,112	83.7%	80.7%	81.0%	81.8%	Page 34
Chesapeake Utilities--Net Income Electric**	3,727			87,212	89,796	83,466	4.3%				Pages 4, 57
Chesapeake Utilities--Operating Income Adjusted**	119,754	109,209	100,571	150,803	142,933	131,112	79.4%	76.4%	76.7%	77.5%	
New Jersey Resources Corporation	207,528	218,873	148,993	407,000	406,475	288,350	51.0%	53.8%	51.7%	52.2%	Pages 43, 69
NiSource	901,900	915,800	617,500	1,295,500	1,265,800	1,006,900	69.6%	72.3%	61.3%	67.8%	Pages 38, 40
Northwest Natural Gas Company	170,591	152,839	147,902	184,941	167,477	163,117	92.2%	91.3%	90.7%	91.4%	Pages 9, 79, 100
ONE Gas, Inc.	377,590	349,957	310,258	377,590	349,957	310,258	100.0%	100.0%	100.0%	100.0%	Pages 7, 42
Southwest Gas Holdings, Inc.***	358,294	307,685	318,492	418,330	-24,398	369,547	85.6%	-1261.1%	86.2%	85.9%	
Southwest Gas Holdings, Inc.***	187,135	154,380	187,135	431,027	-230,290	200,779	43.4%	-67.0%	93.2%	68.3%	Pages 4, 52, 57, 97, 98
Spire Inc.	350,800	339,900	374,000	418,600	408,200	450,200	83.8%	83.3%	83.1%	83.5%	Pages 4, 31

\* - Atmos Energy, New Jersey Resources, and Spire, Inc. have fiscal years running from October 1 to September 30. The data for these companies is taken from their 10Ks from fiscal years ending in 2020, 2021, 2022. The remaining four companies have fiscal years running from January 1 to December 31. Data from these companies is also taken from their 10Ks for fiscal years ending in 2020, 2021, 2022.

\*\* - Operating income. Chesapeake includes electricity distribution operating income.

\*\* - Net income. Chesapeake electric as a percentage of company total.

\*\* - Operating income adjusted. Electric distribution is 4.3 percent of Chesapeake net income. That percentage of company operating income is subtracted from regulated operating income for 2021-2023.

\*\*\* - Operating income. Southwest Gas Holdings, Inc. average is for 2021, 2023. Sale of pipeline in 2022 affected earnings negatively.

\*\*\* - Net income. Southwest Gas Holdings, Inc. average is for 2021, 2023. Sale of pipeline in 2022 affected earnings negatively.

**ROE and ROR Analysis for NSP Gas  
Comparison Group  
From Operating Income Analysis in Exhibit MFG-9**

**Docket No. PU-23-367  
Exhibit MFG-10**

**≥ 65 percent of operating  
income from regulated gas  
distribution operations  
(Companies' 2023 10Ks)**

<b>Company</b>	<b>Ticker</b>	
Atmos Energy Corporation	ATO	Yes
Chesapeake Utilities Corporation	CPK	Yes
New Jersey Resources	NJR	No
NiSource	NI	Yes
Northwest Natural Holding Company	NWN	Yes
ONE Gas, Inc.	OGS	Yes
Southwest Gas Holdings, Inc.	SWX	Yes
Spire Inc.	SR	Yes

**Indicates not passing a screen**

**ROE and ROR Analysis for NSP Gas  
Comparison Group**

**Docket No. PU-23-367  
Exhibit MFG-11**

<b>Company</b>	<b>Ticker</b>
Atmos Energy Corporation	ATO
Chesapeake Utilities	CPK
NiSource	NI
Northwest Natural Holding Company	NWN
ONE Gas, Inc.	OGS
Southwest Gas Holdings	SWX
Spire, Inc.	SR

ROE and ROR Analysis for NSP Gas  
 Comparison Group  
 Common Equity Share Prices  
 Yahoo! Finance May 6, 2024-May 31, 2024

**Atmos Energy (ATO)**

Date	Close
5/6/24	\$ 119.45
5/7/24	\$ 120.34
5/8/24	\$ 120.59
5/9/24	\$ 119.69
5/10/24	\$ 117.18
5/13/24	\$ 116.33
5/14/24	\$ 117.25
5/15/24	\$ 117.81
5/16/24	\$ 118.56
5/17/24	\$ 118.64
5/20/24	\$ 118.28
5/21/24	\$ 118.50
5/22/24	\$ 117.19
5/23/24	\$ 113.99
5/24/24	\$ 112.61
5/28/24	\$ 112.04
5/29/24	\$ 111.34
5/30/24	\$ 112.59
5/31/24	\$ 115.92

Mean \$ 116.75

**Chesapeake Utilities (CPK)**

Date	Close
5/6/24	\$ 109.59
5/7/24	\$ 110.87
5/8/24	\$ 110.53
5/9/24	\$ 111.40
5/10/24	\$ 111.76
5/13/24	\$ 110.37
5/14/24	\$ 110.75
5/15/24	\$ 112.78
5/16/24	\$ 113.95
5/17/24	\$ 113.42
5/20/24	\$ 112.40
5/21/24	\$ 112.26
5/22/24	\$ 110.16
5/23/24	\$ 107.72
5/24/24	\$ 108.36
5/28/24	\$ 108.16
5/29/24	\$ 106.87
5/30/24	\$ 108.51
5/31/24	\$ 112.01

Mean \$ 110.62

**NiSource (NI)**

Date	Close
5/6/24	\$ 28.76
5/7/24	\$ 29.05
5/8/24	\$ 28.72
5/9/24	\$ 28.90
5/10/24	\$ 28.68
5/13/24	\$ 28.80
5/14/24	\$ 28.87
5/15/24	\$ 29.13
5/16/24	\$ 29.15
5/17/24	\$ 29.23
5/20/24	\$ 29.12
5/21/24	\$ 29.21
5/22/24	\$ 28.87
5/23/24	\$ 28.08
5/24/24	\$ 28.04
5/28/24	\$ 27.90
5/29/24	\$ 27.77
5/30/24	\$ 27.98
5/31/24	\$ 29.06

Mean \$ 28.70

ROE and ROR Analysis for NSP Gas  
 Comparison Group  
 Common Equity Share Prices  
 Yahoo! Finance May 6, 2024-May 31, 2024

**Northwest Natural Gas (NWN)**

**ONE Gas, Inc. (OGS)**

**Southwest Gas Holdings (SWX)**

**Spire Inc. (SR)**

Northwest Natural Gas (NWN)		ONE Gas, Inc. (OGS)		Southwest Gas Holdings (SWX)		Spire Inc. (SR)		
Date	Close	Date	Close	Date	Close	Date	Close	
5/6/24	\$ 37.86	5/6/24	\$ 65.09	65.09	5/6/24	\$ 75.76	5/6/24	\$ 61.17
5/7/24	\$ 38.37	5/7/24	\$ 64.83	64.83	5/7/24	\$ 76.29	5/7/24	\$ 61.81
5/8/24	\$ 38.47	5/8/24	\$ 64.09	64.09	5/8/24	\$ 75.79	5/8/24	\$ 61.58
5/9/24	\$ 38.36	5/9/24	\$ 64.29	64.29	5/9/24	\$ 76.96	5/9/24	\$ 61.67
5/10/24	\$ 38.64	5/10/24	\$ 64.15	64.15	5/10/24	\$ 76.38	5/10/24	\$ 61.88
5/13/24	\$ 38.48	5/13/24	\$ 63.81	63.81	5/13/24	\$ 75.84	5/13/24	\$ 62.20
5/14/24	\$ 37.99	5/14/24	\$ 63.95	63.95	5/14/24	\$ 74.21	5/14/24	\$ 61.85
5/15/24	\$ 38.15	5/15/24	\$ 64.16	64.16	5/15/24	\$ 76.11	5/15/24	\$ 62.01
5/16/24	\$ 38.49	5/16/24	\$ 64.87	64.87	5/16/24	\$ 77.37	5/16/24	\$ 62.31
5/17/24	\$ 38.54	5/17/24	\$ 63.72	63.72	5/17/24	\$ 77.68	5/17/24	\$ 62.59
5/20/24	\$ 38.71	5/20/24	\$ 63.90	63.9	5/20/24	\$ 77.77	5/20/24	\$ 62.91
5/21/24	\$ 38.75	5/21/24	\$ 64.11	64.11	5/21/24	\$ 78.35	5/21/24	\$ 63.24
5/22/24	\$ 37.98	5/22/24	\$ 62.73	62.73	5/22/24	\$ 77.50	5/22/24	\$ 62.01
5/23/24	\$ 36.73	5/23/24	\$ 60.37	60.37	5/23/24	\$ 76.44	5/23/24	\$ 60.26
5/24/24	\$ 36.23	5/24/24	\$ 60.12	60.12	5/24/24	\$ 76.19	5/24/24	\$ 59.68
5/28/24	\$ 35.67	5/28/24	\$ 59.09	59.09	5/28/24	\$ 76.00	5/28/24	\$ 59.33
5/29/24	\$ 35.38	5/29/24	\$ 58.54	58.54	5/29/24	\$ 73.87	5/29/24	\$ 59.10
5/30/24	\$ 36.93	5/30/24	\$ 59.35	59.35	5/30/24	\$ 75.19	5/30/24	\$ 59.96
5/31/24	\$ 37.42	5/31/24	\$ 61.63	61.63	5/31/24	\$ 77.59	5/31/24	\$ 61.29
Mean	\$ 37.74	Mean	\$ 62.78		Mean	\$ 76.38	Mean	\$ 61.41

**ROE and ROR Analysis for NSP Gas  
Comparison Group  
Dividends**

**Docket No. PU-23-367  
Exhibit MFG-13**

<b>Name</b>	<b>Value Line</b>	<b>Zacks</b>	<b>Highest</b>
Atmos Energy Corporation	\$ 3.22	\$ 3.22	\$ 3.22
Chesapeake Utilities	\$ 2.56	\$ 2.56	\$ 2.56
NiSource	\$ 1.06	\$ 1.06	\$ 1.06
Northwest Natural Holding Company	\$ 1.95	\$ 1.95	\$ 1.95
ONE Gas, Inc.	\$ 2.64	\$ 2.64	\$ 2.64
Southwest Gas Holdings	\$ 2.48	\$ 2.48	\$ 2.48
Spire, Inc.	\$ 3.02	\$ 3.02	\$ 3.02

Value Line Gas dividends taken from May 24, 2024 Reports

Zacks Gas dividends taken from website on June 20, 2024

ROE and ROR Analysis for NSP Gas  
Comparison Group

Discounted Cash Flow Model Analysis

Common Equity Share Prices--May 6, 2024-May 31, 2024

Zacks, Yahoo! Finance, and Value Line Dividend Growth-Rate Estimates--May-June 2024

Docket No. PU-23-367

Exhibit MFG-14

Schedule 1

	A	B	C	D	E	F
<b>Company Name</b>	<b>Zacks EPS Growth Rate (%)</b>	<b>Yahoo! Finance EPS Growth Rates (%)</b>	<b>Value Line EPS Growth Rates (%)</b>	<b>Zacks-Yahoo! Finance-Value Line Mean Growth Rate (%)</b>	<b>Average of Closing Prices</b>	<b>Annualized Dividend</b>
Atmos Energy Corporation	7.00%	7.40%	7.00%	7.13%	\$ 116.75	\$ 3.22
Chesapeake Utilities	NA	7.60%	6.50%	7.05%	\$ 110.62	\$ 2.56
NiSource	7.00%	6.00%	9.50%	7.50%	\$ 28.70	\$ 1.06
Northwest Natural Holding Company	NA	2.80%	6.50%	4.65%	\$ 37.74	\$ 1.95
ONE Gas, Inc.	5.00%	5.00%	3.50%	4.50%	\$ 62.78	\$ 2.64
Southwest Gas Holdings	6.00%	4.00%	10.00%	6.67%	\$ 76.38	\$ 2.48
Spire, Inc.	5.00%	6.36%	4.50%	5.29%	\$ 61.41	\$ 3.02
<b>Mean</b>	6.00%	5.59%	6.79%	6.11%		

	G	H	I	J	K
<b>Company Name</b>	<b>Dividend Yield (Rate/Price)</b>	<b>Expected Dividend Yield</b>	<b>Required Rate of Return on Equity</b>	<b>Exceeds 7.15% Mean of Value Line and Kroll Low-End Tests</b>	<b>Dividend Yield Adjusted for Flotation Percentage of 0.927</b>
Atmos Energy Corporation	2.76%	2.95%	10.09%	Yes	2.98%
Chesapeake Utilities	2.31%	2.48%	9.53%	Yes	2.50%
NiSource	3.69%	3.97%	11.47%	Yes	4.01%
Northwest Natural Holding Company	5.17%	5.41%	10.06%	Yes	5.46%
ONE Gas, Inc.	4.21%	4.39%	8.89%	Yes	4.44%
Southwest Gas Holdings	3.25%	3.46%	10.13%	Yes	3.50%
Spire, Inc.	4.92%	5.18%	10.46%	Yes	5.23%
<b>Mean</b>	3.76%	3.978%	10.09%		4.016%
<b>Median</b>			10.09%	<b>Flotation Adjustment (K - H)</b>	0.037%

A: Zacks website, June 20, 2024

B: Yahoo! Finance website: June 20, 2024

C: Value Line Investment Survey reports: May 24, 2024

E: Yahoo! Finance website: May 6-May 31, 2024. See Exhibit MFG-12.

F: Higher of Value Line Investment report, May 24, 2024; or Zacks website, June 20, 2024. See Exhibit MFG-13.

K: See Exhibit MFG-15, Schedule 8.

D:  $(A + B + C)/3$

G: F/E

H:  $G*(1+D)$

I:  $H/(1 - 0.02)$

J: D + H

Table VI.G6.—Selected Economic Variables, Calendar Years 2022-2095  
 [GDP and taxable payroll in billions]

Calendar year	Adjusted CPI <sup>a</sup>	Average wage index	Taxable payroll <sup>b</sup>	Gross domestic product	Compound new-issue interest factor <sup>c</sup>	Compound effective trust-fund interest factor <sup>d</sup>
Intermediate:						
2022	96.15	\$63,467.98	\$9,069	\$25,422	0.9711	0.9884
2023	100.00	66,147.17	9,552	26,592	1.0000	1.0117
2024	102.53	68,627.58	9,986	27,655	1.0357	1.0356
2025	104.99	71,411.99	10,465	28,902	1.0727	1.0602
2026	107.51	74,348.48	10,944	30,177	1.1112	1.0862
2027	110.09	77,393.67	11,443	31,478	1.1530	1.1140
2028	112.73	80,510.73	11,934	32,778	1.1985	1.1442
2029	115.44	83,757.03	12,438	34,125	1.2492	1.1768
2030	118.21	87,106.49	12,954	35,521	1.3051	1.2123
2031	121.04	90,574.48	13,492	36,976	1.3656	1.2512
2032	123.95	93,995.33	14,023	38,487	1.4295	1.2946
2035	133.09	104,726.27	15,730	43,392	1.6429	1.4693
2040	149.85	125,312.66	18,992	52,850	2.0725	1.8502
2045	168.71	149,423.47	22,925	64,333	2.6144	2.3337
2050	189.95	177,750.26	27,736	78,438	3.2980	2.9438
2055	213.87	211,432.09	33,623	95,785	4.1603	3.7136
2060	240.79	251,610.19	40,795	116,988	5.2481	4.6846
2065	271.11	299,758.28	49,472	142,731	6.6204	5.9095
2070	305.24	357,187.25	59,924	173,850	8.3514	7.4546
2075	343.67	425,523.96	72,602	211,710	10.5351	9.4038
2080	386.94	506,962.67	88,194	258,358	13.2897	11.8627
2085	435.65	603,863.51	107,502	316,227	16.7646	14.9644
2090	490.50	719,124.11	131,330	387,813	21.1481	18.8772
2095	552.26	856,091.73	160,374	475,384	26.6778	23.8131
2100	621.79	1,019,162.94	195,457	581,611	33.6533	30.0396
			<b>Growth Rate 2029-2050*</b>	4.04%		

Source: Social Security 2023 Trustees' Report

\* = (2050/2030)^(1/20) - 1

ROE and ROR Analysis for NSP Gas  
 U.S Energy Information Administration Long-Term Growth Rate

Docket No. PU-23-367  
 Exhibit MFG-14  
 Schedule 3

Source: U.S. Energy Information Administration, Annual Energy Outlook 2023

Table 20. Macroeconomic Indicators

(Billions 2012 chain-weighted dollars unless otherwise noted)

	2024	2025	2026	2027	2028	2029	2030				
<b>Real Gross Domestic Product</b>											
Reference case	20,095	20,409	20,841	21,273	21,681	22,052	22,392				
<b>Price Indices</b>											
GDP Chain-type Price Index (2012=1.000)											
Reference case	1.35	1.38	1.41	1.44	1.47	1.51	1.54				
	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>	<b>2035</b>	<b>2036</b>	<b>2037</b>	<b>2038</b>	<b>2039</b>	<b>2040</b>	
<b>Real Gross Domestic Product</b>											
Reference case	22,742	23,153	23,604	24,055	24,511	24,996	25,507	26,032	26,566	27,149	
<b>Price Indices</b>											
GDP Chain-type Price Index (2012=1.000)											
Reference case	1.58	1.61	1.65	1.69	1.73	1.77	1.81	1.85	1.89	1.93	
	<b>2041</b>	<b>2042</b>	<b>2043</b>	<b>2044</b>	<b>2045</b>	<b>2046</b>	<b>2047</b>	<b>2048</b>	<b>2049</b>	<b>2050</b>	<b>Growth Rate</b>
<b>Real Gross Domestic Product</b>											<b>2030-2050</b>
Reference case	27,734	28,324	28,927	29,527	30,130	30,748	31,389	32,040	32,699	33,405	2.02%
<b>Price Indices</b>											
GDP Chain-type Price Index (2012=1.000)											
Reference case	1.97	2.02	2.07	2.11	2.16	2.21	2.27	2.32	2.38	2.43	2.31%
<b>Total 2030-2050 Growth Rate</b>											<b>4.33%</b>

ROE and ROR Analysis for NSP Gas

Docket No. PU-23-367

DCF Analysis

Exhibit MFG-14

Common Equity Share Prices: May 6, 2024-May 31, 2024

Schedule 5

Multistage DCF with Zacks, Yahoo! Finance, and Value Line EPS Growth-Rate

Estimates; 2023 SSA and 2023 EIA long-term growth rates

	A	B	C	D	E	F	G	H
	Yahoo!			Zacks-Yahoo!				
	Zacks EPS	Finance EPS	Value Line	Finance-Value	Average of	Annualized	Dividend	Expected
Company Name	Growth Rate	Growth Rates	EPS Growth	Line	Closing Prices	Dividend	Yield	Dividend Yield
	(%)	(%)	Rates (%)	Rate (%)			(Rate/Price)	
Atmos Energy Corporation	7.00%	7.40%	7.00%	7.13%	\$ 116.75	\$ 3.22	2.76%	2.95%
Chesapeake Utilities	NA	7.60%	6.50%	7.05%	\$ 110.62	\$ 2.56	2.31%	2.48%
NiSource	7.00%	6.00%	9.50%	7.50%	\$ 28.70	\$ 1.06	3.69%	3.97%
Northwest Natural Holding Company	NA	2.80%	6.50%	4.65%	\$ 37.74	\$ 1.95	5.17%	5.41%
Southwest Gas Holdings	6.00%	4.00%	3.50%	4.50%	\$ 62.78	\$ 2.64	4.21%	4.39%
ONE Gas, Inc.	5.00%	5.00%	10.00%	6.67%	\$ 76.38	\$ 2.48	3.25%	3.46%
Spire, Inc.	5.00%	6.36%	4.50%	5.29%	\$ 61.41	\$ 3.02	4.92%	5.18%
<b>Mean</b>	6.00%	5.59%	6.79%	6.11%			3.76%	3.98%
	I	J	K	L	M	N	O	P
	SSA Long-	SSA Long-	Weighted	EIA Long-Run	EIA Long-Run	EIA Weighted	Multistage	Exceeds 7.15%
Company Name	Run	Run	Cost of	Projected	Projected	Cost of	Mean Cost of	Mean of Value
	Projected	Weighted	Equity,	Growth Rate,	Growth Rate	Equity, Long-	Equity	Line and Kroll
	EPS Growth	EPS Growth	Long-Run			Run Rate		Low-End Tests
	Rate 4.04%	Rate 4.04%	Rate	4.33%	4.33%			
Atmos Energy Corporation	4.04%	6.10%	9.06%	4.33%	6.20%	9.15%	9.11%	Yes
Chesapeake Utilities	4.04%	6.05%	8.52%	4.33%	6.14%	8.62%	8.57%	Yes
NiSource	4.04%	6.35%	10.32%	4.33%	6.44%	10.41%	10.37%	Yes
Northwest Natural Holding Company	4.04%	4.45%	9.86%	4.33%	4.54%	9.96%	9.91%	Yes
Southwest Gas Holdings	4.04%	4.35%	8.74%	4.33%	4.44%	8.84%	8.79%	Yes
ONE Gas, Inc.	4.04%	5.79%	9.25%	4.33%	5.89%	9.35%	9.30%	Yes
Spire, Inc.	4.04%	4.87%	10.05%	4.33%	4.97%	10.15%	10.10%	Yes
<b>Mean</b>		5.42%	9.40%		5.52%	9.50%	9.45%	<b>Mean</b>
<b>Median</b>			9.25%			9.35%	9.30%	<b>Median</b>

A: Zacks website, June 20, 2024

B: Yahoo! Finance website: June 20, 2024

C: Value Line Investment Survey reports: May 24, 2024

E: Yahoo! Finance website: May 6-May 31, 2024. See Exhibit MFG-12.

F: Higher of Value Line Investment report, May 24, 2024; or Zacks website, June 20, 2024. See Exhibit MFG-13.

I: U.S. Social Security Administration, The 2023 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds, March 31, 2023 (OASDI Trustees Report), Table VI G6. See Exhibit MFG-14, Schedule 2.

L: U.S. Energy Information Administration, *Annual Energy Outlook 2023, Macroeconomic Indicators* (Real GDP Growth + GDP Chain-Type Index Increase 2020-2050), <https://www.eia.gov/analysis/projection-data.php#annualproi>. See Exhibit MFG-14, Schedule 3.

P: See Exhibit (MFG-15), Schedule 8.

D: = (A + B + C)/3

G: = F/E

H: = G\*(1+D)

J: = 2/3\*D + 1/3\*J

M: = 2/3\*D + 1/3\*L

O: = (K + N)/2

K: = H + J

N: = H + M

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis**  
**Risk-Free Rate Analysis**

**Docket No. PU-23-367**  
**Exhibit MFG-15, Schedule 1**

**Daily Treasury Yield Curve Rates**

**May 6, 2024-May 31, 2024**

<b>Date</b>	<b>1 mo</b>	<b>2 mo</b>	<b>3 mo</b>	<b>4 mo</b>	<b>6 mo</b>	<b>1 yr</b>	<b>2 yr</b>	<b>3 yr</b>	<b>5 yr</b>	<b>7 yr</b>	<b>10 yr</b>	<b>20 yr</b>	<b>30 yr</b>
5/6/24	5.51	5.48	5.45	5.50	5.42	5.12	4.82	4.64	4.48	4.48	4.49	4.73	4.64
5/7/24	5.51	5.48	5.45	5.51	5.41	5.13	4.82	4.60	4.48	4.47	4.47	4.70	4.61
5/8/24	5.51	5.47	5.45	5.50	5.41	5.13	4.84	4.63	4.50	4.49	4.48	4.73	4.64
5/9/24	5.51	5.48	5.46	5.50	5.41	5.12	4.80	4.60	4.47	4.46	4.45	4.70	4.6
5/10/24	5.51	5.47	5.47	5.51	5.43	5.17	4.87	4.65	4.52	4.51	4.50	4.74	4.64
5/13/24	5.50	5.47	5.45	5.51	5.43	5.16	4.85	4.66	4.50	4.49	4.48	4.72	4.63
5/14/24	5.50	5.47	5.44	5.51	5.43	5.16	4.81	4.62	4.46	4.45	4.45	4.69	4.49
5/15/24	5.49	5.46	5.45	5.50	5.40	5.10	4.73	4.51	4.35	4.35	4.36	4.61	4.52
5/16/24	5.51	5.47	5.45	5.53	5.41	5.13	4.78	4.58	4.40	4.39	4.38	4.62	4.52
5/17/24	5.50	5.47	5.46	5.50	5.41	5.14	4.83	4.60	4.44	4.43	4.42	4.66	4.56
5/20/24	5.50	5.47	5.45	5.51	5.43	5.15	4.82	4.62	4.46	4.44	4.44	4.68	4.58
5/21/24	5.50	5.47	5.45	5.51	5.42	5.14	4.82	4.61	4.43	4.42	4.41	4.65	4.55
5/22/24	5.49	5.48	5.45	5.50	5.43	5.16	4.86	4.64	4.47	4.44	4.43	4.63	4.55
5/23/24	5.51	5.48	5.46	5.51	5.44	5.20	4.91	4.71	4.52	4.50	4.47	4.67	4.58
5/24/24	5.56	5.53	5.46	5.51	5.44	5.21	4.93	4.71	4.53	4.49	4.46	4.65	4.57
5/28/24	5.50	5.48	5.46	5.51	5.43	5.21	4.94	4.75	4.56	4.56	4.54	4.74	4.66
5/29/24	5.50	5.48	5.46	5.47	5.43	5.22	4.96	4.79	4.63	4.63	4.61	4.82	4.74
5/30/24	5.48	5.48	5.46	5.48	5.42	5.19	4.92	4.74	4.57	4.57	4.55	4.76	4.69
5/31/24	5.48	5.48	5.46	5.46	5.42	5.18	4.89	4.69	4.52	4.52	4.51	4.73	4.65
												Mean	4.60

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis  
Beta calculation for Comparison Group  
Value Line Investment Survey Betas taken from  
reports of May 24, 2024**

**Docket No. PU-23-367  
Exhibit MFG-15, Schedule 2**

<b>Company Name</b>	<b>Value Line Betas-- Comparison Group</b>
Atmos Energy Corporation	0.85
Chesapeake Utilities	0.80
NiSource, Inc.	0.95
Northwest Natural Holding Co.	0.85
ONE Gas, Inc.	0.85
Southwest Gas Holdings	0.90
Spire Inc.	0.85

ROE and ROR Analysis for NSP Gas  
 CAPM Analysis  
 Moody's 10-Year Baa Corporate Bonds Index May 6, 2024-May 31, 2024  
 Downloaded June 14, 2024

Docket No. PU-23-367  
 Exhibit MFG-15  
 Schedule 3

**S&P Global**  
 Market Intelligence  
 Chart Builder

Entities: Moodys Bond Yield Avg - BAA Rated Corporates  
 Metrics: Index Value

SERIES NAME	CATEGORY	AVERAGE
Moodys Bond Yield Avg - BAA Rated Corporates- Index Value (Daily)	Market Data	5.94

Pricing Date	Moodys Bond Yield Avg BAA Rated Corporates-Index Value (Daily)
5/31/24	5.97
5/30/24	6.01
5/29/24	6.08
5/28/24	5.99
5/24/24	5.92
5/23/24	5.92
5/22/24	5.89
5/21/24	5.89
5/20/24	5.91
5/17/24	5.90
5/16/24	5.85
5/15/24	5.85
5/14/24	5.93
5/13/24	5.96
5/10/24	5.98
5/9/24	5.93
5/8/24	5.95
5/7/24	5.92
5/6/24	5.96

Mean 5.94

**ROE and ROR Analysis for SP Gas  
CAPM ROE Analysis--Kroll Risk Premium  
Calculation for Proxy Group**

**Docket No. PU-23-367  
Exhibit MFG-15  
Schedule 5**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
	<b>Rf</b>	<b>MRP</b>	<b>Beta</b>	<b>RP</b>	<b>CAPM ROE</b>	<b>Filtered Results</b>
Atmos Energy Corporation	4.60%	5.50%	0.85	4.68%	9.28%	9.28%
Chesapeake Utilities	4.60%	5.50%	0.80	4.40%	9.00%	9.00%
NiSource	4.60%	5.50%	0.95	5.23%	9.83%	9.83%
Northwest Natural Holding Co.	4.60%	5.50%	0.90	4.95%	9.55%	9.55%
Southwest Gas Holdings	4.60%	5.50%	0.85	4.68%	9.28%	9.28%
ONE Gas, Inc.	4.60%	5.50%	0.85	4.68%	9.28%	9.28%
Spire, Inc.	4.60%	5.50%	0.85	4.68%	9.28%	9.28%
				<b>Mean</b>	9.35%	9.35%
				<b>Median</b>	9.28%	9.28%

A: MFG-15, Sch 1  
B: MFG-15, Sch 4  
C: MFG-15 Sch 2

D: B \* C  
E: B + E  
F: Low-end test < Column E < High-end test

<b>Low-End Test:</b>	Moody's 10-Year Baa Corporate Bond Index, MFG-15, Schedule 3	5.94%
	CAPM Risk Premium, Column B	5.50%
	20 percent of CAPM risk premium	1.10%
	Moody's 10-Year Baa Corporate Bond Index + 20 percent of CAPM risk	7.04%
<b>High-End Test:</b>	Proxy Group median, Column E	9.28%
	200 percent of Proxy Group median	18.55%

Constant-Growth DCF Analysis for S&P 500--Value Line

All companies shown

A, B, and E: Value Line Analyzer, April 1, 2024

$C = B * (1 + A/100)$

$D = A + C$

$F = E / (\text{Sum of E})$

$G = D * F$

**Companies Excluded**

Companies not paying dividends

Companies with EPS < 0

Companies with EPS > 20%

**5-Year**

**EPS**

11.24

**Market**

**Return %**

	A	B	C	D	E	F	G
	EPS	Dividend	Expected Dividend	Rate of Return on Equity	Market Cap \$	Market Cap Weight	Weighted Rate of Return on Equity
Company Name	Rate (%)	Yield (%)	Yield (%)	(%)	(Mil)	Factor	(%)

Companies not paying dividends

Adobe Inc.	14.50	0.00	0.00	14.50	236,209		
Advanced Micro Dev.	17.50	0.00	0.00	17.50	290,264		
Airbnb Inc.		0.00	0.00	0.00	105,250		
Akamai Technologies	5.00	0.00	0.00	5.00	16,575		
Align Techn.	13.50	0.00	0.00	13.50	25,208		
Alphabet Inc.	13.00	0.00	0.00	13.00	1,873,395		
Alphabet Inc. 'A'	15.98	0.00	0.00	15.98	1,853,300		
Amazon.com	19.50	0.00	0.00	19.50	1,840,289		
Amer. Airlines		0.00	0.00	0.00	9,522		
ANSYS Inc.	9.00	0.00	0.00	9.00	29,813		
Aptiv PLC	27.00	0.00	0.00	27.00	22,046		
Arch Capital Group	23.50	0.00	0.00	23.50	34,411		
Arista Networks	17.00	0.00	0.00	17.00	92,606		
Autodesk Inc.	10.00	0.00	0.00	10.00	56,160		

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
**Standard and Poor's 500 Adjusted**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
AutoZone Inc.	12.50	0.00	0.00	12.50	55,180		
Axon Enterprise	21.50	0.00	0.00	21.50	23,666		
Bio-Rad Labs. 'A'	9.00	0.00	0.00	9.00	9,801		
Biogen	-1.00	0.00	0.00	-1.00	31,610		
Boeing		0.00	0.00	0.00	114,455		
Booking Holdings	28.00	0.00	0.00	28.00	125,920		
Boston Scientific	12.50	0.00	0.00	12.50	98,791		
Builders FirstSource	20.00	0.00	0.00	20.00	25,496		
Cadence Design Sys.	14.00	0.00	0.00	14.00	86,206		
Caesars Entertainment		0.00	0.00	0.00	9,016		
CarMax Inc.	3.50	0.00	0.00	3.50	13,128		
Carnival Corp.		0.00	0.00	0.00	21,298		
Catalent Inc.	5.50	0.00	0.00	5.50	10,114		
CBRE Group	5.00	0.00	0.00	5.00	29,146		
Centene Corp.	10.00	0.00	0.00	10.00	41,626		
Charles River	7.00	0.00	0.00	7.00	13,756		
Charter Communic.	8.50	0.00	0.00	8.50	42,885		
Chipotle Mex. Grill	22.50	0.00	0.00	22.50	79,569		
Cooper Cos.	9.50	0.00	0.00	9.50	20,200		
Copart Inc.	9.00	0.00	0.00	9.00	54,699		
Corpay	15.50	0.00	0.00	15.50	22,122		
CoStar Group	15.00	0.00	0.00	15.00	39,301		
DaVita Inc.	9.50	0.00	0.00	9.50	12,677		
Dayforce Inc.		0.00	0.00	0.00	10,775		
Deckers Outdoor	14.00	0.00	0.00	14.00	23,474		
DexCom Inc.	24.00	0.00	0.00	24.00	51,210		
Dollar Tree Inc.	9.00	0.00	0.00	9.00	27,908		

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis—Value Line EPS  
Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
Edwards Lifesciences	10.00	0.00	0.00	10.00	55,926		
Enphase Energy	14.00	0.00	0.00	14.00	15,432		
EPAM Systems	5.50	0.00	0.00	5.50	16,878		
Etsy Inc.	2.00	0.00	0.00	2.00	8,157		
Expedia Group		0.00	0.00	0.00	19,314		
F5 Inc.	10.50	0.00	0.00	10.50	11,144		
Fair Isaac	19.50	0.00	0.00	19.50	30,984		
First Solar Inc.	34.00	0.00	0.00	34.00	16,136		
Fiserv Inc.	9.50	0.00	0.00	9.50	93,605		
Fortinet Inc.	21.50	0.00	0.00	21.50	51,649		
Gartner Inc.	10.00	0.00	0.00	10.00	37,747		
Generac Holdings	12.50	0.00	0.00	12.50	7,116		
Hologic Inc.	-1.00	0.00	0.00	-1.00	17,600		
IDEXX Labs.	11.00	0.00	0.00	11.00	43,965		
Illumina Inc.	-6.00	0.00	0.00	-6.00	21,044		
Incyte Corp.	16.50	0.00	0.00	16.50	13,052		
Insulet Corp.	69.50	0.00	0.00	69.50	11,675		
Intuitive Surgical	12.50	0.00	0.00	12.50	137,527		
IQVIA Holdings	11.50	0.00	0.00	11.50	46,121		
Keysight Technologies	8.00	0.00	0.00	8.00	26,354		
Live Nation Entertain.		0.00	0.00	0.00	23,896		
lululemon athletica	16.50	0.00	0.00	16.50	59,212		
Match Group	13.50	0.00	0.00	13.50	9,683		
Mettler-Toledo Int'l	9.00	0.00	0.00	9.00	28,045		
MGM Resorts Int'l		0.00	0.00	0.00	15,208		
Moderna Inc.	-17.50	0.00	0.00	-17.50	39,274		
Mohawk Inds.	1.00	0.00	0.00	1.00	7,870		

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis—Value Line EPS  
Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Molina Healthcare	12.00	0.00	0.00	12.00	24,134		
Monster Beverage	13.00	0.00	0.00	13.00	62,640		
Netflix Inc.	14.50	0.00	0.00	14.50	274,727		
Norwegian Cruise Line		0.00	0.00	0.00	8,585		
NVR Inc.	1.50	0.00	0.00	1.50	25,427		
O'Reilly Automotive	11.00	0.00	0.00	11.00	67,656		
ON Semiconductor	13.00	0.00	0.00	13.00	32,540		
Palo Alto Networks		0.00	0.00	0.00	91,018		
PayPal Holdings	12.00	0.00	0.00	12.00	69,734		
PTC Inc.	11.00	0.00	0.00	11.00	22,668		
Qorvo Inc.	9.50	0.00	0.00	9.50	10,975		
Regeneron Pharmac.	3.00	0.00	0.00	3.00	105,205		
Royal Caribbean		0.00	0.00	0.00	34,728		
Schein (Henry)	7.50	0.00	0.00	7.50	9,665		
ServiceNow Inc.	61.00	0.00	0.00	61.00	157,138		
Super Micro Computer	39.00	0.00	0.00	39.00	50,128		
Synopsys Inc.	14.50	0.00	0.00	14.50	89,963		
Take-Two Interactive	59.00	0.00	0.00	59.00	25,307		
Teledyne Technologies	9.50	0.00	0.00	9.50	20,055		
Tesla Inc.	23.00	0.00	0.00	23.00	558,423		
TransDigm Group	21.00	0.00	0.00	21.00	67,459		
Trimble Inc.	5.50	0.00	0.00	5.50	15,712		
Tyler Technologies	10.00	0.00	0.00	10.00	17,711		
Uber Technologies		0.00	0.00	0.00	162,875		
Ulta Beauty	13.50	0.00	0.00	13.50	25,495		
Under Armour 'C'		0.00	0.00	0.00	3,101		
United Airlines Hldgs.		0.00	0.00	0.00	15,082		

	A	B	C	D	E	F	G
Company Name	EPS Growth Rate (%)	Dividend Yield (%)	Expected Dividend Yield (%)	Rate of Return on Equity (%)	Market Cap \$ (Mil)	Market Cap Weight Factor	Weighted Rate of Return on Equity (%)
VeriSign Inc.	13.00	0.00	0.00	13.00	19,236		
Vertex Pharmac.	9.50	0.00	0.00	9.50	106,254		
Warner Bros. Discovery		0.00	0.00	0.00	21,308		
Waters Corp.	5.00	0.00	0.00	5.00	20,594		
Western Digital	7.00	0.00	0.00	7.00	19,795		
Zebra Techn. 'A'	-1.00	0.00	0.00	-1.00	14,679		

**Companies with EPS ≤ 0%**

AES Corp.	0.00	4.44	4.44	4.44	10,406		
Albemarle Corp.	-4.50	1.29	1.23	-3.27	14,605		
Baker Hughes	0.00	2.52	2.52	2.52	33,590		
Best Buy Co.	-0.50	4.89	4.87	4.37	16,999		
Camden Property Trust	-6.50	4.26	3.98	-2.52	10,503		
Constellation Energy	0.00	0.80	0.80	0.80	56,052		
Coterra Energy	0.00	3.10	3.10	3.10	20,843		
Delta Air Lines	0.00	0.88	0.88	0.88	29,200		
Digital Realty Trust	-5.00	3.51	3.33	-1.67	43,903		
Discover Fin'l Svcs.	0.00	2.23	2.23	2.23	31,450		
EQT Corp.	0.00	1.86	1.86	1.86	13,911		
Equity Residential	-4.50	4.23	4.04	-0.46	23,538		
Expeditors Int'l	-1.00	1.15	1.14	0.14	17,384		
Federal Rlty. Inv. Trust	0.00	4.31	4.31	4.31	7,947		
Fidelity Nat'l Info.	-3.00	2.04	1.98	-1.02	41,854		
GE HealthCare	0.00	0.13	0.13	0.13	41,375		
Host Hotels & Resorts	0.00	3.85	3.85	3.85	14,825		

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis—Value Line EPS  
Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
Kenvue Inc.	0.00	3.92	3.92	3.92	39,085		
KeyCorp	-2.00	5.45	5.34	3.34	14,080		
Laboratory Corp.	-1.50	1.38	1.36	-0.14	17,775		
Las Vegas Sands	0.00	1.58	1.58	1.58	38,079		
LyondellBasell Inds.	0.00	4.89	4.89	4.89	33,191		
Mid-America Apt.	-11.00	4.48	3.99	-7.01	15,143		
Mosaic Company	-6.00	2.60	2.44	-3.56	10,459		
News Corp. 'B'	0.00	0.75	0.75	0.75	15,841		
Paramount Global	-2.50	1.60	1.56	-0.94	8,157		
Revvity Inc.	-2.50	0.27	0.26	-2.24	12,911		
Southwest Airlines	0.00	2.50	2.50	2.50	17,192		
Targa Resources	0.00	2.75	2.75	2.75	24,334		
Tyson Foods 'A'	-16.50	3.40	2.84	-13.66	20,599		
Ventas Inc.	0.00	4.19	4.19	4.19	17,560		
Viatis Inc.	-1.50	4.71	4.64	3.14	14,252		
Walgreens Boots	-2.00	4.74	4.65	2.65	18,183		
Weyerhaeuser Co.	-1.00	2.27	2.25	1.25	25,768		
Wynn Resorts	0.00	1.00	1.00	1.00	11,345		

**Companies with EPS > 20%**

Bristol-Myers Squibb	24.50	4.63	5.76	30.26	105,524		
Diamondback Energy	34.00	1.87	2.51	36.51	34,493		
Disney (Walt)	37.00	0.64	0.88	37.88	219,061		
Ford Motor	37.00	10.23	14.02	51.02	53,600		
Gen'l Electric	29.50	0.18	0.23	29.73	189,308		

	A	B	C	D	E	F	G
Company Name	EPS Growth Rate (%)	Dividend Yield (%)	Expected Dividend Yield (%)	Rate of Return on Equity (%)	Market Cap \$ (Mil)	Market Cap Weight Factor	Weighted Rate of Return on Equity (%)
Halliburton Co.	27.50	2.20	2.81	30.31	34,207		
Hilton Worldwide	37.00	0.28	0.38	37.38	54,286		
Lilly (Eli)	27.50	0.67	0.85	28.35	733,737		
Marathon Oil Corp.	25.50	1.73	2.17	27.67	15,989		
Marriott Int'l	23.00	0.82	1.01	24.01	74,996		
Molson Coors Beverage	42.00	2.63	3.73	45.73	14,257		
NVIDIA Corp.	33.00	0.02	0.03	33.03	2,226,766		
PG&E Corp.	30.00	0.31	0.40	30.40	34,563		
Schlumberger Ltd.	26.00	2.02	2.55	28.55	77,650		
Welltower Inc.	25.50	2.72	3.41	28.91	52,469		

**Qualifying Companies**

3M Company	4.50	5.59	5.84	10.34	59,740	0.00186	0.0193
Abbott Labs.	4.00	1.97	2.05	6.05	193,350	0.00603	0.0365
AbbVie Inc.	3.50	3.52	3.64	7.14	311,202	0.00970	0.0693
Accenture Plc	8.50	1.36	1.48	9.98	238,533	0.00744	0.0742
Aflac Inc.	7.50	2.39	2.57	10.07	49,159	0.00153	0.0154
Agilent Technologies	8.00	0.64	0.69	8.69	43,159	0.00135	0.0117
Air Products & Chem.	10.50	2.93	3.24	13.74	53,119	0.00166	0.0228
Alexandria Real Estate	1.00	4.03	4.07	5.07	19,939	0.00062	0.0032
Allegion plc	8.50	1.42	1.54	10.04	11,838	0.00037	0.0037
Alliant Energy	6.00	3.71	3.93	9.93	12,498	0.00039	0.0039
Allstate Corp.	11.00	2.28	2.53	13.53	42,227	0.00132	0.0178
Altria Group	5.00	8.75	9.19	14.19	79,273	0.00247	0.0351
Amcor plc	7.50	5.46	5.87	13.37	13,213	0.00041	0.0055

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis—Value Line EPS  
Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Amer. Elec. Power	6.50	4.31	4.59	11.09	43,549	0.00136	0.0151
Amer. Express	8.50	1.23	1.33	9.83	166,146	0.00518	0.0510
Amer. Int'l Group	9.00	1.88	2.05	11.05	54,069	0.00169	0.0186
Amer. Tower 'A'	5.50	3.33	3.51	9.01	90,729	0.00283	0.0255
Amer. Water Works	3.00	2.54	2.62	5.62	22,996	0.00072	0.0040
Ameren Corp.	6.00	3.72	3.94	9.94	18,942	0.00059	0.0059
Ameriprise Fin'l	12.50	1.34	1.51	14.01	43,708	0.00136	0.0191
AMETEK Inc.	13.00	0.61	0.69	13.69	42,513	0.00133	0.0181
Amgen	4.50	3.30	3.45	7.95	146,109	0.00456	0.0362
Amphenol Corp.	13.00	0.79	0.89	13.89	67,143	0.00209	0.0291
Analog Devices	7.50	1.89	2.03	9.53	96,365	0.00300	0.0286
Aon plc	10.00	0.86	0.95	10.95	65,475	0.00204	0.0223
APA Corp.	19.50	3.55	4.24	23.74	10,367	0.00032	0.0077
Apple Inc.	6.50	0.54	0.58	7.08	2,762,278	0.08613	0.6094
Applied Materials	10.00	0.69	0.76	10.76	170,384	0.00531	0.0572
Archer Daniels Midl'd	7.50	2.94	3.16	10.66	31,452	0.00098	0.0105
Assurant Inc.	10.50	1.60	1.77	12.27	9,525	0.00030	0.0036
AT&T Inc.	4.00	6.45	6.71	10.71	123,053	0.00384	0.0411
Atmos Energy	7.00	2.87	3.07	10.07	17,572	0.00055	0.0055
Automatic Data Proc.	11.00	2.34	2.60	13.60	101,739	0.00317	0.0431
AvalonBay Communities	5.50	3.76	3.97	9.47	26,087	0.00081	0.0077
Avery Dennison	5.00	1.59	1.67	6.67	17,438	0.00054	0.0036
Ball Corp.	10.00	1.23	1.35	11.35	20,599	0.00064	0.0073
Bank of America	4.50	2.67	2.79	7.29	291,183	0.00908	0.0662
Bank of NY Mellon	9.00	3.08	3.36	12.36	43,183	0.00135	0.0166
Bath & Body Works	6.00	1.66	1.76	7.76	10,919	0.00034	0.0026
Baxter Int'l Inc.	4.00	2.77	2.88	6.88	21,234	0.00066	0.0046

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
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	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Becton Dickinson	5.50	1.62	1.71	7.21	68,721	0.00214	0.0154
Berkley (W.R.)	16.00	0.51	0.59	16.59	22,285	0.00069	0.0115
Bio-Techne Corp.	10.00	0.44	0.48	10.48	11,295	0.00035	0.0037
BlackRock Inc.	7.50	2.69	2.89	10.39	121,819	0.00380	0.0395
Blackstone Inc.	15.00	2.51	2.89	17.89	90,745	0.00283	0.0506
BorgWarner	5.50	1.35	1.42	6.92	7,519	0.00023	0.0016
Boston Properties	0.50	6.08	6.11	6.61	10,089	0.00031	0.0021
Broadcom Inc.	17.50	1.65	1.94	19.44	590,788	0.01842	0.3581
Broadridge Fin'l	9.50	1.57	1.72	11.22	24,050	0.00075	0.0084
Brown & Brown	6.50	0.60	0.64	7.14	24,666	0.00077	0.0055
Brown-Forman 'B'	16.50	1.66	1.93	18.43	25,044	0.00078	0.0144
Bunge Global SA	1.50	2.80	2.84	4.34	14,156	0.00044	0.0019
C.H. Robinson	3.50	3.35	3.47	6.97	8,613	0.00027	0.0019
Campbell Soup	5.00	3.60	3.78	8.78	12,918	0.00040	0.0035
Capital One Fin'l	4.00	1.69	1.76	5.76	53,928	0.00168	0.0097
Cardinal Health	10.00	1.80	1.98	11.98	27,301	0.00085	0.0102
Carrier Global	13.50	1.30	1.48	14.98	49,157	0.00153	0.0230
Caterpillar Inc.	13.00	1.46	1.65	14.65	181,463	0.00566	0.0829
Cboe Global Markets	13.00	1.20	1.36	14.36	19,338	0.00060	0.0087
CDW Corp.	7.00	0.99	1.06	8.06	33,632	0.00105	0.0085
Celanese Corp.	4.50	1.74	1.82	6.32	18,010	0.00056	0.0035
Cencora	8.00	0.86	0.93	8.93	48,244	0.00150	0.0134
CenterPoint Energy	6.00	2.85	3.02	9.02	17,737	0.00055	0.0050
CF Industries	2.00	2.32	2.37	4.37	16,211	0.00051	0.0022
Chevron Corp.	16.50	4.27	4.97	21.47	291,752	0.00910	0.1954
Chubb Ltd.	16.00	1.33	1.54	17.54	105,468	0.00329	0.0577
Church & Dwight	5.50	1.11	1.17	6.67	25,376	0.00079	0.0053

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	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Cigna Group	12.00	1.58	1.77	13.77	103,537	0.00323	0.0445
Cincinnati Financial	10.50	2.73	3.02	13.52	18,608	0.00058	0.0078
Cintas Corp.	14.00	0.85	0.97	14.97	64,355	0.00201	0.0300
Cisco Systems	4.50	3.23	3.38	7.88	200,678	0.00626	0.0493
Citigroup Inc.	2.50	3.53	3.62	6.12	115,082	0.00359	0.0220
Citizens Fin'l Group	4.50	4.94	5.16	9.66	16,243	0.00051	0.0049
Clorox Co.	7.00	3.19	3.41	10.41	18,673	0.00058	0.0061
CME Group	7.50	2.15	2.31	9.81	76,731	0.00239	0.0235
CMS Energy Corp.	5.00	3.52	3.70	8.70	17,231	0.00054	0.0047
Coca-Cola	8.00	3.23	3.49	11.49	261,711	0.00816	0.0938
Cognizant Technology	6.50	1.60	1.70	8.20	37,650	0.00117	0.0096
Colgate-Palmolive	8.00	2.26	2.44	10.44	72,745	0.00227	0.0237
Comcast Corp.	8.00	2.88	3.11	11.11	171,078	0.00533	0.0593
Comerica Inc.	2.50	5.49	5.63	8.13	6,827	0.00021	0.0017
Conagra Brands	3.50	4.92	5.09	8.59	13,786	0.00043	0.0037
ConocoPhillips	9.00	1.97	2.15	11.15	143,622	0.00448	0.0499
Consol. Edison	6.00	3.75	3.98	9.98	30,630	0.00096	0.0095
Constellation Brands	6.50	1.33	1.42	7.92	49,086	0.00153	0.0121
Corning Inc.	12.50	3.43	3.86	16.36	26,789	0.00084	0.0137
Corteva Inc.	9.00	1.20	1.31	10.31	39,081	0.00122	0.0126
Costco Wholesale	9.50	0.59	0.65	10.15	328,546	0.01024	0.1039
Crown Castle Int'l	6.00	5.99	6.35	12.35	45,362	0.00141	0.0175
CSX Corp.	7.00	1.28	1.37	8.37	74,322	0.00232	0.0194
Cummins Inc.	7.50	2.34	2.52	10.02	40,699	0.00127	0.0127
CVS Health	5.50	3.37	3.56	9.06	101,726	0.00317	0.0287
Danaher Corp.	7.50	0.43	0.46	7.96	186,042	0.00580	0.0462
Darden Restaurants	13.00	3.00	3.39	16.39	20,862	0.00065	0.0107

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	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Deere & Co.	5.00	1.49	1.56	6.56	109,687	0.00342	0.0225
Dentsply Sirona	8.50	1.92	2.08	10.58	7,053	0.00022	0.0023
Devon Energy	9.50	3.62	3.96	13.46	31,159	0.00097	0.0131
Dollar General	2.00	1.51	1.54	3.54	34,254	0.00107	0.0038
Dominion Energy	0.50	5.54	5.57	6.07	40,310	0.00126	0.0076
Domino's Pizza	11.50	1.34	1.49	12.99	15,686	0.00049	0.0064
Dover Corp.	6.50	1.16	1.24	7.74	24,558	0.00077	0.0059
Dow Inc.	1.50	4.90	4.97	6.47	40,852	0.00127	0.0082
DTE Energy	6.00	3.71	3.93	9.93	22,697	0.00071	0.0070
Duke Energy	5.50	4.34	4.58	10.08	73,561	0.00229	0.0231
DuPont de Nemours	9.00	2.07	2.26	11.26	32,048	0.00100	0.0112
Eastman Chemical	5.00	3.46	3.63	8.63	10,987	0.00034	0.0030
Eaton Corp. plc	12.50	1.21	1.36	13.86	123,707	0.00386	0.0535
eBay Inc.	7.00	2.15	2.30	9.30	27,024	0.00084	0.0078
Ecolab Inc.	7.00	1.00	1.07	8.07	65,257	0.00203	0.0164
Edison Int'l	4.50	4.52	4.72	9.22	26,658	0.00083	0.0077
Electronic Arts	17.50	0.62	0.73	18.23	35,462	0.00111	0.0202
Elevance Health	11.50	1.27	1.42	12.92	120,813	0.00377	0.0487
Emerson Electric	7.00	1.88	2.01	9.01	64,042	0.00200	0.0180
Entergy Corp.	0.50	4.39	4.41	4.91	21,928	0.00068	0.0034
EOG Resources	13.00	2.97	3.36	16.36	73,289	0.00229	0.0374
Equifax Inc.	4.50	0.59	0.62	5.12	32,636	0.00102	0.0052
Equinix Inc.	16.00	2.07	2.40	18.40	77,442	0.00241	0.0444
Essex Property Trust	1.00	4.01	4.05	5.05	14,983	0.00047	0.0024
Everest Group	10.00	1.84	2.02	12.02	16,957	0.00053	0.0064
Evergy Inc.	5.50	5.04	5.32	10.82	11,892	0.00037	0.0040
Eversource Energy	5.50	4.81	5.07	10.57	20,681	0.00064	0.0068

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis—Value Line EPS  
Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Exelon Corp.	2.00	4.18	4.26	6.26	36,377	0.00113	0.0071
Extra Space Storage	5.00	4.85	5.09	10.09	18,816	0.00059	0.0059
Exxon Mobil Corp.	7.00	3.36	3.60	10.60	447,779	0.01396	0.1479
FactSet Research	11.00	0.88	0.98	11.98	18,570	0.00058	0.0069
Fastenal Co.	9.00	2.01	2.19	11.19	44,420	0.00139	0.0155
FedEx Corp.	5.50	1.94	2.05	7.55	64,970	0.00203	0.0153
Fifth Third Bancorp	5.00	3.93	4.13	9.13	24,936	0.00078	0.0071
FirstEnergy Corp.	4.50	4.34	4.54	9.04	21,954	0.00068	0.0062
FMC Corp.	5.00	3.70	3.89	8.89	7,998	0.00025	0.0022
Fortive Corp.	15.00	0.37	0.43	15.43	30,178	0.00094	0.0145
Fox Corp. 'A'	8.00	1.72	1.86	9.86	14,397	0.00045	0.0044
Franklin Resources	3.00	4.53	4.67	7.67	13,531	0.00042	0.0032
Freep't-McMoRan Inc.	12.50	1.30	1.46	13.96	66,024	0.00206	0.0287
Gallagher (Arthur J.)	17.50	0.94	1.10	18.60	55,242	0.00172	0.0320
Garmin Ltd.	5.00	2.06	2.16	7.16	28,130	0.00088	0.0063
Gen Digital Inc.	10.50	2.32	2.56	13.06	13,753	0.00043	0.0056
Gen'l Dynamics	10.00	2.01	2.21	12.21	77,306	0.00241	0.0294
Gen'l Mills	6.00	3.49	3.70	9.70	39,499	0.00123	0.0119
Gen'l Motors	8.50	1.12	1.22	9.72	59,990	0.00187	0.0182
Genuine Parts	8.50	2.58	2.80	11.30	21,676	0.00068	0.0076
Gilead Sciences	3.00	4.16	4.28	7.28	92,179	0.00287	0.0209
Global Payments	13.50	0.84	0.95	14.45	34,651	0.00108	0.0156
Globe Life Inc.	8.00	0.81	0.87	8.87	12,404	0.00039	0.0034
Goldman Sachs	1.50	2.77	2.81	4.31	129,489	0.00404	0.0174
Grainger (W.W.)	7.00	0.74	0.79	7.79	50,114	0.00156	0.0122
Hartford Fin'l Svcs.	8.50	1.86	2.02	10.52	30,582	0.00095	0.0100
Hasbro Inc.	4.50	5.16	5.39	9.89	7,531	0.00023	0.0023

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis—Value Line EPS  
Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
HCA Healthcare	10.00	0.80	0.88	10.88	88,453	0.00276	0.0300
Healthpeak Properties	18.50	6.83	8.09	26.59	9,477	0.00030	0.0079
Henry (Jack) & Assoc.	6.50	1.28	1.36	7.86	12,495	0.00039	0.0031
Hershey Co.	9.50	2.77	3.03	12.53	40,476	0.00126	0.0158
Hess Corp.	20.00	1.17	1.40	21.40	45,867	0.00143	0.0306
Hewlett Packard Ent.	5.50	3.78	3.99	9.49	22,005	0.00069	0.0065
Home Depot	6.00	2.34	2.48	8.48	381,335	0.01189	0.1008
Honeywell Int'l	10.50	2.15	2.38	12.88	131,129	0.00409	0.0526
Hormel Foods	5.50	3.36	3.54	9.04	18,892	0.00059	0.0053
Horton D.R.	4.00	0.79	0.82	4.82	52,679	0.00164	0.0079
Howmet Aerospace	17.00	0.30	0.35	17.35	27,682	0.00086	0.0150
HP Inc.	7.00	3.74	4.00	11.00	29,086	0.00091	0.0100
Hubbell Inc.	9.00	1.20	1.31	10.31	21,850	0.00068	0.0070
Humana Inc.	8.00	1.02	1.10	9.10	42,866	0.00134	0.0122
Hunt (J.B.)	8.50	0.88	0.95	9.45	20,119	0.00063	0.0059
Huntington Bancshs.	8.00	4.66	5.03	13.03	19,292	0.00060	0.0078
Huntington Ingalls	11.50	1.78	1.98	13.48	11,577	0.00036	0.0049
IDEX Corp.	6.00	1.12	1.19	7.19	18,242	0.00057	0.0041
Illinois Tool Works	9.50	2.08	2.28	11.78	80,867	0.00252	0.0297
Ingersoll Rand Inc.	12.50	0.09	0.10	12.60	37,786	0.00118	0.0148
Int'l Business Mach.	4.00	3.42	3.56	7.56	177,109	0.00552	0.0417
Int'l Flavors & Frag.	0.50	1.91	1.92	2.42	21,422	0.00067	0.0016
Int'l Paper	5.50	4.72	4.98	10.48	13,574	0.00042	0.0044
Intel Corp.	6.00	1.18	1.25	7.25	178,422	0.00556	0.0403
Intercontinental Exch.	6.50	1.32	1.41	7.91	77,985	0.00243	0.0192
Interpublic Group	8.50	4.02	4.36	12.86	12,868	0.00040	0.0052
Intuit Inc.	13.50	0.57	0.65	14.15	179,118	0.00559	0.0790

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis—Value Line EPS  
Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Invesco Ltd.	3.00	5.43	5.59	8.59	7,116	0.00022	0.0019
Invitation Homes	8.50	3.27	3.55	12.05	21,302	0.00066	0.0080
Iron Mountain	7.00	3.24	3.47	10.47	23,404	0.00073	0.0076
Jabil Inc.	15.00	0.25	0.29	15.29	16,325	0.00051	0.0078
Jacobs Solutions	9.00	0.77	0.84	9.84	18,917	0.00059	0.0058
Johnson & Johnson	3.50	3.17	3.28	6.78	374,927	0.01169	0.0793
Johnson Ctrl. Int'l plc	11.00	2.31	2.56	13.56	43,703	0.00136	0.0185
JPMorgan Chase	8.50	2.14	2.32	10.82	567,592	0.01770	0.1915
Juniper Networks	8.50	2.39	2.59	11.09	11,793	0.00037	0.0041
Kellanova	1.50	4.06	4.12	5.62	18,780	0.00059	0.0033
Keurig Dr Pepper	12.50	3.03	3.41	15.91	41,310	0.00129	0.0205
Kimberly-Clark	7.50	3.92	4.21	11.71	41,930	0.00131	0.0153
Kimco Realty	18.00	5.04	5.95	23.95	12,050	0.00038	0.0090
Kinder Morgan Inc.	15.00	6.27	7.21	22.21	40,168	0.00125	0.0278
KLA Corp.	10.50	0.83	0.92	11.42	94,134	0.00294	0.0335
Kraft Heinz Co.	4.00	4.53	4.71	8.71	43,374	0.00135	0.0118
Kroger Co.	6.00	2.04	2.16	8.16	40,918	0.00128	0.0104
L3Harris Technologies	9.50	2.19	2.40	11.90	40,287	0.00126	0.0149
Lam Research	9.00	0.87	0.95	9.95	124,593	0.00389	0.0387
Lamb Weston Holdings	15.00	1.43	1.64	16.64	14,896	0.00046	0.0077
Lauder (Estee)	2.50	1.80	1.85	4.35	52,603	0.00164	0.0071
Leidos Hldgs.	7.50	1.19	1.28	8.78	17,362	0.00054	0.0048
Lennar Corp.	4.00	1.22	1.27	5.27	45,974	0.00143	0.0076
Linde plc	7.50	1.09	1.17	8.67	226,342	0.00706	0.0612
LKQ Corp.	7.00	2.29	2.45	9.45	14,011	0.00044	0.0041
Lockheed Martin	9.00	2.89	3.15	12.15	106,422	0.00332	0.0403
Loews Corp.	19.50	0.32	0.38	19.88	17,438	0.00054	0.0108

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis—Value Line EPS  
Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Lowe's Cos.	6.50	1.75	1.86	8.36	144,877	0.00452	0.0378
M&T Bank Corp.	6.50	3.77	4.02	10.52	23,789	0.00074	0.0078
Marathon Petroleum	14.50	1.67	1.91	16.41	72,772	0.00227	0.0372
MarketAxess Holdings	8.50	1.37	1.49	9.99	8,213	0.00026	0.0026
Marsh & McLennan	12.00	1.39	1.56	13.56	101,775	0.00317	0.0430
Martin Marietta	10.50	0.50	0.55	11.05	37,318	0.00116	0.0129
Masco Corp.	6.50	1.52	1.62	8.12	17,106	0.00053	0.0043
MasterCard Inc.	16.00	0.54	0.63	16.63	458,270	0.01429	0.2376
McCormick & Co.	4.50	2.44	2.55	7.05	18,443	0.00058	0.0041
McDonald's Corp.	10.00	2.40	2.64	12.64	205,572	0.00641	0.0810
McKesson Corp.	8.50	0.48	0.52	9.02	69,528	0.00217	0.0196
Medtronic plc	6.50	3.28	3.49	9.99	111,744	0.00348	0.0348
Merck & Co.	15.50	2.49	2.88	18.38	313,543	0.00978	0.1797
Meta Platforms	17.00	0.40	0.47	17.47	1,294,637	0.04037	0.7052
MetLife Inc.	7.00	2.84	3.04	10.04	54,607	0.00170	0.0171
Microchip Technology	6.00	2.13	2.26	8.26	47,738	0.00149	0.0123
Micron Technology	19.50	0.49	0.59	20.09	106,260	0.00331	0.0666
Microsoft Corp.	10.50	0.72	0.80	11.30	3,160,309	0.09855	1.1131
Mondelez Int'l	11.00	2.37	2.63	13.63	97,805	0.00305	0.0416
Monolithic Power Sys.	10.50	0.75	0.83	11.33	32,035	0.00100	0.0113
Moody's Corp.	5.50	0.79	0.83	6.33	71,202	0.00222	0.0141
Morgan Stanley	7.50	3.72	4.00	11.50	150,020	0.00468	0.0538
Motorola Solutions	10.50	1.13	1.25	11.75	57,510	0.00179	0.0211
MSCI Inc.	12.50	1.14	1.28	13.78	44,223	0.00138	0.0190
Nasdaq Inc.	7.00	1.45	1.55	8.55	29,911	0.00093	0.0080
NetApp Inc.	8.50	1.91	2.07	10.57	21,515	0.00067	0.0071
Newmont Corp.	5.00	2.91	3.06	8.06	27,234	0.00085	0.0068

	A	B	C	D	E	F	G
Company Name	EPS Growth Rate (%)	Dividend Yield (%)	Expected Dividend Yield (%)	Rate of Return on Equity (%)	Market Cap \$ (Mil)	Market Cap Weight Factor	Weighted Rate of Return on Equity (%)
News Corp. 'A'	16.00	0.77	0.89	16.89	14,805	0.00046	0.0078
NextEra Energy	8.50	3.31	3.59	12.09	127,616	0.00398	0.0481
NIKE Inc. 'B'	16.50	1.48	1.72	18.22	152,110	0.00474	0.0864
NiSource Inc.	6.00	3.84	4.07	10.07	11,102	0.00035	0.0035
Nordson Corp.	9.50	1.03	1.13	10.63	15,153	0.00047	0.0050
Norfolk Southern	9.50	2.07	2.27	11.77	58,955	0.00184	0.0216
Northern Trust Corp.	3.00	3.57	3.68	6.68	17,251	0.00054	0.0036
Northrop Grumman	8.00	1.70	1.84	9.84	70,664	0.00220	0.0217
NRG Energy	1.00	2.43	2.45	3.45	13,974	0.00044	0.0015
Nucor Corp.	2.00	1.08	1.10	3.10	47,570	0.00148	0.0046
NXP Semi. NV	10.00	1.68	1.85	11.85	62,601	0.00195	0.0231
Occidental Petroleum	15.50	1.38	1.59	17.09	55,989	0.00175	0.0298
Old Dominion Freight	8.50	0.48	0.52	9.02	47,412	0.00148	0.0133
Omnicom Group	7.00	3.18	3.40	10.40	18,657	0.00058	0.0061
ONEOK Inc.	13.50	5.07	5.75	19.25	45,980	0.00143	0.0276
Oracle Corp.	9.50	1.24	1.36	10.86	355,022	0.01107	0.1202
Otis Worldwide	11.50	1.37	1.53	13.03	40,388	0.00126	0.0164
PACCAR Inc.	14.50	3.57	4.09	18.59	63,526	0.00198	0.0368
Packaging Corp.	7.00	2.71	2.90	9.90	16,511	0.00051	0.0051
Parker-Hannifin	12.50	1.11	1.25	13.75	70,172	0.00219	0.0301
Paychex Inc.	10.00	3.14	3.45	13.45	44,255	0.00138	0.0186
Paycom Software	18.50	0.78	0.92	19.42	11,040	0.00034	0.0067
Pentair plc	12.00	1.12	1.25	13.25	13,604	0.00042	0.0056
PepsiCo Inc.	7.50	3.03	3.26	10.76	236,136	0.00736	0.0792
Pfizer Inc.	2.50	6.07	6.22	8.72	156,394	0.00488	0.0425
Philip Morris Int'l	5.00	5.55	5.83	10.83	145,364	0.00453	0.0491
Phillips 66	17.50	2.77	3.25	20.75	69,847	0.00218	0.0452

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
Pinnacle West Capital	2.50	4.86	4.98	7.48	8,249	0.00026	0.0019
Pioneer Natural Res.	8.50	4.03	4.37	12.87	59,265	0.00185	0.0238
PNC Financial Serv.	6.50	4.18	4.45	10.95	61,269	0.00191	0.0209
Pool Corp.	5.50	1.08	1.14	6.64	15,837	0.00049	0.0033
PPG Inds.	6.50	1.74	1.85	8.35	33,545	0.00105	0.0087
PPL Corp.	7.50	3.81	4.10	11.60	19,939	0.00062	0.0072
Price (T. Rowe) Group	1.50	4.27	4.33	5.83	26,425	0.00082	0.0048
Principal Fin'l Group	5.50	3.29	3.47	8.97	20,134	0.00063	0.0056
Procter & Gamble	5.00	2.32	2.44	7.44	381,166	0.01189	0.0884
Progressive Corp.	14.50	0.19	0.22	14.72	120,346	0.00375	0.0552
Prologis	0.50	3.03	3.05	3.55	118,969	0.00371	0.0132
Prudential Fin'l	5.50	4.51	4.76	10.26	41,428	0.00129	0.0133
Public Serv. Enterprise	4.00	3.76	3.91	7.91	31,817	0.00099	0.0078
Public Storage	7.00	4.26	4.56	11.56	49,393	0.00154	0.0178
PulteGroup Inc.	6.50	0.72	0.77	7.27	24,229	0.00076	0.0055
Qualcomm Inc.	7.50	1.91	2.05	9.55	187,455	0.00585	0.0558
Quanta Services	15.50	0.15	0.17	15.67	36,306	0.00113	0.0177
Quest Diagnostics	1.50	2.35	2.39	3.89	14,305	0.00045	0.0017
Ralph Lauren	13.00	1.58	1.79	14.79	12,161	0.00038	0.0056
Raymond James Fin'l	12.50	1.47	1.65	14.15	25,603	0.00080	0.0113
Realty Income Corp.	5.50	5.89	6.21	11.71	31,006	0.00097	0.0113
Regency Centers Corp.	14.50	4.45	5.10	19.60	10,292	0.00032	0.0063
Regions Financial	7.50	4.96	5.33	12.83	18,235	0.00057	0.0073
Republic Services	11.00	1.14	1.27	12.27	59,176	0.00185	0.0226
ResMed Inc.	8.50	1.04	1.13	9.63	28,297	0.00088	0.0085
Robert Half Inc.	6.00	2.64	2.80	8.80	8,492	0.00026	0.0023
Rockwell Automation	10.00	1.77	1.95	11.95	32,292	0.00101	0.0120

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
Rollins Inc.	9.00	1.28	1.40	10.40	22,668	0.00071	0.0073
Roper Tech.	8.50	0.54	0.59	9.09	59,229	0.00185	0.0168
Ross Stores	15.00	1.00	1.15	16.15	49,525	0.00154	0.0249
RTX Corp.	12.00	2.49	2.79	14.79	125,857	0.00392	0.0580
S&P Global	8.00	0.85	0.92	8.92	134,966	0.00421	0.0375
Salesforce Inc.	18.00	0.52	0.61	18.61	297,204	0.00927	0.1725
SBA Communications	19.00	1.85	2.20	21.20	23,324	0.00073	0.0154
Schwab (Charles)	10.00	1.61	1.77	11.77	127,044	0.00396	0.0466
Seagate Technology plc	11.00	3.20	3.55	14.55	18,315	0.00057	0.0083
Sempra Energy	6.50	3.56	3.79	10.29	44,055	0.00137	0.0141
Sherwin-Williams	11.50	0.84	0.94	12.44	87,309	0.00272	0.0339
Simon Property Group	3.50	5.15	5.33	8.83	51,063	0.00159	0.0141
Skyworks Solutions	1.50	2.75	2.79	4.29	16,911	0.00053	0.0023
Smith (A.O.)	11.50	1.46	1.63	13.13	12,929	0.00040	0.0053
Smucker (J.M.)	7.50	3.50	3.76	11.26	13,105	0.00041	0.0046
Snap-on Inc.	7.50	2.55	2.74	10.24	15,412	0.00048	0.0049
Southern Co.	6.00	4.07	4.31	10.31	76,594	0.00239	0.0246
Stanley Black & Decker	3.50	3.52	3.64	7.14	14,189	0.00044	0.0032
Starbucks Corp.	9.00	2.46	2.68	11.68	104,842	0.00327	0.0382
State Street Corp.	7.00	3.82	4.09	11.09	22,780	0.00071	0.0079
Steel Dynamics	1.50	1.29	1.31	2.81	23,333	0.00073	0.0020
STERIS plc	7.50	0.94	1.01	8.51	23,049	0.00072	0.0061
Stryker Corp.	8.50	0.92	1.00	9.50	134,248	0.00419	0.0398
Synchrony Financial	4.50	2.31	2.41	6.91	17,954	0.00056	0.0039
Sysco Corp.	16.00	2.46	2.85	18.85	40,886	0.00127	0.0240
T-Mobile US	19.50	1.64	1.96	21.46	192,716	0.00601	0.1290
Tapestry Inc.	12.50	2.95	3.32	15.82	10,874	0.00034	0.0054

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
Target Corp.	10.50	2.58	2.85	13.35	78,693	0.00245	0.0328
TE Connectivity	8.00	1.67	1.80	9.80	43,730	0.00136	0.0134
Teleflex Inc.	9.00	0.62	0.68	9.68	10,361	0.00032	0.0031
Teradyne Inc.	16.50	0.46	0.54	17.04	16,356	0.00051	0.0087
Texas Instruments	3.00	3.06	3.15	6.15	154,342	0.00481	0.0296
Textron Inc.	16.00	0.08	0.09	16.09	18,323	0.00057	0.0092
Thermo Fisher Sci.	5.00	0.27	0.28	5.28	224,115	0.00699	0.0369
TJX Companies	16.50	1.40	1.63	18.13	112,796	0.00352	0.0638
Tractor Supply	11.00	1.71	1.90	12.90	27,880	0.00087	0.0112
Trane Technologies plc	14.50	1.12	1.28	15.78	67,838	0.00212	0.0334
Travelers Cos.	10.50	1.78	1.97	12.47	51,388	0.00160	0.0200
Truist Fin'l	6.00	5.87	6.22	12.22	49,106	0.00153	0.0187
U.S. Bancorp	4.50	4.51	4.71	9.21	67,710	0.00211	0.0195
UDR Inc.	2.50	4.67	4.79	7.29	12,193	0.00038	0.0028
Union Pacific	6.50	2.15	2.29	8.79	150,142	0.00468	0.0412
United Parcel Serv.	3.50	4.26	4.41	7.91	131,825	0.00411	0.0325
United Rentals	17.00	0.92	1.08	18.08	47,717	0.00149	0.0269
UnitedHealth Group	12.00	1.52	1.70	13.70	457,163	0.01426	0.1953
Universal Health `B'	6.00	0.44	0.47	6.47	12,279	0.00038	0.0025
V.F. Corp.	2.00	2.50	2.55	4.55	5,607	0.00017	0.0008
Valero Energy	6.50	2.41	2.57	9.07	57,731	0.00180	0.0163
Verisk Analytics	9.00	0.66	0.72	9.72	34,270	0.00107	0.0104
Verizon Communic.	0.50	6.63	6.66	7.16	168,669	0.00526	0.0377
VICI Properties	9.50	5.76	6.31	15.81	18,126	0.00057	0.0089
Visa Inc.	13.50	0.74	0.84	14.34	531,118	0.01656	0.2375
Vulcan Materials	8.00	0.68	0.73	8.73	35,897	0.00112	0.0098
Wabtec Corp.	12.00	0.56	0.63	12.63	25,401	0.00079	0.0100

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
**Standard and Poor's 500 Adjusted**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
Walmart Inc.	6.50	1.26	1.34	7.84	494,839	0.01543	0.1210
Waste Management	6.00	1.42	1.51	7.51	85,343	0.00266	0.0200
WEC Energy Group	6.50	4.15	4.42	10.92	25,411	0.00079	0.0087
Wells Fargo	10.50	2.44	2.70	13.20	208,093	0.00649	0.0856
West Pharmac. Svcs.	7.50	0.20	0.22	7.72	29,163	0.00091	0.0070
WestRock Co.	8.50	2.45	2.66	11.16	12,706	0.00040	0.0044
Williams Cos.	10.00	5.02	5.52	15.52	46,088	0.00144	0.0223
Willis Towers Wat. plc	8.50	1.22	1.32	9.82	28,383	0.00089	0.0087
Xcel Energy Inc.	6.00	4.22	4.47	10.47	29,006	0.00090	0.0095
Xylem Inc.	15.50	1.13	1.31	16.81	27,928	0.00087	0.0146
Yum! Brands	10.50	1.90	2.10	12.60	38,223	0.00119	0.0150
Zimmer Biomet Hldgs.	4.50	0.77	0.80	5.30	26,445	0.00082	0.0044
Zoetis Inc.	8.00	1.01	1.09	9.09	78,376	0.00244	0.0222
				<b>Totals</b>	32,069,324	1.00	11.24

**ROE and ROR Analysis for NSP Gas**  
**CAPM ROE Analysis--Value Line**  
**Calculation for Proxy Group**

**Docket No. PU-23-367**  
**Exhibit MFG-15**  
**Schedule 7**

	<b>A</b> <b>Market</b> <b>Return</b>	<b>B</b> <b>Rf</b>	<b>C</b> <b>MRP</b>	<b>D</b> <b>Beta</b>	<b>E</b> <b>RP</b>	<b>F</b> <b>CAPM</b> <b>ROE</b>	<b>G</b> <b>Filtered</b> <b>Results</b>
Atmos Energy Corporation	11.24%	4.60%	6.64%	0.85	5.64%	10.24%	10.24%
Chesapeake Utilities	11.24%	4.60%	6.64%	0.80	5.31%	9.91%	9.91%
NiSource	11.24%	4.60%	6.64%	0.95	6.31%	10.91%	10.91%
Northwest Natural Holding Co.	11.24%	4.60%	6.64%	0.85	5.64%	10.24%	10.24%
Southwest Gas Holdings	11.24%	4.60%	6.64%	0.85	5.64%	10.24%	10.24%
ONE Gas, Inc.	11.24%	4.60%	6.64%	0.90	5.98%	10.58%	10.58%
Spire, Inc.	11.24%	4.60%	6.64%	0.85	5.64%	10.24%	10.24%
					<b>Mean</b>	10.34%	10.34%
					<b>Median</b>	10.24%	10.24%

A: MFG-15, Sch 5

E: C \* D

B: MFG-15 Sch 1

F: B + E

C: A - B

G: Low-end test < Column F < High-end test

D: MFG-15, Sch 2

<b>Low-End Test:</b>	Moody's 10-Year Baa Corporate Bond Index, S&P Global Market Intelligence)	5.94%
	CAPM Risk Premium, Column C	6.64%
	20 percent of CAPM risk premium	1.33%
	Moody's 10-Year Baa Corporate Bond Index + 20 percent of CAPM risk premium	7.27%
<b>High-End Test:</b>	Proxy Group median, Column F	10.24%
	150 percent of Proxy Group median	15.37%
	200 percent of Proxy Group median	20.49%

**ROE and ROR Analysis for NSP Gas**  
**CAPM ROE Analysis**  
**Average of Low-End Tests for Value Line and Kroll**

**Docket No. PU-23-367**  
**Exhibit MFG-15**  
**Schedule 8**

<b>Value Line Low-End Test:</b>	Moody's 10-Year Baa Corporate Bond Index, S&P Global	
	Market Intelligence. MFG-15, Schedule 5	5.94%
	CAPM Risk Premium, Value Line, MFG-15, Schedule 7	6.64%
	20 percent of CAPM risk premium	1.33%
	Moody's 10-Year Baa Public Corporate Bond Index + 20 percent of CAPM risk premium	7.27%
<b>Kroll Low-End Test:</b>	Moody's 10-Year Baa Corporate Bond Index, S&P Global	
	Market Intelligence. MFG-15, Schedule 3	5.94%
	CAPM Risk Premium, Kroll, MFG-15, Schedule 5	5.50%
	20 percent of CAPM risk premium	1.10%
	Moody's 10-Year Baa Public Corporate Bond Index + 20 percent of CAPM risk premium	7.04%
<b>Mean of Value Line and Kroll Low-End Tests</b>		<b>7.15%</b>



Source: S&P Capital IQ Pro Regulatory Research Associates Rate Case History  
 Downloaded April 8, 2024

2021							
State	Company	Docket	Case Type	Date of Decision	Decision Type	Return on Equity (%)	Equity Ratio (%)
Georgia	Atlanta Gas Light Co.	D-42315 (2020 review)	Distribution	1/1/21	Fully Litigated	NA	56.00
Colorado	Black Hills Colorado Gas Inc.	D-20AL-0380G	Distribution	1/6/21	Fully Litigated	NA	NA
Delaware	Delmarva Power & Light Co.	D-20-0150	Distribution	1/6/21	Settled	9.60	50.37
Oregon	Cascade Natural Gas Corp.	D-UG 390	Distribution	1/6/21	Settled	9.40	50.00
Illinois	Ameren Illinois	D-20-0308	Distribution	1/13/21	Fully Litigated	9.67	52.00
Minnesota	CenterPoint Energy Resources	D-G-008/GR-19-524	Distribution	1/14/21	Settled	NA	NA
Nebraska	Black Hills Nebraska Gas	D-NG-109	Distribution	1/26/21	Settled	9.50	50.00
Montana	MDU Resources Group	D2020.06.076	Distribution	2/16/21	Settled	NA	NA
Tennessee	Piedmont Natural Gas Co.	D-20-00086	Distribution	2/16/21	Settled	9.80	50.50
Pennsylvania	Columbia Gas of Pennsylvania	D-R-2020-3018835	Distribution	2/19/21	Fully Litigated	9.86	54.19
District of Columbia	Washington Gas Light Co.	FC-1162	Distribution	2/24/21	Settled	9.25	52.10
California	Southwest Gas Corp.	A-19-08-015 (SoCal)	Distribution	3/25/21	Settled	10.00	52.00
California	Southwest Gas Corp.	A-19-08-015 (NoCal)	Distribution	3/25/21	Settled	10.00	52.00
California	Southwest Gas Corp.	A-19-08-015 (LkTah)	Distribution	3/25/21	Settled	10.00	52.00
Maryland	Washington Gas Light Co.	C-9651	Distribution	4/9/21	Fully Litigated	9.70	52.03
North Dakota	MDU Resources Group	C-PU-20-379	Distribution	5/5/21	Settled	9.30	50.31
Washington	Cascade Natural Gas Corp.	D-UG-200568	Distribution	5/18/21	Fully Litigated	9.40	49.10
New York	Coming Natural Gas Corp.	C-20-G-0101	Distribution	5/19/21	Fully Litigated	8.80	48.00
Pennsylvania	PECO Energy Co	D-R-2020-3018929	Distribution	6/17/21	Fully Litigated	10.24	53.38
Kentucky	Louisville Gas & Electric Co.	C-2020-00350 (gas)	Distribution	6/30/21	Settled	9.43	NA
Tennessee	Atmos Energy Corp.	D-21-00019	Distribution	7/19/21	Settled	NA	59.88
West Virginia	Hope Gas Inc.	C-20-0746-G-42T	Distribution	7/27/21	Fully Litigated	9.54	47.45

**ROE and ROR Analysis for NSP Gas  
Authorized ROEs in Natural Gas Rate Cases  
January 1, 2021-December 31, 2023**

New Hampshire	Liberty Utilities EnergyNorth	D-DG-20-105	Distribution	7/30/21	Settled	9.30	52.00
Wisconsin	Wisconsin Electric Power Co.	D-5-AF-107 (WEP-Gas)	Distribution	8/11/21	NA	NA	NA
Wisconsin	Wisconsin Gas LLC	D-5-AF-107	Distribution	8/11/21	NA	NA	NA
Wisconsin	Wisconsin Public Service Corp.	D-5-AF-107 (Gas)	Distribution	8/11/21	NA	NA	NA
New York	KeySpan Gas East Corp.	C-19-G-0310	Distribution	8/12/21	Settled	8.80	48.00
New York	The Brooklyn Union Gas Co.	C-19-G-0309	Distribution	8/12/21	Settled	8.80	48.00
Oklahoma	CenterPoint Energy Resources	Ca-PUD202100054	Distribution	8/19/21	Settled	NA	NA
Idaho	Avista Corp.	C-AVU-G-21-01	Distribution	9/1/21	Settled	9.40	50.00
Illinois	North Shore Gas Co.	D-20-0810	Distribution	9/8/21	Fully Litigated	9.67	51.58
Michigan	Michigan Gas Utilities Corp.	C-U-20718	Distribution	9/9/21	Settled	9.85	NA
Virginia	Virginia Natural Gas Inc.	C-PUR-2020-00095	Distribution	9/14/21	Settled	9.50	51.89
Arkansas*	CenterPoint Energy Resources	D-17-010-FR (2021 filing)	Distribution	9/23/21	Fully Litigated	NA	32.27
Washington	Avista Corp.	D-UG-200901	Distribution	9/27/21	Settled	9.40	48.50
South Carolina	Piedmont Natural Gas Co.	D-2021-7-G	Distribution	9/29/21	Settled	9.80	52.20
Massachusetts	Boston Gas Co.	DPU 20-120	Distribution	9/30/21	Fully Litigated	9.70	53.44
Indiana	Sthm IN Gas & Electric Co.	Ca-45447	Distribution	10/6/21	Settled	9.70	45.74
Washington	Northwest Natural Gas Co.	D-UG-200994	Distribution	10/21/21	Settled	NA	NA
Missouri	Spire Missouri Inc.	C-GR-2021-0108	Distribution	10/27/21	Fully Litigated	9.37	49.86
Massachusetts	NSTAR Gas Co.	DPU 21-107	Distribution	10/29/21	Fully Litigated	NA	NA
Indiana	Indiana Gas Co.	Ca-45468	Distribution	11/17/21	Settled	9.80	46.21
New Jersey	New Jersey Natural Gas Co.	D-GR21030679	Distribution	11/17/21	Settled	9.60	54.00
Georgia	Atlanta Gas Light Co.	D-42315 (2021 review)	Distribution	11/18/21	Settled	NA	56.00
Illinois	Northern Illinois Gas Co.	D-21-0098	Distribution	11/18/21	Fully Litigated	9.75	54.46
New York	Central Hudson Gas & Electric	C-20-G-0429	Distribution	11/18/21	Settled	9.00	50.00
Wisconsin	Northern States Power Co.	D-4220-UR-125 (Gas)	Distribution	11/18/21	Settled	10.00	52.50
Wisconsin	Wisconsin Power and Light	D-6680-UR-123 (Gas)	Distribution	11/18/21	Settled	10.00	52.50
Wisconsin	Madison Gas and Electric	D-3270-UR-124 (Gas)	Distribution	11/23/21	Settled	9.80	55.00
Oklahoma	Oklahoma Natural Gas Co	Ca-PUD202100063	Distribution	11/30/21	Settled	9.40	58.55
Maryland	Columbia Gas of Maryland	C-9664	Distribution	12/3/21	Fully Litigated	9.65	52.95
Michigan	DTE Gas Co.	C-U-20940	Distribution	12/9/21	Fully Litigated	9.90	39.23
Colorado	Black Hills Colorado Gas Inc.	D-21AL-0236G	Distribution	12/13/21	Settled	9.20	50.26

**ROE and ROR Analysis for NSP Gas  
Authorized ROEs in Natural Gas Rate Cases  
January 1, 2021-December 31, 2023**

Pennsylvania	Columbia Gas of Pennsylvania	D-R-2021-3024296	Distribution	12/16/21	Settled	NA	NA
Missouri	Union Electric Co.	C-GR-2021-0241	Distribution	12/22/21	Settled	NA	NA
Iowa	Black Hills Iowa Gas Utility	D-RPU-2021-0002	Distribution	12/28/21	Settled	9.60	50.01
Kentucky	Columbia Gas of Kentucky	C-2021-00183	Distribution	12/28/21	Settled	9.35	52.64
Kentucky	Duke Energy Kentucky Inc.	C-2021-00190	Distribution	12/28/21	Settled	9.38	51.34
Kansas	Black Hills Kansas Gas Utility	D-21-BHCG-418-RTS	Distribution	12/30/21	Settled	NA	NA

\*-CenterPoint Energy Arkansas case excluded from Equity Ratio. Capital Structure includes unusual items

<b>Mean</b>	<b>9.56</b>	<b>51.32</b>
<b>Median</b>	<b>9.60</b>	<b>51.95</b>
<b>Range</b>	<b>8.80-10.24</b>	<b>39.23-59.88</b>
	<b>n = 43</b>	<b>n = 44</b>

2022

State	Company	Docket	Case Type	Date of Decision	Decision Type	Return on Equity (%)	Equity Ratio (%)
Kentucky	Delta Natural Gas Co.	C-2021-00185	Distribution	1/3/22	Settled	9.25	NA
North Carolina	Piedmont Natural Gas Co.	D-G-9, Sub 781	Distribution	1/6/22	Settled	9.60	51.60
New York	Niagara Mohawk Power	C-20-G-0381	Distribution	1/20/22	Settled	9.00	48.00
North Carolina	Public Service Co. of NC	D-G-5 Sub 632	Distribution	1/21/22	Settled	9.60	51.60
Nevada	Southwest Gas Corp.	D-21-09001 (Southern)	Distribution	3/22/22	Settled	9.40	50.00
Nevada	Southwest Gas Corp.	D-21-09001 (Northern)	Distribution	3/22/22	Settled	9.40	50.00
New York	Orange & Rockland Utilts Inc.	C-21-G-0073	Distribution	4/14/22	Settled	9.20	48.00
Kentucky	Atmos Energy Corp.	C-2021-00214	Distribution	5/19/22	Fully Litigated	9.23	54.50
New York	Coming Natural Gas Corp.	C-21-G-0394	Distribution	6/16/22	Settled	9.25	48.00
Tennessee	Atmos Energy Corp.	D-22-00010	Distribution	6/20/22	Fully Litigated	NA	60.59
Missouri	Empire District Gas Co.	C-GR-2021-0320	Distribution	6/23/22	Settled	NA	NA
Michigan	Consumers Energy Co.	C-U-21148	Distribution	7/7/22	Settled	9.90	NA
New Hampshire	Northern Utilities Inc.	D-DG-21-104	Distribution	7/20/22	Settled	9.30	52.00
Indiana	Northern IN Public Svc Co. LLC	Ca-45621	Distribution	7/27/22	Settled	9.85	49.47
Oregon	Avista Corp.	D-UG 433	Distribution	8/2/22	Settled	9.40	50.00
New Jersey	Elizabethtown Gas Co.	D-GR21121254	Distribution	8/17/22	Settled	9.60	52.00
Minnesota	CenterPoint Energy Resources	D-G-008/GR-21-435	Distribution	8/18/22	Settled	9.39	51.00
Washington	Cascade Natural Gas Corp.	D-UG-210755	Distribution	8/23/22	Settled	9.40	47.00

**ROE and ROR Analysis for NSP Gas  
Authorized ROEs in Natural Gas Rate Cases  
January 1, 2021-December 31, 2023**

Pennsylvania	UGI Utilities Inc.	D-R-2021-3030218	Distribution	9/15/22	Settled	NA	NA
South Carolina	Piedmont Natural Gas Co.	D-2022-89-G	Distribution	9/15/22	Settled	9.30	52.20
Massachusetts	Boston Gas Co.	DPU 22-74	Distribution	9/26/22	Fully Litigated	NA	NA
Delaware	Delmarva Power & Light Co.	D-22-0002	Distribution	10/12/22	Settled	9.60	49.94
Arkansas	Black Hills Energy Arkansas	D-21-097-U	Distribution	10/10/22	Fully Litigated	9.60	45.00
Oregon	Northwest Natural Gas Co.	D-UG-435	Distribution	10/24/22	Settled	9.40	50.00
Colorado	Public Service Co. of CO	D-22AL-0046G	Distribution	10/25/22	Fully Litigated	9.20	53.78
Massachusetts	The Berkshire Gas Co.	DPU 22-20	Distribution	10/27/22	Settled	9.70	54.00
North Dakota	Northern States Power Co.	C-PU-21-381	Distribution	10/27/22	Settled	9.80	52.54
Pennsylvania	PECO Energy Co	D-R-2022-3031113	Distribution	10/27/22	Settled	NA	NA
California	San Diego Gas & Electric Co.	A-21-08-014 (Gas)	Distribution	11/3/22	Fully Litigated	10.20	52.00
Oklahoma	Summit Utilities Inc.	Ca-PUD202200022	Distribution	11/10/22	Settled	NA	NA
Maryland	Columbia Gas of Maryland Inc	C-9680	Distribution	11/17/22	Settled	9.65	52.97
Oklahoma	Oklahoma Natural Gas Co	Ca-PUD202200023	Distribution	11/29/22	Settled	NA	NA
Missouri	Spire Missouri Inc.	C-GR-2022-0179	Distribution	11/30/22	Settled	NA	NA
New Mexico	New Mexico Gas Co.	C-21-00267-UT	Distribution	11/30/22	Settled	9.38	52.00
Pennsylvania	Columbia Gas of Pennsylvania	D-R-2022-3031211	Distribution	12/8/22	Settled	NA	NA
Washington	Avista Corp.	D-UG-220054	Distribution	12/12/22	Settled	NA	NA
California	Southern California Gas Co.	A-22-04-011	Distribution	12/15/22	Fully Litigated	9.80	52.00
New Jersey	South Jersey Gas Co.	D-GR22040253	Distribution	12/21/22	Settled	9.60	54.00
Washington	Puget Sound Energy Inc.	D-UG-220067	Distribution	12/22/22	Settled	9.40	49.00
Wisconsin	Wisconsin Public Service Corp.	D-6690-UR-127 (Gas)	Distribution	12/22/22	Fully Litigated	9.80	53.40
Utah	Dominion Energy Inc.	D-22-057-03	Distribution	12/23/22	Fully Litigated	9.60	51.00
Wisconsin	Wisconsin Electric Power Co.	D-5-UR-110 (WEP-Gas)	Distribution	12/29/22	Fully Litigated	9.80	58.22
Wisconsin	Wisconsin Gas LLC	D-5-UR-110	Distribution	12/29/22	Fully Litigated	9.80	52.70

\*-Black Hills Energy Arkansas case excluded from Equity Ratio. Capital Structure includes unusual items.

<b>Mean</b>	<b>9.53</b>	<b>51.52</b>
<b>Median</b>	<b>9.60</b>	<b>51.80</b>
<b>Range</b>	<b>9.20-10.20</b>	<b>45.00-60.59</b>
	<b>n = 33</b>	<b>n = 32</b>

**ROE and ROR Analysis for NSP Gas  
Authorized ROEs in Natural Gas Rate Cases  
January 1, 2021-December 31, 2023**

State	Company	Docket	Case Type	Date of Decision	Decision Type	Return on Equity (%)	Equity Ratio (%)
Texas	Texas Gas Service Co.	D-OSS-22-00009896	Distribution	1/19/23	Fully Litigated	9.60	59.74
Arizona	Southwest Gas Corp.	D-G-01551A-21-0368	Distribution	1/23/23	Settled	9.30	50.00
Florida	Florida Public Utilities Co.	D-20220067-GU	Distribution	1/24/23	Fully Litigated	10.25	45.16
Ohio	Columbia Gas Ohio Inc.	C-21-0637-GA-AIR	Distribution	1/26/23	Settled	9.60	50.60
Minnesota	Northern States Power Co.	D-G-002/GR-21-678	Distribution	3/23/23	Settled	9.57	52.50
Florida	Pivotal Utility Holdings Inc.	20220069-GU	Distribution	3/28/23	Fully Litigated	9.50	59.60
South Dakota	MidAmerican Energy Co.	D-NG22-005	Distribution	3/28/23	Settled	NA	NA
Colorado	Atmos Energy Corp.	D-22AL-0348G	Distribution	5/4/23	Settled	9.30	58.00
Kansas	Atmos Energy Corp.	D-23-ATMG-359-RTS	Distribution	5/9/23	Settled	NA	NA
Virginia	Columbia Gas of Virginia Inc	C-PUR-2022-00036	Distribution	5/15/23	Settled	NA	NA
Pennsylvania	Natl Fuel Gas Distribution	D-R-2022-3035730	Distribution	6/15/23	Settled	NA	NA
Idaho	Intermountain Gas Co.	C-INT-G-22-07	Distribution	6/30/23	Settled	9.50	50.00
Oklahoma	Oklahoma Natural Gas Co	Ca-PUD2023-000012	Distribution	7/11/23	Settled	NA	NA
New York	Consolidated Edison Company of	C-22-G-0065	Distribution	7/20/23	Settled	9.25	48.00
Virginia	Virginia Natural Gas Inc.	C-PUR-2022-00052	Distribution	8/28/23	Settled	NA	NA
Virginia	Washington Gas Light Co.	C-PUR-2022-00054	Distribution	8/29/23	Settled	NA	NA
Michigan	Consumers Energy Co.	C-U-21308	Distribution	8/30/23	Settled	9.90	NA
Michigan	Michigan Gas Utilities Corp.	C-U-21366	Distribution	8/30/23	Settled	9.80	NA
Idaho	Avista Corp.	C-AVU-G-23-01	Distribution	8/31/23	Settled	9.40	50.00
Maine	Northern Utilities Inc.	D-2023-00051	Distribution	9/20/23	Settled	9.35	52.01
South Carolina	Dominion Energy South Carolina	D-2023-70-G	Distribution	9/20/23	Settled	9.49	54.78
Massachusetts	Boston Gas Co.	DPU 23-56	Distribution	9/28/23	Fully Litigated	NA	NA
South Carolina	Piedmont Natural Gas Co.	D-2023-7-G	Distribution	10/5/23	Settled	9.30	53.13
Tennessee	Chattanooga Gas Co.	D-23-00029	Distribution	10/6/23	Settled	9.80	49.23
New York	NY State Electric & Gas	C-22-G-0318	Distribution	10/12/23	Settled	9.20	48.00
New York	Rochester Gas & Electric Corp.	C-22-G-0320	Distribution	10/12/23	Settled	9.20	48.00
Montana	NorthWestern Energy Group	D-2022-7-78 (gas)	Distribution	10/25/23	Settled	9.55	48.02
Maryland	Columbia Gas of Maryland	C-9701	Distribution	10/26/23	Settled	NA	NA
Minnesota	Minnesota Energy	D-G-011/GR-22-504	Distribution	10/26/23	Settled	9.65	53.00
Oregon	Avista Corp.	D-UG-461	Distribution	10/26/23	Settled	9.50	50.00
Massachusetts	NSTAR Gas Co.	DPU 23-94	Distribution	10/30/23	Fully Litigated	NA	NA

**ROE and ROR Analysis for NSP Gas  
Authorized ROEs in Natural Gas Rate Cases  
January 1, 2021-December 31, 2023**

Ohio	Duke Energy Ohio Inc.	C-22-0507-GA-AIR	Distribution	11/1/23	Settled	9.60	52.32
Wisconsin	Madison Gas and Electric Co.	D-3270-UR-125 (Gas)	Distribution	11/3/23	Fully Litigated	9.70	56.06
Wyoming	Questar Gas Co.	D-30010-215-GR-23	Distribution	11/7/23	Settled	9.65	51.56
Florida	Peoples Gas System	D-20230023-GU	Distribution	11/9/23	Fully Litigated	10.15	NA
Wisconsin	Northern States Power Co.	D-4220-UR-126 (Gas)	Distribution	11/9/23	Fully Litigated	9.80	52.50
Wisconsin	Wisconsin Power and Light Co	D-6680-UR-124 (Gas)	Distribution	11/9/23	Fully Litigated	9.80	53.70
California	Pacific Gas and Electric Co.	A-21-06-021 (Gas)	Distribution	11/16/23	Fully Litigated	NA	NA
Illinois	Ameren Illinois	D-23-0067	Distribution	11/16/23	Fully Litigated	9.44	50.00
Illinois	North Shore Gas Co.	D-23-0068	Distribution	11/16/23	Fully Litigated	9.38	52.58
Illinois	Northern Illinois Gas Co.	D-23-0066	Distribution	11/16/23	Fully Litigated	9.51	50.00
Illinois	The Peoples Gas Light & Coke C	D-23-0069	Distribution	11/16/23	Fully Litigated	9.38	50.79
Tennessee	Piedmont Natural Gas Co.	D-23-00035	Distribution	12/4/23	Settled	9.80	50.09
Maryland	Baltimore Gas and Electric Co.	C-9692 (GAS)	Distribution	12/14/23	Fully Litigated	9.45	52.00
Maryland	Washington Gas Light Co.	C-9704	Distribution	12/14/23	Fully Litigated	9.50	52.60
District of Columbia	Washington Gas Light Co.	FC-1169	Distribution	12/15/23	Fully Litigated	9.65	52.00
Virginia	Roanoke Gas Co.	C-PUR-2022-00205 (Exp	Distribution	12/19/23	Settled	NA	NA
West Virginia	Mountaineer Gas Co.	C-23-0280-G-42T	Distribution	12/21/23	Settled	9.75	NA
California	Southern California Gas Co.	Advice Letter No. 6207-G	Distribution	12/22/23	Fully Litigated	10.50	52.00

<b>Mean</b>	<b>9.60</b>	<b>51.76</b>
<b>Median</b>	<b>9.55</b>	<b>50.60</b>
<b>Range</b>	<b>9.20-10.50</b>	<b>45.16-59.74</b>
	<b>n = 37</b>	<b>n = 33</b>

**Overall 2021-2023**

<b>Mean</b>	<b>9.56</b>	<b>51.34</b>
<b>Median</b>	<b>9.60</b>	<b>51.95</b>
<b>Range</b>	<b>8.80-10.50</b>	<b>45.16-59.74</b>
	<b>n = 113</b>	<b>n = 109</b>

**ROE and ROR Analysis for NSP Gas**  
**Summary of ROE Analyses and Recommended ROE**

**Docket No. PU-23-367**  
**Exhibit MFG-17**  
**Schedule 1**

<b>Analysis</b>	<b>Weight</b>	<b>ROE</b>	<b>Exhibit</b>		
Constant-Growth DCF	<b>Mean</b>	10.09%	Exhibit MFG-14, Schedule 1		
	<b>Median</b>	10.09%			
Multistage DCF	<b>Mean</b>	9.45%	Exhibit MFG-14, Schedule 5		
	<b>Median</b>	9.30%			
CAPM Kroll Market Risk Premium	<b>Mean</b>	9.35%	Exhibit MFG-15, Schedule 4		
	<b>Median</b>	9.28%			
CAPM S&P 500 Value Line	<b>Mean</b>	10.34%	Exhibit MFG-15, Schedule 6		
	<b>Median</b>	10.24%			
<b>DCF and CAPM Value Line results</b>		<b>Mean</b>	9.81%		
		<b>Median</b>	9.73%		
		<b>2121</b>	<b>2022</b>	<b>2023</b>	
<b>Recently awarded ROEs</b>	<b>Mean</b>	9.56	9.53	9.60	Exhibit MFG-16
	<b>Median</b>	9.60	9.60	9.55	
	<b>Range</b>	8.80-10.24	9.20-10.20	9.20-10.50	
	<b>Cases</b>	n = 43	n = 33	n = 37	
		<b>Overall</b>			
	<b>Mean</b>	9.56			
	<b>Median</b>	9.60			
	<b>Range</b>	8.80-10.50			
	<b>Cases</b>	n = 113			
<b>Recommended ROE for Summit Utilities Arkansas</b>		9.80%			

**S&P Capital IQ** PRO

S&P Market Intelligence website, downloaded June 23, 2024  
 In thousands of dollars

Company Name	2024Q1	2023Q4	2023Q3	2023Q2	2023Q1	2022Q4	2022Q3	2022Q2
<b>Average Long-Term Debt for each quarter</b>								
Atmos Energy Corporation	7,527,695	7,181,468	6,738,154	6,597,871	6,552,446	6,248,372	5,852,056	5,758,380
Chesapeake Utilities	1,196,312	926,233	656,084	662,861	629,587	593,794	598,210	605,826
NiSource, Inc.	11,402,950	11,046,300	11,007,050	10,633,750	9,910,100	9,538,350	9,520,700	9,350,000
Northwest Natural Holding Company	1,577,194	1,502,325	1,437,288	1,372,711	1,349,012	1,345,304	1,244,916	1,124,093
ONE Gas, Inc.	2,160,532	2,018,651	1,869,407	1,875,893	2,277,358	2,554,098	2,356,459	2,283,743
Southwest Gas Holdings, Inc.	4,694,173	4,987,463	5,260,192	4,931,222	4,546,128	5,190,124	5,227,023	4,574,106
Spire Inc.	3,334,600	3,436,000	3,588,750	3,627,900	3,429,400	3,094,250	3,120,050	3,207,600

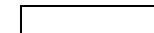
Company Name	2024Q1	2023Q4	2023Q3	2023Q2	2023Q1	2022Q4	2022Q3	2022Q2
<b>Average Short-Term Debt for each quarter</b>								
Atmos Energy Corporation	10,538	150,363	148,378	4,513	1,101,498	2,313,276	2,313,249	2,201,417
Chesapeake Utilities	196,079	170,871	129,552	118,152	172,161	208,764	176,167	162,066
NiSource, Inc.	2,163,500	2,663,700	1,933,000	1,465,600	1,554,300	1,549,750	947,550	585,100
Northwest Natural Holding Company	170,300	253,261	273,495	299,179	332,662	271,693	208,671	279,254
ONE Gas, Inc.	938,255	1,011,145	1,075,757	1,055,689	829,984	623,070	1,281,762	1,897,644
Southwest Gas Holdings, Inc.	694,278	400,810	78,728	283,514	1,061,331	1,017,870	963,254	1,634,546
Spire Inc.	1,298,750	1,311,700	1,041,550	890,900	1,150,600	1,404,400	1,032,800	689,350

**ROE and ROR Analysis NSP Gas  
Capital Structure Analysis  
Proxy Group Ratios**

<b>Company Name</b>	<b>2024Q1</b>	<b>2023Q4</b>	<b>2023Q3</b>	<b>2023Q2</b>	<b>2023Q1</b>	<b>2022Q4</b>	<b>2022Q3</b>	<b>2022Q2</b>
<b>Average Common Equity for each quarter</b>								
Atmos Energy Corporation	11,445,924	11,071,637	10,736,223	10,403,793	10,020,740	9,627,683	9,343,631	9,125,701
Chesapeake Utilities	1,263,504	1,056,391	865,453	861,408	845,695	823,620	815,070	810,607
NiSource, Inc.	7,201,250	6,283,200	6,068,800	6,102,750	5,970,050	5,621,650	5,446,250	5,450,250
Northwest Natural Holding Company	1,313,612	1,251,689	1,229,909	1,244,293	1,211,874	1,148,149	1,129,818	1,063,362
ONE Gas, Inc.	2,797,931	2,706,312	2,650,787	2,653,153	2,617,953	2,515,350	2,449,935	2,451,493
Southwest Gas Holdings, Inc.	3,333,139	3,274,391	3,250,786	3,279,491	3,177,458	3,235,837	3,435,884	3,473,967
Spire Inc.	2,978,550	2,742,050	2,682,900	2,717,500	2,683,300	2,599,300	2,590,200	2,601,550

ROE and ROR Analysis NSP Gas  
 Capital Structure Analysis  
 Proxy Group Ratios

<b>Company Name</b>	<b>Average Total Capital 2022Q2- 2024Q1</b>	<b>Long-Term Debt %</b>	<b>Short-Term Debt %</b>	<b>Common Equity %</b>	
Atmos Energy Corporation	17,809,375	36.82%	5.79%	57.40%	100.00%
Chesapeake Utilities	1,818,057	40.35%	9.17%	50.48%	100.00%
NiSource, Inc.	17,926,988	57.46%	8.97%	33.57%	100.00%
Northwest Natural Holding Company	2,829,257	48.39%	9.23%	42.38%	100.00%
ONE Gas, Inc.	5,869,045	37.05%	18.56%	44.39%	100.00%
Southwest Gas Holdings, Inc.	9,000,714	54.73%	8.52%	36.75%	100.00%
Spire Inc.	7,156,744	46.88%	15.41%	37.72%	100.00%
<b>Proxy Group</b>	<b>Average %</b>	45.95%	10.80%	43.24%	100.00%
<b>Proxy Group w/o ONE Gas and Spire</b>	<b>Average %</b>	47.55%	8.33%	44.11%	100.00%
<b>Capital structure requested by NSP Gas</b>		47.38%	0.12%	52.50%	100.00%
<b>Recommended capital structure for NSP Gas</b>		<b>Long-Term Debt</b> 47.50%	<b>Short-Term Debt</b> 2.50%	<b>Common Equity</b> 50.00%	100.00%



**Average  
2022Q2-  
2024Q1**

---

6,557,055  
733,613  
10,301,150  
1,369,105  
2,174,517  
4,926,304  
3,354,819

**Average  
2022Q2-  
2024Q1**

---

1,030,404  
166,726  
1,607,813  
261,064  
1,089,163  
766,791  
1,102,506

**ROE and ROR Analysis NSP Gas  
Capital Structure Analysis  
Proxy Group Ratios**

**Average  
2022Q2-  
2024Q1**

---

10,221,916  
917,718  
6,018,025  
1,199,088  
2,605,364  
3,307,619  
2,699,419



**ROE and ROR Analysis for NSP Gas  
Comparison Group  
Value Line Natural Gas Utilities  
S&P Capital IQ Pro Database, June 17, 2024**

**Docket No. PU-23-367  
Exhibit MFG-4**

Company	Exchange	U.S.-Based	Merger or Acquisition/Sale	S&P Credit Rating BBB- or better	Paying Dividends	Postive EPS Growth Rates
Adams Resources & Energy	AMS	Yes	No	None	Yes	Yes
Atmos Energy	NYS	Yes	No	A-	Yes	Yes
Chesapeake Utilities*	NYS	Yes	No	2A, 2B	Yes	Yes
New Jersey Resources**	NYS	Yes	No	A1	Yes	Yes
NiSource Inc.	NYS	Yes	No	BBB+	Yes	Yes
Northwest Natural Holding Co.	NYS	Yes	No	A	Yes	Yes
ONE Gas, Inc.	NYS	Yes	No	A-	Yes	Yes
RGC Resources Inc.	NDQ	Yes	No	None	Yes	No
Southwest Gas Holdings***	NYS	Yes	Yes	BBB-	Yes	Yes
Spire Inc.	NYS	Yes	No	BBB+	Yes	Yes
Star Group L.P.	NYS	Yes	No	None	Yes	NA
UGI Corp.	NYS	Yes	No	None	Yes	Yes

NSP Yes No A- Yes

\*-National Association of Insurance Commissioners rating. "2A" is equivalent to a BBB+ rating and "2B" is equivalent to a BBB rating from Standard & Poor's.

\*\*-.The rating for New Jersey Resources is the Moody's rating for New New Jersey Natural Gas (NJNG), a New Jersey Resources (NJR) subsidiary. NJNG issues its own bonds. NJR does not issue bonds. Standard & Poor's (S&P) currently has No Rating for NJNG, but Moody's A1 is equivalent to an S&P rating of A+.

\*\*\*-.Southwest Gas Holdings recently completed its first public offering of common equity shares in the Centuri Group, the infrastructure services company it is spinning off. This step signifies that the transaction is on track and investors can build it into their assessments of Southwest Gas Holdings with confidence. Therefore, Southwest Gas Holdings stock price will not be volatile due to the spin-off allowing it to be considered for the Comparison Group.

**Indicates not passing a screen**



## NEWS DETAILS

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### Centuri Announces Closing of Initial Public Offering

April 22, 2024

PHOENIX--(BUSINESS WIRE)-- Centuri Holdings, Inc. (NYSE: CTRI) ("Centuri"), a leading, pure-play North American utility infrastructure services company, today announced the closing of its initial public offering ("IPO") of 14,260,000 shares of its common stock at a price to the public of \$21.00 per share, including the underwriters' full exercise of their option to purchase 1,860,000 shares to cover over-allotments. Shares of Centuri's common stock began trading on the New York Stock Exchange under the symbol "CTRI" on April 18, 2024.

As previously announced, in addition to the shares of Centuri's common stock sold in the IPO, Icahn Partners LP and Icahn Partners Master Fund LP, investment entities affiliated with Carl C. Icahn, purchased 2,591,929 shares of Centuri's common stock in a concurrent private placement at a price per share equal to the IPO price. The sale of these shares was not registered under the Securities Act of 1933, as amended (the "Securities Act").

UBS Investment Bank, BofA Securities and J.P. Morgan acted as joint lead book-running managers for the IPO. Wells Fargo Securities acted as a book-running manager for the IPO. Baird, KeyBanc Capital Markets and Siebert Williams Shank acted as co-managers for the IPO.

The offering was made only by means of a prospectus. A registration statement on Form S-1 relating to the offering was filed with, and declared effective, by the U.S. Securities and Exchange Commission (the "SEC"). Copies of the prospectus related to the offering may be obtained from the SEC at [www.sec.gov](http://www.sec.gov), and from: UBS Securities LLC, Attn: Prospectus Department, 1285 Avenue of the Americas, New York, NY 10019 or email: [ol-prospectusrequest@ubs.com](mailto:ol-prospectusrequest@ubs.com); BofA Securities, Attention: Prospectus Department, NC1-022-02-25, 201 North Tryon Street, Charlotte, North Carolina 28255-0001 or by email at [dg.prospectus\\_requests@bofa.com](mailto:dg.prospectus_requests@bofa.com); or J.P. Morgan Securities LLC, Attention: Broadridge Financial Solutions, 1155 Long Island Avenue, Edgewood, NY 11717, by telephone at 866-803-9204 or by email at [prospectus-eq\\_fi@jpmorganchase.com](mailto:prospectus-eq_fi@jpmorganchase.com).

This press release does not constitute an offer to sell or the solicitation of an offer to buy these securities, nor shall there be any sale of these securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction. Any offers, solicitations or offers to buy, or any sales of securities will be made in accordance with the registration requirements of the Securities Act of 1933, as amended.

SOUTHWEST GAS NYSE-SWX												RECENT PRICE	P/E RATIO	Trailing: 19.9 Median: 20.0		RELATIVE P/E RATIO	DIV'D YLD	3.3%	VALUE LINE																					
TIMELINESS	Suspended 11/17/23											High: 56.0	64.2	63.7	79.6	86.9	86.0	92.9	81.6	73.5	95.6	68.0	77.2	Target Price	2027	2028	2029													
SAFETY	2 Raised 2/23/24											Low: 42.0	47.2	50.5	53.5	72.3	62.5	73.3	45.7	57.0	59.5	53.8	57.6	Price Range																
TECHNICAL	Suspended 11/17/23											<b>LEGENDS</b> 0.80 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession																												
BETA	.90 (1.00 = Market)											<b>2027-29 PROJECTIONS</b> Price 90 Gain (+20%) 7% Ann'l Total Return -2%											% TOT. RETURN 4/24 THIS STOCK 37.5 VL ARITH. INDEX 11.5 1 yr. 18.3 3 yr. 5.5 5 yr. 56.1																	
18-Month Target Price Range	Low-High Midpoint (% to Mid)											<b>INSTITUTIONAL DECISIONS</b> 202023 3Q2023 4Q2023 to Buy 138 103 130 to Sell 136 140 144 Hld's(000) 65230 64845 66489											Percent shares traded 15 10 5																	
<b>CAPITAL STRUCTURE as of 3/31/24</b> Total Debt \$4748.8 mill. Due in 5 Yrs \$1008 mill. LT Debt \$4649.0 mill. LT Interest \$275 mill. (Total interest coverage: 1.45x) (54% of Cap'l)												2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	© VALUE LINE PUB. LLC		27-29								
<b>Leases, Uncapitalized Annual rentals \$24.9 mill.</b> <b>Pension Assets-12/23 \$1202.0 mill.</b> <b>Pfd Stock None</b> <b>Common Stock 71,669,140 shs. as of 4/26/24</b> <b>MARKET CAP: \$5.4 billion (Mid Cap)</b>												48.53	42.00	40.18	41.07	41.77	42.08	45.61	52.00	51.82	53.00	54.31	56.72	57.68	60.91	73.90	76.22	69.45	71.90	Revenues per sh	73.35									
<b>Business</b> : Southwest Gas Holdings, Inc. is the parent holding company of Southwest Gas. Centuri Group spun-off 4/22/24. Southwest Gas is a regulated gas distributor serving 2.2 million customers in Arizona, Nevada, and California. 2023 margin mix: residential 68%, small commercial, 20%; large commercial and industrial, 8%; transportation, 4%. Total throughput: 2.2 billion therms. Southwest has 2,371 employees; Centuri 12,572. Off. & dir. own .4% of common stock; Carl C. Icahn, 15.4%; BlackRock, 13.0%; The Vanguard Group, 10.1%; (3/24 Proxy). Chairman: Michael J. Melarkey. Pres. & CEO: Karen S. Haller. Inc.: DE. Addr.: 8360 S. Durango Drive, P.O. Box 98510 Las Vegas, Nevada 89193. Telephone: 702-876-7237. Internet: www.swgas.com.												5.76	6.16	6.46	6.81	7.73	8.24	8.47	8.62	9.29	8.83	8.14	9.40	9.87	9.46	3.91	8.29	9.55	10.15	"Cash Flow" per sh	11.00									
<b>Despite missing our earnings targets, Southwest stock is up nearly 25% in price since our last review.</b> The stock jumped significantly after the 2023 year-end earnings call when management provided insight as to the planned spin-off of the Centuri Group. Otherwise the company continued to struggle throughout the year due to higher costs and customer pushback on energy bills, though these operating results via comparisons is obscured by the significant charges from recent corporate restructuring.												1.39	1.94	2.27	2.43	2.86	3.11	3.01	2.92	3.18	3.62	3.68	3.94	4.14	3.39	d3.10	2.13	3.30	3.90	Earnings per sh A	4.20									
<b>Despite the ongoing devistiture, some catalysts should provide a near-term lift.</b> Though Southwest is still offloading shares of the newly issued CTRI stock, operating margins reached a record in the first-quarter under the new corporate structure. Strong customer growth trends and regulatory approvals suggest a bright outlook compared with recent profit performances. Management expects a 20% to 25% increase in the authorized rate base by 2026, providing ample potential to our earnings targets late decade.												.90	.95	1.00	1.06	1.18	1.32	1.46	1.62	1.80	1.98	2.08	2.18	2.28	2.38	2.48	2.48	2.48	2.48	Div'ds Decl'd per sh B=1	2.60									
<b>The company successfully completed its initial public offering of the Centuri Group.</b> The move, championed by activist investor Carl Icahn, aims to restore Southwest as a pure-play regulated natural gas utility. Centuri Group, the infrastructure services company, is now listed under the ticker CTRI. The stock debuted at \$21 per share, a roughly \$1.8 billion valuation, but quickly rose to around \$25 each, where it has traded since. The company reported a \$186 million loss on \$2.9 billion in revenue in fiscal 2023. Southwest plans to use proceeds to reduce debt and improve cash flows.												6.79	4.81	4.73	8.29	8.57	7.86	8.53	10.30	11.15	12.97	14.44	17.06	14.43	11.84	12.80	12.19	12.50	12.50	Cap'l Spending per sh	14.50									
<b>Sustainable profit growth may prove difficult in the long run.</b> The company has been facing substantial backlash from customers for sharp increases in energy costs. While this in large part reflects commodity markets conditions, many customers are highly vocal about the company's perceived grifting which could lead to increased regulatory pressure down the line.												23.49	24.44	25.62	26.66	28.35	30.47	31.95	33.61	35.03	37.74	42.47	45.56	46.77	48.89	47.95	47.72	53.95	54.35	Book Value per sh	57.35									
<b>The stock has risen on recent developments and currently trades well within our three- to five-year target price range.</b> The timeliness rank remains suspended pending business realignment.												44.19	45.09	45.56	45.96	46.15	46.36	46.52	47.38	47.48	48.09	53.03	55.01	57.19	60.42	67.12	71.56	72.00	73.00	Common Shs Outst'g C	75.00									
<b>Retained to Com Eq</b> 3.0% <b>All Div's to Net Prof</b> 62%												20.3	12.2	14.0	15.7	15.0	15.8	17.9	19.4	21.6	22.2	20.6	21.3	16.8	19.9	--	29.1	29.1	29.1	Avg Ann'l P/E Ratio	18.0									
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												1.22	.81	.89	.98	.95	.89	.94	.98	1.13	1.12	1.11	1.13	.86	1.08	--	1.68	1.68	1.68	Relative P/E Ratio	.90									
<b>Business</b> : Southwest Gas Holdings, Inc. is the parent holding company of Southwest Gas. Centuri Group spun-off 4/22/24. Southwest Gas is a regulated gas distributor serving 2.2 million customers in Arizona, Nevada, and California. 2023 margin mix: residential 68%, small commercial, 20%; large commercial and industrial, 8%; transportation, 4%. Total throughput: 2.2 billion therms. Southwest has 2,371 employees; Centuri 12,572. Off. & dir. own .4% of common stock; Carl C. Icahn, 15.4%; BlackRock, 13.0%; The Vanguard Group, 10.1%; (3/24 Proxy). Chairman: Michael J. Melarkey. Pres. & CEO: Karen S. Haller. Inc.: DE. Addr.: 8360 S. Durango Drive, P.O. Box 98510 Las Vegas, Nevada 89193. Telephone: 702-876-7237. Internet: www.swgas.com.												3.2%	4.0%	3.2%	2.8%	2.8%	2.7%	2.7%	2.9%	2.6%	2.5%	2.7%	2.6%	3.3%	3.5%	3.2%	4.0%	4.0%	4.0%	Avg Ann'l Div'd Yield	3.4%									
<b>Retained to Com Eq</b> 3.0% <b>All Div's to Net Prof</b> 62%												2121.7	2463.6	2460.5	2548.8	2880.0	3119.9	3298.9	3680.5	4960.0	5454.0	5000	5250	5000	5250	5000	5250	5000	5250	Revenues (\$mill)	5500									
<b>Net Profit (\$mill)</b> 315 <b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												141.1	138.3	152.0	173.8	182.3	213.9	232.3	200.8	d203.3	150.9	240	285	240	285	240	285	240	285	Net Profit (\$mill)	315									
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												35.7%	36.4%	33.9%	32.8%	25.3%	20.5%	21.6%	16.1%	NMF	21.2%	21.0%	21.0%	NMF	2.8%	4.8%	5.4%	5.4%	5.4%	Income Tax Rate	21.0%									
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												52.4%	49.3%	48.2%	49.8%	48.3%	47.9%	50.5%	58.2%	57.8%	57.4%	58.0%	58.0%	57.8%	57.4%	58.0%	58.0%	58.0%	58.0%	Long-Term Debt Ratio	57.0%									
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												47.6%	50.7%	51.8%	50.2%	51.7%	52.1%	49.5%	41.8%	42.2%	42.6%	42.0%	42.0%	42.2%	42.6%	42.0%	42.0%	42.0%	42.0%	Capital Equity Ratio	43.0%									
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												3123.9	3143.5	3213.5	3613.3	4359.3	4806.4	5407.2	7069.5	7621.4	8024.5	9250	9450	7621.4	8024.5	9250	9450	9250	9450	Total Capital (\$mill)	10000									
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												3658.4	3891.1	4132.0	4523.7	5093.2	5685.2	6176.1	7594.0	7024.5	7518.2	7550	7750	7024.5	7518.2	7550	7750	7550	7750	Net Plant (\$mill)	8000									
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												5.7%	5.5%	5.8%	5.8%	5.2%	5.4%	5.3%	3.5%	NMF	1.9%	2.5%	3.0%	NMF	4.4%	6.0%	6.0%	6.0%	6.0%	Return on Total Cap'l	3.0%									
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												9.5%	8.7%	9.1%	9.6%	8.1%	8.5%	8.7%	6.8%	NMF	4.4%	6.0%	7.0%	NMF	4.4%	6.0%	7.0%	7.0%	7.0%	Return on Shr. Equity	7.5%									
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												9.5%	8.7%	9.1%	9.6%	8.1%	8.5%	8.7%	6.8%	NMF	4.4%	6.0%	7.0%	NMF	4.4%	6.0%	7.0%	7.0%	7.0%	Return on Com Equity	7.5%									
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												5.0%	4.0%	4.1%	4.5%	3.6%	3.9%	4.0%	2.1%	NMF	1.5%	2.5%	3.0%	NMF	1.5%	2.5%	3.0%	3.0%	3.0%	Retained to Com Eq	3.0%									
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												47%	54%	55%	53%	55%	54%	54%	69%	NMF	116%	75%	65%	NMF	116%	75%	65%	65%	65%	All Div's to Net Prof	62%									
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												<b>ANNUAL RATES</b> Past 10 Yrs. Past 5 Yrs. Est'd '21-'23 to '27-'29 Revenues 3.5% 3.0% 6.0% "Cash Flow" 4.0% 1.5% 8.5% Earnings 5.5% 4.5% 10.0% Dividends 8.5% 7.0% 5.5% Book Value 6.5% 7.0% 7.5%											<b>QUARTERLY REVENUES (\$ mill.)</b> Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2021 885.9 821.4 888.7 1084.5 3680.5 2022 1267.4 1146.1 1125.6 1420.9 4960.0 2023 1603.3 1293.6 1169.5 1387.6 5454.0 2024 1581.0 1000 1220 1199 5000 2025 1225 1275 1350 1400 5250						<b>EARNINGS PER SHARE A D</b> Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2021 2.03 .43 d.19 1.15 3.39 2022 1.58 d.10 d.18 d.4.18 d3.10 2023 .67 .40 .04 1.02 2.13 2024 1.22 .55 .20 1.33 3.30 2025 1.75 .65 .15 1.35 3.90						<b>QUARTERLY DIVIDENDS PAID B=1</b> Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2020 .545 .570 .570 .570 2.26 2021 .570 .595 .595 .595 2.36 2022 .595 .62 .62 .62 2.46 2023 .62 .62 .62 .62 2.48 2024 .62					
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												<b>COMPANY'S FINANCIAL STRENGTH</b> Stock's Price Stability 80 Price Growth Persistence 35 Earnings Predictability 10																												
<b>Income Tax Rate</b> 21.0% <b>Net Profit Margin</b> 5.7% <b>Long-Term Debt Ratio</b> 57.0% <b>Capital Equity Ratio</b> 43.0% <b>Total Capital (\$mill)</b> 10000 <b>Net Plant (\$mill)</b> 8000 <b>Return on Total Cap'l</b> 3.0% <b>Return on Shr. Equity</b> 7.5% <b>Return on Com Equity</b> 7.5%												<b>TO SUBSCRIBE CALL 1-800-VALUELINE</b>																												

(A) Diluted earnings. Excl. nonrec. gains (losses): '22, 10c. Next egs. report due early August. (B) Dividends historically paid early March, June, September, and December.

Div'd reinvestment and stock purchase plan avail. (C) In millions. (D) Totals may not sum due to rounding.

Company's Financial Strength A  
 Stock's Price Stability 80  
 Price Growth Persistence 35  
 Earnings Predictability 10

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# S&P Global Ratings

## (/en\_US/web/guest/home) General Criteria: Understanding S&P Global Ratings' Rating Definitions

03-Jun-2009 14:39 EDT

[View Analyst Contact Information](#)

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[Appendix IV](#)

[Appendix V](#)

[Revisions And Updates](#)

[Related Criteria And Research](#)

**(Editor's Note:** We're republishing this article following our periodic review completed on Feb. 23, 2018. See the "Revisions And Updates" section for details.)

## Executive Summary

S&P Global Ratings' credit ratings are designed primarily to provide relative rankings among issuers and obligations of overall creditworthiness; the ratings are not measures of absolute default probability. Creditworthiness encompasses likelihood of default, and also includes (i) payment priority, (ii) recovery, and (iii) credit stability.

In addition, our rating symbols are intended to connote the same general level of creditworthiness for issuers and bonds in different sectors and at different times. In order to promote the comparability of ratings across sectors, geographies, and over time, we are introducing stress scenarios associated with each rating category. These stress scenarios will be an important tool for calibrating our criteria to help maintain comparability. The scenarios will not become part of the rating definitions. Nor will they be the sole or primary drivers of our criteria.

S&P Global Ratings is committed to taking action to help restore confidence in ratings. As one example, over the past year, we have launched a number of initiatives designed to foster greater transparency in our analytics and processes. These initiatives have included publishing "what-if" scenario analyses discussing factors that could cause ratings to change, more

explicit discussions of the assumptions we used in forming our opinions, and changes we have made to our rating criteria for several asset classes resulting from macroeconomic developments and ongoing performance data.

By providing more information and data about ratings, we can help market participants better understand how we develop our ratings and -- whether they agree or disagree with our assessment -- act accordingly.

This article is designed to help market participants better understand what our credit ratings mean. Although the official definitions appear outwardly to be very simple, they embody multiple factors that compose the overall assessment of creditworthiness.

S&P Global Ratings has striven to maintain comparability of ratings across sectors. This has been done by relating all ratings to common default behavior and measurement and by common approaches to risk analysis. In the spirit of promoting greater transparency, S&P Global Ratings is now articulating a set of economic stress scenarios enumerated in Appendix IV, which we intend to use as benchmarks for enhancing the consistency and comparability of ratings across sectors and over time. Each scenario describes particular conditions of economic stress, which we associate with a particular rating level, as described in the appendix. Credits rated in each category are intended to be able to withstand particular conditions of economic stress without defaulting (though they might be downgraded significantly as economic stresses increase).

This publication intends to promote greater understanding of ratings and help investors attribute clearer meanings to different rating categories.

## Key Attributes Of S&P Global Ratings' Credit Ratings

### Rank ordering of creditworthiness

Our credit ratings express forward-looking opinions about the creditworthiness of issuers and obligations (see Appendix I for a description of "issuer" and "issue" ratings). More specifically, our credit ratings express a relative ranking of creditworthiness. Issuers and obligations with higher ratings are judged by us to be more creditworthy than issuers and obligations with lower credit ratings. (See Appendix III for a relevant excerpt from the rating definitions.)

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

The term creditworthiness refers to the question of whether a bond or other financial instrument will be paid according to its contractual terms. At first blush, the idea of creditworthiness seems entirely straightforward. However, delving beneath the outward simplicity reveals the true multi-dimensional nature.

### Primary factor -- likelihood of default

In our view, likelihood of default is the centerpiece of creditworthiness. That means likelihood of default--encompassing both capacity and willingness to pay--is the single most important factor in our assessment of the creditworthiness of an issuer or an obligation. Therefore, consistent with our goal of achieving a rank ordering of creditworthiness, higher ratings on issuers and obligations reflect our expectation that the rated issuer or obligation should default less frequently than issuers and obligations with lower ratings, all other things being equal.

Although we emphasize the rank ordering of default likelihood, we do not view the rating categories solely in relative terms. We associate each successively higher rating category with the ability to withstand successively more stressful economic environments, which we view as less likely to occur. We associate issuers and obligations rated in the highest categories with the ability to withstand extreme or severe stress in absolute terms without defaulting. Conversely, we associate issuers and obligations rated in lower categories with vulnerability to mild or modest stress. (See Appendix IV for stress scenarios by rating level that we intend to use in promoting ratings comparability. Appendix V contains a listing of historical examples of stress conditions, including the magnitude of stress that we associate with each.)

Looking to absolute stress levels is part of how we try to achieve comparability of ratings across different types of securities, different times, different currencies, and different regions. That is, we strive to make our rating symbols correspond to the same approximate level of creditworthiness wherever they appear. Thus, when we use a given rating

Credit Rating Providers - Generic Rating Symbol Mapping (*)											
(Pursuant to the guidance in this Manual, particularly, Part One, "The Use of Credit Ratings of NRSROs in NAIC Processes," "Filing Exemptions," "Policies Applicable to Specific Asset Classes," and Part Three, "Procedure Applicable to Filing Exempt (FE) Securities and Private Letter (PL) Rating Securities")											
NAIC Designation	NAIC Designation Modifier	NAIC Designation Category	Moody's Investor's Service	Standard and Poor's	Fitch Ratings	Dominion Bond Rating Service	A.M. Best Company	Morningstar Credit Ratings, LLC	Kroll Bond Rating Agency	Egan Jones Rating Company	HR Ratings de Mexico, S.A. de C.V.
1	A	1.A	Aaa	AAA	AAApre, AAA	AAA, Pfd-1 (high)	aaa	AAA	AAA	AAA	HR AAA (G)
1	B	1.B	Aa1	AA+	AA+	AA (high), Pfd-1	aa+	AA+	AA+	AA+	HR AA+ (G)
1	C	1.C	Aa2	AA	AA	AA, Pfd-1 (low)	aa	AA	AA	AA	HR AA (G)
1	D	1.D	Aa3	AA-	AA-	AA (low), Pfd-1	aa-	AA-	AA-	AA-	HR AA- (G)
1	E	1.E	A1	A+	A+	A (high)	a+	A+	A+	A+	HR A+ (G)
1	F	1.F	A2	A	A	A	a	A	A	A	HR A (G)
1	G	1.G	A3	A-	A-	A (low)	a-	A-	A-	A-	HR A- (G)
2	A	2.A	Baa1	BBB+	BBB+	BBB (high), Pfd-2 (high)	bbb+	BBB+	BBB+	BBB+	HR BBB+ (G)
2	B	2.B	Baa2	BBB	BBB	BBB, Pfd-2	bbb	BBB	BBB	BBB	HR BBB (G)
2	C	2.C	Baa3	BBB-	BBB-	BBB (low), Pfd-2 (low)	bbb-	BBB-	BBB-	BBB-	HR BBB- (G)
3	A	3.A	Ba1	BB+	BB+	BB (high), Pfd-3 (high)	bb+	BB+	BB+	BB+	HR BB+ (G)
3	B	3.B	Ba2	BB	BB	BB, Pfd-3	bb	BB	BB	BB	HR BB (G)
3	C	3.C	Ba3	BB-	BB-	BB (low), Pfd-3 (low)	bb-	BB-	BB-	BB-	HR BB- (G)
4	A	4.A	B1	B+	B+	B (high), Pfd-4 (high)	b+	B+	B+	B+	HR B+ (G)
4	B	4.B	B2	B	B	B, Pfd-4	b	B	B	B	HR B (G)
4	C	4.C	B3	B-	B-	B (low), Pfd-4 (low)	b-	B-	B-	B-	HR B- (G)
5	A	5.A	Caa1	CCC+	CCC+	CCC (high), Pfd-5 (high)	ccc+	CCC+	CCC+	CCC+	HR C+ (G)
5	B	5.B	Caa2	CCC	CCC	CCC, Pfd-5	ccc	CCC	CCC	CCC	HR C (G)
5	C	5.C	Caa3	CCC-	CCC-	CCC (low), Pfd-5 (low)	ccc-	CCC-	CCC-	CCC-	HR C- (G)
6	6	6	Ca	CC	CC	CC (high)	cc	CC	CC	CC	HR D (G)
6	6	6	C	C	C	CC	c	C	C	C	
6	6	6	D	D	DDD	CC (low)	d	D	D	D	
6	6	6	DD	DD	DD	C (high)					
6	6	6	D	D	D	C					
6	6	6				C (low)					
6	6	6				D					



New Jersey Natural Gas Company | Credit Ratings

(MI KEY: 4061755; SPCIQ KEY: 4233224)

Agency All

# NR

**S&P Global Ratings**

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Issuer Credit Rating (Foreign Currency LT)  
5/27/2019

Not Rated | CreditWatch/Outlook: NR  
5/27/2019

# A1

**Moody's**

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Long Term Rating (Senior Secured Domestic)  
3/18/2020

**Current Ratings**

**S&P GLOBAL RATINGS (S&P Entity Name:New Jersey Natural Gas Co.)**

RATING TYPE	RATING	RATING DATE	LAST REVIEW DATE	PREVIOUS RATING	ACTION	CREDITWATCH/ OUTLOOK	CREDITWATCH/ OUTLOOK DATE
<b>Issuer Credit Rating</b>							
Foreign Currency LT	NR	5/27/2019	5/27/2019	BBB+	Not Rated   CreditWatch/Outlook	NR	5/27/2019
Local Currency LT	NR	5/27/2019	5/27/2019	BBB+	Not Rated   CreditWatch/Outlook	NR	5/27/2019
Foreign Currency ST	NR	5/27/2019	5/27/2019	A-2	Not Rated		
Local Currency ST	NR	5/27/2019	5/27/2019	A-2	Not Rated		

**MOODY'S**

RATING TYPE	RATING	DATE	ACTION	OUTLOOK
<b>Ratings Summary</b>				
Long Term Rating (Senior Secured Domestic)	A1	3/18/2020	Downgrade	
Short Term Rating (Commercial Paper Domestic)	P-2	3/18/2020	Downgrade	
Outlook		3/18/2020		Stable

**Ratings Detail**

**ROE and ROR Analysis for NSP Gas  
Comparison Group  
Natural Gas Distribution Company 10Ks  
Operating Income unless noted otherwise**

**Docket No. PU-23-367  
Exhibit MFG-9**

Name	Operating Income for Natural Gas Utilities (In thousands of dollars)						Regulated Natural Gas as % of Company					10K Sources
	Regulated Natural Gas Unit			Company			2023*	2022	2021	3-Year Average		
	2023*	2022	2021	2023*	2022	2021						
Atmos Energy Corp.--Distribution Regulated	692,626	604,545	618,514	1,067,147	920,982	904,998	64.9%	65.6%	68.3%	66.3%	Pages 4, 26, 38	
Chesapeake Utilities**	126,199	115,317	106,174	150,803	142,933	131,112	83.7%	80.7%	81.0%	81.8%	Page 34	
Chesapeake Utilities--Net Income Electric**	3,727			87,212	89,796	83,466	4.3%				Pages 4, 57	
Chesapeake Utilities--Operating Income Adjusted**	119,754	109,209	100,571	150,803	142,933	131,112	79.4%	76.4%	76.7%	77.5%		
New Jersey Resources Corporation	207,528	218,873	148,993	407,000	406,475	288,350	51.0%	53.8%	51.7%	52.2%	Pages 43, 69	
NiSource	901,900	915,800	617,500	1,295,500	1,265,800	1,006,900	69.6%	72.3%	61.3%	67.8%	Pages 38, 40	
Northwest Natural Gas Company	170,591	152,839	147,902	184,941	167,477	163,117	92.2%	91.3%	90.7%	91.4%	Pages 9, 79, 100	
ONE Gas, Inc.	377,590	349,957	310,258	377,590	349,957	310,258	100.0%	100.0%	100.0%	100.0%	Pages 7, 42	
Southwest Gas Holdings, Inc.***	358,294	307,685	318,492	418,330	-24,398	369,547	85.6%	-1261.1%	86.2%	85.9%		
Southwest Gas Holdings, Inc.***	187,135	154,380	187,135	431,027	-230,290	200,779	43.4%	-67.0%	93.2%	68.3%	Pages 4, 52, 57, 97, 98	
Spire Inc.	350,800	339,900	374,000	418,600	408,200	450,200	83.8%	83.3%	83.1%	83.5%	Pages 4, 31	

\* - Atmos Energy, New Jersey Resources, and Spire, Inc. have fiscal years running from October 1 to September 30. The data for these companies is taken from their 10Ks from fiscal years ending in 2020, 2021, 2022. The remaining four companies have fiscal years running from January 1 to December 31. Data from these companies is also taken from their 10Ks for fiscal years ending in 2020, 2021, 2022.

\*\* - Operating income. Chesapeake includes electricity distribution operating income.

\*\* - Net income. Chesapeake electric as a percentage of company total.

\*\* - Operating income adjusted. Electric distribution is 4.3 percent of Chesapeake net income. That percentage of company operating income is subtracted from regulated operating income for 2021-2023.

\*\*\* - Operating income. Southwest Gas Holdings, Inc. average is for 2021, 2023. Sale of pipeline in 2022 affected earnings negatively.

\*\*\* - Net income. Southwest Gas Holdings, Inc. average is for 2021, 2023. Sale of pipeline in 2022 affected earnings negatively.

**ROE and ROR Analysis for NSP Gas  
Comparison Group  
From Operating Income Analysis in Exhibit MFG-9**

**Docket No. PU-23-367  
Exhibit MFG-10**

**≥ 65 percent of operating  
income from regulated gas  
distribution operations  
(Companies' 2023 10Ks)**

<b>Company</b>	<b>Ticker</b>	
Atmos Energy Corporation	ATO	Yes
Chesapeake Utilities Corporation	CPK	Yes
New Jersey Resources	NJR	No
NiSource	NI	Yes
Northwest Natural Holding Company	NWN	Yes
ONE Gas, Inc.	OGS	Yes
Southwest Gas Holdings, Inc.	SWX	Yes
Spire Inc.	SR	Yes

**Indicates not passing a screen**

**ROE and ROR Analysis for NSP Gas  
Comparison Group**

**Docket No. PU-23-367  
Exhibit MFG-11**

<b>Company</b>	<b>Ticker</b>
Atmos Energy Corporation	ATO
Chesapeake Utilities	CPK
NiSource	NI
Northwest Natural Holding Company	NWN
ONE Gas, Inc.	OGS
Southwest Gas Holdings	SWX
Spire, Inc.	SR

ROE and ROR Analysis for NSP Gas  
 Comparison Group  
 Common Equity Share Prices  
 Yahoo! Finance May 6, 2024-May 31, 2024

**Atmos Energy (ATO)**

Date	Close
5/6/24	\$ 119.45
5/7/24	\$ 120.34
5/8/24	\$ 120.59
5/9/24	\$ 119.69
5/10/24	\$ 117.18
5/13/24	\$ 116.33
5/14/24	\$ 117.25
5/15/24	\$ 117.81
5/16/24	\$ 118.56
5/17/24	\$ 118.64
5/20/24	\$ 118.28
5/21/24	\$ 118.50
5/22/24	\$ 117.19
5/23/24	\$ 113.99
5/24/24	\$ 112.61
5/28/24	\$ 112.04
5/29/24	\$ 111.34
5/30/24	\$ 112.59
5/31/24	\$ 115.92

Mean \$ 116.75

**Chesapeake Utilities (CPK)**

Date	Close
5/6/24	\$ 109.59
5/7/24	\$ 110.87
5/8/24	\$ 110.53
5/9/24	\$ 111.40
5/10/24	\$ 111.76
5/13/24	\$ 110.37
5/14/24	\$ 110.75
5/15/24	\$ 112.78
5/16/24	\$ 113.95
5/17/24	\$ 113.42
5/20/24	\$ 112.40
5/21/24	\$ 112.26
5/22/24	\$ 110.16
5/23/24	\$ 107.72
5/24/24	\$ 108.36
5/28/24	\$ 108.16
5/29/24	\$ 106.87
5/30/24	\$ 108.51
5/31/24	\$ 112.01

Mean \$ 110.62

**NiSource (NI)**

Date	Close
5/6/24	\$ 28.76
5/7/24	\$ 29.05
5/8/24	\$ 28.72
5/9/24	\$ 28.90
5/10/24	\$ 28.68
5/13/24	\$ 28.80
5/14/24	\$ 28.87
5/15/24	\$ 29.13
5/16/24	\$ 29.15
5/17/24	\$ 29.23
5/20/24	\$ 29.12
5/21/24	\$ 29.21
5/22/24	\$ 28.87
5/23/24	\$ 28.08
5/24/24	\$ 28.04
5/28/24	\$ 27.90
5/29/24	\$ 27.77
5/30/24	\$ 27.98
5/31/24	\$ 29.06

Mean \$ 28.70

ROE and ROR Analysis for NSP Gas  
Comparison Group  
Common Equity Share Prices  
Yahoo! Finance May 6, 2024-May 31, 2024

Northwest Natural Gas (NWN)

ONE Gas, Inc. (OGS)

Southwest Gas Holdings (SWX)

Spire Inc. (SR)

Northwest Natural Gas (NWN)		ONE Gas, Inc. (OGS)		Southwest Gas Holdings (SWX)		Spire Inc. (SR)	
Date	Close	Date	Close	Date	Close	Date	Close
5/6/24	\$ 37.86	5/6/24	\$ 65.09	5/6/24	\$ 75.76	5/6/24	\$ 61.17
5/7/24	\$ 38.37	5/7/24	\$ 64.83	5/7/24	\$ 76.29	5/7/24	\$ 61.81
5/8/24	\$ 38.47	5/8/24	\$ 64.09	5/8/24	\$ 75.79	5/8/24	\$ 61.58
5/9/24	\$ 38.36	5/9/24	\$ 64.29	5/9/24	\$ 76.96	5/9/24	\$ 61.67
5/10/24	\$ 38.64	5/10/24	\$ 64.15	5/10/24	\$ 76.38	5/10/24	\$ 61.88
5/13/24	\$ 38.48	5/13/24	\$ 63.81	5/13/24	\$ 75.84	5/13/24	\$ 62.20
5/14/24	\$ 37.99	5/14/24	\$ 63.95	5/14/24	\$ 74.21	5/14/24	\$ 61.85
5/15/24	\$ 38.15	5/15/24	\$ 64.16	5/15/24	\$ 76.11	5/15/24	\$ 62.01
5/16/24	\$ 38.49	5/16/24	\$ 64.87	5/16/24	\$ 77.37	5/16/24	\$ 62.31
5/17/24	\$ 38.54	5/17/24	\$ 63.72	5/17/24	\$ 77.68	5/17/24	\$ 62.59
5/20/24	\$ 38.71	5/20/24	\$ 63.90	5/20/24	\$ 77.77	5/20/24	\$ 62.91
5/21/24	\$ 38.75	5/21/24	\$ 64.11	5/21/24	\$ 78.35	5/21/24	\$ 63.24
5/22/24	\$ 37.98	5/22/24	\$ 62.73	5/22/24	\$ 77.50	5/22/24	\$ 62.01
5/23/24	\$ 36.73	5/23/24	\$ 60.37	5/23/24	\$ 76.44	5/23/24	\$ 60.26
5/24/24	\$ 36.23	5/24/24	\$ 60.12	5/24/24	\$ 76.19	5/24/24	\$ 59.68
5/28/24	\$ 35.67	5/28/24	\$ 59.09	5/28/24	\$ 76.00	5/28/24	\$ 59.33
5/29/24	\$ 35.38	5/29/24	\$ 58.54	5/29/24	\$ 73.87	5/29/24	\$ 59.10
5/30/24	\$ 36.93	5/30/24	\$ 59.35	5/30/24	\$ 75.19	5/30/24	\$ 59.96
5/31/24	\$ 37.42	5/31/24	\$ 61.63	5/31/24	\$ 77.59	5/31/24	\$ 61.29
Mean	\$ 37.74	Mean	\$ 62.78	Mean	\$ 76.38	Mean	\$ 61.41

**ROE and ROR Analysis for NSP Gas  
Comparison Group  
Dividends**

**Docket No. PU-23-367  
Exhibit MFG-13**

<b>Name</b>	<b>Value Line</b>	<b>Zacks</b>	<b>Highest</b>
Atmos Energy Corporation	\$ 3.22	\$ 3.22	\$ 3.22
Chesapeake Utilities	\$ 2.56	\$ 2.56	\$ 2.56
NiSource	\$ 1.06	\$ 1.06	\$ 1.06
Northwest Natural Holding Company	\$ 1.95	\$ 1.95	\$ 1.95
ONE Gas, Inc.	\$ 2.64	\$ 2.64	\$ 2.64
Southwest Gas Holdings	\$ 2.48	\$ 2.48	\$ 2.48
Spire, Inc.	\$ 3.02	\$ 3.02	\$ 3.02

Value Line Gas dividends taken from May 24, 2024 Reports

Zacks Gas dividends taken from website on June 20, 2024

ROE and ROR Analysis for NSP Gas  
Comparison Group

Docket No. PU-23-367

Exhibit MFG-14

Schedule 1

Discounted Cash Flow Model Analysis

Common Equity Share Prices--May 6, 2024-May 31, 2024

Zacks, Yahoo! Finance, and Value Line Dividend Growth-Rate Estimates--May-June 2024

	A	B	C	D	E	F
<b>Company Name</b>	<b>Zacks EPS Growth Rate (%)</b>	<b>Yahoo! Finance EPS Growth Rates (%)</b>	<b>Value Line EPS Growth Rates (%)</b>	<b>Zacks-Yahoo! Finance-Value Line Mean Growth Rate (%)</b>	<b>Average of Closing Prices</b>	<b>Annualized Dividend</b>
Atmos Energy Corporation	7.00%	7.40%	7.00%	7.13%	\$ 116.75	\$ 3.22
Chesapeake Utilities	NA	7.60%	6.50%	7.05%	\$ 110.62	\$ 2.56
NiSource	7.00%	6.00%	9.50%	7.50%	\$ 28.70	\$ 1.06
Northwest Natural Holding Company	NA	2.80%	6.50%	4.65%	\$ 37.74	\$ 1.95
ONE Gas, Inc.	5.00%	5.00%	3.50%	4.50%	\$ 62.78	\$ 2.64
Southwest Gas Holdings	6.00%	4.00%	10.00%	6.67%	\$ 76.38	\$ 2.48
Spire, Inc.	5.00%	6.36%	4.50%	5.29%	\$ 61.41	\$ 3.02

**Mean** 6.00% 5.59% 6.79% 6.11%

	G	H	I	J	K
<b>Company Name</b>	<b>Dividend Yield (Rate/Price)</b>	<b>Expected Dividend Yield</b>	<b>Required Rate of Return on Equity</b>	<b>Exceeds 7.15% Mean of Value Line and Kroll Low-End Tests</b>	<b>Dividend Yield Adjusted for Flotation Percentage of 0.927</b>
Atmos Energy Corporation	2.76%	2.95%	10.09%	Yes	2.98%
Chesapeake Utilities	2.31%	2.48%	9.53%	Yes	2.50%
NiSource	3.69%	3.97%	11.47%	Yes	4.01%
Northwest Natural Holding Company	5.17%	5.41%	10.06%	Yes	5.46%
ONE Gas, Inc.	4.21%	4.39%	8.89%	Yes	4.44%
Southwest Gas Holdings	3.25%	3.46%	10.13%	Yes	3.50%
Spire, Inc.	4.92%	5.18%	10.46%	Yes	5.23%

**Mean** 3.76% 3.978% 10.09% 10.09% **Flotation Adjustment** 4.016%

**Median** (K - H) means 0.037%

A: Zacks website, June 20, 2024

B: Yahoo! Finance website: June 20, 2024

C: Value Line Investment Survey reports: May 24, 2024

E: Yahoo! Finance website: May 6-May 31, 2024. See Exhibit MFG-12.

F: Higher of Value Line Investment report, May 24, 2024; or Zacks website, June 20, 2024. See Exhibit MFG-13.

K: See Exhibit MFG-15, Schedule 8.

D:  $(A + B + C)/3$

G: F/E

H:  $G*(1+D)$

I:  $H/(1 - 0.02)$

J: D + H

Table VI.G6.—Selected Economic Variables, Calendar Years 2022-2095  
 [GDP and taxable payroll in billions]

Calendar year	Adjusted CPI <sup>a</sup>	Average wage index	Taxable payroll <sup>b</sup>	Gross domestic product	Compound new-issue interest factor <sup>c</sup>	Compound effective trust-fund interest factor <sup>d</sup>
Intermediate:						
2022	96.15	\$63,467.98	\$9,069	\$25,422	0.9711	0.9884
2023	100.00	66,147.17	9,552	26,592	1.0000	1.0117
2024	102.53	68,627.58	9,986	27,655	1.0357	1.0356
2025	104.99	71,411.99	10,465	28,902	1.0727	1.0602
2026	107.51	74,348.48	10,944	30,177	1.1112	1.0862
2027	110.09	77,393.67	11,443	31,478	1.1530	1.1140
2028	112.73	80,510.73	11,934	32,778	1.1985	1.1442
2029	115.44	83,757.03	12,438	34,125	1.2492	1.1768
2030	118.21	87,106.49	12,954	35,521	1.3051	1.2123
2031	121.04	90,574.48	13,492	36,976	1.3656	1.2512
2032	123.95	93,995.33	14,023	38,487	1.4295	1.2946
2035	133.09	104,726.27	15,730	43,392	1.6429	1.4693
2040	149.85	125,312.66	18,992	52,850	2.0725	1.8502
2045	168.71	149,423.47	22,925	64,333	2.6144	2.3337
2050	189.95	177,750.26	27,736	78,438	3.2980	2.9438
2055	213.87	211,432.09	33,623	95,785	4.1603	3.7136
2060	240.79	251,610.19	40,795	116,988	5.2481	4.6846
2065	271.11	299,758.28	49,472	142,731	6.6204	5.9095
2070	305.24	357,187.25	59,924	173,850	8.3514	7.4546
2075	343.67	425,523.96	72,602	211,710	10.5351	9.4038
2080	386.94	506,962.67	88,194	258,358	13.2897	11.8627
2085	435.65	603,863.51	107,502	316,227	16.7646	14.9644
2090	490.50	719,124.11	131,330	387,813	21.1481	18.8772
2095	552.26	856,091.73	160,374	475,384	26.6778	23.8131
2100	621.79	1,019,162.94	195,457	581,611	33.6533	30.0396
			<b>Growth Rate 2029-2050*</b>	4.04%		

Source: Social Security 2023 Trustees' Report

\* = (2050/2030)^(1/20) - 1

ROE and ROR Analysis for NSP Gas  
 U.S Energy Information Administration Long-Term Growth Rate

Docket No. PU-23-367  
 Exhibit MFG-14  
 Schedule 3

Source: U.S. Energy Information Administration, Annual Energy Outlook 2023

Table 20. Macroeconomic Indicators

(Billions 2012 chain-weighted dollars unless otherwise noted)

	2024	2025	2026	2027	2028	2029	2030				
<b>Real Gross Domestic Product</b>											
Reference case	20,095	20,409	20,841	21,273	21,681	22,052	22,392				
<b>Price Indices</b>											
GDP Chain-type Price Index (2012=1.000)											
Reference case	1.35	1.38	1.41	1.44	1.47	1.51	1.54				
	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>	<b>2035</b>	<b>2036</b>	<b>2037</b>	<b>2038</b>	<b>2039</b>	<b>2040</b>	
<b>Real Gross Domestic Product</b>											
Reference case	22,742	23,153	23,604	24,055	24,511	24,996	25,507	26,032	26,566	27,149	
<b>Price Indices</b>											
GDP Chain-type Price Index (2012=1.000)											
Reference case	1.58	1.61	1.65	1.69	1.73	1.77	1.81	1.85	1.89	1.93	
	<b>2041</b>	<b>2042</b>	<b>2043</b>	<b>2044</b>	<b>2045</b>	<b>2046</b>	<b>2047</b>	<b>2048</b>	<b>2049</b>	<b>2050</b>	<b>Growth Rate</b>
<b>Real Gross Domestic Product</b>											<b>2030-2050</b>
Reference case	27,734	28,324	28,927	29,527	30,130	30,748	31,389	32,040	32,699	33,405	2.02%
<b>Price Indices</b>											
GDP Chain-type Price Index (2012=1.000)											
Reference case	1.97	2.02	2.07	2.11	2.16	2.21	2.27	2.32	2.38	2.43	2.31%
	<b>Total 2030-2050 Growth Rate</b>										4.33%

Chapter 9: Discounted Cash Flow Application

growth than to insert a constant growth rate into the plain vanilla DCF equation. The practical challenge is to establish a reasonable growth path for future dividends. As previously discussed, an excellent starting point is security analysts' earnings growth forecasts (available from IBES, Zacks, Reuters, First Call) as a proxy for dividend forecasts. These forecasts are typically for the next five years. From the standpoint of the DCF model that extends into perpetuity, this forecasting horizon may be too short. For example, it is quite possible that a company's dividends can grow faster than the general economy for five years, but it is quite implausible for such growth to continue into perpetuity. The two-stage DCF model is based on the premise that investors expect the growth rate for the utilities to be equal to the company-specific growth rates for the next 5 years, let us say, (Stage 1 Growth), and to converge to an expected steady-state long-run rate of growth from year 6 onward (Stage 2 Growth). For example, it is quite plausible that near-term DCF growth estimates for a given company are unduly high and unsustainable over long periods, and that such growth rates are expected to decline toward a lower long-run level over time. Another example of this situation is that of companies that operate in a relatively undeveloped industry (e.g. wholesale power generation) or companies that are experiencing very high growth rates. Here again, the assumption of a constant perpetual growth rate may not be reasonable.

### Blended Growth Approach

One way to account for the two stages of growth is to modify the single-stage DCF model by specifying the growth rate as a weighted average of short-term and long-term growth rates. The blended growth rate is calculated as a weighted average giving two-thirds weight to the analysts' five-year growth projections (Zacks, IBES, etc.) and one-third to historical long-term growth of the economy as a whole and/or the long-range projections of growth in Gross Domestic Product (GDP) projected for the very long term. FERC has adopted such a method in the past for determining the return on equity for gas and oil utilities.

To illustrate, two-stage DCF estimates for a group of widely traded dividend-paying diversified natural gas producers are shown on Table 9-5. Column 1 shows the spot dividend yield for each company, Column 2 shows the analyst consensus growth forecast for the next five years for each company, and column 3 shows the long-range GDP forecast of 6.5% for the U.S. economy at that time. Column 4 computes the weighed average growth, giving 2/3 weight to column 1 and 1/3 weight to column 2. Averages are shown at the bottom of the table. Adding the average blended growth rate of 9.02% to the average expected dividend yield of 2.83% shown at the bottom of Column 6 produces an estimate of equity costs of 11.85% for the group, unadjusted for flotation costs. Allowance for flotation costs to the results of Column 7 brings the return on equity estimate to 12.00%, shown in Column 7. Note

ROE and ROR Analysis for NSP Gas

Docket No. PU-23-367

DCF Analysis

Exhibit MFG-14

Common Equity Share Prices: May 6, 2024-May 31, 2024

Schedule 5

Multistage DCF with Zacks, Yahoo! Finance, and Value Line EPS Growth-Rate

Estimates; 2023 SSA and 2023 EIA long-term growth rates

	A	B	C	D	E	F	G	H
	Yahoo!			Zacks-Yahoo!				
	Zacks EPS	Finance EPS	Value Line	Finance-Value	Average of	Annualized	Dividend	Expected
Company Name	Growth Rate	Growth Rates	EPS Growth	Line	Closing Prices	Dividend	Yield	Dividend Yield
	(%)	(%)	Rates (%)	Rate (%)			(Rate/Price)	
Atmos Energy Corporation	7.00%	7.40%	7.00%	7.13%	\$ 116.75	\$ 3.22	2.76%	2.95%
Chesapeake Utilities	NA	7.60%	6.50%	7.05%	\$ 110.62	\$ 2.56	2.31%	2.48%
NiSource	7.00%	6.00%	9.50%	7.50%	\$ 28.70	\$ 1.06	3.69%	3.97%
Northwest Natural Holding Company	NA	2.80%	6.50%	4.65%	\$ 37.74	\$ 1.95	5.17%	5.41%
Southwest Gas Holdings	6.00%	4.00%	3.50%	4.50%	\$ 62.78	\$ 2.64	4.21%	4.39%
ONE Gas, Inc.	5.00%	5.00%	10.00%	6.67%	\$ 76.38	\$ 2.48	3.25%	3.46%
Spire, Inc.	5.00%	6.36%	4.50%	5.29%	\$ 61.41	\$ 3.02	4.92%	5.18%
<b>Mean</b>	6.00%	5.59%	6.79%	6.11%			3.76%	3.98%
	I	J	K	L	M	N	O	P
	SSA Long-	SSA Long-	Weighted	EIA Long-Run	EIA Long-Run	EIA Weighted	Multistage	Exceeds 7.15%
Company Name	Run	Run	Cost of	Projected	Projected	Cost of	Mean Cost of	Mean of Value
	Projected	Weighted	Equity,	Growth Rate,	Growth Rate	Equity, Long-	Equity	Line and Kroll
	EPS Growth	EPS Growth	Long-Run			Run Rate		Low-End Tests
	Rate 4.04%	Rate 4.04%	Rate	4.33%	4.33%			
Atmos Energy Corporation	4.04%	6.10%	9.06%	4.33%	6.20%	9.15%	9.11%	Yes
Chesapeake Utilities	4.04%	6.05%	8.52%	4.33%	6.14%	8.62%	8.57%	Yes
NiSource	4.04%	6.35%	10.32%	4.33%	6.44%	10.41%	10.37%	Yes
Northwest Natural Holding Company	4.04%	4.45%	9.86%	4.33%	4.54%	9.96%	9.91%	Yes
Southwest Gas Holdings	4.04%	4.35%	8.74%	4.33%	4.44%	8.84%	8.79%	Yes
ONE Gas, Inc.	4.04%	5.79%	9.25%	4.33%	5.89%	9.35%	9.30%	Yes
Spire, Inc.	4.04%	4.87%	10.05%	4.33%	4.97%	10.15%	10.10%	Yes
<b>Mean</b>		5.42%	9.40%		5.52%	9.50%	9.45%	<b>Mean</b>
<b>Median</b>			9.25%			9.35%	9.30%	<b>Median</b>

A: Zacks website, June 20, 2024

B: Yahoo! Finance website: June 20, 2024

C: Value Line Investment Survey reports: May 24, 2024

E: Yahoo! Finance website: May 6-May 31, 2024. See Exhibit MFG-12.

F: Higher of Value Line Investment report, May 24, 2024; or Zacks website, June 20, 2024. See Exhibit MFG-13.

I: U.S. Social Security Administration, The 2023 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds, March 31, 2023 (OASDI Trustees Report), Table VI G6. See Exhibit MFG-14, Schedule 2.

L: U.S. Energy Information Administration, *Annual Energy Outlook 2023, Macroeconomic Indicators* (Real GDP Growth + GDP Chain-Type Index Increase 2020-2050), <https://www.eia.gov/analysis/projection-data.php#annualproi>. See Exhibit MFG-14, Schedule 3.

P: See Exhibit (MFG-15), Schedule 8.

D: = (A + B + C)/3

G: = F/E

H: = G\*(1+D)

J: = 2/3\*D + 1/3\*J

M: = 2/3\*D + 1/3\*L

O: = (K + N)/2

K: = H + J

N: = H + M

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis**  
**Risk-Free Rate Analysis**

**Docket No. PU-23-367**  
**Exhibit MFG-15, Schedule 1**

**Daily Treasury Yield Curve Rates**

**May 6, 2024-May 31, 2024**

<b>Date</b>	<b>1 mo</b>	<b>2 mo</b>	<b>3 mo</b>	<b>4 mo</b>	<b>6 mo</b>	<b>1 yr</b>	<b>2 yr</b>	<b>3 yr</b>	<b>5 yr</b>	<b>7 yr</b>	<b>10 yr</b>	<b>20 yr</b>	<b>30 yr</b>
5/6/24	5.51	5.48	5.45	5.50	5.42	5.12	4.82	4.64	4.48	4.48	4.49	4.73	4.64
5/7/24	5.51	5.48	5.45	5.51	5.41	5.13	4.82	4.60	4.48	4.47	4.47	4.70	4.61
5/8/24	5.51	5.47	5.45	5.50	5.41	5.13	4.84	4.63	4.50	4.49	4.48	4.73	4.64
5/9/24	5.51	5.48	5.46	5.50	5.41	5.12	4.80	4.60	4.47	4.46	4.45	4.70	4.6
5/10/24	5.51	5.47	5.47	5.51	5.43	5.17	4.87	4.65	4.52	4.51	4.50	4.74	4.64
5/13/24	5.50	5.47	5.45	5.51	5.43	5.16	4.85	4.66	4.50	4.49	4.48	4.72	4.63
5/14/24	5.50	5.47	5.44	5.51	5.43	5.16	4.81	4.62	4.46	4.45	4.45	4.69	4.49
5/15/24	5.49	5.46	5.45	5.50	5.40	5.10	4.73	4.51	4.35	4.35	4.36	4.61	4.52
5/16/24	5.51	5.47	5.45	5.53	5.41	5.13	4.78	4.58	4.40	4.39	4.38	4.62	4.52
5/17/24	5.50	5.47	5.46	5.50	5.41	5.14	4.83	4.60	4.44	4.43	4.42	4.66	4.56
5/20/24	5.50	5.47	5.45	5.51	5.43	5.15	4.82	4.62	4.46	4.44	4.44	4.68	4.58
5/21/24	5.50	5.47	5.45	5.51	5.42	5.14	4.82	4.61	4.43	4.42	4.41	4.65	4.55
5/22/24	5.49	5.48	5.45	5.50	5.43	5.16	4.86	4.64	4.47	4.44	4.43	4.63	4.55
5/23/24	5.51	5.48	5.46	5.51	5.44	5.20	4.91	4.71	4.52	4.50	4.47	4.67	4.58
5/24/24	5.56	5.53	5.46	5.51	5.44	5.21	4.93	4.71	4.53	4.49	4.46	4.65	4.57
5/28/24	5.50	5.48	5.46	5.51	5.43	5.21	4.94	4.75	4.56	4.56	4.54	4.74	4.66
5/29/24	5.50	5.48	5.46	5.47	5.43	5.22	4.96	4.79	4.63	4.63	4.61	4.82	4.74
5/30/24	5.48	5.48	5.46	5.48	5.42	5.19	4.92	4.74	4.57	4.57	4.55	4.76	4.69
5/31/24	5.48	5.48	5.46	5.46	5.42	5.18	4.89	4.69	4.52	4.52	4.51	4.73	4.65
												Mean	4.60

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis  
Beta calculation for Comparison Group  
Value Line Investment Survey Betas taken from  
reports of May 24, 2024**

**Docket No. PU-23-367  
Exhibit MFG-15, Schedule 2**

<b>Company Name</b>	<b>Value Line Betas-- Comparison Group</b>
Atmos Energy Corporation	0.85
Chesapeake Utilities	0.80
NiSource, Inc.	0.95
Northwest Natural Holding Co.	0.85
ONE Gas, Inc.	0.85
Southwest Gas Holdings	0.90
Spire Inc.	0.85

ROE and ROR Analysis for NSP Gas  
 CAPM Analysis  
 Moody's 10-Year Baa Corporate Bonds Index May 6, 2024-May 31, 2024  
 Downloaded June 14, 2024

Docket No. PU-23-367  
 Exhibit MFG-15  
 Schedule 3

**S&P Global**  
 Market Intelligence  
 Chart Builder

Entities: Moodys Bond Yield Avg - BAA Rated Corporates  
 Metrics: Index Value

SERIES NAME	CATEGORY	AVERAGE
Moodys Bond Yield Avg - BAA Rated Corporates- Index Value (Daily)	Market Data	5.94

Pricing Date	Moodys Bond Yield Avg BAA Rated Corporates-Index Value (Daily)
5/31/24	5.97
5/30/24	6.01
5/29/24	6.08
5/28/24	5.99
5/24/24	5.92
5/23/24	5.92
5/22/24	5.89
5/21/24	5.89
5/20/24	5.91
5/17/24	5.90
5/16/24	5.85
5/15/24	5.85
5/14/24	5.93
5/13/24	5.96
5/10/24	5.98
5/9/24	5.93
5/8/24	5.95
5/7/24	5.92
5/6/24	5.96

Mean 5.94



# Cost of Capital in the Current Environment

June 2023 Update

“ Although at a slower pace, major central banks are continuing to hike interest rates to tame high inflation. Headline inflation appears to have peaked, but core inflation (i.e., excluding the volatile energy and food prices) continues to be stubbornly high. Economists have upgraded real growth expectations for 2023 relative to the beginning of the year, partly due to China’s reopening (after ending its zero-COVID-19 policy) and warmer weather that helped lower energy prices. Nevertheless, several countries are still expected to fall into recession in 2023 or in early 2024. In fact, Germany and the Eurozone are already in technical recession (i.e., two consecutive quarters of contraction). However, global financial markets are generally pricing a soft landing rather than a deep and prolonged recessionary period. Amidst this uncertain environment, cost of capital estimates are now similar to levels observed around the Global Financial Crisis of 2008-2009. ”

Carla S. Nunes, CFA – Managing Director, Kroll

## Kroll Cost of Capital Inputs

Data as of June 14, 2023

	Normalized Risk-Free Rate	Kroll-Recommended Equity Risk Premium
U.S. (in USD)	Higher of 3.5% or Spot*	5.5%
Eurozone** (in EUR)	Higher of 3.0% or Spot**	5.5% to 6.0%

\* We recommend using the spot 20-year U.S. Treasury yield as the proxy for the risk-free rate, if the prevailing yield as of the valuation date is higher than our recommended U.S. normalized risk-free rate of 3.5%. This guidance is effective when developing USD-denominated discount rates as of June 16, 2022, and thereafter.

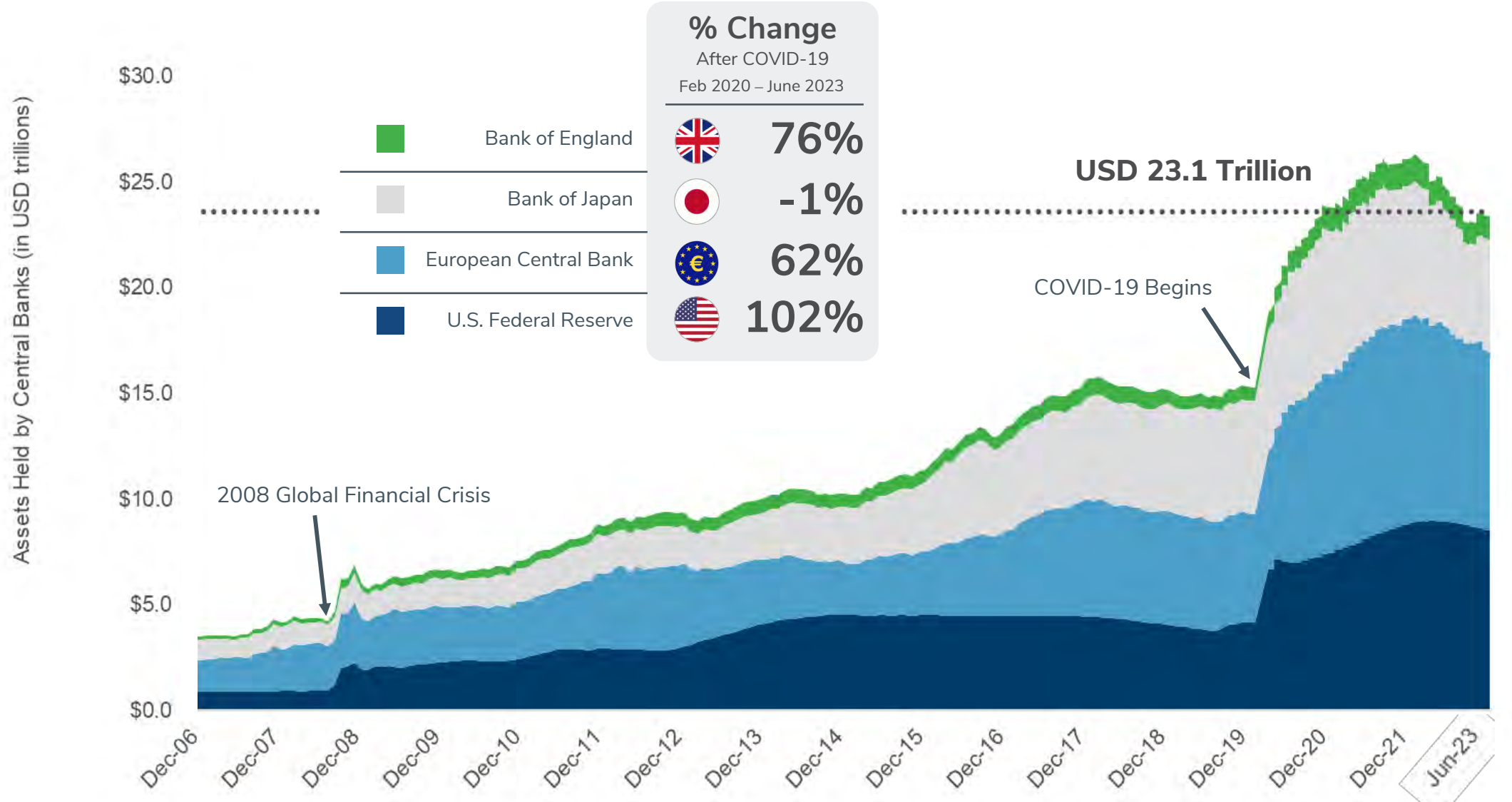
\*\* We recommend using the spot 15-year German government bond yield as the proxy for the risk-free rate, if the prevailing yield as of the valuation date is higher than our recommended German normalized risk-free rate of 3.0%. This guidance is effective when developing EUR-denominated discount rates as of October 18, 2022, and thereafter.

\*\*\* German normalized risk-free rate and Eurozone equity risk premium (ERP) for use in EUR-denominated discount rates from a German investor perspective. Our current ERP recommendation is at the top of the range. Additional country risk adjustments may be warranted when estimating discount rates for other countries in the Eurozone.

For more information, visit: <https://www.kroll.com/costofcapitalnavigator>

## Total Assets Held by Major Central Banks Over Time

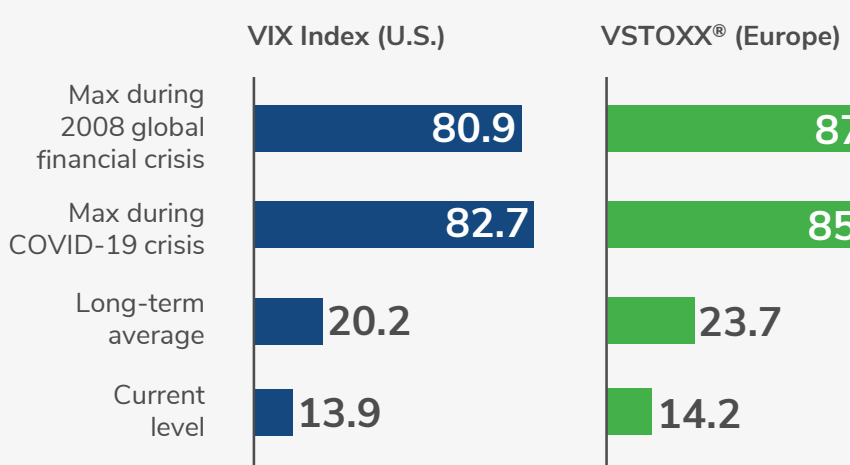
Data as of June 14, 2023



Sources: Capital IQ, FRED® Economic Data, Bank of England, Bank of Japan and European Central Bank

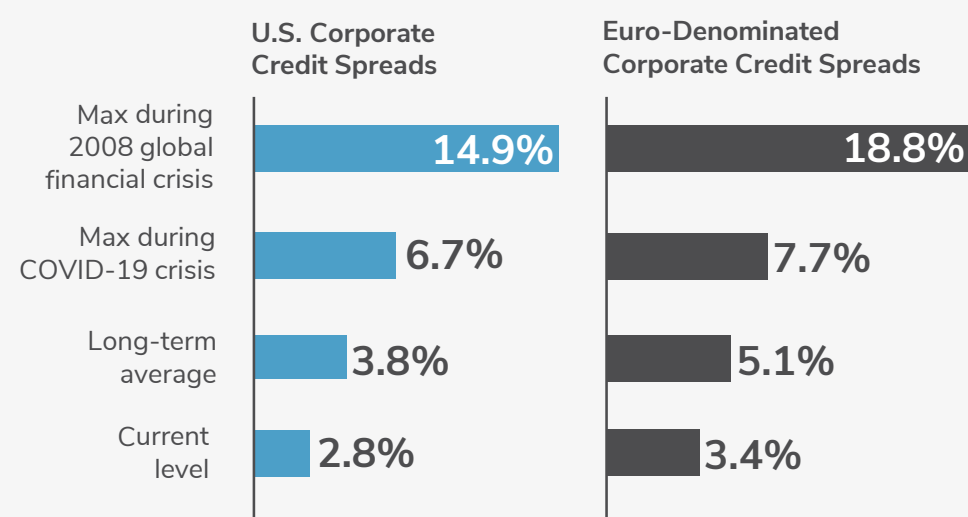
## Global Market Volatility

Data as of June 14, 2023



## Global Credit Spreads

Data as of June 14, 2023

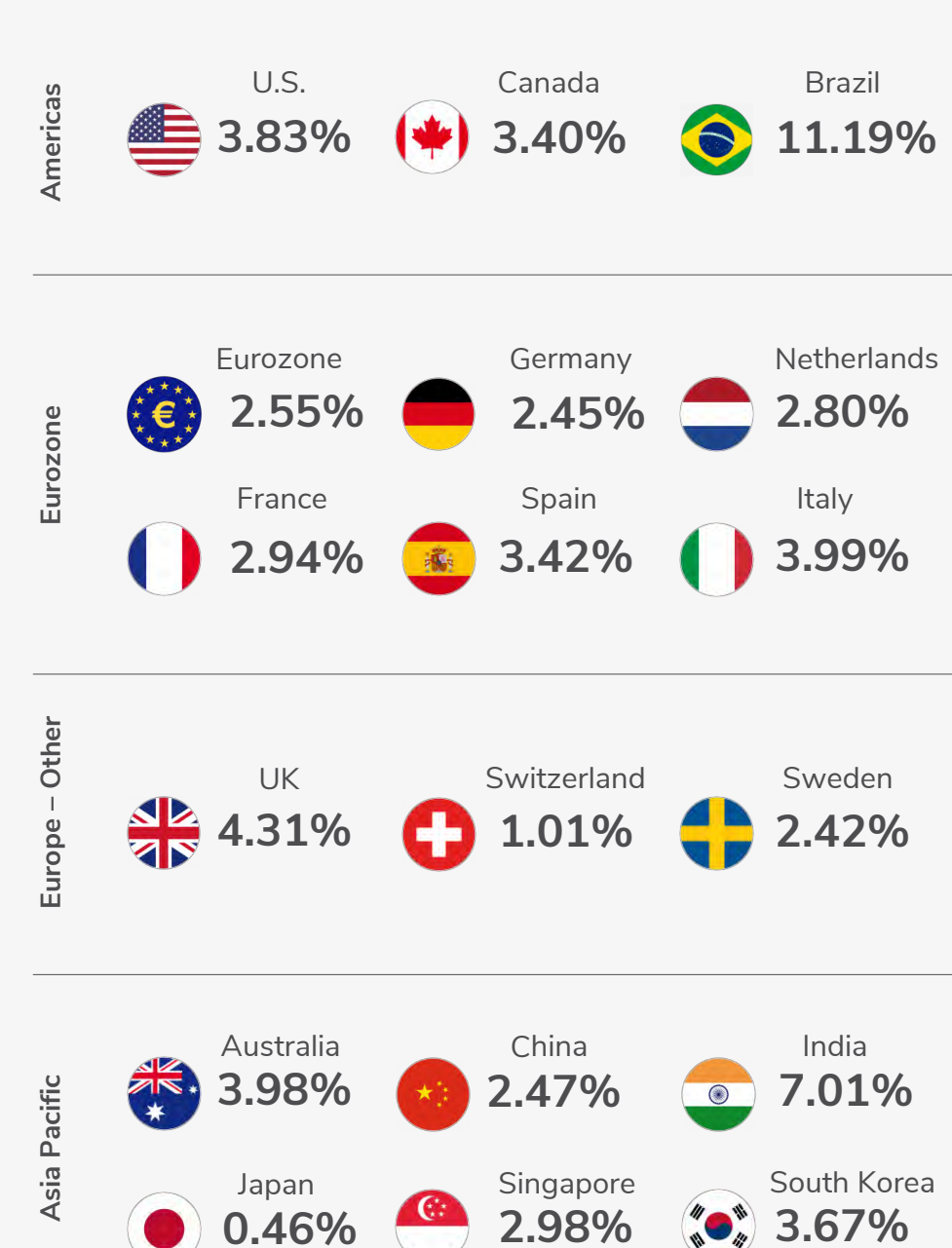


Sources: Capital IQ, FRED® Economic Data, Bloomberg

U.S. corporate credit spreads are based on the difference in effective yields between the ICE BofA U.S. High Yield Index and the ICE BofA U.S. Corporate Index. Euro-denominated corporate credit spreads are based on the difference in effective yields between the Bloomberg Pan-European High Yield Index (EUR) and the Bloomberg Euro Aggregate Corporate Bond Index. Long-term averages are based on 1995 to present for VIX daily series, 1999 to present for VSTOXX daily series, 1996 to present for U.S. credit spread daily series, and 1998 to present for EUR-denominated credit spread monthly series.

## Global 10-Year Government Bond Yields

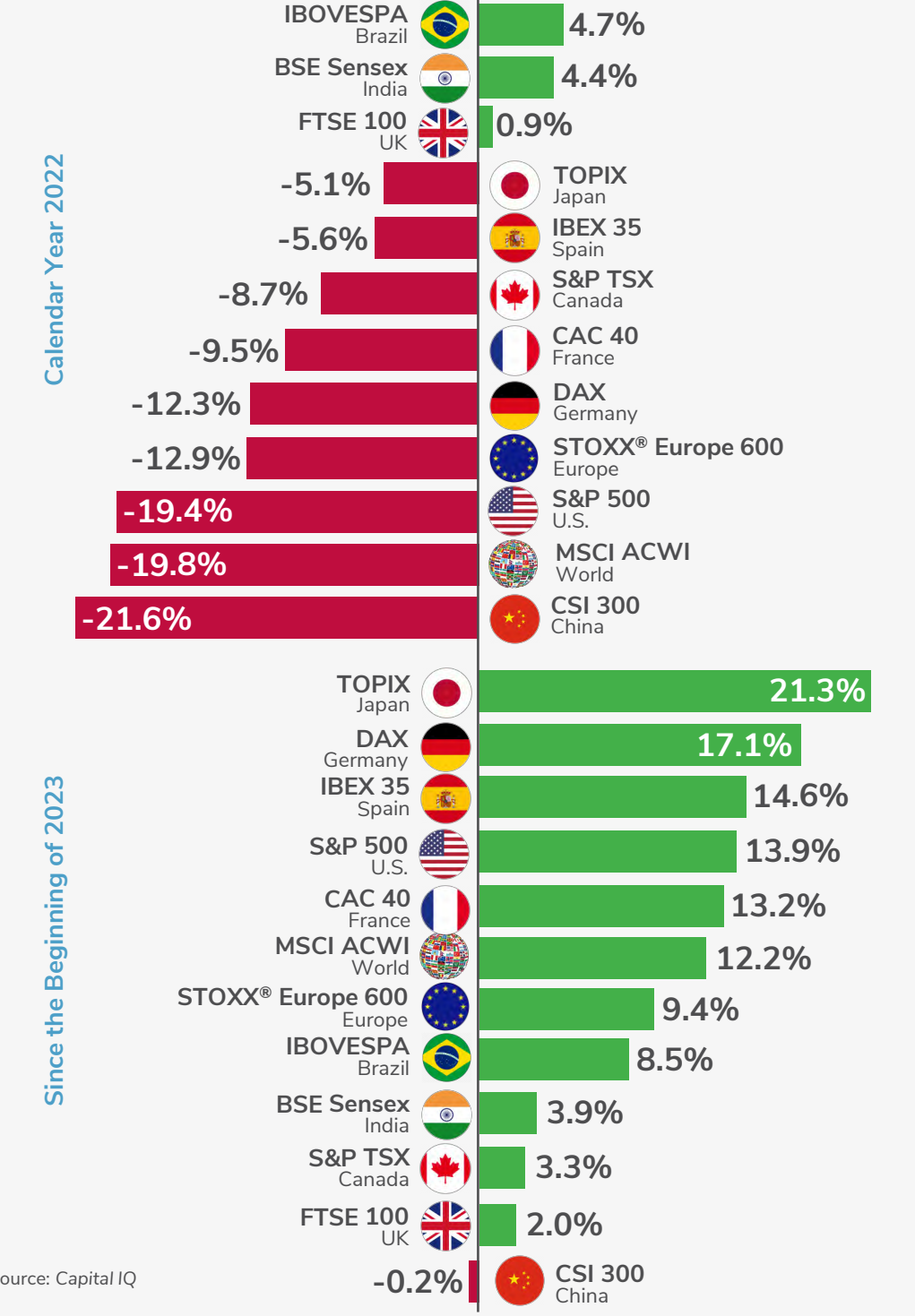
Data as of June 14, 2023



Sources: Refinitiv (Brazil, India), European Central Bank (Eurozone aggregate yield) and Capital IQ (other countries)

## Stock Market Performance

Data as of June 14, 2023



Source: Capital IQ

## U.S. and Eurozone Consumer Sentiment vs. Business Confidence

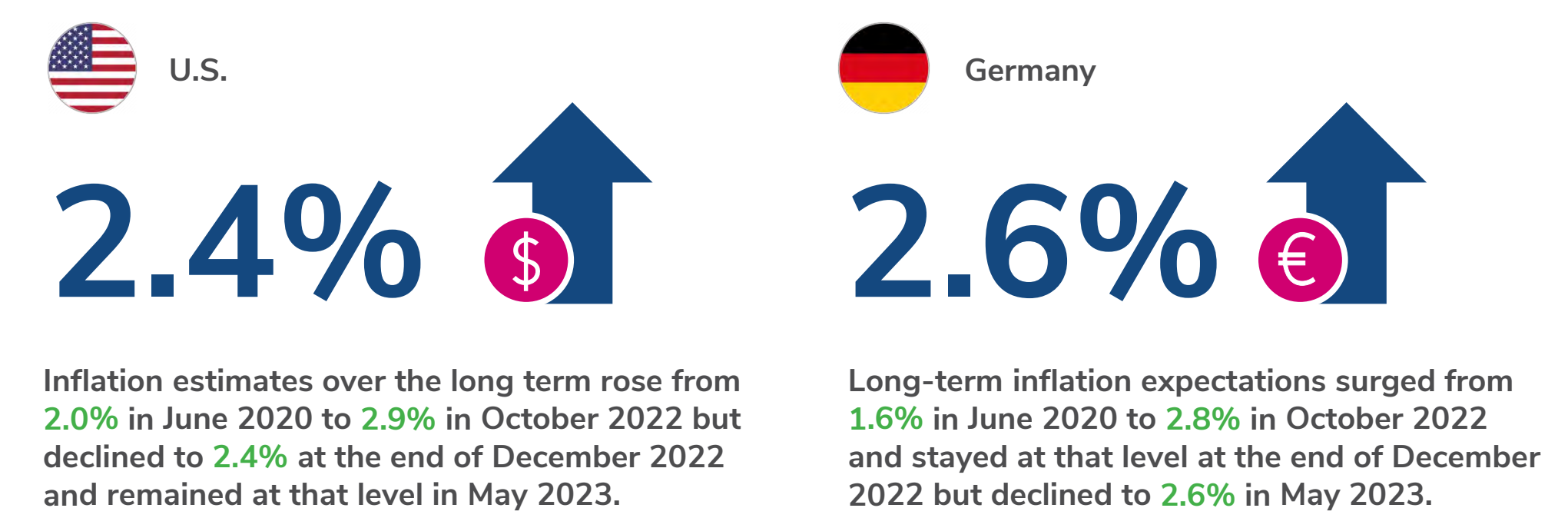
Data as of June 14, 2023

	Pre-COVID-19 (February 2020)	Post-COVID-19 (June 2023)	Long-Term Avg. (1952-2023)
Consumer Sentiment	101.0	59.2	85.7
Business Confidence	99.0	98.9	100.0

Sources: Michigan University’s Index of Consumer Sentiment, OECD’s Business Confidence Index and European Commission business and consumer surveys (The same methodology that the European Commission uses to standardize its Economic Sentiment Indicator (ESI) was applied to the Eurozone Consumer Confidence and Business Climate Indicator series.)

## Long-Term Inflation Expectations (Median)

Data as of May 31, 2023



Sources of underlying U.S. data: Blue Chip Economic Indicators; Blue Chip Financial Forecasts, Consensus Economics, IHS Markit (S&P Global Market Intelligence), Federal Reserve Bank of Cleveland, Federal Reserve Bank of Philadelphia (Aruoba Term Structure of Inflation Expectations, Livingston Survey, and Survey of Professional Forecasters), Oxford Economics and the University of Michigan’s Surveys of Consumers Inflation Expectations. Sources of underlying German data: Consensus Economics, Economist Intelligence Unit, IHS Markit (S&P Global Market Intelligence), International Monetary Fund, Oxford Economics and PwC.

## U.S. vs. Eurozone Unemployment Rate

Data as of June 14, 2023

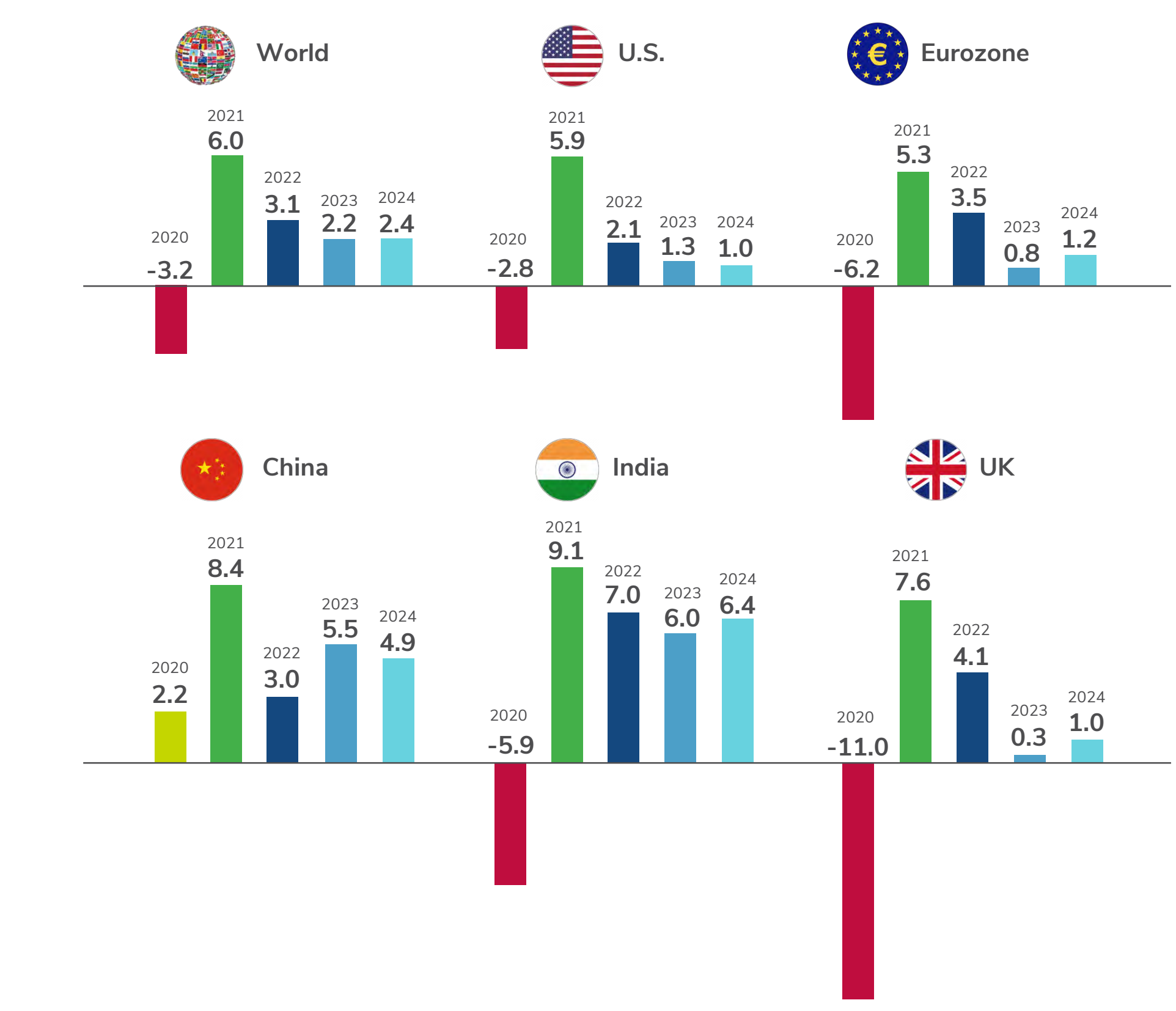
Year	Month	U.S.	Eurozone
2020	March	4.4%	7.1%
	June	11.0%	8.0%
	September	7.9%	8.7%
	December	6.7%	8.1%
2021	March	6.0%	8.1%
	June	5.9%	7.8%
	September	4.7%	7.4%
	December	3.9%	7.0%
2022	March	3.6%	6.8%
	June	3.6%	6.7%
	September	3.5%	6.6%
	December	3.5%	6.7%
2023	March	3.5%	6.6%
	Latest Available*	3.7%	6.5%

Source: U.S. Bureau of Labor Statistics and Eurostat

\* Data through May 2023 for the U.S. and April 2023 for the Eurozone.

## Real GDP Growth (%) Estimates (Median)

Data as of June 15, 2023



Sources: OECD, International Monetary Fund, World Bank, Blue Chip Economic Indicators, Consensus Economics, Economic Intelligence Unit, Fitch Ratings, IHS Markit (S&P Global Market Intelligence), Moody’s Analytics, Oxford Economics and S&P Global Ratings.

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**ROE and ROR Analysis for SP Gas  
CAPM ROE Analysis--Kroll Risk Premium  
Calculation for Proxy Group**

**Docket No. PU-23-367  
Exhibit MFG-15  
Schedule 5**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
	<b>Rf</b>	<b>MRP</b>	<b>Beta</b>	<b>RP</b>	<b>CAPM ROE</b>	<b>Filtered Results</b>
Atmos Energy Corporation	4.60%	5.50%	0.85	4.68%	9.28%	9.28%
Chesapeake Utilities	4.60%	5.50%	0.80	4.40%	9.00%	9.00%
NiSource	4.60%	5.50%	0.95	5.23%	9.83%	9.83%
Northwest Natural Holding Co.	4.60%	5.50%	0.90	4.95%	9.55%	9.55%
Southwest Gas Holdings	4.60%	5.50%	0.85	4.68%	9.28%	9.28%
ONE Gas, Inc.	4.60%	5.50%	0.85	4.68%	9.28%	9.28%
Spire, Inc.	4.60%	5.50%	0.85	4.68%	9.28%	9.28%
				<b>Mean</b>	9.35%	9.35%
				<b>Median</b>	9.28%	9.28%

A: MFG-15, Sch 1  
B: MFG-15, Sch 4  
C: MFG-15 Sch 2

D: B \* C  
E: B + E  
F: Low-end test < Column E < High-end test

<b>Low-End Test:</b> Moody's 10-Year Baa Corporate Bond Index, MFG-15, Schedule 3	5.94%
CAPM Risk Premium, Column B	5.50%
20 percent of CAPM risk premium	1.10%
Moody's 10-Year Baa Corporate Bond Index + 20 percent of CAPM risk	7.04%
<b>High-End Test:</b> Proxy Group median, Column E	9.28%
200 percent of Proxy Group median	18.55%

Constant-Growth DCF Analysis for S&P 500--Value Line

All companies shown

A, B, and E: Value Line Analyzer, April 1, 2024

$C = B * (1 + A/100)$

$D = A + C$

$F = E / (\text{Sum of E})$

$G = D * F$

**Companies Excluded**

Companies not paying dividends

Companies with EPS < 0

Companies with EPS > 20%

**5-Year**

**EPS**

11.24

**Market**

**Return %**

	A	B	C	D	E	F	G
	EPS	Dividend	Expected Dividend	Rate of Return on Equity	Market Cap \$	Market Cap Weight	Weighted Rate of Return on Equity
Company Name	Rate (%)	Yield (%)	Yield (%)	(%)	(Mil)	Factor	(%)

Companies not paying dividends

Adobe Inc.	14.50	0.00	0.00	14.50	236,209		
Advanced Micro Dev.	17.50	0.00	0.00	17.50	290,264		
Airbnb Inc.		0.00	0.00	0.00	105,250		
Akamai Technologies	5.00	0.00	0.00	5.00	16,575		
Align Techn.	13.50	0.00	0.00	13.50	25,208		
Alphabet Inc.	13.00	0.00	0.00	13.00	1,873,395		
Alphabet Inc. 'A'	15.98	0.00	0.00	15.98	1,853,300		
Amazon.com	19.50	0.00	0.00	19.50	1,840,289		
Amer. Airlines		0.00	0.00	0.00	9,522		
ANSYS Inc.	9.00	0.00	0.00	9.00	29,813		
Aptiv PLC	27.00	0.00	0.00	27.00	22,046		
Arch Capital Group	23.50	0.00	0.00	23.50	34,411		
Arista Networks	17.00	0.00	0.00	17.00	92,606		
Autodesk Inc.	10.00	0.00	0.00	10.00	56,160		

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
**Standard and Poor's 500 Adjusted**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
AutoZone Inc.	12.50	0.00	0.00	12.50	55,180		
Axon Enterprise	21.50	0.00	0.00	21.50	23,666		
Bio-Rad Labs. 'A'	9.00	0.00	0.00	9.00	9,801		
Biogen	-1.00	0.00	0.00	-1.00	31,610		
Boeing		0.00	0.00	0.00	114,455		
Booking Holdings	28.00	0.00	0.00	28.00	125,920		
Boston Scientific	12.50	0.00	0.00	12.50	98,791		
Builders FirstSource	20.00	0.00	0.00	20.00	25,496		
Cadence Design Sys.	14.00	0.00	0.00	14.00	86,206		
Caesars Entertainment		0.00	0.00	0.00	9,016		
CarMax Inc.	3.50	0.00	0.00	3.50	13,128		
Carnival Corp.		0.00	0.00	0.00	21,298		
Catalent Inc.	5.50	0.00	0.00	5.50	10,114		
CBRE Group	5.00	0.00	0.00	5.00	29,146		
Centene Corp.	10.00	0.00	0.00	10.00	41,626		
Charles River	7.00	0.00	0.00	7.00	13,756		
Charter Communic.	8.50	0.00	0.00	8.50	42,885		
Chipotle Mex. Grill	22.50	0.00	0.00	22.50	79,569		
Cooper Cos.	9.50	0.00	0.00	9.50	20,200		
Copart Inc.	9.00	0.00	0.00	9.00	54,699		
Corpay	15.50	0.00	0.00	15.50	22,122		
CoStar Group	15.00	0.00	0.00	15.00	39,301		
DaVita Inc.	9.50	0.00	0.00	9.50	12,677		
Dayforce Inc.		0.00	0.00	0.00	10,775		
Deckers Outdoor	14.00	0.00	0.00	14.00	23,474		
DexCom Inc.	24.00	0.00	0.00	24.00	51,210		
Dollar Tree Inc.	9.00	0.00	0.00	9.00	27,908		

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
**Standard and Poor's 500 Adjusted**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
Edwards Lifesciences	10.00	0.00	0.00	10.00	55,926		
Enphase Energy	14.00	0.00	0.00	14.00	15,432		
EPAM Systems	5.50	0.00	0.00	5.50	16,878		
Etsy Inc.	2.00	0.00	0.00	2.00	8,157		
Expedia Group		0.00	0.00	0.00	19,314		
F5 Inc.	10.50	0.00	0.00	10.50	11,144		
Fair Isaac	19.50	0.00	0.00	19.50	30,984		
First Solar Inc.	34.00	0.00	0.00	34.00	16,136		
Fiserv Inc.	9.50	0.00	0.00	9.50	93,605		
Fortinet Inc.	21.50	0.00	0.00	21.50	51,649		
Gartner Inc.	10.00	0.00	0.00	10.00	37,747		
Generac Holdings	12.50	0.00	0.00	12.50	7,116		
Hologic Inc.	-1.00	0.00	0.00	-1.00	17,600		
IDEXX Labs.	11.00	0.00	0.00	11.00	43,965		
Illumina Inc.	-6.00	0.00	0.00	-6.00	21,044		
Incyte Corp.	16.50	0.00	0.00	16.50	13,052		
Insulet Corp.	69.50	0.00	0.00	69.50	11,675		
Intuitive Surgical	12.50	0.00	0.00	12.50	137,527		
IQVIA Holdings	11.50	0.00	0.00	11.50	46,121		
Keysight Technologies	8.00	0.00	0.00	8.00	26,354		
Live Nation Entertain.		0.00	0.00	0.00	23,896		
lululemon athletica	16.50	0.00	0.00	16.50	59,212		
Match Group	13.50	0.00	0.00	13.50	9,683		
Mettler-Toledo Int'l	9.00	0.00	0.00	9.00	28,045		
MGM Resorts Int'l		0.00	0.00	0.00	15,208		
Moderna Inc.	-17.50	0.00	0.00	-17.50	39,274		
Mohawk Inds.	1.00	0.00	0.00	1.00	7,870		

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
**Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Molina Healthcare	12.00	0.00	0.00	12.00	24,134		
Monster Beverage	13.00	0.00	0.00	13.00	62,640		
Netflix Inc.	14.50	0.00	0.00	14.50	274,727		
Norwegian Cruise Line		0.00	0.00	0.00	8,585		
NVR Inc.	1.50	0.00	0.00	1.50	25,427		
O'Reilly Automotive	11.00	0.00	0.00	11.00	67,656		
ON Semiconductor	13.00	0.00	0.00	13.00	32,540		
Palo Alto Networks		0.00	0.00	0.00	91,018		
PayPal Holdings	12.00	0.00	0.00	12.00	69,734		
PTC Inc.	11.00	0.00	0.00	11.00	22,668		
Qorvo Inc.	9.50	0.00	0.00	9.50	10,975		
Regeneron Pharmac.	3.00	0.00	0.00	3.00	105,205		
Royal Caribbean		0.00	0.00	0.00	34,728		
Schein (Henry)	7.50	0.00	0.00	7.50	9,665		
ServiceNow Inc.	61.00	0.00	0.00	61.00	157,138		
Super Micro Computer	39.00	0.00	0.00	39.00	50,128		
Synopsys Inc.	14.50	0.00	0.00	14.50	89,963		
Take-Two Interactive	59.00	0.00	0.00	59.00	25,307		
Teledyne Technologies	9.50	0.00	0.00	9.50	20,055		
Tesla Inc.	23.00	0.00	0.00	23.00	558,423		
TransDigm Group	21.00	0.00	0.00	21.00	67,459		
Trimble Inc.	5.50	0.00	0.00	5.50	15,712		
Tyler Technologies	10.00	0.00	0.00	10.00	17,711		
Uber Technologies		0.00	0.00	0.00	162,875		
Ulta Beauty	13.50	0.00	0.00	13.50	25,495		
Under Armour 'C'		0.00	0.00	0.00	3,101		
United Airlines Hldgs.		0.00	0.00	0.00	15,082		

	A	B	C	D	E	F	G
Company Name	EPS Growth Rate (%)	Dividend Yield (%)	Expected Dividend Yield (%)	Rate of Return on Equity (%)	Market Cap \$ (Mil)	Market Cap Weight Factor	Weighted Rate of Return on Equity (%)
VeriSign Inc.	13.00	0.00	0.00	13.00	19,236		
Vertex Pharmac.	9.50	0.00	0.00	9.50	106,254		
Warner Bros. Discovery		0.00	0.00	0.00	21,308		
Waters Corp.	5.00	0.00	0.00	5.00	20,594		
Western Digital	7.00	0.00	0.00	7.00	19,795		
Zebra Techn. 'A'	-1.00	0.00	0.00	-1.00	14,679		
<b><u>Companies with EPS ≤ 0%</u></b>							
AES Corp.	0.00	4.44	4.44	4.44	10,406		
Albemarle Corp.	-4.50	1.29	1.23	-3.27	14,605		
Baker Hughes	0.00	2.52	2.52	2.52	33,590		
Best Buy Co.	-0.50	4.89	4.87	4.37	16,999		
Camden Property Trust	-6.50	4.26	3.98	-2.52	10,503		
Constellation Energy	0.00	0.80	0.80	0.80	56,052		
Coterra Energy	0.00	3.10	3.10	3.10	20,843		
Delta Air Lines	0.00	0.88	0.88	0.88	29,200		
Digital Realty Trust	-5.00	3.51	3.33	-1.67	43,903		
Discover Fin'l Svcs.	0.00	2.23	2.23	2.23	31,450		
EQT Corp.	0.00	1.86	1.86	1.86	13,911		
Equity Residential	-4.50	4.23	4.04	-0.46	23,538		
Expeditors Int'l	-1.00	1.15	1.14	0.14	17,384		
Federal Rlty. Inv. Trust	0.00	4.31	4.31	4.31	7,947		
Fidelity Nat'l Info.	-3.00	2.04	1.98	-1.02	41,854		
GE HealthCare	0.00	0.13	0.13	0.13	41,375		
Host Hotels & Resorts	0.00	3.85	3.85	3.85	14,825		

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis—Value Line EPS  
Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
Kenvue Inc.	0.00	3.92	3.92	3.92	39,085		
KeyCorp	-2.00	5.45	5.34	3.34	14,080		
Laboratory Corp.	-1.50	1.38	1.36	-0.14	17,775		
Las Vegas Sands	0.00	1.58	1.58	1.58	38,079		
LyondellBasell Inds.	0.00	4.89	4.89	4.89	33,191		
Mid-America Apt.	-11.00	4.48	3.99	-7.01	15,143		
Mosaic Company	-6.00	2.60	2.44	-3.56	10,459		
News Corp. 'B'	0.00	0.75	0.75	0.75	15,841		
Paramount Global	-2.50	1.60	1.56	-0.94	8,157		
Revvity Inc.	-2.50	0.27	0.26	-2.24	12,911		
Southwest Airlines	0.00	2.50	2.50	2.50	17,192		
Targa Resources	0.00	2.75	2.75	2.75	24,334		
Tyson Foods 'A'	-16.50	3.40	2.84	-13.66	20,599		
Ventas Inc.	0.00	4.19	4.19	4.19	17,560		
Viatis Inc.	-1.50	4.71	4.64	3.14	14,252		
Walgreens Boots	-2.00	4.74	4.65	2.65	18,183		
Weyerhaeuser Co.	-1.00	2.27	2.25	1.25	25,768		
Wynn Resorts	0.00	1.00	1.00	1.00	11,345		

**Companies with EPS > 20%**

Bristol-Myers Squibb	24.50	4.63	5.76	30.26	105,524		
Diamondback Energy	34.00	1.87	2.51	36.51	34,493		
Disney (Walt)	37.00	0.64	0.88	37.88	219,061		
Ford Motor	37.00	10.23	14.02	51.02	53,600		
Gen'l Electric	29.50	0.18	0.23	29.73	189,308		

	A	B	C	D	E	F	G
Company Name	EPS Growth Rate (%)	Dividend Yield (%)	Expected Dividend Yield (%)	Rate of Return on Equity (%)	Market Cap \$ (Mil)	Market Cap Weight Factor	Weighted Rate of Return on Equity (%)
Halliburton Co.	27.50	2.20	2.81	30.31	34,207		
Hilton Worldwide	37.00	0.28	0.38	37.38	54,286		
Lilly (Eli)	27.50	0.67	0.85	28.35	733,737		
Marathon Oil Corp.	25.50	1.73	2.17	27.67	15,989		
Marriott Int'l	23.00	0.82	1.01	24.01	74,996		
Molson Coors Beverage	42.00	2.63	3.73	45.73	14,257		
NVIDIA Corp.	33.00	0.02	0.03	33.03	2,226,766		
PG&E Corp.	30.00	0.31	0.40	30.40	34,563		
Schlumberger Ltd.	26.00	2.02	2.55	28.55	77,650		
Welltower Inc.	25.50	2.72	3.41	28.91	52,469		

**Qualifying Companies**

3M Company	4.50	5.59	5.84	10.34	59,740	0.00186	0.0193
Abbott Labs.	4.00	1.97	2.05	6.05	193,350	0.00603	0.0365
AbbVie Inc.	3.50	3.52	3.64	7.14	311,202	0.00970	0.0693
Accenture Plc	8.50	1.36	1.48	9.98	238,533	0.00744	0.0742
Aflac Inc.	7.50	2.39	2.57	10.07	49,159	0.00153	0.0154
Agilent Technologies	8.00	0.64	0.69	8.69	43,159	0.00135	0.0117
Air Products & Chem.	10.50	2.93	3.24	13.74	53,119	0.00166	0.0228
Alexandria Real Estate	1.00	4.03	4.07	5.07	19,939	0.00062	0.0032
Allegion plc	8.50	1.42	1.54	10.04	11,838	0.00037	0.0037
Alliant Energy	6.00	3.71	3.93	9.93	12,498	0.00039	0.0039
Allstate Corp.	11.00	2.28	2.53	13.53	42,227	0.00132	0.0178
Altria Group	5.00	8.75	9.19	14.19	79,273	0.00247	0.0351
Amcor plc	7.50	5.46	5.87	13.37	13,213	0.00041	0.0055

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis—Value Line EPS  
Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Amer. Elec. Power	6.50	4.31	4.59	11.09	43,549	0.00136	0.0151
Amer. Express	8.50	1.23	1.33	9.83	166,146	0.00518	0.0510
Amer. Int'l Group	9.00	1.88	2.05	11.05	54,069	0.00169	0.0186
Amer. Tower 'A'	5.50	3.33	3.51	9.01	90,729	0.00283	0.0255
Amer. Water Works	3.00	2.54	2.62	5.62	22,996	0.00072	0.0040
Ameren Corp.	6.00	3.72	3.94	9.94	18,942	0.00059	0.0059
Ameriprise Fin'l	12.50	1.34	1.51	14.01	43,708	0.00136	0.0191
AMETEK Inc.	13.00	0.61	0.69	13.69	42,513	0.00133	0.0181
Amgen	4.50	3.30	3.45	7.95	146,109	0.00456	0.0362
Amphenol Corp.	13.00	0.79	0.89	13.89	67,143	0.00209	0.0291
Analog Devices	7.50	1.89	2.03	9.53	96,365	0.00300	0.0286
Aon plc	10.00	0.86	0.95	10.95	65,475	0.00204	0.0223
APA Corp.	19.50	3.55	4.24	23.74	10,367	0.00032	0.0077
Apple Inc.	6.50	0.54	0.58	7.08	2,762,278	0.08613	0.6094
Applied Materials	10.00	0.69	0.76	10.76	170,384	0.00531	0.0572
Archer Daniels Midl'd	7.50	2.94	3.16	10.66	31,452	0.00098	0.0105
Assurant Inc.	10.50	1.60	1.77	12.27	9,525	0.00030	0.0036
AT&T Inc.	4.00	6.45	6.71	10.71	123,053	0.00384	0.0411
Atmos Energy	7.00	2.87	3.07	10.07	17,572	0.00055	0.0055
Automatic Data Proc.	11.00	2.34	2.60	13.60	101,739	0.00317	0.0431
AvalonBay Communities	5.50	3.76	3.97	9.47	26,087	0.00081	0.0077
Avery Dennison	5.00	1.59	1.67	6.67	17,438	0.00054	0.0036
Ball Corp.	10.00	1.23	1.35	11.35	20,599	0.00064	0.0073
Bank of America	4.50	2.67	2.79	7.29	291,183	0.00908	0.0662
Bank of NY Mellon	9.00	3.08	3.36	12.36	43,183	0.00135	0.0166
Bath & Body Works	6.00	1.66	1.76	7.76	10,919	0.00034	0.0026
Baxter Int'l Inc.	4.00	2.77	2.88	6.88	21,234	0.00066	0.0046

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
**Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Becton Dickinson	5.50	1.62	1.71	7.21	68,721	0.00214	0.0154
Berkley (W.R.)	16.00	0.51	0.59	16.59	22,285	0.00069	0.0115
Bio-Techne Corp.	10.00	0.44	0.48	10.48	11,295	0.00035	0.0037
BlackRock Inc.	7.50	2.69	2.89	10.39	121,819	0.00380	0.0395
Blackstone Inc.	15.00	2.51	2.89	17.89	90,745	0.00283	0.0506
BorgWarner	5.50	1.35	1.42	6.92	7,519	0.00023	0.0016
Boston Properties	0.50	6.08	6.11	6.61	10,089	0.00031	0.0021
Broadcom Inc.	17.50	1.65	1.94	19.44	590,788	0.01842	0.3581
Broadridge Fin'l	9.50	1.57	1.72	11.22	24,050	0.00075	0.0084
Brown & Brown	6.50	0.60	0.64	7.14	24,666	0.00077	0.0055
Brown-Forman 'B'	16.50	1.66	1.93	18.43	25,044	0.00078	0.0144
Bunge Global SA	1.50	2.80	2.84	4.34	14,156	0.00044	0.0019
C.H. Robinson	3.50	3.35	3.47	6.97	8,613	0.00027	0.0019
Campbell Soup	5.00	3.60	3.78	8.78	12,918	0.00040	0.0035
Capital One Fin'l	4.00	1.69	1.76	5.76	53,928	0.00168	0.0097
Cardinal Health	10.00	1.80	1.98	11.98	27,301	0.00085	0.0102
Carrier Global	13.50	1.30	1.48	14.98	49,157	0.00153	0.0230
Caterpillar Inc.	13.00	1.46	1.65	14.65	181,463	0.00566	0.0829
Cboe Global Markets	13.00	1.20	1.36	14.36	19,338	0.00060	0.0087
CDW Corp.	7.00	0.99	1.06	8.06	33,632	0.00105	0.0085
Celanese Corp.	4.50	1.74	1.82	6.32	18,010	0.00056	0.0035
Cencora	8.00	0.86	0.93	8.93	48,244	0.00150	0.0134
CenterPoint Energy	6.00	2.85	3.02	9.02	17,737	0.00055	0.0050
CF Industries	2.00	2.32	2.37	4.37	16,211	0.00051	0.0022
Chevron Corp.	16.50	4.27	4.97	21.47	291,752	0.00910	0.1954
Chubb Ltd.	16.00	1.33	1.54	17.54	105,468	0.00329	0.0577
Church & Dwight	5.50	1.11	1.17	6.67	25,376	0.00079	0.0053

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
**Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Cigna Group	12.00	1.58	1.77	13.77	103,537	0.00323	0.0445
Cincinnati Financial	10.50	2.73	3.02	13.52	18,608	0.00058	0.0078
Cintas Corp.	14.00	0.85	0.97	14.97	64,355	0.00201	0.0300
Cisco Systems	4.50	3.23	3.38	7.88	200,678	0.00626	0.0493
Citigroup Inc.	2.50	3.53	3.62	6.12	115,082	0.00359	0.0220
Citizens Fin'l Group	4.50	4.94	5.16	9.66	16,243	0.00051	0.0049
Clorox Co.	7.00	3.19	3.41	10.41	18,673	0.00058	0.0061
CME Group	7.50	2.15	2.31	9.81	76,731	0.00239	0.0235
CMS Energy Corp.	5.00	3.52	3.70	8.70	17,231	0.00054	0.0047
Coca-Cola	8.00	3.23	3.49	11.49	261,711	0.00816	0.0938
Cognizant Technology	6.50	1.60	1.70	8.20	37,650	0.00117	0.0096
Colgate-Palmolive	8.00	2.26	2.44	10.44	72,745	0.00227	0.0237
Comcast Corp.	8.00	2.88	3.11	11.11	171,078	0.00533	0.0593
Comerica Inc.	2.50	5.49	5.63	8.13	6,827	0.00021	0.0017
Conagra Brands	3.50	4.92	5.09	8.59	13,786	0.00043	0.0037
ConocoPhillips	9.00	1.97	2.15	11.15	143,622	0.00448	0.0499
Consol. Edison	6.00	3.75	3.98	9.98	30,630	0.00096	0.0095
Constellation Brands	6.50	1.33	1.42	7.92	49,086	0.00153	0.0121
Corning Inc.	12.50	3.43	3.86	16.36	26,789	0.00084	0.0137
Corteva Inc.	9.00	1.20	1.31	10.31	39,081	0.00122	0.0126
Costco Wholesale	9.50	0.59	0.65	10.15	328,546	0.01024	0.1039
Crown Castle Int'l	6.00	5.99	6.35	12.35	45,362	0.00141	0.0175
CSX Corp.	7.00	1.28	1.37	8.37	74,322	0.00232	0.0194
Cummins Inc.	7.50	2.34	2.52	10.02	40,699	0.00127	0.0127
CVS Health	5.50	3.37	3.56	9.06	101,726	0.00317	0.0287
Danaher Corp.	7.50	0.43	0.46	7.96	186,042	0.00580	0.0462
Darden Restaurants	13.00	3.00	3.39	16.39	20,862	0.00065	0.0107

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
**Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Deere & Co.	5.00	1.49	1.56	6.56	109,687	0.00342	0.0225
Dentsply Sirona	8.50	1.92	2.08	10.58	7,053	0.00022	0.0023
Devon Energy	9.50	3.62	3.96	13.46	31,159	0.00097	0.0131
Dollar General	2.00	1.51	1.54	3.54	34,254	0.00107	0.0038
Dominion Energy	0.50	5.54	5.57	6.07	40,310	0.00126	0.0076
Domino's Pizza	11.50	1.34	1.49	12.99	15,686	0.00049	0.0064
Dover Corp.	6.50	1.16	1.24	7.74	24,558	0.00077	0.0059
Dow Inc.	1.50	4.90	4.97	6.47	40,852	0.00127	0.0082
DTE Energy	6.00	3.71	3.93	9.93	22,697	0.00071	0.0070
Duke Energy	5.50	4.34	4.58	10.08	73,561	0.00229	0.0231
DuPont de Nemours	9.00	2.07	2.26	11.26	32,048	0.00100	0.0112
Eastman Chemical	5.00	3.46	3.63	8.63	10,987	0.00034	0.0030
Eaton Corp. plc	12.50	1.21	1.36	13.86	123,707	0.00386	0.0535
eBay Inc.	7.00	2.15	2.30	9.30	27,024	0.00084	0.0078
Ecolab Inc.	7.00	1.00	1.07	8.07	65,257	0.00203	0.0164
Edison Int'l	4.50	4.52	4.72	9.22	26,658	0.00083	0.0077
Electronic Arts	17.50	0.62	0.73	18.23	35,462	0.00111	0.0202
Elevance Health	11.50	1.27	1.42	12.92	120,813	0.00377	0.0487
Emerson Electric	7.00	1.88	2.01	9.01	64,042	0.00200	0.0180
Entergy Corp.	0.50	4.39	4.41	4.91	21,928	0.00068	0.0034
EOG Resources	13.00	2.97	3.36	16.36	73,289	0.00229	0.0374
Equifax Inc.	4.50	0.59	0.62	5.12	32,636	0.00102	0.0052
Equinix Inc.	16.00	2.07	2.40	18.40	77,442	0.00241	0.0444
Essex Property Trust	1.00	4.01	4.05	5.05	14,983	0.00047	0.0024
Everest Group	10.00	1.84	2.02	12.02	16,957	0.00053	0.0064
Evergy Inc.	5.50	5.04	5.32	10.82	11,892	0.00037	0.0040
Eversource Energy	5.50	4.81	5.07	10.57	20,681	0.00064	0.0068

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
**Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Exelon Corp.	2.00	4.18	4.26	6.26	36,377	0.00113	0.0071
Extra Space Storage	5.00	4.85	5.09	10.09	18,816	0.00059	0.0059
Exxon Mobil Corp.	7.00	3.36	3.60	10.60	447,779	0.01396	0.1479
FactSet Research	11.00	0.88	0.98	11.98	18,570	0.00058	0.0069
Fastenal Co.	9.00	2.01	2.19	11.19	44,420	0.00139	0.0155
FedEx Corp.	5.50	1.94	2.05	7.55	64,970	0.00203	0.0153
Fifth Third Bancorp	5.00	3.93	4.13	9.13	24,936	0.00078	0.0071
FirstEnergy Corp.	4.50	4.34	4.54	9.04	21,954	0.00068	0.0062
FMC Corp.	5.00	3.70	3.89	8.89	7,998	0.00025	0.0022
Fortive Corp.	15.00	0.37	0.43	15.43	30,178	0.00094	0.0145
Fox Corp. 'A'	8.00	1.72	1.86	9.86	14,397	0.00045	0.0044
Franklin Resources	3.00	4.53	4.67	7.67	13,531	0.00042	0.0032
Freep't-McMoRan Inc.	12.50	1.30	1.46	13.96	66,024	0.00206	0.0287
Gallagher (Arthur J.)	17.50	0.94	1.10	18.60	55,242	0.00172	0.0320
Garmin Ltd.	5.00	2.06	2.16	7.16	28,130	0.00088	0.0063
Gen Digital Inc.	10.50	2.32	2.56	13.06	13,753	0.00043	0.0056
Gen'l Dynamics	10.00	2.01	2.21	12.21	77,306	0.00241	0.0294
Gen'l Mills	6.00	3.49	3.70	9.70	39,499	0.00123	0.0119
Gen'l Motors	8.50	1.12	1.22	9.72	59,990	0.00187	0.0182
Genuine Parts	8.50	2.58	2.80	11.30	21,676	0.00068	0.0076
Gilead Sciences	3.00	4.16	4.28	7.28	92,179	0.00287	0.0209
Global Payments	13.50	0.84	0.95	14.45	34,651	0.00108	0.0156
Globe Life Inc.	8.00	0.81	0.87	8.87	12,404	0.00039	0.0034
Goldman Sachs	1.50	2.77	2.81	4.31	129,489	0.00404	0.0174
Grainger (W.W.)	7.00	0.74	0.79	7.79	50,114	0.00156	0.0122
Hartford Fin'l Svcs.	8.50	1.86	2.02	10.52	30,582	0.00095	0.0100
Hasbro Inc.	4.50	5.16	5.39	9.89	7,531	0.00023	0.0023

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis—Value Line EPS  
Standard and Poor's 500 Adjusted**

**Docket No. PU-23-367  
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	A	B	C	D	E	F	G
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
HCA Healthcare	10.00	0.80	0.88	10.88	88,453	0.00276	0.0300
Healthpeak Properties	18.50	6.83	8.09	26.59	9,477	0.00030	0.0079
Henry (Jack) & Assoc.	6.50	1.28	1.36	7.86	12,495	0.00039	0.0031
Hershey Co.	9.50	2.77	3.03	12.53	40,476	0.00126	0.0158
Hess Corp.	20.00	1.17	1.40	21.40	45,867	0.00143	0.0306
Hewlett Packard Ent.	5.50	3.78	3.99	9.49	22,005	0.00069	0.0065
Home Depot	6.00	2.34	2.48	8.48	381,335	0.01189	0.1008
Honeywell Int'l	10.50	2.15	2.38	12.88	131,129	0.00409	0.0526
Hormel Foods	5.50	3.36	3.54	9.04	18,892	0.00059	0.0053
Horton D.R.	4.00	0.79	0.82	4.82	52,679	0.00164	0.0079
Howmet Aerospace	17.00	0.30	0.35	17.35	27,682	0.00086	0.0150
HP Inc.	7.00	3.74	4.00	11.00	29,086	0.00091	0.0100
Hubbell Inc.	9.00	1.20	1.31	10.31	21,850	0.00068	0.0070
Humana Inc.	8.00	1.02	1.10	9.10	42,866	0.00134	0.0122
Hunt (J.B.)	8.50	0.88	0.95	9.45	20,119	0.00063	0.0059
Huntington Bancshs.	8.00	4.66	5.03	13.03	19,292	0.00060	0.0078
Huntington Ingalls	11.50	1.78	1.98	13.48	11,577	0.00036	0.0049
IDEX Corp.	6.00	1.12	1.19	7.19	18,242	0.00057	0.0041
Illinois Tool Works	9.50	2.08	2.28	11.78	80,867	0.00252	0.0297
Ingersoll Rand Inc.	12.50	0.09	0.10	12.60	37,786	0.00118	0.0148
Int'l Business Mach.	4.00	3.42	3.56	7.56	177,109	0.00552	0.0417
Int'l Flavors & Frag.	0.50	1.91	1.92	2.42	21,422	0.00067	0.0016
Int'l Paper	5.50	4.72	4.98	10.48	13,574	0.00042	0.0044
Intel Corp.	6.00	1.18	1.25	7.25	178,422	0.00556	0.0403
Intercontinental Exch.	6.50	1.32	1.41	7.91	77,985	0.00243	0.0192
Interpublic Group	8.50	4.02	4.36	12.86	12,868	0.00040	0.0052
Intuit Inc.	13.50	0.57	0.65	14.15	179,118	0.00559	0.0790

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis—Value Line EPS  
Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
Company Name	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Invesco Ltd.	3.00	5.43	5.59	8.59	7,116	0.00022	0.0019
Invitation Homes	8.50	3.27	3.55	12.05	21,302	0.00066	0.0080
Iron Mountain	7.00	3.24	3.47	10.47	23,404	0.00073	0.0076
Jabil Inc.	15.00	0.25	0.29	15.29	16,325	0.00051	0.0078
Jacobs Solutions	9.00	0.77	0.84	9.84	18,917	0.00059	0.0058
Johnson & Johnson	3.50	3.17	3.28	6.78	374,927	0.01169	0.0793
Johnson Ctrl. Int'l plc	11.00	2.31	2.56	13.56	43,703	0.00136	0.0185
JPMorgan Chase	8.50	2.14	2.32	10.82	567,592	0.01770	0.1915
Juniper Networks	8.50	2.39	2.59	11.09	11,793	0.00037	0.0041
Kellanova	1.50	4.06	4.12	5.62	18,780	0.00059	0.0033
Keurig Dr Pepper	12.50	3.03	3.41	15.91	41,310	0.00129	0.0205
Kimberly-Clark	7.50	3.92	4.21	11.71	41,930	0.00131	0.0153
Kimco Realty	18.00	5.04	5.95	23.95	12,050	0.00038	0.0090
Kinder Morgan Inc.	15.00	6.27	7.21	22.21	40,168	0.00125	0.0278
KLA Corp.	10.50	0.83	0.92	11.42	94,134	0.00294	0.0335
Kraft Heinz Co.	4.00	4.53	4.71	8.71	43,374	0.00135	0.0118
Kroger Co.	6.00	2.04	2.16	8.16	40,918	0.00128	0.0104
L3Harris Technologies	9.50	2.19	2.40	11.90	40,287	0.00126	0.0149
Lam Research	9.00	0.87	0.95	9.95	124,593	0.00389	0.0387
Lamb Weston Holdings	15.00	1.43	1.64	16.64	14,896	0.00046	0.0077
Lauder (Estee)	2.50	1.80	1.85	4.35	52,603	0.00164	0.0071
Leidos Hldgs.	7.50	1.19	1.28	8.78	17,362	0.00054	0.0048
Lennar Corp.	4.00	1.22	1.27	5.27	45,974	0.00143	0.0076
Linde plc	7.50	1.09	1.17	8.67	226,342	0.00706	0.0612
LKQ Corp.	7.00	2.29	2.45	9.45	14,011	0.00044	0.0041
Lockheed Martin	9.00	2.89	3.15	12.15	106,422	0.00332	0.0403
Loews Corp.	19.50	0.32	0.38	19.88	17,438	0.00054	0.0108

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
Company Name	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Lowe's Cos.	6.50	1.75	1.86	8.36	144,877	0.00452	0.0378
M&T Bank Corp.	6.50	3.77	4.02	10.52	23,789	0.00074	0.0078
Marathon Petroleum	14.50	1.67	1.91	16.41	72,772	0.00227	0.0372
MarketAxess Holdings	8.50	1.37	1.49	9.99	8,213	0.00026	0.0026
Marsh & McLennan	12.00	1.39	1.56	13.56	101,775	0.00317	0.0430
Martin Marietta	10.50	0.50	0.55	11.05	37,318	0.00116	0.0129
Masco Corp.	6.50	1.52	1.62	8.12	17,106	0.00053	0.0043
MasterCard Inc.	16.00	0.54	0.63	16.63	458,270	0.01429	0.2376
McCormick & Co.	4.50	2.44	2.55	7.05	18,443	0.00058	0.0041
McDonald's Corp.	10.00	2.40	2.64	12.64	205,572	0.00641	0.0810
McKesson Corp.	8.50	0.48	0.52	9.02	69,528	0.00217	0.0196
Medtronic plc	6.50	3.28	3.49	9.99	111,744	0.00348	0.0348
Merck & Co.	15.50	2.49	2.88	18.38	313,543	0.00978	0.1797
Meta Platforms	17.00	0.40	0.47	17.47	1,294,637	0.04037	0.7052
MetLife Inc.	7.00	2.84	3.04	10.04	54,607	0.00170	0.0171
Microchip Technology	6.00	2.13	2.26	8.26	47,738	0.00149	0.0123
Micron Technology	19.50	0.49	0.59	20.09	106,260	0.00331	0.0666
Microsoft Corp.	10.50	0.72	0.80	11.30	3,160,309	0.09855	1.1131
Mondelez Int'l	11.00	2.37	2.63	13.63	97,805	0.00305	0.0416
Monolithic Power Sys.	10.50	0.75	0.83	11.33	32,035	0.00100	0.0113
Moody's Corp.	5.50	0.79	0.83	6.33	71,202	0.00222	0.0141
Morgan Stanley	7.50	3.72	4.00	11.50	150,020	0.00468	0.0538
Motorola Solutions	10.50	1.13	1.25	11.75	57,510	0.00179	0.0211
MSCI Inc.	12.50	1.14	1.28	13.78	44,223	0.00138	0.0190
Nasdaq Inc.	7.00	1.45	1.55	8.55	29,911	0.00093	0.0080
NetApp Inc.	8.50	1.91	2.07	10.57	21,515	0.00067	0.0071
Newmont Corp.	5.00	2.91	3.06	8.06	27,234	0.00085	0.0068

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
**Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
News Corp. 'A'	16.00	0.77	0.89	16.89	14,805	0.00046	0.0078
NextEra Energy	8.50	3.31	3.59	12.09	127,616	0.00398	0.0481
NIKE Inc. 'B'	16.50	1.48	1.72	18.22	152,110	0.00474	0.0864
NiSource Inc.	6.00	3.84	4.07	10.07	11,102	0.00035	0.0035
Nordson Corp.	9.50	1.03	1.13	10.63	15,153	0.00047	0.0050
Norfolk Southern	9.50	2.07	2.27	11.77	58,955	0.00184	0.0216
Northern Trust Corp.	3.00	3.57	3.68	6.68	17,251	0.00054	0.0036
Northrop Grumman	8.00	1.70	1.84	9.84	70,664	0.00220	0.0217
NRG Energy	1.00	2.43	2.45	3.45	13,974	0.00044	0.0015
Nucor Corp.	2.00	1.08	1.10	3.10	47,570	0.00148	0.0046
NXP Semi. NV	10.00	1.68	1.85	11.85	62,601	0.00195	0.0231
Occidental Petroleum	15.50	1.38	1.59	17.09	55,989	0.00175	0.0298
Old Dominion Freight	8.50	0.48	0.52	9.02	47,412	0.00148	0.0133
Omnicom Group	7.00	3.18	3.40	10.40	18,657	0.00058	0.0061
ONEOK Inc.	13.50	5.07	5.75	19.25	45,980	0.00143	0.0276
Oracle Corp.	9.50	1.24	1.36	10.86	355,022	0.01107	0.1202
Otis Worldwide	11.50	1.37	1.53	13.03	40,388	0.00126	0.0164
PACCAR Inc.	14.50	3.57	4.09	18.59	63,526	0.00198	0.0368
Packaging Corp.	7.00	2.71	2.90	9.90	16,511	0.00051	0.0051
Parker-Hannifin	12.50	1.11	1.25	13.75	70,172	0.00219	0.0301
Paychex Inc.	10.00	3.14	3.45	13.45	44,255	0.00138	0.0186
Paycom Software	18.50	0.78	0.92	19.42	11,040	0.00034	0.0067
Pentair plc	12.00	1.12	1.25	13.25	13,604	0.00042	0.0056
PepsiCo Inc.	7.50	3.03	3.26	10.76	236,136	0.00736	0.0792
Pfizer Inc.	2.50	6.07	6.22	8.72	156,394	0.00488	0.0425
Philip Morris Int'l	5.00	5.55	5.83	10.83	145,364	0.00453	0.0491
Phillips 66	17.50	2.77	3.25	20.75	69,847	0.00218	0.0452

**ROE and ROR Analysis for NSP Gas  
CAPM Analysis—Value Line EPS  
Standard and Poor's 500 Adjusted**

	A	B	C	D	E	F	G
	EPS		Expected	Rate of		Market	Weighted
Company Name	Growth	Dividend	Dividend	Return on	Market Cap \$	Cap	Rate of
	Rate (%)	Yield (%)	Yield (%)	Equity (%)	(Mil)	Weight	Return on
						Factor	Equity (%)
Pinnacle West Capital	2.50	4.86	4.98	7.48	8,249	0.00026	0.0019
Pioneer Natural Res.	8.50	4.03	4.37	12.87	59,265	0.00185	0.0238
PNC Financial Serv.	6.50	4.18	4.45	10.95	61,269	0.00191	0.0209
Pool Corp.	5.50	1.08	1.14	6.64	15,837	0.00049	0.0033
PPG Inds.	6.50	1.74	1.85	8.35	33,545	0.00105	0.0087
PPL Corp.	7.50	3.81	4.10	11.60	19,939	0.00062	0.0072
Price (T. Rowe) Group	1.50	4.27	4.33	5.83	26,425	0.00082	0.0048
Principal Fin'l Group	5.50	3.29	3.47	8.97	20,134	0.00063	0.0056
Procter & Gamble	5.00	2.32	2.44	7.44	381,166	0.01189	0.0884
Progressive Corp.	14.50	0.19	0.22	14.72	120,346	0.00375	0.0552
Prologis	0.50	3.03	3.05	3.55	118,969	0.00371	0.0132
Prudential Fin'l	5.50	4.51	4.76	10.26	41,428	0.00129	0.0133
Public Serv. Enterprise	4.00	3.76	3.91	7.91	31,817	0.00099	0.0078
Public Storage	7.00	4.26	4.56	11.56	49,393	0.00154	0.0178
PulteGroup Inc.	6.50	0.72	0.77	7.27	24,229	0.00076	0.0055
Qualcomm Inc.	7.50	1.91	2.05	9.55	187,455	0.00585	0.0558
Quanta Services	15.50	0.15	0.17	15.67	36,306	0.00113	0.0177
Quest Diagnostics	1.50	2.35	2.39	3.89	14,305	0.00045	0.0017
Ralph Lauren	13.00	1.58	1.79	14.79	12,161	0.00038	0.0056
Raymond James Fin'l	12.50	1.47	1.65	14.15	25,603	0.00080	0.0113
Realty Income Corp.	5.50	5.89	6.21	11.71	31,006	0.00097	0.0113
Regency Centers Corp.	14.50	4.45	5.10	19.60	10,292	0.00032	0.0063
Regions Financial	7.50	4.96	5.33	12.83	18,235	0.00057	0.0073
Republic Services	11.00	1.14	1.27	12.27	59,176	0.00185	0.0226
ResMed Inc.	8.50	1.04	1.13	9.63	28,297	0.00088	0.0085
Robert Half Inc.	6.00	2.64	2.80	8.80	8,492	0.00026	0.0023
Rockwell Automation	10.00	1.77	1.95	11.95	32,292	0.00101	0.0120

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
**Standard and Poor's 500 Adjusted**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
Rollins Inc.	9.00	1.28	1.40	10.40	22,668	0.00071	0.0073
Roper Tech.	8.50	0.54	0.59	9.09	59,229	0.00185	0.0168
Ross Stores	15.00	1.00	1.15	16.15	49,525	0.00154	0.0249
RTX Corp.	12.00	2.49	2.79	14.79	125,857	0.00392	0.0580
S&P Global	8.00	0.85	0.92	8.92	134,966	0.00421	0.0375
Salesforce Inc.	18.00	0.52	0.61	18.61	297,204	0.00927	0.1725
SBA Communications	19.00	1.85	2.20	21.20	23,324	0.00073	0.0154
Schwab (Charles)	10.00	1.61	1.77	11.77	127,044	0.00396	0.0466
Seagate Technology plc	11.00	3.20	3.55	14.55	18,315	0.00057	0.0083
Sempra Energy	6.50	3.56	3.79	10.29	44,055	0.00137	0.0141
Sherwin-Williams	11.50	0.84	0.94	12.44	87,309	0.00272	0.0339
Simon Property Group	3.50	5.15	5.33	8.83	51,063	0.00159	0.0141
Skyworks Solutions	1.50	2.75	2.79	4.29	16,911	0.00053	0.0023
Smith (A.O.)	11.50	1.46	1.63	13.13	12,929	0.00040	0.0053
Smucker (J.M.)	7.50	3.50	3.76	11.26	13,105	0.00041	0.0046
Snap-on Inc.	7.50	2.55	2.74	10.24	15,412	0.00048	0.0049
Southern Co.	6.00	4.07	4.31	10.31	76,594	0.00239	0.0246
Stanley Black & Decker	3.50	3.52	3.64	7.14	14,189	0.00044	0.0032
Starbucks Corp.	9.00	2.46	2.68	11.68	104,842	0.00327	0.0382
State Street Corp.	7.00	3.82	4.09	11.09	22,780	0.00071	0.0079
Steel Dynamics	1.50	1.29	1.31	2.81	23,333	0.00073	0.0020
STERIS plc	7.50	0.94	1.01	8.51	23,049	0.00072	0.0061
Stryker Corp.	8.50	0.92	1.00	9.50	134,248	0.00419	0.0398
Synchrony Financial	4.50	2.31	2.41	6.91	17,954	0.00056	0.0039
Sysco Corp.	16.00	2.46	2.85	18.85	40,886	0.00127	0.0240
T-Mobile US	19.50	1.64	1.96	21.46	192,716	0.00601	0.1290
Tapestry Inc.	12.50	2.95	3.32	15.82	10,874	0.00034	0.0054

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
**Standard and Poor's 500 Adjusted**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
Target Corp.	10.50	2.58	2.85	13.35	78,693	0.00245	0.0328
TE Connectivity	8.00	1.67	1.80	9.80	43,730	0.00136	0.0134
Teleflex Inc.	9.00	0.62	0.68	9.68	10,361	0.00032	0.0031
Teradyne Inc.	16.50	0.46	0.54	17.04	16,356	0.00051	0.0087
Texas Instruments	3.00	3.06	3.15	6.15	154,342	0.00481	0.0296
Textron Inc.	16.00	0.08	0.09	16.09	18,323	0.00057	0.0092
Thermo Fisher Sci.	5.00	0.27	0.28	5.28	224,115	0.00699	0.0369
TJX Companies	16.50	1.40	1.63	18.13	112,796	0.00352	0.0638
Tractor Supply	11.00	1.71	1.90	12.90	27,880	0.00087	0.0112
Trane Technologies plc	14.50	1.12	1.28	15.78	67,838	0.00212	0.0334
Travelers Cos.	10.50	1.78	1.97	12.47	51,388	0.00160	0.0200
Truist Fin'l	6.00	5.87	6.22	12.22	49,106	0.00153	0.0187
U.S. Bancorp	4.50	4.51	4.71	9.21	67,710	0.00211	0.0195
UDR Inc.	2.50	4.67	4.79	7.29	12,193	0.00038	0.0028
Union Pacific	6.50	2.15	2.29	8.79	150,142	0.00468	0.0412
United Parcel Serv.	3.50	4.26	4.41	7.91	131,825	0.00411	0.0325
United Rentals	17.00	0.92	1.08	18.08	47,717	0.00149	0.0269
UnitedHealth Group	12.00	1.52	1.70	13.70	457,163	0.01426	0.1953
Universal Health `B'	6.00	0.44	0.47	6.47	12,279	0.00038	0.0025
V.F. Corp.	2.00	2.50	2.55	4.55	5,607	0.00017	0.0008
Valero Energy	6.50	2.41	2.57	9.07	57,731	0.00180	0.0163
Verisk Analytics	9.00	0.66	0.72	9.72	34,270	0.00107	0.0104
Verizon Communic.	0.50	6.63	6.66	7.16	168,669	0.00526	0.0377
VICI Properties	9.50	5.76	6.31	15.81	18,126	0.00057	0.0089
Visa Inc.	13.50	0.74	0.84	14.34	531,118	0.01656	0.2375
Vulcan Materials	8.00	0.68	0.73	8.73	35,897	0.00112	0.0098
Wabtec Corp.	12.00	0.56	0.63	12.63	25,401	0.00079	0.0100

**ROE and ROR Analysis for NSP Gas**  
**CAPM Analysis—Value Line EPS**  
**Standard and Poor's 500 Adjusted**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
<b>Company Name</b>	<b>EPS Growth Rate (%)</b>	<b>Dividend Yield (%)</b>	<b>Expected Dividend Yield (%)</b>	<b>Rate of Return on Equity (%)</b>	<b>Market Cap \$ (Mil)</b>	<b>Market Cap Weight Factor</b>	<b>Weighted Rate of Return on Equity (%)</b>
Walmart Inc.	6.50	1.26	1.34	7.84	494,839	0.01543	0.1210
Waste Management	6.00	1.42	1.51	7.51	85,343	0.00266	0.0200
WEC Energy Group	6.50	4.15	4.42	10.92	25,411	0.00079	0.0087
Wells Fargo	10.50	2.44	2.70	13.20	208,093	0.00649	0.0856
West Pharmac. Svcs.	7.50	0.20	0.22	7.72	29,163	0.00091	0.0070
WestRock Co.	8.50	2.45	2.66	11.16	12,706	0.00040	0.0044
Williams Cos.	10.00	5.02	5.52	15.52	46,088	0.00144	0.0223
Willis Towers Wat. plc	8.50	1.22	1.32	9.82	28,383	0.00089	0.0087
Xcel Energy Inc.	6.00	4.22	4.47	10.47	29,006	0.00090	0.0095
Xylem Inc.	15.50	1.13	1.31	16.81	27,928	0.00087	0.0146
Yum! Brands	10.50	1.90	2.10	12.60	38,223	0.00119	0.0150
Zimmer Biomet Hldgs.	4.50	0.77	0.80	5.30	26,445	0.00082	0.0044
Zoetis Inc.	8.00	1.01	1.09	9.09	78,376	0.00244	0.0222
				<b>Totals</b>	32,069,324	1.00	11.24

**ROE and ROR Analysis for NSP Gas**  
**CAPM ROE Analysis--Value Line**  
**Calculation for Proxy Group**

**Docket No. PU-23-367**  
**Exhibit MFG-15**  
**Schedule 7**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
	<b>Market</b>	<b>Rf</b>	<b>MRP</b>	<b>Beta</b>	<b>RP</b>	<b>CAPM</b>	<b>Filtered</b>
	<b>Return</b>					<b>ROE</b>	<b>Results</b>
Atmos Energy Corporation	11.24%	4.60%	6.64%	0.85	5.64%	10.24%	10.24%
Chesapeake Utilities	11.24%	4.60%	6.64%	0.80	5.31%	9.91%	9.91%
NiSource	11.24%	4.60%	6.64%	0.95	6.31%	10.91%	10.91%
Northwest Natural Holding Co.	11.24%	4.60%	6.64%	0.85	5.64%	10.24%	10.24%
Southwest Gas Holdings	11.24%	4.60%	6.64%	0.85	5.64%	10.24%	10.24%
ONE Gas, Inc.	11.24%	4.60%	6.64%	0.90	5.98%	10.58%	10.58%
Spire, Inc.	11.24%	4.60%	6.64%	0.85	5.64%	10.24%	10.24%
					<b>Mean</b>	10.34%	10.34%
					<b>Median</b>	10.24%	10.24%

A: MFG-15, Sch 5  
B: MFG-15 Sch 1  
C: A - B  
D: MFG-15, Sch 2

E: C \* D  
F: B + E  
G: Low-end test < Column F < High-end test

<b>Low-End Test:</b>	Moody's 10-Year Baa Corporate Bond Index, S&P Global Market Intelligence)	5.94%
	CAPM Risk Premium, Column C	6.64%
	20 percent of CAPM risk premium	1.33%
	Moody's 10-Year Baa Corporate Bond Index + 20 percent of CAPM risk premium	7.27%
<b>High-End Test:</b>	Proxy Group median, Column F	10.24%
	150 percent of Proxy Group median	15.37%
	200 percent of Proxy Group median	20.49%

**ROE and ROR Analysis for NSP Gas**  
**CAPM ROE Analysis**  
**Average of Low-End Tests for Value Line and Kroll**

**Docket No. PU-23-367**  
**Exhibit MFG-15**  
**Schedule 8**

<b>Value Line Low-End Test:</b>	Moody's 10-Year Baa Corporate Bond Index, S&P Global	
	Market Intelligence. MFG-15, Schedule 5	5.94%
	CAPM Risk Premium, Value Line, MFG-15, Schedule 7	6.64%
	20 percent of CAPM risk premium	1.33%
	Moody's 10-Year Baa Public Corporate Bond Index + 20 percent of CAPM risk premium	7.27%
<b>Kroll Low-End Test:</b>	Moody's 10-Year Baa Corporate Bond Index, S&P Global	
	Market Intelligence. MFG-15, Schedule 3	5.94%
	CAPM Risk Premium, Kroll, MFG-15, Schedule 5	5.50%
	20 percent of CAPM risk premium	1.10%
	Moody's 10-Year Baa Public Corporate Bond Index + 20 percent of CAPM risk premium	7.04%
<b>Mean of Value Line and Kroll Low-End Tests</b>		<b>7.15%</b>



Source: S&P Capital IQ Pro Regulatory Research Associates Rate Case History  
 Downloaded April 8, 2024

2021							
State	Company	Docket	Case Type	Date of Decision	Decision Type	Return on Equity (%)	Equity Ratio (%)
Georgia	Atlanta Gas Light Co.	D-42315 (2020 review)	Distribution	1/1/21	Fully Litigated	NA	56.00
Colorado	Black Hills Colorado Gas Inc.	D-20AL-0380G	Distribution	1/6/21	Fully Litigated	NA	NA
Delaware	Delmarva Power & Light Co.	D-20-0150	Distribution	1/6/21	Settled	9.60	50.37
Oregon	Cascade Natural Gas Corp.	D-UG 390	Distribution	1/6/21	Settled	9.40	50.00
Illinois	Ameren Illinois	D-20-0308	Distribution	1/13/21	Fully Litigated	9.67	52.00
Minnesota	CenterPoint Energy Resources	D-G-008/GR-19-524	Distribution	1/14/21	Settled	NA	NA
Nebraska	Black Hills Nebraska Gas	D-NG-109	Distribution	1/26/21	Settled	9.50	50.00
Montana	MDU Resources Group	D2020.06.076	Distribution	2/16/21	Settled	NA	NA
Tennessee	Piedmont Natural Gas Co.	D-20-00086	Distribution	2/16/21	Settled	9.80	50.50
Pennsylvania	Columbia Gas of Pennsylvania	D-R-2020-3018835	Distribution	2/19/21	Fully Litigated	9.86	54.19
District of Columbia	Washington Gas Light Co.	FC-1162	Distribution	2/24/21	Settled	9.25	52.10
California	Southwest Gas Corp.	A-19-08-015 (SoCal)	Distribution	3/25/21	Settled	10.00	52.00
California	Southwest Gas Corp.	A-19-08-015 (NoCal)	Distribution	3/25/21	Settled	10.00	52.00
California	Southwest Gas Corp.	A-19-08-015 (LkTah)	Distribution	3/25/21	Settled	10.00	52.00
Maryland	Washington Gas Light Co.	C-9651	Distribution	4/9/21	Fully Litigated	9.70	52.03
North Dakota	MDU Resources Group	C-PU-20-379	Distribution	5/5/21	Settled	9.30	50.31
Washington	Cascade Natural Gas Corp.	D-UG-200568	Distribution	5/18/21	Fully Litigated	9.40	49.10
New York	Coming Natural Gas Corp.	C-20-G-0101	Distribution	5/19/21	Fully Litigated	8.80	48.00
Pennsylvania	PECO Energy Co	D-R-2020-3018929	Distribution	6/17/21	Fully Litigated	10.24	53.38
Kentucky	Louisville Gas & Electric Co.	C-2020-00350 (gas)	Distribution	6/30/21	Settled	9.43	NA
Tennessee	Atmos Energy Corp.	D-21-00019	Distribution	7/19/21	Settled	NA	59.88
West Virginia	Hope Gas Inc.	C-20-0746-G-42T	Distribution	7/27/21	Fully Litigated	9.54	47.45

**ROE and ROR Analysis for NSP Gas  
Authorized ROEs in Natural Gas Rate Cases  
January 1, 2021-December 31, 2023**

New Hampshire	Liberty Utilities EnergyNorth	D-DG-20-105	Distribution	7/30/21	Settled	9.30	52.00
Wisconsin	Wisconsin Electric Power Co.	D-5-AF-107 (WEP-Gas)	Distribution	8/11/21	NA	NA	NA
Wisconsin	Wisconsin Gas LLC	D-5-AF-107	Distribution	8/11/21	NA	NA	NA
Wisconsin	Wisconsin Public Service Corp.	D-5-AF-107 (Gas)	Distribution	8/11/21	NA	NA	NA
New York	KeySpan Gas East Corp.	C-19-G-0310	Distribution	8/12/21	Settled	8.80	48.00
New York	The Brooklyn Union Gas Co.	C-19-G-0309	Distribution	8/12/21	Settled	8.80	48.00
Oklahoma	CenterPoint Energy Resources	Ca-PUD202100054	Distribution	8/19/21	Settled	NA	NA
Idaho	Avista Corp.	C-AVU-G-21-01	Distribution	9/1/21	Settled	9.40	50.00
Illinois	North Shore Gas Co.	D-20-0810	Distribution	9/8/21	Fully Litigated	9.67	51.58
Michigan	Michigan Gas Utilities Corp.	C-U-20718	Distribution	9/9/21	Settled	9.85	NA
Virginia	Virginia Natural Gas Inc.	C-PUR-2020-00095	Distribution	9/14/21	Settled	9.50	51.89
Arkansas*	CenterPoint Energy Resources	D-17-010-FR (2021 filing)	Distribution	9/23/21	Fully Litigated	NA	32.27
Washington	Avista Corp.	D-UG-200901	Distribution	9/27/21	Settled	9.40	48.50
South Carolina	Piedmont Natural Gas Co.	D-2021-7-G	Distribution	9/29/21	Settled	9.80	52.20
Massachusetts	Boston Gas Co.	DPU 20-120	Distribution	9/30/21	Fully Litigated	9.70	53.44
Indiana	Sthm IN Gas & Electric Co.	Ca-45447	Distribution	10/6/21	Settled	9.70	45.74
Washington	Northwest Natural Gas Co.	D-UG-200994	Distribution	10/21/21	Settled	NA	NA
Missouri	Spire Missouri Inc.	C-GR-2021-0108	Distribution	10/27/21	Fully Litigated	9.37	49.86
Massachusetts	NSTAR Gas Co.	DPU 21-107	Distribution	10/29/21	Fully Litigated	NA	NA
Indiana	Indiana Gas Co.	Ca-45468	Distribution	11/17/21	Settled	9.80	46.21
New Jersey	New Jersey Natural Gas Co.	D-GR21030679	Distribution	11/17/21	Settled	9.60	54.00
Georgia	Atlanta Gas Light Co.	D-42315 (2021 review)	Distribution	11/18/21	Settled	NA	56.00
Illinois	Northern Illinois Gas Co.	D-21-0098	Distribution	11/18/21	Fully Litigated	9.75	54.46
New York	Central Hudson Gas & Electric	C-20-G-0429	Distribution	11/18/21	Settled	9.00	50.00
Wisconsin	Northern States Power Co.	D- 4220-UR-125 (Gas)	Distribution	11/18/21	Settled	10.00	52.50
Wisconsin	Wisconsin Power and Light	D-6680-UR-123 (Gas)	Distribution	11/18/21	Settled	10.00	52.50
Wisconsin	Madison Gas and Electric	D-3270-UR-124 (Gas)	Distribution	11/23/21	Settled	9.80	55.00
Oklahoma	Oklahoma Natural Gas Co	Ca-PUD202100063	Distribution	11/30/21	Settled	9.40	58.55
Maryland	Columbia Gas of Maryland	C-9664	Distribution	12/3/21	Fully Litigated	9.65	52.95
Michigan	DTE Gas Co.	C-U-20940	Distribution	12/9/21	Fully Litigated	9.90	39.23
Colorado	Black Hills Colorado Gas Inc.	D-21AL-0236G	Distribution	12/13/21	Settled	9.20	50.26

**ROE and ROR Analysis for NSP Gas  
Authorized ROEs in Natural Gas Rate Cases  
January 1, 2021-December 31, 2023**

Pennsylvania	Columbia Gas of Pennsylvania	D-R-2021-3024296	Distribution	12/16/21	Settled	NA	NA
Missouri	Union Electric Co.	C-GR-2021-0241	Distribution	12/22/21	Settled	NA	NA
Iowa	Black Hills Iowa Gas Utility	D-RPU-2021-0002	Distribution	12/28/21	Settled	9.60	50.01
Kentucky	Columbia Gas of Kentucky	C-2021-00183	Distribution	12/28/21	Settled	9.35	52.64
Kentucky	Duke Energy Kentucky Inc.	C-2021-00190	Distribution	12/28/21	Settled	9.38	51.34
Kansas	Black Hills Kansas Gas Utility	D-21-BHCG-418-RTS	Distribution	12/30/21	Settled	NA	NA

\*-CenterPoint Energy Arkansas case excluded from Equity Ratio. Capital Structure includes unusual items

<b>Mean</b>	<b>9.56</b>	<b>51.32</b>
<b>Median</b>	<b>9.60</b>	<b>51.95</b>
<b>Range</b>	<b>8.80-10.24</b>	<b>39.23-59.88</b>
	<b>n = 43</b>	<b>n = 44</b>

2022

State	Company	Docket	Case Type	Date of Decision	Decision Type	Return on Equity (%)	Equity Ratio (%)
Kentucky	Delta Natural Gas Co.	C-2021-00185	Distribution	1/3/22	Settled	9.25	NA
North Carolina	Piedmont Natural Gas Co.	D-G-9, Sub 781	Distribution	1/6/22	Settled	9.60	51.60
New York	Niagara Mohawk Power	C-20-G-0381	Distribution	1/20/22	Settled	9.00	48.00
North Carolina	Public Service Co. of NC	D-G-5 Sub 632	Distribution	1/21/22	Settled	9.60	51.60
Nevada	Southwest Gas Corp.	D-21-09001 (Southern)	Distribution	3/22/22	Settled	9.40	50.00
Nevada	Southwest Gas Corp.	D-21-09001 (Northern)	Distribution	3/22/22	Settled	9.40	50.00
New York	Orange & Rockland Utilts Inc.	C-21-G-0073	Distribution	4/14/22	Settled	9.20	48.00
Kentucky	Atmos Energy Corp.	C-2021-00214	Distribution	5/19/22	Fully Litigated	9.23	54.50
New York	Coming Natural Gas Corp.	C-21-G-0394	Distribution	6/16/22	Settled	9.25	48.00
Tennessee	Atmos Energy Corp.	D-22-00010	Distribution	6/20/22	Fully Litigated	NA	60.59
Missouri	Empire District Gas Co.	C-GR-2021-0320	Distribution	6/23/22	Settled	NA	NA
Michigan	Consumers Energy Co.	C-U-21148	Distribution	7/7/22	Settled	9.90	NA
New Hampshire	Northern Utilities Inc.	D-DG-21-104	Distribution	7/20/22	Settled	9.30	52.00
Indiana	Northern IN Public Svc Co. LLC	Ca-45621	Distribution	7/27/22	Settled	9.85	49.47
Oregon	Avista Corp.	D-UG 433	Distribution	8/2/22	Settled	9.40	50.00
New Jersey	Elizabethtown Gas Co.	D-GR21121254	Distribution	8/17/22	Settled	9.60	52.00
Minnesota	CenterPoint Energy Resources	D-G-008/GR-21-435	Distribution	8/18/22	Settled	9.39	51.00
Washington	Cascade Natural Gas Corp.	D-UG-210755	Distribution	8/23/22	Settled	9.40	47.00

**ROE and ROR Analysis for NSP Gas  
Authorized ROEs in Natural Gas Rate Cases  
January 1, 2021-December 31, 2023**

Pennsylvania	UGI Utilities Inc.	D-R-2021-3030218	Distribution	9/15/22	Settled	NA	NA
South Carolina	Piedmont Natural Gas Co.	D-2022-89-G	Distribution	9/15/22	Settled	9.30	52.20
Massachusetts	Boston Gas Co.	DPU 22-74	Distribution	9/26/22	Fully Litigated	NA	NA
Delaware	Delmarva Power & Light Co.	D-22-0002	Distribution	10/12/22	Settled	9.60	49.94
Arkansas	Black Hills Energy Arkansas	D-21-097-U	Distribution	10/10/22	Fully Litigated	9.60	45.00
Oregon	Northwest Natural Gas Co.	D-UG-435	Distribution	10/24/22	Settled	9.40	50.00
Colorado	Public Service Co. of CO	D-22AL-0046G	Distribution	10/25/22	Fully Litigated	9.20	53.78
Massachusetts	The Berkshire Gas Co.	DPU 22-20	Distribution	10/27/22	Settled	9.70	54.00
North Dakota	Northern States Power Co.	C-PU-21-381	Distribution	10/27/22	Settled	9.80	52.54
Pennsylvania	PECO Energy Co	D-R-2022-3031113	Distribution	10/27/22	Settled	NA	NA
California	San Diego Gas & Electric Co.	A-21-08-014 (Gas)	Distribution	11/3/22	Fully Litigated	10.20	52.00
Oklahoma	Summit Utilities Inc.	Ca-PUD202200022	Distribution	11/10/22	Settled	NA	NA
Maryland	Columbia Gas of Maryland Inc	C-9680	Distribution	11/17/22	Settled	9.65	52.97
Oklahoma	Oklahoma Natural Gas Co	Ca-PUD202200023	Distribution	11/29/22	Settled	NA	NA
Missouri	Spire Missouri Inc.	C-GR-2022-0179	Distribution	11/30/22	Settled	NA	NA
New Mexico	New Mexico Gas Co.	C-21-00267-UT	Distribution	11/30/22	Settled	9.38	52.00
Pennsylvania	Columbia Gas of Pennsylvania	D-R-2022-3031211	Distribution	12/8/22	Settled	NA	NA
Washington	Avista Corp.	D-UG-220054	Distribution	12/12/22	Settled	NA	NA
California	Southern California Gas Co.	A-22-04-011	Distribution	12/15/22	Fully Litigated	9.80	52.00
New Jersey	South Jersey Gas Co.	D-GR22040253	Distribution	12/21/22	Settled	9.60	54.00
Washington	Puget Sound Energy Inc.	D-UG-220067	Distribution	12/22/22	Settled	9.40	49.00
Wisconsin	Wisconsin Public Service Corp.	D-6690-UR-127 (Gas)	Distribution	12/22/22	Fully Litigated	9.80	53.40
Utah	Dominion Energy Inc.	D-22-057-03	Distribution	12/23/22	Fully Litigated	9.60	51.00
Wisconsin	Wisconsin Electric Power Co.	D-5-UR-110 (WEP-Gas)	Distribution	12/29/22	Fully Litigated	9.80	58.22
Wisconsin	Wisconsin Gas LLC	D-5-UR-110	Distribution	12/29/22	Fully Litigated	9.80	52.70

\*-Black Hills Energy Arkansas case excluded from Equity Ratio. Capital Structure includes unusual items.

<b>Mean</b>	<b>9.53</b>	<b>51.52</b>
<b>Median</b>	<b>9.60</b>	<b>51.80</b>
<b>Range</b>	<b>9.20-10.20</b>	<b>45.00-60.59</b>
	<b>n = 33</b>	<b>n = 32</b>

State	Company	Docket	Case Type	Date of Decision	Decision Type	Return on Equity (%)	Equity Ratio (%)
Texas	Texas Gas Service Co.	D-OSS-22-00009896	Distribution	1/19/23	Fully Litigated	9.60	59.74
Arizona	Southwest Gas Corp.	D-G-01551A-21-0368	Distribution	1/23/23	Settled	9.30	50.00
Florida	Florida Public Utilities Co.	D-20220067-GU	Distribution	1/24/23	Fully Litigated	10.25	45.16
Ohio	Columbia Gas Ohio Inc.	C-21-0637-GA-AIR	Distribution	1/26/23	Settled	9.60	50.60
Minnesota	Northern States Power Co.	D-G-002/GR-21-678	Distribution	3/23/23	Settled	9.57	52.50
Florida	Pivotal Utility Holdings Inc.	20220069-GU	Distribution	3/28/23	Fully Litigated	9.50	59.60
South Dakota	MidAmerican Energy Co.	D-NG22-005	Distribution	3/28/23	Settled	NA	NA
Colorado	Atmos Energy Corp.	D-22AL-0348G	Distribution	5/4/23	Settled	9.30	58.00
Kansas	Atmos Energy Corp.	D-23-ATMG-359-RTS	Distribution	5/9/23	Settled	NA	NA
Virginia	Columbia Gas of Virginia Inc	C-PUR-2022-00036	Distribution	5/15/23	Settled	NA	NA
Pennsylvania	Natl Fuel Gas Distribution	D-R-2022-3035730	Distribution	6/15/23	Settled	NA	NA
Idaho	Intermountain Gas Co.	C-INT-G-22-07	Distribution	6/30/23	Settled	9.50	50.00
Oklahoma	Oklahoma Natural Gas Co	Ca-PUD2023-000012	Distribution	7/11/23	Settled	NA	NA
New York	Consolidated Edison Company of	C-22-G-0065	Distribution	7/20/23	Settled	9.25	48.00
Virginia	Virginia Natural Gas Inc.	C-PUR-2022-00052	Distribution	8/28/23	Settled	NA	NA
Virginia	Washington Gas Light Co.	C-PUR-2022-00054	Distribution	8/29/23	Settled	NA	NA
Michigan	Consumers Energy Co.	C-U-21308	Distribution	8/30/23	Settled	9.90	NA
Michigan	Michigan Gas Utilities Corp.	C-U-21366	Distribution	8/30/23	Settled	9.80	NA
Idaho	Avista Corp.	C-AVU-G-23-01	Distribution	8/31/23	Settled	9.40	50.00
Maine	Northern Utilities Inc.	D-2023-00051	Distribution	9/20/23	Settled	9.35	52.01
South Carolina	Dominion Energy South Carolina	D-2023-70-G	Distribution	9/20/23	Settled	9.49	54.78
Massachusetts	Boston Gas Co.	DPU 23-56	Distribution	9/28/23	Fully Litigated	NA	NA
South Carolina	Piedmont Natural Gas Co.	D-2023-7-G	Distribution	10/5/23	Settled	9.30	53.13
Tennessee	Chattanooga Gas Co.	D-23-00029	Distribution	10/6/23	Settled	9.80	49.23
New York	NY State Electric & Gas	C-22-G-0318	Distribution	10/12/23	Settled	9.20	48.00
New York	Rochester Gas & Electric Corp.	C-22-G-0320	Distribution	10/12/23	Settled	9.20	48.00
Montana	NorthWestern Energy Group	D-2022-7-78 (gas)	Distribution	10/25/23	Settled	9.55	48.02
Maryland	Columbia Gas of Maryland	C-9701	Distribution	10/26/23	Settled	NA	NA
Minnesota	Minnesota Energy	D-G-011/GR-22-504	Distribution	10/26/23	Settled	9.65	53.00
Oregon	Avista Corp.	D-UG-461	Distribution	10/26/23	Settled	9.50	50.00
Massachusetts	NSTAR Gas Co.	DPU 23-94	Distribution	10/30/23	Fully Litigated	NA	NA

**ROE and ROR Analysis for NSP Gas  
Authorized ROEs in Natural Gas Rate Cases  
January 1, 2021-December 31, 2023**

Ohio	Duke Energy Ohio Inc.	C-22-0507-GA-AIR	Distribution	11/1/23	Settled	9.60	52.32
Wisconsin	Madison Gas and Electric Co.	D-3270-UR-125 (Gas)	Distribution	11/3/23	Fully Litigated	9.70	56.06
Wyoming	Questar Gas Co.	D-30010-215-GR-23	Distribution	11/7/23	Settled	9.65	51.56
Florida	Peoples Gas System	D-20230023-GU	Distribution	11/9/23	Fully Litigated	10.15	NA
Wisconsin	Northern States Power Co.	D-4220-UR-126 (Gas)	Distribution	11/9/23	Fully Litigated	9.80	52.50
Wisconsin	Wisconsin Power and Light Co	D-6680-UR-124 (Gas)	Distribution	11/9/23	Fully Litigated	9.80	53.70
California	Pacific Gas and Electric Co.	A-21-06-021 (Gas)	Distribution	11/16/23	Fully Litigated	NA	NA
Illinois	Ameren Illinois	D-23-0067	Distribution	11/16/23	Fully Litigated	9.44	50.00
Illinois	North Shore Gas Co.	D-23-0068	Distribution	11/16/23	Fully Litigated	9.38	52.58
Illinois	Northern Illinois Gas Co.	D-23-0066	Distribution	11/16/23	Fully Litigated	9.51	50.00
Illinois	The Peoples Gas Light & Coke C	D-23-0069	Distribution	11/16/23	Fully Litigated	9.38	50.79
Tennessee	Piedmont Natural Gas Co.	D-23-00035	Distribution	12/4/23	Settled	9.80	50.09
Maryland	Baltimore Gas and Electric Co.	C-9692 (GAS)	Distribution	12/14/23	Fully Litigated	9.45	52.00
Maryland	Washington Gas Light Co.	C-9704	Distribution	12/14/23	Fully Litigated	9.50	52.60
District of Columbia	Washington Gas Light Co.	FC-1169	Distribution	12/15/23	Fully Litigated	9.65	52.00
Virginia	Roanoke Gas Co.	C-PUR-2022-00205 (Exp	Distribution	12/19/23	Settled	NA	NA
West Virginia	Mountaineer Gas Co.	C-23-0280-G-42T	Distribution	12/21/23	Settled	9.75	NA
California	Southern California Gas Co.	Advice Letter No. 6207-G	Distribution	12/22/23	Fully Litigated	10.50	52.00

<b>Mean</b>	<b>9.60</b>	<b>51.76</b>
<b>Median</b>	<b>9.55</b>	<b>50.60</b>
<b>Range</b>	<b>9.20-10.50</b>	<b>45.16-59.74</b>
	<b>n = 37</b>	<b>n = 33</b>

**Overall 2021-2023**

<b>Mean</b>	<b>9.56</b>	<b>51.34</b>
<b>Median</b>	<b>9.60</b>	<b>51.95</b>
<b>Range</b>	<b>8.80-10.50</b>	<b>45.16-59.74</b>
	<b>n = 113</b>	<b>n = 109</b>

**ROE and ROR Analysis for NSP Gas**  
**Summary of ROE Analyses and Recommended ROE**

**Docket No. PU-23-367**  
**Exhibit MFG-17**  
**Schedule 1**

<b>Analysis</b>	<b>Weight</b>	<b>ROE</b>	<b>Exhibit</b>		
Constant-Growth DCF	<b>Mean</b>	10.09%	Exhibit MFG-14, Schedule 1		
	<b>Median</b>	10.09%			
Multistage DCF	<b>Mean</b>	9.45%	Exhibit MFG-14, Schedule 5		
	<b>Median</b>	9.30%			
CAPM Kroll Market Risk Premium	<b>Mean</b>	9.35%	Exhibit MFG-15, Schedule 5		
	<b>Median</b>	9.28%			
CAPM S&P 500 Value Line	<b>Mean</b>	10.34%	Exhibit MFG-15, Schedule 7		
	<b>Median</b>	10.24%			
<b>DCF and CAPM Value Line results</b>		<b>Mean</b>	9.81%		
		<b>Median</b>	9.73%		
		<b>2121</b>	<b>2022</b>	<b>2023</b>	
<b>Recently awarded ROEs</b>	<b>Mean</b>	9.56	9.53	9.60	Exhibit MFG-16
	<b>Median</b>	9.60	9.60	9.55	
	<b>Range</b>	8.80-10.24	9.20-10.20	9.20-10.50	
	<b>Cases</b>	n = 43	n = 33	n = 37	
		<b>Overall</b>			
	<b>Mean</b>	9.56			
	<b>Median</b>	9.60			
	<b>Range</b>	8.80-10.50			
	<b>Cases</b>	n = 113			
<b>Recommended ROE for NSP Gas</b>		9.80%			

**S&P Capital IQ** PRO

S&P Market Intelligence website, downloaded June 23, 2024  
 In thousands of dollars

Company Name	2024Q1	2023Q4	2023Q3	2023Q2	2023Q1	2022Q4	2022Q3	2022Q2	Average 2022Q2- 2024Q1
<b>Average Long-Term Debt for each quarter</b>									
Atmos Energy Corporation	7,527,695	7,181,468	6,738,154	6,597,871	6,552,446	6,248,372	5,852,056	5,758,380	6,557,055
Chesapeake Utilities	1,196,312	926,233	656,084	662,861	629,587	593,794	598,210	605,826	733,613
NiSource, Inc.	11,402,950	11,046,300	11,007,050	10,633,750	9,910,100	9,538,350	9,520,700	9,350,000	10,301,150
Northwest Natural Holding Company	1,577,194	1,502,325	1,437,288	1,372,711	1,349,012	1,345,304	1,244,916	1,124,093	1,369,105
ONE Gas, Inc.	2,160,532	2,018,651	1,869,407	1,875,893	2,277,358	2,554,098	2,356,459	2,283,743	2,174,517
Southwest Gas Holdings, Inc.	4,694,173	4,987,463	5,260,192	4,931,222	4,546,128	5,190,124	5,227,023	4,574,106	4,926,304
Spire Inc.	3,334,600	3,436,000	3,588,750	3,627,900	3,429,400	3,094,250	3,120,050	3,207,600	3,354,819

Company Name	2024Q1	2023Q4	2023Q3	2023Q2	2023Q1	2022Q4	2022Q3	2022Q2	Average 2022Q2- 2024Q1
<b>Average Short-Term Debt for each quarter</b>									
Atmos Energy Corporation	10,538	150,363	148,378	4,513	1,101,498	2,313,276	2,313,249	2,201,417	1,030,404
Chesapeake Utilities	196,079	170,871	129,552	118,152	172,161	208,764	176,167	162,066	166,726
NiSource, Inc.	2,163,500	2,663,700	1,933,000	1,465,600	1,554,300	1,549,750	947,550	585,100	1,607,813
Northwest Natural Holding Company	170,300	253,261	273,495	299,179	332,662	271,693	208,671	279,254	261,064
ONE Gas, Inc.	938,255	1,011,145	1,075,757	1,055,689	829,984	623,070	1,281,762	1,897,644	1,089,163
Southwest Gas Holdings, Inc.	694,278	400,810	78,728	283,514	1,061,331	1,017,870	963,254	1,634,546	766,791
Spire Inc.	1,298,750	1,311,700	1,041,550	890,900	1,150,600	1,404,400	1,032,800	689,350	1,102,506

Company Name	2024Q1	2023Q4	2023Q3	2023Q2	2023Q1	2022Q4	2022Q3	2022Q2	Average 2022Q2- 2024Q1
<b>Average Common Equity for each quarter</b>									
Atmos Energy Corporation	11,445,924	11,071,637	10,736,223	10,403,793	10,020,740	9,627,683	9,343,631	9,125,701	10,221,916
Chesapeake Utilities	1,263,504	1,056,391	865,453	861,408	845,695	823,620	815,070	810,607	917,718
NiSource, Inc.	7,201,250	6,283,200	6,068,800	6,102,750	5,970,050	5,621,650	5,446,250	5,450,250	6,018,025
Northwest Natural Holding Company	1,313,612	1,251,689	1,229,909	1,244,293	1,211,874	1,148,149	1,129,818	1,063,362	1,199,088
ONE Gas, Inc.	2,797,931	2,706,312	2,650,787	2,653,153	2,617,953	2,515,350	2,449,935	2,451,493	2,605,364
Southwest Gas Holdings, Inc.	3,333,139	3,274,391	3,250,786	3,279,491	3,177,458	3,235,837	3,435,884	3,473,967	3,307,619
Spire Inc.	2,978,550	2,742,050	2,682,900	2,717,500	2,683,300	2,599,300	2,590,200	2,601,550	2,699,419

Company Name	Average Total Capital 2022Q2- 2024Q1	Long-Term Debt %	Short-Term Debt %	Common Equity %	
Atmos Energy Corporation	17,809,375	36.82%	5.79%	57.40%	100.00%
Chesapeake Utilities	1,818,057	40.35%	9.17%	50.48%	100.00%
NiSource, Inc.	17,926,988	57.46%	8.97%	33.57%	100.00%
Northwest Natural Holding Company	2,829,257	48.39%	9.23%	42.38%	100.00%
ONE Gas, Inc.	5,869,045	37.05%	18.56%	44.39%	100.00%
Southwest Gas Holdings, Inc.	9,000,714	54.73%	8.52%	36.75%	100.00%
Spire Inc.	7,156,744	46.88%	15.41%	37.72%	100.00%
<b>Proxy Group</b>	<b>Average %</b>	45.95%	10.80%	43.24%	100.00%
<b>Proxy Group w/o ONE Gas and Spire</b>	<b>Average %</b>	47.55%	8.33%	44.11%	100.00%
<b>Capital structure requested by NSP Gas</b>		47.38%	0.12%	52.50%	100.00%
<b>Recommended capital structure for NSP Gas</b>		47.50%	2.50%	50.00%	100.00%

**ROE and ROR Analysis for NSP Gas**  
**Recommended ROE and ROR**  
**Weighted Average Cost of Capital**  
**Based on Inputs from MFG-20, Schedules 1-2**

**Docket No. PU-23-367**  
**Exhibit MFG-17**  
**Schedule 3**

	<b>Rate of Return NDPS</b>		
	<b>Ratio</b>	<b>Cost</b>	<b>WACC</b>
<b>Long-Term Debt</b>	47.50%	4.54%	2.16%
<b>Short-Term Debt</b>	2.50%	7.72%	0.19%
<b>Common Equity</b>	50.00%	9.80%	4.90%
<b>Overall Rate of Return</b>	100.00%		7.25%

<b>Flotation Cost Calculation</b>	
<b>Year</b>	<b>Percentage</b>
2013	1.179
2014	1.097
2018	1.002
2019	0.416
2020	1.133
2021	0.909
2022	0.913
2022	0.869
2022	0.904
2023	0.850

The recommended common equity cost of 9.80 percent is taken from Exhibit MFG-20, Schedule 1. The capital structure incorporates information from Exhibit MFG-20, Schedule 2. The cost of long-term debt and short-term debt are taken from the Direct Testimony of Joshua C. Nowak, page 5.

**Mean** 0.927  
**Adjustment** 0.037%

	<b>Requested Rate of Return NSP Gas</b>		
	<b>Ratio</b>	<b>Cost</b>	<b>WACC</b>
<b>Long-Term Debt</b>	47.38%	4.54%	2.15%
<b>Short-Term Debt</b>	0.12%	7.72%	0.01%
<b>Common Equity</b>	52.50%	10.20%	5.36%
<b>Overall Rate of Return</b>	100.00%		7.52%

Percentages from Exhibit (JCN-1), Schedule 9, Page 1 of 2; Adjustment from Exhibit MFG-14, Schedule 1

The recommended common equity cost of 10.20 percent is taken from the Direct Testimony of Joshua C. Nowak, Exhibit JCN-1, Page 4. The capital structure is taken from the Direct Testimony of Mr. Nowak, page 56. The costs of long-term debt and short-term debt are taken from the Direct Testimony of Mr. Nowak, page 5.

**ROE and ROR Analysis for NSP Gas  
Summary of ROE Analyses and Recommended ROE**

**Docket No. PU-23-367  
Exhibit MFG-17  
Schedule 1**

<b>Analysis</b>	<b>Weight</b>	<b>ROE</b>	<b>Exhibit</b>		
Constant-Growth DCF	<b>Mean</b>	10.09%	Exhibit MFG-14, Schedule 1		
	<b>Median</b>	10.09%			
Multistage DCF	<b>Mean</b>	9.45%	Exhibit MFG-14, Schedule 5		
	<b>Median</b>	9.30%			
CAPM Kroll Market Risk Premium	<b>Mean</b>	9.35%	Exhibit MFG-15, Schedule 4		
	<b>Median</b>	9.28%			
CAPM S&P 500 Value Line	<b>Mean</b>	10.34%	Exhibit MFG-15, Schedule 6		
	<b>Median</b>	10.24%			
<b>DCF and CAPM Value Line results</b>		<b>Mean</b>	9.81%		
		<b>Median</b>	9.73%		
		<b>2121</b>	<b>2022</b>	<b>2023</b>	
<b>Recently awarded ROEs</b>	<b>Mean</b>	9.56	9.53	9.60	Exhibit MFG-16
	<b>Median</b>	9.60	9.60	9.55	
	<b>Range</b>	8.80-10.24	9.20-10.20	9.20-10.50	
	<b>Cases</b>	n = 43	n = 33	n = 37	
		<b>Overall</b>			
	<b>Mean</b>	9.56			
	<b>Median</b>	9.60			
	<b>Range</b>	8.80-10.50			
	<b>Cases</b>	n = 113			
<b>Recommended ROE for Summit Utilities Arkansas</b>		9.80%			

**S&P Capital IQ** PRO

S&P Market Intelligence website, downloaded June 23, 2024  
 In thousands of dollars

Company Name	2024Q1	2023Q4	2023Q3	2023Q2	2023Q1	2022Q4	2022Q3	2022Q2	Average 2022Q2- 2024Q1
<b>Average Long-Term Debt for each quarter</b>									
Atmos Energy Corporation	7,527,695	7,181,468	6,738,154	6,597,871	6,552,446	6,248,372	5,852,056	5,758,380	6,557,055
Chesapeake Utilities	1,196,312	926,233	656,084	662,861	629,587	593,794	598,210	605,826	733,613
NiSource, Inc.	11,402,950	11,046,300	11,007,050	10,633,750	9,910,100	9,538,350	9,520,700	9,350,000	10,301,150
Northwest Natural Holding Company	1,577,194	1,502,325	1,437,288	1,372,711	1,349,012	1,345,304	1,244,916	1,124,093	1,369,105
ONE Gas, Inc.	2,160,532	2,018,651	1,869,407	1,875,893	2,277,358	2,554,098	2,356,459	2,283,743	2,174,517
Southwest Gas Holdings, Inc.	4,694,173	4,987,463	5,260,192	4,931,222	4,546,128	5,190,124	5,227,023	4,574,106	4,926,304
Spire Inc.	3,334,600	3,436,000	3,588,750	3,627,900	3,429,400	3,094,250	3,120,050	3,207,600	3,354,819

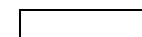
Company Name	2024Q1	2023Q4	2023Q3	2023Q2	2023Q1	2022Q4	2022Q3	2022Q2	Average 2022Q2- 2024Q1
<b>Average Short-Term Debt for each quarter</b>									
Atmos Energy Corporation	10,538	150,363	148,378	4,513	1,101,498	2,313,276	2,313,249	2,201,417	1,030,404
Chesapeake Utilities	196,079	170,871	129,552	118,152	172,161	208,764	176,167	162,066	166,726
NiSource, Inc.	2,163,500	2,663,700	1,933,000	1,465,600	1,554,300	1,549,750	947,550	585,100	1,607,813
Northwest Natural Holding Company	170,300	253,261	273,495	299,179	332,662	271,693	208,671	279,254	261,064
ONE Gas, Inc.	938,255	1,011,145	1,075,757	1,055,689	829,984	623,070	1,281,762	1,897,644	1,089,163
Southwest Gas Holdings, Inc.	694,278	400,810	78,728	283,514	1,061,331	1,017,870	963,254	1,634,546	766,791
Spire Inc.	1,298,750	1,311,700	1,041,550	890,900	1,150,600	1,404,400	1,032,800	689,350	1,102,506

ROE and ROR Analysis NSP Gas  
 Capital Structure Analysis  
 Proxy Group Ratios

Company Name	2024Q1	2023Q4	2023Q3	2023Q2	2023Q1	2022Q4	2022Q3	2022Q2	Average 2022Q2- 2024Q1
<b>Average Common Equity for each quarter</b>									
Atmos Energy Corporation	11,445,924	11,071,637	10,736,223	10,403,793	10,020,740	9,627,683	9,343,631	9,125,701	10,221,916
Chesapeake Utilities	1,263,504	1,056,391	865,453	861,408	845,695	823,620	815,070	810,607	917,718
NiSource, Inc.	7,201,250	6,283,200	6,068,800	6,102,750	5,970,050	5,621,650	5,446,250	5,450,250	6,018,025
Northwest Natural Holding Company	1,313,612	1,251,689	1,229,909	1,244,293	1,211,874	1,148,149	1,129,818	1,063,362	1,199,088
ONE Gas, Inc.	2,797,931	2,706,312	2,650,787	2,653,153	2,617,953	2,515,350	2,449,935	2,451,493	2,605,364
Southwest Gas Holdings, Inc.	3,333,139	3,274,391	3,250,786	3,279,491	3,177,458	3,235,837	3,435,884	3,473,967	3,307,619
Spire Inc.	2,978,550	2,742,050	2,682,900	2,717,500	2,683,300	2,599,300	2,590,200	2,601,550	2,699,419

ROE and ROR Analysis NSP Gas  
 Capital Structure Analysis  
 Proxy Group Ratios

Company Name	Average Total Capital		Long-Term Debt %	Short-Term Debt %	Common Equity %	
	2022Q2-	2024Q1				
Atmos Energy Corporation	17,809,375		36.82%	5.79%	57.40%	100.00%
Chesapeake Utilities	1,818,057		40.35%	9.17%	50.48%	100.00%
NiSource, Inc.	17,926,988		57.46%	8.97%	33.57%	100.00%
Northwest Natural Holding Company	2,829,257		48.39%	9.23%	42.38%	100.00%
ONE Gas, Inc.	5,869,045		37.05%	18.56%	44.39%	100.00%
Southwest Gas Holdings, Inc.	9,000,714		54.73%	8.52%	36.75%	100.00%
Spire Inc.	7,156,744		46.88%	15.41%	37.72%	100.00%
<b>Proxy Group</b>	<b>Average %</b>		45.95%	10.80%	43.24%	100.00%
<b>Proxy Group w/o ONE Gas and Spire</b>	<b>Average %</b>		47.55%	8.33%	44.11%	100.00%
<b>Capital structure requested by NSP Gas</b>			47.38%	0.12%	52.50%	100.00%
<b>Recommended capital structure for NSP Gas</b>			<b>Long-Term Debt</b>	<b>Short-Term Debt</b>	<b>Common Equity</b>	
			47.50%	2.50%	50.00%	100.00%



**ROE and ROR Analysis for NSP Gas  
Recommended ROE and ROR  
Weighted Average Cost of Capital  
Based on Inputs from MFG-20, Schedules 1-2**

**Docket No. PU-23-367  
Exhibit MFG-17  
Schedule 3**

**Rate of Return NDPSC**

	<b>Ratio</b>	<b>Cost</b>	<b>WACC</b>
<b>Long-Term Debt</b>	47.50%	4.54%	2.16%
<b>Short-Term Debt</b>	2.50%	7.72%	0.19%
<b>Common Equity</b>	50.00%	9.80%	4.90%
<b>Overall Rate of Return</b>	100.00%		7.25%

The recommended common equity cost of 9.80 percent is taken from Exhibit MFG-20, Schedule 1. The capital structure incorporates information from Exhibit MFG-20, Schedule 2. The cost of long-term debt and short-term debt are taken from the Direct Testimony of Joshua C. Nowak, page 5.

**Requested Rate of Return  
NSP Gas**

	<b>Ratio</b>	<b>Cost</b>	<b>WACC</b>
<b>Long-Term Debt</b>	47.38%	4.54%	2.15%
<b>Short-Term Debt</b>	0.12%	7.72%	0.01%
<b>Common Equity</b>	52.50%	10.20%	5.36%
<b>Overall Rate of Return</b>	100.00%		7.52%

The recommended common equity cost of 10.20 percent is taken from the Direct Testimony of Joshua C. Nowak, Exhibit JCN-1, Page 4. The capital structure is taken from the Direct Testimony of Mr. Nowak, page 56. The costs of long-term debt and short-term debt are taken from the Direct Testimony of Mr. Nowak, page 5.

**Flotation Cost Calculation**

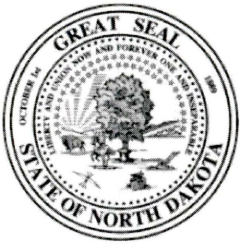
<b>Year</b>	<b>Percentage</b>
2013	1.179
2014	1.097
2018	1.002
2019	0.416
2020	1.133
2021	0.909
2022	0.913
2022	0.869
2022	0.904
2023	0.850

**Mean** 0.927

**Adjustment** 0.037%

Percentages from Exhibit (JCN-1), Schedule 9, Page 1 of 2; Adjustment from Exhibit MFG-14, Schedule 1





# Public Service Commission

Sheri Haugen-Hoffart

Randy Christmann

Julie Fedorchak

600 East Boulevard Ave  
Dept. 408  
Bismarck, ND 58505-0480  
701-328-2400  
ndpsc@nd.gov

July 3, 2024

Public Service Commission  
Attention: Steve Kahl  
600 East Boulevard Avenue, Dept 408  
Bismarck, ND 58505-0480

In re: Northern States Power Company  
2024 Natural Gas Rate Increase  
Application  
Case No. PU-23-367

Dear Mr. Kahl,

Enclosed for filing in the above referenced matter please find the original copy of the following public document:

1. Revised Prefiled Direct Testimony of Karl R. Pavlovic.

Respectfully,

A handwritten signature in black ink, appearing to read "Brian Johnson".

Brian Johnson  
Special Assistant Attorney General Bar ID 07397  
North Dakota Public Service Commission  
600 East Boulevard Avenue Dept. 408  
Bismarck, ND 58505  
701-328-2407

STATE OF NORTH DAKOTA  
BEFORE THE NORTH DAKOTA PUBLIC SERVICE COMMISSION

---

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

---

Case No. PU-23-367

**DIRECT TESTIMONY OF  
KARL R. PAVLOVIC**

**Submitted on Behalf of  
the Advocacy Staff of the  
North Dakota Public Service Commission**

July 1, 2024

**DIRECT TESTIMONY OF  
KARL R. PAVLOVIC**

**QUALIFICATIONS**

**Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.**

A. My name is Karl Richard Pavlovic. My business address is 22 Brookes Avenue, Gaithersburg, MD 20877. I am a Senior Consultant with and the Managing Director of PCMG and Associates LLC.

**Q. PLEASE DESCRIBE PCMG.**

A. PCMG and Associates LLC (PCMG) is an association of experts in economics, accounting, finance, and utility regulation and policy, with over 75 years collective experience providing assistance to counsel and expert testimony regarding the regulation of electric, gas, water, and wastewater utilities. PCMG began operation on January 1, 2015. During its most recent year of operation, PCMG has provided assistance to counsel and/or testimony in regulatory proceedings before Federal Energy Regulatory Commission, the Pennsylvania Public Service Commission, the Maine Public Utilities Commission, the Massachusetts Department of Public Utilities, the New Jersey Board of Public Utilities, and the Hawaii Public Utilities Commission. PCMG is currently providing assistance to the Hawaii Division of Consumer Advocate, the Maine Office of the Public Advocate, the Massachusetts Office of the Attorney General, the New Jersey Division of Rate Counsel, and the Pennsylvania Office of Consumer Advocate.

1 **Q. HAVE YOU PREPARED A SUMMARY OF YOUR QUALIFICATIONS AND**  
2 **EXPERIENCE?**

3 A. Yes. Exhibit KRP-1 to my testimony summarizes my qualifications and experience.

4 **Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN REGULATORY**  
5 **PROCEEDINGS?**

6 A. Yes. Exhibit KRP-1 also contains a complete list of my engagements as an expert and/or  
7 expert witness in matters before state and federal regulatory agencies. I have submitted  
8 testimony to the Federal Communications Commission, the Federal Energy Regulatory  
9 Commission, the Alaska Public Utilities Commission, the Alberta Utilities Commission,  
10 the California Public Utilities Commission, the Delaware Public Service Commission, the  
11 Public Service Commission of the District of Columbia, the Hawaii Public Utilities  
12 Commission, the Illinois Commerce Commission, the Kansas Corporation Commission,  
13 the Maine Public Utilities Commission, the Maryland Public Service Commission, the  
14 Massachusetts Department of Public Utilities, the Missouri Public Service Commission,  
15 and the North Dakota Public Service Commission.

16 **Q. IN WHICH PROCEEDINGS HAVE YOU PREVIOUSLY APPEARED BEFORE**  
17 **THIS COMMISSION?**

18 A. I appeared on behalf of the North Dakota Public Service Commission Advocacy Staff in  
19 Case No. PU-12-813 Application of Northern States Power Company for Authority to  
20 Increase Rates for Electric Service in North Dakota, in Case No. PU-17-295 Montana-  
21 Dakota Utilities Co. for Authority to Establish Increased Rates for Natural Gas Service,  
22 in Case PU-20-441 Application of Northern States Power Company for Authority to

1 Increase Rates for Electric Service in North Dakota, and in Case No. PU-21-381  
2 Application of Northern States Power Company for Authority to Increase Rates for  
3 Natural Gas Service in North Dakota.

4 **Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS?**

5 A. I received undergraduate and graduate degrees in Philosophy from Yale College and  
6 Purdue University. By education and professional experience I have expertise in formal  
7 and mathematical logic, statistics, economics, financial analysis, econometrics, and  
8 computer modeling. I have knowledge and experience in the areas of commercial and  
9 industrial operations in the energy, transportation, and telecommunications industries and  
10 am familiar with a wide range of experimental and investigative methods in science and  
11 engineering.

12 **Q. PLEASE SUMMARIZE YOUR ELECTRIC AND GAS REGULATORY**  
13 **EXPERIENCE.**

14 For most of my career I have performed analyses and submitted testimony regarding  
15 electric and gas utility least-cost planning, reliability, cost of service, rate design, and  
16 weather-emergency response. Specifically regarding gas utilities, I have testified on: (a)  
17 integrated resource planning, (b) class cost of service and rate design, and (c) various  
18 infrastructure operating expense and investment recovery mechanisms.

19 **I. PURPOSE AND ORGANIZATION**

20 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

21 A. I have been asked by the Commission's Advocacy Staff to address Northern States Power  
22 (NSP) assertions and proposals in this proceeding regarding (1) North Dakota class cost of

1 service study, (2) North Dakota class revenue responsibility distribution, and (3) North  
2 Dakota rate design.

3 **Q. HAVE YOU PREPARED ANY EXHIBITS IN SUPPORT OF YOUR**  
4 **RECOMMENDATIONS?**

5 A. Yes. I have included the following four exhibits:

6 Exhibit No. KRP-1: Qualifications

7 Exhibit No. KRP-2: CCOSS Without Minimum System Classification

8 Exhibit No. KRP-3: Calculations for Tables 2, 3, 4 and 5.

9  
10  
11 **II. SUMMARY OF TESTIMONY AND CONCLUSIONS**

12 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

13 A. My testimony finds the following.

- 14 • The NSP CCOSS' use of a minimum size study to classify a portion of  
15 distribution mains as customer-related is inconsistent with the principle of cost  
16 causation.
- 17 • The NSP CCOSS' use of customer and demand allocators to allocate mains is  
18 inconsistent with the principle of cost causation.
- 19 • NSP's CCOSS without minimum-size classification and allocation of distribution  
20 mains is a guide to rate design that is consistent with the principle of cost causation.

21 I recommend that the Commission:

- 1 • Direct that NSP’s distribution mains be classified as wholly demand-related with  
2 no customer-related component, consistent with the CCOSS’ classification of  
3 transmission plant and regulator stations as only demand-related.
- 4 • Direct that NSP’s distribution mains costs be allocated using NSP’s Average and  
5 Peak, consistent with the CCOSS’ allocation of transmission plant and regulator  
6 stations.
- 7 • Direct that NSP derive class tariff rates from class revenue requirements based on  
8 NSP’s CCOSS without minimum-size classification and allocation of NSP’s  
9 distribution mains.

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11 **III. DISCUSSION**

12 **A. NORTH DAKOTA COST OF SERVICE AND RATE DESIGN**

13 **Q. PLEASE SUMMARIZE NSP'S NORTH DAKOTA COST OF SERVICE AND**  
14 **RATE DESIGN PROPOSALS.**

15 A. Based on a forecasted 2024 Test Year class cost of service study<sup>1</sup> and a revenue requirement  
16 distribution to classes based on the ratemaking principles of cost causation, competitive  
17 service pricing and moderation of rate increases,<sup>2</sup> and the cost study's class customer cost  
18 results, NSP proposes the following changes in customer rates in Table 1.

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<sup>1</sup> Direct Testimony of Christopher J. Barthol (Berthol Direct).

<sup>2</sup> Direct Testimony of Martha E Hoschmiller (Hoschmiller Direct)..

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**Table 1: NSP Rate Design Proposals<sup>3</sup>**

<b>Residential (RC 401):</b> 12.5% revenue increase with Delivery Service Charge increased 5.1% from \$22.25/month to \$25.00/month and a new Distribution Charge of \$0.06155/therm;
<b>Commercial and Industrial (RC 403, 410):</b> 7.2% revenue increase with (a) Basic Service Charge unchanged of \$35.00/month and (b) Distribution Charge increased 37.54% from \$0.13581/therm to \$0.18665/therm;
<b>Small Interruptible (RC 404):</b> 7.7% revenue increase with (a) Basic Service Charge increased 25.0% from \$100.00/month to \$125.00/month and (b) Distribution Charge increased 31.5% from \$0.11065/therm to \$0.14549/therm;
<b>Large Interruptible (RC 405):</b> 8.1% revenue increase with (a) Basic Service Charge unchanged of \$275.00/month and (b) Distribution Charge increased 48.4% from \$0.07636/therm to \$0.11330/therm.

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**B. NORTH DAKOTA CLASS COST OF SERVICE STUDY**

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**Q. HAVE YOU EXAMINED NSP’S NORTH DAKOTA CLASS COST OF SERVICE STUDY (CCOSS)?**

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A. Yes. NSP’s CCOSS is a spreadsheet model<sup>4</sup> that follows the standard class cost of service procedure of first functionalizing costs, second classifying the functionalized costs as directly assignable to certain classes or as demand-related, customer-related or commodity-related, and third allocating to customer classes those functionalized costs that are classified as demand-, customer-, or commodity-related.<sup>5</sup>

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**Q. HAVE YOU FOUND ANY ERRORS IN THE CCOSS’ FUNCTIONALIZATION OF NSP’S GAS COSTS?**

12

13

A. No. The CCOSS properly functionalizes NSP’s gas costs using the FERC Gas Uniform System of Accounts (USoA).

14

<sup>3</sup> Hoschmiller Direct, page 1 line23 to page 2 line 7 and Exhibit MEH-1, Schedules 3and 4.

<sup>4</sup> Exhibit CJB-1, Schedule 3.

<sup>5</sup> See NARUC Gas Distribution Rate Design Manual (NARUC Gas Manual), 1989, pages 22-24.

1 **Q. HAVE YOU FOUND ANY ERRORS IN THE CCOSS' CLASSIFICATION OF**  
2 **NSP'S FUNCTIONALIZED GAS COSTS?**

3 A. Yes. The CCOSS relies on a NARUC minimum system study<sup>6</sup> to first classify NSP's  
4 distribution mains costs as 65.3% customer-related and the remaining 34.7% classified  
5 demand related to which NSP makes a "demand adjustment" that lowers the customer -  
6 related percentage to 49.2% and raises the demand related percentage to 50.8%.<sup>7</sup> NSP's  
7 minimum system study is based on the minimum size main theory which "assumes that  
8 there is a ... minimum size main necessary to connect the customer to the system"  
9 (emphasis added).<sup>8</sup> Under the minimum size theory, "all distribution mains are priced  
10 out at the historic unit cost of the smallest main installed, and assigned as customer  
11 costs."<sup>9</sup> The NARUC manual noted in 1989, the date of publication, that the minimum  
12 size main theory was controversial.<sup>10</sup> While this method of distribution mains  
13 classification is still frequently used, there is, from the perspective of cost causation, no  
14 theoretical or practical justification for minimum size mains classification.

15 **Q. WHAT IS THE COST CAUSATION THAT DEFINES THE CLASSIFICATION**  
16 **OF GAS DISTRIBUTION ACCOUNTS AS CUSTOMER-RELATED?**

17 A. As clearly articulated in Bonbright's Principles of Public Utility Rates,<sup>11</sup> under the  
18 principle of cost causation, customer-related costs are "those operating and capital costs  
19 found to vary with number of customers."<sup>12</sup> Operationally defined, customer-related

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<sup>6</sup> Barthol Direct, page 9 lines 12-24; NARUC Gas Distribution Rate Design manual (NARUC Manual).

<sup>7</sup> Bathol Direct, page 11 line 12 to page 14, line 12 and Exhibit CJB-1, Schedule 2, pages 3-4..

<sup>8</sup> NARUC Gas Manual, page 22.

<sup>9</sup> NARUC Gas Manual, page 22; Direct Testimony of Christopher J. Barthol, page 14, lines 11-13.

<sup>10</sup> NARUC Gas Manual, page 22.

<sup>11</sup> Bonbright et al, Principles of Public Utility Rates, 1988.

<sup>12</sup> Bonbright, page 490; also see NARUC Manual Electric Utility Cost Allocation Manual, 1992, page 90, "The customer component of distribution facilities is the portion of costs which varies with the number of customers."

1 costs are the “costs of connecting another customer or the savings in costs of not  
2 connecting the customer.”<sup>13</sup> Per the NARUC Gas Manual, customer costs are those  
3 operating capital costs found to vary directly with the number of customers served rather  
4 than with the amount of utility service supplied ... [t]hey include the expenses of  
5 metering, reading, billing, collecting, and accounting, as well as those cost associated  
6 with the capital investment in metering and in customers’ service connections.”<sup>14</sup> NSP’s  
7 CCOSS properly classifies the costs of services, meters and house regulators as  
8 customer-related. The CCOSS errs only in classifying a portion of the distribution mains  
9 costs as customer-related, rather than properly as demand-related.

10 **Q. WHAT IS THE COST CAUSATION THAT DEFINES THE CLASSIFICATION**  
11 **OF GAS DISTRIBUTION ACCOUNTS AS DEMAND-RELATED?**

12 A. As Bonbright also explains, it is theoretically impossible for the capital costs of  
13 distribution system facilities upstream of the facilities to be classified as customer-related  
14 because the connection of a new customer (or disconnection of an existing customer) has  
15 no measurable impact on the costs of those facilities.<sup>15</sup> Since the costs of the distribution  
16 facilities upstream of customer-related facilities do not and cannot vary with the number  
17 of customers connected to the distribution system, for the purposes of embedded cost  
18 analysis, those costs are properly classified as demand-related, because those costs do  
19 “var[y] continuously (and, perhaps, even more or less directly) with the maximum  
20 demand imposed on this system as measured by peak load.”<sup>16</sup> Per the NARUC Gas

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<sup>13</sup> Bonbright, page 490.

<sup>14</sup> NARUC Gas Manual, page 22; see also page 23 “only facilities, such as meters, regulators and service taps, are considered to be customer related, as they vary directly with the number of customers on the system.”

<sup>15</sup> Bonbright, page 491.

<sup>16</sup> Bonbright, page 492; see also NARUC Electric Manual, page 90, “Classifying distribution plant as a demand cost assigns investment ... based upon its contribution to some total peak load ,, [because] costs are incurred to serve area load, rather than a specific number of customers.”

1 Manual, demand related costs “are related to maximum system requirements which the  
2 system is designed to serve during short intervals and do not directly vary with the  
3 number of customers or their annual usage.”<sup>17</sup> NSP’s CCOSS properly classifies the  
4 costs of production plant, storage plant, transmission plant and regulator stations as  
5 demand-related. The CCOSS errs only in classifying a portion of the distribution mains  
6 costs as customer-related, rather than properly as demand-related.

7 **Q. WHAT IS YOUR RECOMMENDATION REGARDING THE CLASSIFICATION**  
8 **OF DISTRIBUTION MAINS IN NSP’S CCOSS?**

9 A. For reasons given above I recommend that NSP’s distribution mains be classified as  
10 wholly demand-related with no customer-related component, consistent with the CCOSS’  
11 classification of transmission mains and regulator stations as demand-related.

12 **Q. HAVE YOU FOUND ANY ERRORS IN THE CCOSS’ ALLOCATION OF NSP’S**  
13 **CLASSIFIED AND FUNCTIONALIZED GAS COSTS?**

14 A. No, except for the allocation error that results from the erroneous classification of a portion  
15 of distribution mains as customer-related and the allocation of that portion using a customer  
16 allocator.

17 **Q. WHAT IS YOUR RECOMMENDATION REGARDING THE ALLOCATION OF**  
18 **NSP’S MAINS COSTS?**

19 A. For the reasons given above I recommend that NSP’s distribution mains costs be  
20 classified as only demand-related and allocated using the Average and Peak demand  
21 allocator consistent with to the demand allocator applied to transmission and regulator  
22 station costs.

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<sup>17</sup> NARUC Gas Manual, pages 23 and 24.

1 **Q. WHAT IS THE IMPACT OF YOUR RECOMMENDATIONS REGARDING THE**  
2 **CLASSIFICATION AND ALLOCATION OF NSP'S GAS COSTS?**

3 A. Regarding distribution mains classification, NSP's residential rate class has  
4 proportionately more customers than its commercial rate classes and significantly less  
5 aggregate demand than the commercial classes. Consequently, the CCOSS' class  
6 customer allocation of distribution mains costs that the CCOSS erroneously classifies as  
7 customer-related results in an unsupported and unjustified over allocation of distribution  
8 costs to NSP's residential rate class, which constitutes a interclass subsidization of the  
9 commercial & industrial class. Classifying the entirety of NSP's distribution mains costs  
10 as demand-related corrects the over allocation.

11 **Q. HAVE YOU QUANTIFIED THE IMPACT OF YOUR RECOMMENDATION?**

12 A. Yes. NSP's CCOSS calculates the customer class total operating income and rate of return  
13 under current rates as shown in columns B and C of Table 2 below. My correction of the  
14 minimum-size classification and allocation error in NSP's CCOSS described above results  
15 in the customer class costs of service shown in columns D and E of Table 2.

1

**Table 2: Comparison of Class Costs of Service Under Current Rates (\$000)**

Rate Class (A)	NSP CCOSS <sup>18</sup>		CCOSS without Minimum- Size Classification <sup>19</sup>		Increase (Decrease) (F)
	Operating Income (B)	Rate of Return (C)	Operating Income (D)	Rate of Return (E)	
Residential	\$1,075	1.07%	\$2,215	2.86%	(\$3,451)
C&I Firm	\$4,213	6.63%	\$3,180	3.75%	\$4,051
Small Interruptible	\$318	30.28%	\$294	18.96%	(\$599)
Large Interruptible	\$628	24.32%	\$546	12.79%	(\$82)
Total	\$6,234	3.71%	\$6,234	3.71%	\$0

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**NORTH DAKOTA CLASS REVENUE REQUIREMENTS**

9

**Q. WHAT IS NSP’S PROPOSAL REGARDING CLASS REVENUE**

10

**REQUIREMENTS?**

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A. NSP proposes to apportion or distribute the overall revenue requirement to customer classes

12

based on cost of service adjusted with regarding efficient energy use, competitive services

13

and moderation in rate increase.<sup>20</sup>

<sup>18</sup> Exhibit CJB-1, Schedule3, page 1 lines 40 and 42.

<sup>19</sup> Exhibit KRP-2.

<sup>20</sup> Hoschmiller Direct, page 2, lines 11-24.

1 **Q. DO YOU FIND ANY ERRORS IN NSP’S PROPOSED CLASS REVENUE**  
 2 **REQUIREMENT APPORTIONMENT?**

3 A. Yes, in that it is based on the results of NSP’s CCOSS with minimum-size classification of  
 4 distribution mains. Table 3 below compares NSP’s proposed class revenue requirements  
 5 and class revenue increases to the class revenue requirements and increases based on the  
 6 results from the CCOSS without minimum-size classification of distribution mains.

7 **Table 3: Comparison of Class Revenue Requirements (\$000)**

		NSP <sup>21</sup>			PSC <sup>22</sup>		
Rate Class (A)	Current Revenue (B)	Proposed Revenue (C)	Increase (Decrease) (D)	Percent Increase (E)	Proposed Revenue (F)	Increase (Decrease) (G)	Increase (Decrease) (H)
Residential	\$35,610	\$40,061	\$4,451	12.50%	\$38,611	\$3,001	8.43%
C&I Firm	\$45,208	\$48,471	\$3,263	7.22%	\$49,516	\$4,308	9.53%
Small Interruptible	\$2,472	\$2,662	\$190	7.69%	\$2,870	\$398	16.11%
Large Interruptible	\$6,700	\$7,242	\$542	8.09%	\$7,440	\$740	11.04%
Total	\$89,990	\$98,436	\$8,446	9.39%	\$98,437	\$8,447	9.39%

8  
 9 **Q. HAVE YOU DEVELOPED A CLASS REVENUE RESPONSIBILITY BASED ON**  
 10 **THE CCOSS WITHOUT MINIMUM-SIZE CLASSIFICATION OF**  
 11 **DISTRIBUTION MAINS AND ADVOCACY STAFF WITNESS MUGRACE’S**  
 12 **PROPOSED OVERALL REVENUE REQUIREMENT?**

13 A. Yes. I have developed class revenue requirements based on the CCOSS without minimum-  
 14 size classification of distribution mains and Staff Witness Mugrace’s recommended revenue

<sup>21</sup> Hoschmiller Direct, page 9, Table 2.

<sup>22</sup> Exhibit KRP-3.

1 requirement.<sup>23</sup> Table 4 compares those class revenue requirements to NSP’s proposed class  
2 revenue requirements.

3 **Table 4: Comparison of Class Revenue Requirements (\$000)**

Rate Class (A)	NSP Proposed Revenue <sup>24</sup> (B)	PSC Proposed Revenue <sup>25</sup> (C)	Increase (Decrease)
Residential	\$40,061	\$37,970	(\$2,091)
C&I Firm	\$48,471	\$48,694	\$223
Small Interruptible	\$2,662	\$2,823	\$161
Large Interruptible	\$7,242	\$7,316	\$74
Total	\$98,436	\$96,803	(\$1,633)

4  
5 As one can see from Table 3, the net impact of the corrected class cost of service and Staff  
6 Witness Mugrace’s recommended revenue requirement is a reduction in the revenue  
7 requirement of the Residential rate class and marginal increases for the other classes.

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10 **C. NORTH DAKOTA TARIFF RATE DESIGN**

11 **Q. WHAT ARE NSP’S RATE DESIGN PROPOSALS?**

12 A. NSP is proposing no structural changes to its Commercial & Industrial, Small Interruptible  
13 and Large Interruptible customer classes’ rate structures. NSP proposes to add a  
14 Distribution Charge to its Residential rate structure. Regarding both class rate structures and  
15 class tariff charges proposals see Table 1 above.

<sup>23</sup> Direct Testimony of Dante Mugrace, Schedule DM-1.

<sup>24</sup> Hoschmiller Direct, page 9, Table 2.

<sup>25</sup> Exhibit KRP-3.

1 **Q. DO YOU HAVE ANY CRITICISMS OF THE PROPOSED RATE DESIGNS?**

2 A. My only criticism is that the class tariff charges are derived from NSP's proposed class  
3 revenue requirements. Table 5 shows my recommended class tariff charges based on the  
4 class revenue requirements in Table 4 above.

5 **Table 5: Recommended Class Tariff Rates<sup>26</sup>**

Residential (RC 401): 8.4% revenue increase with Delivery Service Charge unchanged at \$22.25/month and a new Distribution Charge of \$0.05507/therm;
Commercial and Industrial (RC 403, 410): 9.5% revenue increase with (a) Basic Service Charge unchanged of \$35.00/month and (b) Distribution Charge increased 37.54% from \$0.13581/therm to \$0.18944/therm;
Small Interruptible (RC 404): 16.1% revenue increase with (a) Basic Service Charge increased 25.0% from \$100.00/month to \$125.00/month and (b) Distribution Charge increased 60.7% from \$0.11065/therm to \$0.17779/therm;
Large Interruptible (RC 405): 11.0% revenue increase with (a) Basic Service Charge unchanged of \$275.00/month and (b) Distribution Charge increased 54.6% from \$0.07636/therm to \$0.11804/therm.

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

8 A. Yes.

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<sup>26</sup> Exhibit KRP-3.

**KARL RICHARD PAVLOVIC, Ph.D.*****Education***

Purdue University – MA and Ph.D. in Philosophy

Karl-Ruprecht Universität, Heidelberg, Germany – graduate study

Yale University – BA in Philosophy

***Positions***

Senior Consultant – PCMG and Associates	2015-Present
Senior Consultant – Snavelly King Majoros and Associates	2010-2014
Director – FTI Consulting	2008-2010
President – DOXA, Inc	1994-2008
Partner – Snavelly King and Associates	1983-1994
Assistant Professor – University of Florida-Gainesville	1978-1983

***Professional Experience***

Dr. Pavlovic provides clients with economic and policy analyses of commercial operations and expert testimony in support of litigation, negotiation and strategic planning. His analyses and testimony are distinguished by systematic articulation and testing of assumptions, thorough evaluation of data, innovative application of statistical tools and economic principles, and clarity and precision of presentation. Dr. Pavlovic has provided expert testimony on the operations, costs and revenues of gas and electric utilities, the impacts of restructuring wholesale and retail electric markets, effects of mergers, the operation and competitiveness of petroleum and electric markets, the market valuation of crude oil, electric and gas reliability, and the performance of energy efficiency, renewable energy, and peak reduction programs.

Major projects directed by Dr. Pavlovic have included: analytical assistance to counsel and testimony on all aspects of the restructuring of wholesale and retail electric markets in the Eastern Interconnection; technical representation of the District of Columbia People's Counsel on the DC PSC's Pepco Productivity Improvement Working Group and various PJM working groups; impact evaluation study of pilot energy efficiency and renewable energy programs in the District of Columbia; analysis of petroleum markets, expert testimony, and coordination of technical testimony in the Trans-Alaska Pipeline quality bank litigation; Independent Technical Review of the economic models used by the US Army Corps of Engineers for the Ohio River System Investment Plan; assistance to a major independent telephone company in the formulation and implementation of corporate strategic plans, applications for long-distance authority, and settlement negotiations with major domestic and foreign carriers.

By education and professional experience Dr. Pavlovic has expertise in formal and mathematical logic, statistics, economics, financial analysis, econometrics, and computer modeling. With 33 years' experience as a consultant and expert witness, Dr. Pavlovic has in-depth knowledge of

commercial and industrial operations in the energy, transportation, and telecommunications industries and is familiar with a wide range of experimental and investigative methods in science and engineering.

***Regulatory Projects and Appearances***

1. In re: the Application of Otter Tail Power Company for Authority to Increase Rates for Electric Utility Service in North Dakota (2024) - (Appearance: cost of service and rate design on behalf of the North Dakota Public Service Commission Advocacy Staff)  
ND PSC Case No. PU-20-441
2. In re: 2023 Gas System Enhancement Program Plan Filings for the Commonwealth's Natural Gas Distribution Companies (2024) - (Appearance: cost and project compliance with tariff on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket Nos. D.P.U. 23-GSEP-01 to 23-GSEP-06
3. In re: the Application of Northern States Power Company for Advance Determination of Prudence – 345kV Big Stone to Sherburne (2024) - (Appearance: need, necessity and conformance with North Dakota Statutes and Regulation on behalf of the North Dakota Public Service Commission Advocacy Staff)  
ND PSC Case No. PU-23-329
4. Pennsylvania Office of Consumer Advocate: Monitor, Review and Report on Electric and Natural Gas Filings to the FERC (2024)  
Federal Energy Regulatory Agency Dockets
5. In re: Petition of Veolia Water New Jersey, Inc. for an Increase in Rates for Water Service and Other Tariff Changes (2023) - (Appearance: cost of service and rate design on behalf of the New Jersey Rate Counsel)  
NJ BPU Docket No. WR23110790
6. In re: the Application of Northern States Power Company for Advance Determination of Prudence – Brookings County to Lyon County and Helena to Hampton 345 kV Second Circuit (2023) - (Appearance: need, necessity and conformance with North Dakota Statutes and Regulation on behalf of the North Dakota Public Service Commission Advocacy Staff)  
ND PSC Case No. PU-23-295
7. In re: the Application of Northern States Power Company for Advance Determination of Prudence - Sherburne County 345 kV Transmission Line (2023) - (Appearance: need, necessity and conformance with North Dakota Statutes and Regulation on behalf of the North Dakota Public Service Commission Advocacy Staff)  
ND PSC Case No. PU-23-142
8. In re: Petition of Middlesex Water Company for an Increase in Rates for Water Service and Other Tariff Changes (2023) - (Appearance: cost of service and rate design on behalf of the Township of East Brunswick, New Jersey)  
NJ BPU Docket No. WR23050292

9. In re: Petition of NSTAR Gas Company d/b/a Eversource Energy for Approval of its 2022 Gas System Enhancement Plan Reconciliation Filing (2023) - (Appearance: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 23-GREC-06
10. In re: Petition of Eversource Gas Company of Massachusetts d/b/a Eversource Energy for Approval of its 2022 Gas System Enhancement Plan Reconciliation Filing (2023) - (Appearance: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 23-GREC-05
11. In re: Petition of Berkshire Gas Company for Approval of its 2022 Gas System Enhancement Plan Reconciliation Filing (2023) - (Appearance: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 23-GREC-02
12. In re: Pittsburgh Water and Sewer Authority General Base Rate Increase Filing (2023) – (Appearance: gas and electric cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)  
PA Public Utility Commission Docket Nos. R-2023-3039920 et al
13. In re: UGI Electric Company General Base Rate Increase Filing (2023) – (Appearance: electric cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)  
PA Public Utility Commission Docket Nos. R-2022-3037368
14. In re: Application of Hawaii Water Service Company, Inc. for Approval of a General Rate Increase for its Pukalani Wastewater Division and Certain Tariff Changes (2023) – (Appearance: cost of service and rate design on behalf of the Hawaii Division of Consumer Advocacy)  
HI Public Utilities Commission Docket No. 2022-0186
15. In re: Application of Lanai Water Company, Inc. for Review and Approval of Rate Increases; Revised Rate Schedules; and Changes to its Tariff (2023) – (Appearance: cost of service and rate design on behalf of the Hawaii Division of Consumer Advocacy)  
HI Public Utilities Commission Docket No. 2022-0233

16. In re: Application of Southern Maryland Electric Cooperative, Inc., for Authority to Revise Its Rates and Charges for Electric Service and Certain Rate Design Changes (2023) – (Appearance: cost of service and rate design on behalf of the Maryland Office of the People’s Counsel)  
MD PSC Case No. 9688
17. In re: Application of San Diego Gas & Electric Company for Authority to Establish Its Authorized Cost of Capital for Utility Operations for 2023 (2022) – (Appearance: business risk and cost of equity on behalf of Utility Consumers’ Action Network)  
CA Public Utilities Commission Application 22-04-012
18. In re: Valley Energy, Inc. General Base Rate Increase Filing (2022) – (Appearance: gas cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)  
PA Public Utility Commission Docket Nos. R-2022-3032300
19. In re: Citizens’ Electric Company General Base Rate Increase Filing (2022) – (Appearance: electric cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)  
PA Public Utility Commission Docket Nos. R-2022-3032369
20. In re: PECO Energy Company (Gas Division) General Base Rate Increase Filing (2022) – (Appearance: gas and electric cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)  
PA Public Utility Commission Docket Nos. R-2022-3031113
21. In re: Petition of Eversource Gas Company of Massachusetts d/b/a Eversource Energy for Approval of its 2021 Gas System Enhancement Plan Reconciliation Filing (2022) - (Appearance: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 22-GREC-05
22. In re: Petition of Liberty Utilities (New England Natural Gas Company Corp.) d/b/a Liberty for Approval of its 2021 Gas System Enhancement Plan Reconciliation Filing (2022) - (Appearance: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 22-GREC-04
23. In re: Petition of Berkshire Gas Company for Approval of its 2021 Gas System Enhancement Plan Reconciliation Filing (2022) - (Appearance: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 22-GREC-02

24. In re: Nova Scotia Power 2022-2024 General Rate Application (2022) - (Appearance: cost of service on behalf of the Nova Scotia Utility and Review Board)  
NS UARB M10431
25. In re: the Application of Northern States Power Company for Authority to Increase Rates for Natural Gas Service in North Dakota (2021) - (Appearance: cost of service and rate design on behalf of the North Dakota Public Service Commission Advocacy Staff)  
ND PSC Case No. PU-20-441
26. In re: Application of San Diego Gas & Electric Company 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: wildfire risk accounting and ratemaking on behalf of Utility Consumers’ Action Network)  
CA Public Utilities Commission Application 21-08-014
27. In re: Petition of HPBS, Inc. for review and approval of Central Scheduling System (CSS) charge increase and revised CSS schedule (2021) – (Appearance: rate design on behalf of the Hawaii Department of Commerce and Consumer Affairs)  
HI DCCA Docket No. PTP-2021-001
28. In re: Petition of NSTAR Gas Company d/b/a Eversource Energy for Approval of its 2020 Gas System Enhancement Plan Reconciliation Filing (2021) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 21-GREC-06
29. In re: Petition of Eversource Gas Company of Massachusetts d/b/a Eversource Energy for Approval of its 2020 Gas System Enhancement Plan Reconciliation Filing (2021) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 21-GREC-05
30. In re: Petition of Berkshire Gas Company for Approval of its 2020 Gas System Enhancement Plan Reconciliation Filing (2021) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 20-GREC-02
31. In re: the Application of Northern States Power Company for Authority to Increase Rates for Electric Service in North Dakota (2021) - (Appearance: cost of service and rate design on behalf of the North Dakota Public Service Commission Advocacy Staff)  
ND PSC Case No. PU-20-441

32. In re: Pike County Light & Power Company 2020 General Base Rate Increase Filing – (Appearance: gas and electric cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)  
PA Public Utility Commission Docket Nos. R-2020-3022134 and R-2020-3022135
33. In re: Young Brothers LLC’s Application for Approval of a New Cost of Service Model (2020) – (Appearance: cost of service on behalf of the Hawaii Division of Consumer Advocacy)  
HI Public Utilities Commission Docket No. 2020-0135
34. In re: Petition of NSTAR Gas Company d/b/a Eversource Energy for Approval of its 2019 Gas System Enhancement Plan Reconciliation Filing (2020) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 20-GREC-06
35. In re: Petition of Bay State Gas Company d/b/a Columbia Gas of Massachusetts for Approval of its 2019 Gas System Enhancement Plan Reconciliation Filing (2020) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 20-GREC-05
36. In re: Petition of Berkshire Gas Company for Approval of its 2019 Gas System Enhancement Plan Reconciliation Filing (2020) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 20-GREC-02
37. In re: Pittsburgh Water and Sewer Authority 2020 General Base Rate Increases 2020 – (Appearance: multi-year rate plan and performance-based ratemaking on behalf of the Pennsylvania Office of Consumer Advocate)  
PA Public Utility Commission Docket Nos. R-2020-3017970 and R-2020-3017951
38. In re: Commonwealth Edison Company Petition for approval of a Revision to Integrated Distribution Company Implementation Plan Creation of Rate Residential Time of Use Pricing Pilot (“Rate RTOUP”) – On Rehearing (2020) – (Appearance: price signal and customer response on behalf of the Illinois Attorney General)  
IL Commerce Commission Docket Nos. 18-1725/18-1824
39. In re: Hawaii Electric Company, Inc. Application for Approval of a General Rate Increase and Revised Rate Schedules and Rules (2019) - (Appearance: cost of service and rate design on behalf of the Hawaii Division of Consumer Advocacy)  
HI Public Utilities Commission Docket No. 2019-0085

40. In re: Application of San Diego Gas & Electric Company 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) Increase its Overall Rate of Return, (v) Modify its Adopted Cost of Capital Mechanism Structure, and (vi) Revise its Electric Distribution and Gas Rates Accordingly, and for Related Substantive and Procedural Relief (2019) – (Appearance: wildfire risk accounting and ratemaking on behalf of Utility Consumers’ Action Network)  
CA Public Utilities Commission Application 19-04-017
41. In re: Proposed Amendments to N.J.A.C. 14:9 Adoption of Water and Sewer Uniform System of Accounts (2019) – (Assistance to counsel: water and sewer accounting on behalf of the Division of Rate Counsel)  
NJ Board of Public Utilities Docket Nos. WX19050612 and WX19050613
42. In re: Petition of Public Service Electric and Gas Company for Approval of Gas Base Rate Adjustments Pursuant to its Gas System Modernization Program (2019) – (Assistance to Counsel: infrastructure replacement accounting)  
NJ Board of Public Utilities Docket No. GE19040522
43. In re: Petition of NSTAR Gas Company d/b/a Eversource Energy for Approval of its 2018 Gas System Enhancement Plan Reconciliation Filing (2019) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 19-GREC-06
44. In re: Petition of Bay State Gas Company d/b/a Columbia Gas of Massachusetts for Approval of its 2018 Gas System Enhancement Plan Reconciliation Filing (2019) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 19-GREC-05
45. In re: The Application of Potomac Electric Power Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2019) – (Appearance: cost of service and rate design on behalf of the Maryland Office of People’s Counsel)  
MD Public Service Commission Case No. 9602
46. In re: PECO Energy Company Non-Bypassable Transmission Service Charge (NBT) Semiannual Adjustment (2019) - (Appearance: accounting, cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)  
PA Public Utility Commission Docket No. M-2018-3005860

47. In re: PECO Energy Company Transmission Formula Rate Application (2018) - (Appearance: accounting, cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)  
Federal Energy Regulatory Commission Docket ER17-1519-000
48. In re: Petition of NSTAR Gas Company d/b/a Eversource Energy for Approval of its 2017 Gas System Enhancement Plan Reconciliation Filing (2018) - (Appearance: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 18-GREC-06
49. In re: Petition of Bay State Gas Company d/b/a Columbia Gas of Massachusetts for Approval of its 2017 Gas System Enhancement Plan Reconciliation Filing (2018) - (Appearance: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 18-GREC-05
50. In re: The Application of the Potomac Edison Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2018) – (Appearance: cost of service and rate design on behalf of the Maryland Office of People’s Counsel)  
MD Public Service Commission Case No. 9490
51. In re: Rate Applications of Kansas City Power & Light – Missouri and Kansas City Power & Light – Greater Missouri Operations (2018) – (Appearance: consolidated operations, cost of service and rate design on behalf of the Missouri Office of Public Counsel)  
MO Public Service Commission Case Nos. ER-2018-0145 and ER-2018-0146
52. In re: The Application of Potomac Electric Power Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2018) – (Appearance: cost of service and rate design on behalf of the Maryland Office of People’s Counsel)  
MD Public Service Commission Case No. 9472
53. In re: Mid-Atlantic Interstate Transmission, L.L.C. 2018 Transmission Formula Rate Protocol Filings (2018) - (Analysis and Advice to Counsel: accounting)  
Federal Energy Regulatory Commission Docket ER17-211-000
54. In re: The Gas Company d/b/a Hawaii Gas Application for Approval of Rate Increases and Revised Rate Schedules and Rules (2017) - (Appearance: cost of service and rate design on behalf of the Hawaii Division of Consumer Advocacy)  
HI Public Utilities Commission Docket No. 2017-0105
55. In re: Montana-Dakota Utilities Co., Application to Increase Natural Gas Rates (2017) - (Appearance: cost of service and rate design on behalf of the North Dakota Public Service Commission Staff)  
ND Public Service Commission Case No. PU-12-813

56. In re: The Application of Delmarva Power and Light 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. 9455
57. 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
58. 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
59. In re: In the matter of the application of Columbia Gas of Maryland, Inc. for Authority to Increase Rates and Charges (2017) - (Appearance: cost of service and rate design on behalf of the Maryland Office of People’s Counsel)  
MD Public Service Commission Case No. 9447
60. In re: PJM Interconnection, L.L.C. - PECO Energy Company Transmission Formula Rate Application (2017) - (Analysis and Advice to Counsel: accounting, cost of service and rate design)  
Federal Energy Regulatory Commission Docket ER17-1519-000
61. 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 re. accelerated asset replacement program on behalf of the Illinois Citizens Utility Board)  
IL Commerce Commission Docket No. 17-0124
62. 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
63. In re: PJM Interconnection, L.L.C. - Rockland Electric Company Transmission Rate Application (2017) (Analysis and Advice to Counsel: accounting, cost of service and rate design on behalf of the New Jersey Division of Rate Counsel)  
Federal Energy Regulatory Commission Docket ER17-856-000

64. In re: PJM Interconnection, L.L.C. - Mid-Atlantic Interstate Transmission, L.L.C. Transmission Formula Rate Application (2016) - (Analysis and Advice to Counsel: accounting, cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)  
Federal Energy Regulatory Commission Docket ER17-211-000
65. In re: The Application of Delmarva Power and Light Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2016) – (Appearance: cost of service and rate design on behalf of the Maryland Office of People’s Counsel)  
MD Public Service Commission Case No. 9424
66. In re: The Application of Potomac Electric Power Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2016) – (Appearance: cost of service and rate design on behalf of the Maryland Office of People’s Counsel)  
MD Public Service Commission Case No. 9418
67. 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 Advice 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
68. 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) - (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. 16-GREC-05
69. 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) - (Appearance: compliance with statutes and regulations, prudence, cost/benefit, and ratemaking on behalf of the New Hampshire Office of Consumer Advocate)  
NH Public Utilities Commission Docket No. DE 16-241
70. In re: Central Maine Power Company, Annual Compliance Filing and Price Change (2016) - (Analysis and Advice to Counsel: tax normalization regulatory asset on behalf of the Maine Office of the Public Advocate)  
ME Public Service Commission Docket No. 2016-00035
71. In re: Bulletin 2015-10 Generic Proceeding to Establish Parameters for the Next Generation PBR Plans (2016) - (Appearance: productivity adjustments/performance based ratemaking on behalf of the Alberta Utilities Consumer Advocate)  
Alberta Utilities Commission Proceeding 20414

72. In re: Emera Maine, Proposed Rate Increase in Rates (2016) - (Analysis and Advice to to Counsel: evaluation of management audit of implementation of Customer Information System on behalf of the Maine Office of the Public Advocate)  
ME Public Service Commission Docket No. 2015-00360
73. 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) - (Appearance: earnings, synergy savings, rates, operations, supply procurement, safety, and reliability on behalf of the Maryland Office of People's Counsel)  
MD Public Service Commission Case No. 9404
74. In re: Petition of Bay State Gas Company d/b/a Columbia Gas of Massachusetts for Approval of Firm Transportation Agreements with Millennium Pipeline Company, LLC (2015-2016) - (Analysis, Advice to Counsel, and Assistance on Brief: compliance with gas supply plan, rates, and reliability on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 15-142
75. 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, Advice to Counsel, and Assistance on Brief: compliance with gas supply plan, rates, and reliability on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 15-130
76. 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 and Advice to Counsel: compliance with gas supply plan, rates, and reliability on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 15-129
77. In re: Columbia Gas of Massachusetts CY2014 Targeted Infrastructure Reinvestment Factor Compliance Filing (2015) - (Appearance: PBR tracker design/rates, prudence/used and useful, plant accounting on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 15-55
78. ENMAX Energy Corporation (EEC) 2015-2016 Regulated Rate Option Non-Energy Tariff Application (2015-2016) - (Appearance: cost allocation, rate design, non-energy risk on behalf of the Alberta Utilities Consumer Advocate)  
Alberta Utilities Commission Proceeding 20480

79. In the Matter of the Merger of Exelon Corporation and Pepco Holdings, Inc. (2014) - (Advice to Counsel: impact on customers on behalf of the New Jersey Division of Rate Counsel)  
NJ Board of Public Utilities BPU Docket No. EM1406
80. In re: Application of Baltimore Gas and Electric Company For Adjustments To Its Electric and Gas Base Rates (2014) (Analysis and Advice to Counsel in Settlement: earnings, investment tracker, cost allocation and rate design on behalf of the Maryland Office of People's Counsel)  
MD Public Service Commission Case No. 9355
81. In re: Columbia Gas of Massachusetts CY2013 Targeted Infrastructure Reinvestment Factor Compliance Filing (2014) - (Appearance: PBR tracker design/rates, prudence/used and useful, plant accounting on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)  
MA Department of Public Utilities Docket No. D.P.U. 14-83
82. In re: Potential Business Combination of Entergy Louisiana, LLC and Entergy Gulf States Louisiana, L.L.C. (2014-2015) - (Analysis and Advice to Counsel: impact on rates and consolidation of rates on behalf of the Louisiana Public Service Commission Staff)  
LA Public Service Commission Docket No.U-33244
83. In the Matter of the Application of Ohio Power Company to Adopt a Final Implementation Plan for the Retail Stability Rider (2014) - (Analysis and Advice to Counsel: rate design)  
OH Public Utilities Commission Case No. 14-1186-EL-RDR
84. In re: Examination of Long-Term Natural Gas Hedging Proposals (2014-2015 ) - (Analysis and Advice to Counsel: natural gas procurement on behalf of the Louisiana Public Service Commission Staff)  
LA Public Service Commission Docket No.R-32975-LPSC, ex parte
85. In re: 2013 Integrated Resource Planning Process for Southwestern Electric Power Company Pursuant to General Order Dated April, 20, 2012 (2014-2015 - (Analysis and Advice to Counsel: IRP design and evaluation on behalf of the Louisiana Public Service Commission Staff)  
LA Public Service Commission Docket No. I-33013 SWEPCO, ex parte
86. In the Matter of the Application of Columbia Gas of Maryland, Inc. for Authority to Adopt an Infrastructure Replacement Surcharge Mechanism (2013-2014) - (Appearance: PBR tracker design/rates, prudence/used and useful, plant accounting on behalf of the Maryland Office of People's Counsel)  
MD Public Service Commission Case No. 9332

87. In the Matter of the Application of Baltimore Gas and Electric Company for Approval of a Gas System Strategic Infrastructure Development and Enhancement Plan and Accompanying Cost Recovery Mechanism (2013-2014) - (Appearance: PBR tracker design/rates, prudence/used and useful, plant accounting on behalf of the Maryland Office of People's Counsel)  
MD Public Service Commission Case No. 9331
88. In the Matter of the Application of Delmarva Power & Light Company for an Increase in Electric Base Rates and Miscellaneous Tariff Changes (2013-2014) - (Appearance: earnings, investment tracker design/rates, cost allocation and rate design on behalf of the Delaware Public Service Commission Staff)  
DE Public Service Commission Docket No. 13-115
89. In the Matter of the Application of Northern States Power Company for Authority to Increase Rates for Electric Service in North Dakota (2013) - (Appearance: cost allocation and rate design on behalf of the North Dakota Public Service Commission Staff)  
ND Public Service Commission Case No. PU-12-813
90. In the Matter of the Application of Columbia Gas of Maryland, Inc. for Authority to Increase Rates and Charges (2013) - (Appearance: expense tracker design/rates and evaluation on behalf of the Maryland Office of People's Counsel)  
MD Public Service Commission Case No. 9316



SUMMARY

Equal Return vs Present

	ND	Res	C&I	Sm Int	Lg Int	
Operating Revenue Requirement						
1 Return On Rate Base		7.52%	7.52%	7.52%	7.52%	7.52%
2 Equalized Total Retail Rev		98,453	40,406	49,438	2,226	6,382
3 Present Total Retail Revenue		89,990	35,610	45,208	2,472	6,700
4 Revenue Deficiency		8,463	4,797	4,230	-246	-318
5 Deficiency / Pres Total Retail Rev		9.40%	13.47%	9.36%	-9.95%	-4.74%
Internal Retail Revenue Req						
6 Customer Retail Revenue Requirement		21,356	16,698	4,505	103	50
7 Average Monthly Customers		64,674	54,948	9,648	54	24
8 Revenue Requirement \$ / Mo / Cust		27.52	25.32	38.91	157.72	172.57
9 Capacity Retail Revenue Requirement		16,111	6,256	9,338	125	392
10 Annual Dkt Sales		14,337,878	4,285,129	7,990,310	497,468	1,564,971
11 Revenue Requirement \$ / Dkt		1.12	1.46	1.17	0.25	0.25
Capacity - Sub Classification						
12 Capacity - Base Revenue Requirement		3,532	1,050	1,966	125	392
13 Capacity - Seasonal Revenue Requirement		7,816	3,301	4,515	0	0
14 Peak Shaving Revenue Requirement		4,762	1,906	2,857	0	0
15 Base Rev Requirement \$ / Dkt		0.25	0.24	0.25	0.25	0.25
16 Seasonal Rev Requirement \$ / Dkt		0.55	0.77	0.57	0.00	0.00
17 Peak Shave Rev Requirement \$ / Dkt		0.33	0.44	0.36	0.00	0.00
18 Energy Retail Revenue Requirement		2,789	859	1,509	104	316
19 Revenue Requirement \$ / Dkt		0.19	0.20	0.19	0.21	0.20
20 Total Internal Retail Revenue Requirement		40,255	23,813	15,352	332	758
21 Revenue Requirement \$ / Dkt		2.81	5.56	1.92	0.67	0.48
22 Revenue Requirement \$ / Mo / Cust		51.87	36.11	132.61	509.04	2,631.49
External Retail Revenue Req						
23 Capacity Revenue Requirement		12,118	4,945	7,173	0	0
24 Energy Revenue Requirement		46,037	15,571	23,325	1,808	5,333
25 Total External Revenue Requirement		58,155	20,516	30,498	1,808	5,333
26 Cap Revenue Requirement \$ / Dkt		0.85	1.15	0.90	0.00	0.00
27 Ener Revenue Requirement \$ / Dkt		3.21	3.63	2.92	3.63	3.41
28 Tot Revenue Requirement \$ / Dkt		4.06	4.79	3.82	3.63	3.41
Total Retail Revenue Req						
29 Customer Revenue Requirement		21,356	16,698	4,505	103	50
30 Capacity Revenue Requirement		28,228	11,200	16,511	125	392
31 Energy Revenue Requirement		48,825	16,430	24,834	1,912	5,649
32 Total Revenue Requirement		98,410	44,329	45,851	2,140	6,091
33 Customer Revenue Req \$ / Dkt		1.49	3.90	0.56	0.21	0.03
34 Demand Revenue Req \$ / Dkt		1.97	2.61	2.07	0.25	0.25
35 Energy Revenue Req \$ / Dkt		3.41	3.83	3.11	3.84	3.61
36 Total Revenue Req \$ / Dkt		6.86	10.34	5.74	4.30	3.89
Proposed Return vs Present						
37 Proposed Total Retail Revenue		98,453	40,076	48,472	2,662	7,242
38 Revenue Deficiency		8,463	4,466	3,265	190	542
39 Deficiency / Pres Total Oper Revenue		9.40%	12.54%	7.22%	7.67%	8.09%
Proposed Return vs Equal						
40 Revenue Difference		0	-330	-965	436	860
41 Difference / Tot Equal Revenue*		0.00%	-0.82%	-1.95%	19.58%	13.47%

RATE BASE

Plant in Service	FERC Accounts	Allocator	ND	Res	C&I	Sm Int	Lg Int
1 Production Plant (LPG)	304, 305, 311	Design Day		11,445	4,619	6,825	0
2 Storage Plant (LNG)	360, 361, 362, 363	Design Day		14,311	5,776	8,535	0
3 Transmission Plant	365, 366, 367, 368, 369, 370, 371	Average and Peak		4,006	1,541	2,286	43
Distribution Plant							
4 Regulator Stations	374, 375, 378, 379	Average and Peak		151	58	86	2
5 Mains - Minimum System	376	Customers	49.2%	63,898	54,288	9,532	54
6 Mains - Average Capacity	Split of 376	Sales, W/ Transp	15.8%	20,467	6,117	11,406	710
7 Mains - Excess Capacity	Split of 376	Excess Design Day	35.0%	45,438	19,237	26,201	0
<b>8 Mains - Total</b>	<b>376</b>	<b>Average and Peak</b>		<b>129,802</b>	<b>49,935</b>	<b>74,069</b>	<b>1,399</b>
9 Services	380	Service Study		67,913	47,572	19,888	323
10 Meters	381	Meter & Regul Study		12,866	8,706	3,928	125
11 House Regulators	383	Meter & Regul Study		3,451	2,335	1,054	34
12 Total Distribution Plant	Subtotal			214,184	108,606	99,025	1,881
13 General Plant	390-399	Prod-Stor-Tran-Dis		35,889	17,734	17,164	283
14 Common Plant	390-399	Prod-Stor-Tran-Dis		0	0	0	0
15 Gas Plant in Service	Total			279,835	138,277	133,836	2,208
Accum Depr Reserve							
16 Production Plant (LPG)	108(1)	Design Day		2,944	1,188	1,756	0
17 Storage Plant (LNG)	108(5)	Design Day		8,376	3,380	4,995	0
18 Transmission Plant	108(7)	Average and Peak		1,823	701	1,040	20
Distribution Plant							
19 Regulator Stations	108(8)	Average and Peak		0	0	0	0
20 Mains	108(8)	Mains, Overall		29,905	11,504	17,064	322
21 Services	108(8)	Service Study		30,064	21,059	8,804	143
22 Meters	108(8)	Meter & Regul Study		6,047	4,092	1,846	59
23 House Regulators	108(8)	Meter & Regul Study		891	603	272	9
24 Total Distribution Plant	Sub-total			66,906	37,258	27,986	532
25 General Plant	108(9)	Prod-Stor-Tran-Dis		15,955	7,884	7,631	126
26 Common Plant	108(9)	Prod-Stor-Tran-Dis		0	0	0	0
27 Total Accum Depr	Sub-total			96,003	50,412	43,408	678
28 Net Plant	Total			183,832	87,865	90,428	1,530
Subtractions to Net Plant							
Accum Deferred Inc Tax							
29 Production Plant (LPG)	190, 281, 282, 283 Net	Design Day		-17	-7	-10	0
30 Storage Plant (LNG)	190, 281, 282, 283 Net	Design Day		-117	-47	-70	0
31 Transmission Plant	190, 281, 282, 283 Net	Average and Peak		618	238	353	7
Distribution Plant							
32 Regulator Stations	190, 281, 282, 283 Net	Average and Peak		0	0	0	0
33 Mains	190, 281, 282, 283 Net	Mains, Overall		7,528	2,896	4,296	81
34 Services	190, 281, 282, 283 Net	Service Study		9,487	6,646	2,778	45
35 Meters	190, 281, 282, 283 Net	Meter & Regul Study		2,306	1,561	704	22
36 House Regulators	190, 281, 282, 283 Net	Meter & Regul Study		254	172	78	2
37 Total Distribution Plant	Sub-total			19,576	11,274	7,856	151
38 General Plant	190, 281, 282, 283 Net	Prod-Stor-Tran-Dis		2,594	1,282	1,241	20
39 Common Plant	190, 281, 282, 283 Net	Prod-Stor-Tran-Dis		0	0	0	0
40 Accumulated Deferred Tax	283	Net Plant		0	0	0	0
41 Non-Plant Related	190 & 282 Net	Labor		217	127	83	2
42 Total Subtractions	Total			22,872	12,867	9,453	180

Northern States Power Company  
 State of North Dakota Gas Jurisdiction  
 CLASS COST OF SERVICE STUDY (\$000); TEST YEAR 2024

Case No. PU-23-\_\_\_\_  
 Exhibit \_\_\_\_ (CIB-1), Schedule 3  
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RATE BASE

Additions to Net Plant		ND	Res	C&I	Sm Int	Lg Int
CWIP	FERC Accounts					
1 Production Plant (LPG)		Design Day	127	51	76	0
2 Storage Plant (LNG)		Design Day	263	106	157	0
3 Transmission Plant	107	Average and Peak	0	0	0	0
4 Regulator Stations	107	Average and Peak	0	0	0	0
5 Mains	107	Mains Overall	83	32	48	1
6 Services		Service Study	0	0	0	0
7 Meters		Meter & Regul Study	0	0	0	0
8 House Regulators	107	Meter & Regul Study	0	0	0	0
9 General & Common Plant	Sub-total	Prod-Stor-Tran-Dis	205	101	98	2
10 Total CWIP	Sub-total		678	291	378	3
11 Materials & Supplies	154, 155, 156	Tran & Distrib	306	154	142	3
Gas In Storage						
12 LPG In Storage	164.2	Sales, W/ Transp	0	0	0	0
13 LNG In Storage	164	Sales, W/ Transp	0	0	0	0
14 NatGas Underground	164	Sales, W/ Transp	0	0	0	0
12 Total Gas in Storage	Total	Sales, W/ Transp	6,008	1,796	3,348	208
13 Non-Plant Assets & Liab	Total	Labor	1,049	613	401	9
Miscellaneous	FERC Accounts					
14 Prepay: Insurance	165	Tran & Distrib	0	0	0	0
15 Prepay: Miscellaneous	165	Tran & Distrib	-304	-153	-141	-3
16 Fuel	176	Sales, W/o Transp	0	0	0	0
17 Customer Advances	252	Sales, W/ T Transp	0	0	0	0
18 Other Working Capital	131, 135, 143, 182.3, 184, 185, 186, 232, 253, 254	Pres Rev; Mod Pres Rev	0	0	0	0
17 Total Miscellaneous			-304	-153	-141	-3
Working Cash						
18 Purch Gas Exp - Commodity	N / A	Sales, W/ Transp	0	0	0	0
19 Purch Gas Exp - Demand	N / A	Design Day	0	0	0	0
20 Labor - Regular	N / A	Modified O&M Expense	0	0	0	0
21 Labor - Incentive Compen'n	N / A	Modified O&M Expense	0	0	0	0
22 Pension and Benefits	N / A	Labor	0	0	0	0
23 Payroll Taxes	N / A	Labor	0	0	0	0
24 Other Operating Expenses	N / A	Modified O&M Expense	0	0	0	0
25 Property Taxes	N / A	Gas Plant In Service	0	0	0	0
26 Gross Receipts Tax	N / A	Gr Rcpts; Mod Pres Rev	0	0	0	0
27 Federal Income Tax	N / A	Rt Base, w/o Work Cash	0	0	0	0
28 State Income Tax	N / A	Rt Base, w/o Work Cash	0	0	0	0
29 State Sales Tax	N / A	Present Retail Revenue	0	0	0	0
30 Total Working Cash	Total	Modified O&M Expense	-726	-280	-366	-20
31 Total Additions	Sub-total		7,011	2,421	3,762	199
32 Total Rate Base	Sub-Total		167,970	77,419	84,736	1,549
33 Common Rate Base (@ 52.50%)			88,184	40,645	44,487	813
34 Customer Component			91,802	71,646	19,728	278
35 Demand Component			70,567	27,463	40,700	580
36 Energy Component			5,601	1,657	3,143	192

Northern States Power Company

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Operating Revenue (Cal Month)		Allocator	ND	Res	C&I	Sm Int	Lg Int	
Retail Revenue								
1a	Present Retail Rev	480,481,482,484	Direct Assign	89,990	35,610	45,208	2,472	6,700
1b	Proposed Retail Rev		Direct Assign	98,436	40,061	48,471	2,662	7,242
2	Retail Rev Increase			8,446	4,451	3,263	190	542
Other Retail Revenue								
3	Interdepartmental Generation		Dir Assign; Mod Pres Rev					
4	Transportation		Dir Assign; Mod Pres Rev					
5	Tot Other Retail Rev							
Other Operating Revenue								
3	Late Pay Penalties	488,495	Late Pay; Mod Pres Rev	181	163	17	1	0
4	Connection Charges	488,495	Customers	120	102	18	0	0
5	Return Check Charges	488,495	Customers	7	6	1	0	0
6	Connect Smart	488,495	Customers	4	3	1	0	0
7	Interchange Gas	488,495	Design Day	66	27	39	0	0
8	Other Gas Revenue	488,495	Design Day	65	26	39	0	0
9	Ltd Firm Sales - Rsvs & Vols	488,495	Design Day	27	11	16	0	0
10	Other Gas Revenue - Distr	488,495	Design Day	3	1	2	0	0
11	Contr In Aid Cons Tax Gr-Up	488,495	CWIP	0	0	0	0	0
12	Other - Miscellaneous	488,495	1/2 Dsgn Day, 1/2 Ener	-3	-1	-2	0	0
13	Tot Other Oper Rev - Pres	Sub-total		469	338	131	1	0
14	Incr Misc Serv		Customers	0	0	0	0	0
15	Incr Late Pay - Proposed		Late Pay; Mod Pres Rev	17	15	2	0	0
14	Low Income Admin Cost		Pres Rev; Mod Pres Rev	0	0	0	0	0
16	Tot Other Oper Rev - Prop			486	353	132	1	0
16a	Total Oper Rev - Present	Total		90,459	35,948	45,338	2,473	6,700
16b	Total Oper Rev - Proposed			98,922	40,414	48,603	2,663	7,243
17	Operating Rev Increase			8,463	4,466	3,265	190	542
Operation & Maintenance (Pg 1 of 2)								
Purchased Gas Expense		FERC Accounts	Alloc					
18	Commodity	728,804,805,808,858	Direct Assign	46,037	15,571	23,325	1,808	5,333
19	Demand	804,808,858	Direct Assign	12,118	4,945	7,173	0	0
20	Propane		Design Day	0	0	0	0	0
21	Limited Firm	728	Design Day	0	0	0	0	0
22	Total Purchases	Sub-total		58,155	20,516	30,498	1,808	5,333
Other Production Expense								
23	Other Purchased Gas		Design Day	186	75	111	0	0
24	Misc. LPG Op Exp	710,733,735,736,742,759	Design Day	520	210	310	0	0
25	MGP	735	Sales, W/o Transp	1,250	423	633	49	145
26	Misc. LNG Op Exp	840,841,842,843	1/2 Dsgn Day, 1/2 Ener	344	121	198	6	19
27	Total Other Production Expense			2,300	829	1,253	55	164
28	Transmission Expense	850-865	Average and Peak	295	114	169	3	10
Distribution Expense								
29	Regulator Stations	875,877,889,891	Average and Peak	111	43	64	1	4
30	Mains	874,887	Mains, Overall	2,072	797	1,182	22	70
31	Services	892	Service Study	509	357	149	2	1
32	Meters	878,893	Meter & Regul Study	-750	-508	-229	-7	-6
33	House Regulators	878,893	Meter & Regul Study	861	583	263	8	7
34	Other Property & Equipment	881	Customers	167	142	25	0	0
35	Dispatching	871	1/2 Dsgn Day, 1/2 Ener	380	133	219	7	21
36	Customer Installations	879	Customers	313	266	47	0	0
37	Other Distribution	880	Customers	774	657	115	1	0
38	Supervision & Engineering	870,885	Dist Exp, w/o Sup & Eng	844	470	349	7	18
39	Total Distribution Expense	Sub-total		5,282	2,940	2,184	41	116

INCOME STATEMENT

Operation & Maintenance (Pg 2 of 2)

	FERC Accounts	Allocator	ND	Res	C&I	Sm Int	Lg Int
Cust Acctg & Inform							
1 Acct Superv	901	Customers		4	4	1	0
2 Acct Meter Read	902	Customers		136	115	20	0
3 Acct Recrds & Coll	903	Record & Coll Study		760	588	121	36
4 Acct Uncollect	904	Uncollectibles Study		444	368	75	0
5 Acct Misc	905	Customers		10	9	2	0
6 Asst Expense (w/o CIP)	908	Cust Inform Study		126	97	21	6
7 Serv Instruct Advr	909	Customers		0	0	0	0
8 Tot Cust Acctg & Inform				1,480	1,181	240	42
Admin & General							
9 Property Insurance	924	Net Plant		99	47	49	1
10 Pension & Benefit-Direct	926	Labor		1,002	586	383	9
11 Salaries	920	Labor		976	571	373	8
12 Office & Supplies	921	Labor		643	376	246	5
13 Admin Transfer Credit	922	Labor		-745	-436	-285	-6
14 Outside Services	923	Labor		206	120	79	2
15 Incentive Compensation	920 + other	Labor		0	0	0	0
16 Injuries and Claims	925	1/2 Rt Base, 1/2 Pres Rev;		227	97	114	4
17 Regulatory Comm Exp	928	Present Retail Revenue		35	14	18	1
18 Duplicate Charge Credit	929	Present Retail Revenue		0	0	0	0
19 General Advertising	930	1/2 Rt Base, 1/2 Pres Rev;		5	2	3	0
20 Misc General Exp	930	1/2 Rt Base, 1/2 Pres Rev;		36	15	18	1
21 Rents	931	1/2 Rt Base, 1/2 Pres Rev;		982	421	494	18
22 Maint of Gen Plt	935	1/2 Rt Base, 1/2 Pres Rev;		8	3	4	0
23 Total A & G Expense				3,474	1,818	1,496	43
Cust Service & Info							
24 CIP/DSM & Amortizations	407.3 + CIP	Sales, W/o CIP Exempt		0	0	0	0
25 MN Energy Policy Rider	407	Sales, W/ Transp		0	0	0	0
26 Instructional Advertising	407	Present Retail Revenue		25	10	13	1
27 Total Customer Service Info	Sub-total			25	10	13	1
28 Amortizations		Labor		567	332	217	5
Sales Expense							
29 Sales, Econ Dvlp & Other	912	Sales, W/ Transp		9	3	5	0
30 Total Sales Expense	Sub-total			9	3	5	0
31 Total O&M Expense				71,587	27,742	36,074	1,997
Book Depreciation	FERC Accounts						
32 Production Plant (LPG)	403	Design Day		732	295	436	0
33 Storage Plant (LNG)	403	Design Day		525	212	313	0
34 Transmission Plant	403	Average and Peak		79	30	45	1
Distribution Plant							
35 Regulator Stations	403	Average and Peak		0	0	0	0
36 Mains	403	Mains, Overall		2,920	1,123	1,666	31
37 Services	403	Service Study		2,142	1,500	627	10
38 Meters	403	Meter & Regul Study		430	291	131	4
39 House Regulators	403	Meter & Regul Study		92	62	28	1
40 Total Distribution Plant				5,583	2,976	2,452	47
41 General Plant	403	Prod-Stor-Tran-Dis		2,450	1,211	1,172	19
42 Common Plant	403, 404	Prod-Stor-Tran-Dis		0	0	0	0
43 Total Book Deprec	Sub-total			9,370	4,725	4,419	67



INCOME STATEMENT

	FERC Accounts	Allocator	ND	Res	C&I	Sm Int	Lg Int		
<b>Tax Deprec &amp; Removal</b>									
1	Production Plant (LPG)	Not Applicable		911	368	543	0	0	
2	Storage Plant (LNG)	Not Applicable		938	379	559	0	0	
3	Transmission Plant	Not Applicable		59	23	33	1	2	
<b>Distribution Plant</b>									
4	Regulator Stations	Not Applicable		0	0	0	0	0	
5	Mains	Not Applicable		5,322	2,047	3,037	57	180	
6	Services	Not Applicable		2,601	1,822	762	12	5	
7	Meters	Not Applicable		569	385	174	6	5	
8	House Regulators	Not Applicable		117	79	36	1	1	
9	Total Distribution Plant	Sub-total		8,610	4,334	4,008	76	191	
<b>General Plant</b>									
10	General Plant	Not Applicable		0	0	0	0	0	
11	Common Plant	Not Applicable		0	0	0	0	0	
12	Tax Benefit Transfers	Not Applicable		4,502	2,152	2,214	37	98	
13	Total Tax Depreciation	Total		15,020	7,255	7,359	114	291	
<b>Present Return</b>									
<b>Inc Tax Additions</b>									
14	Total Book Depr Exp	from another page		9,370	4,725	4,419	67	158	
15	Provision for Deferred	from another page		1,276.78	632	612	9	23	
16	Net Inv Tax Credit	from another page		0	0	0	0	0	
17	Avoided Tax Interest	Not Applicable	CWIP	235	101	131	1	2	
18	Total Tax Additions	Sub-total		10,881	5,457	5,162	77	184	
<b>Inc Tax Deductions</b>									
19	Tax Depr & Removal Exp	from another page		15,020	7,255	7,359	114	291	
20	Debt Interest Expense	Calculation	; Mod Rate Base	3,628	1,672	1,830	33	92	
21	Other Timing Differences	Not Applicable	Labor	-396	-232	-152	-3	-10	
22	Meals		Labor	14	8	5	0	0	
23	Total Tax Deductions			18,265	8,703	9,043	145	374	
23a	Pres Taxable Net Income	Calculation		-1,574	-1,410	-959	309	486	
23b	Prop Taxable Net Income			6,889	3,056	2,306	499	1,028	
<b>Note: If the Gas Utility doesn't have any state or Federal tax credits, then the following 22 lines need not be displayed.</b>									
24	Pres State Tax Before Credits			-68	-61	-41	13	21	Fact
25	Prop State Tax Before Credits			297	132	99	22	44	Fact
26	Equal State Tax Before Credits			297	146	141	3	7	
27	Pres State Tax Credits			8	7	5	-2	-2	Diff
28	Prop State Tax Credits			8	4	3	1	1	Diff
29	Equal State Tax Credits			8	4	4	0	0	
30	Pres State Tax After Credits			-75.84	-68	-46	15	23	Int
31	Prop State Tax After Credits			289	128	97	21	43	
32	Equal State Tax After Credits			289	142	137	3	7	Tot

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1	Pres Federal Taxable Income			-1,498	-1,342	-913	295	463	Tot
2	Prop Federal Taxable Income			6,600	2,928	2,210	478	985	
3	Equal Federal Taxable Income			6,600	3,244	3,134	61	161	
4	Pres Federal Tax Before Credits			-315	-282	-192	62	97	Diff
5	Prop Federal Tax Before Credits			1,386	615	464	100	207	Diff
6	Equal Federal Tax Before Credits			1,386	681	658	13	34	
7	Pres Federal Tax Credits			33	29	20	-6	-10	
8	Prop Federal Tax Credits			33	15	11	2	5	
9	Equal Federal Tax Credits			33	16	16	0	1	
10	Pres Federal Tax After Credits			-347.34	-311	-212	68	107	Ext
11	Prop Federal Tax After Credits			1,353	600	453	98	202	Ext
12	Equal Federal Tax After Credits			1,353	665	643	12	33	Int
13a	Pres Inc Tax, @26.89%	Calculation		-423.19	-379	-258	83	131	
13b	Prop Inc Tax, @23.84%			1,642	728	550	119	245	
14a	Pres Preliminary Return			6,234	2,215	3,180	294	546	
14b	Prop Preliminary Return			12,631	5,573	5,637	448	973	
15	Total AFUDC	Not Applicable	CWIP	0	0	0	0	0	
16a	Pres Total Return	Total	: Mod Rate Base	6,234	2,215	3,180	294	546	
16b	Prop Total Return		: Mod Rate Base	12,631	5,573	5,637	448	973	
17a	Pres % Return on Rate Base	Calculation		3.71%	2.86%	3.75%	18.96%	12.79%	
17b	Prop % Return on Rate Base			7.52%	7.20%	6.65%	28.89%	22.82%	
18a	Pres Common Return			2,606	543	1,349	260	454	
18b	Prop Common Return			9,003	3,901	3,807	414	881	
19a	Pres % Ret on Common Rt Bs			2.95%	1.33%	3.03%	31.99%	20.25%	
19b	Prop % Ret on Common Rt Bs			10.21%	9.60%	8.56%	50.92%	39.35%	
AFUDC									
20	Production Plant (LPG)		Design Day	0	0	0	0	0	
21	Storage Plant (LNG)		Design Day	0	0	0	0	0	
22	Transmission Plant		Average and Peak	0	0	0	0	0	
Distribution:									
23	Regulator Stations		Average and Peak	0	0	0	0	0	
24	Mains		Mains Overall	0	0	0	0	0	
25	Services		Service Study	0	0	0	0	0	
26	Meters		Meter & Regul Study	0	0	0	0	0	
27	House Regulators		Meter & Regul Study	0	0	0	0	0	
	Total Distribution			0	0	0	0	0	
28	General & Common Plant		Prod-Stor-Tran-Dis	0	0	0	0	0	
	Total AFUDC			0	0	0	0	0	
Labor Allocator									
29	Customer Accounting	FERC Accounts	Customers	855	726	128	1	0	
30	Cust Serv & Inform	Labor Portion of O&M Accounts	Customers	19	16	3	0	0	
31	Distribution	Labor Portion of O&M Accounts	Dist Exp, w/o Sup & Eng	3,010	1,676	1,245	24	66	
32	Admin & General	Labor Portion of O&M Accounts	Labor w/o A&G	1,906	1,115	729	16	46	
33	Production	Labor Portion of O&M Accounts	Other Production Exp	603	217	328	14	43	
34	Sales	Labor Portion of O&M Accounts	Sales, W/ Transp	0	0	0	0	0	
35	Transmission	Labor Portion of O&M Accounts	Design Day	57	23	34	0	0	
36	Total			6,451	3,774	2,467	55	155	

ALLOCATORS

Internal Allocators	ND	Res	C&I	Sm Int	Lg Int
1 1/2 Dsgn Day, 1/2 Ener	100.00%	35.12%	57.68%	1.73%	5.46%
2 1/2 Rt Base, 1/2 Pres Rev; (Only for Class allocations)	100.00%	42.83%	50.34%	1.83%	4.99%
3 Average and Peak (Mains)	65,905	25,353	37,607	710	2,234
4 Average and Peak	100.00%	38.47%	57.06%	1.08%	3.39%
5 CWIP	100.00%	42.87%	55.75%	0.37%	1.01%
6 Dist Exp, w/o Sup & Eng	4,437	2,470	1,835	35	97
7 Dist Exp, w/o Sup & Eng	100.00%	55.67%	41.36%	0.78%	2.19%
8 Distribution Plant	100.00%	50.71%	46.23%	0.88%	2.18%
9 Gas Plant In Service	100.00%	49.41%	47.83%	0.79%	1.97%
10 Labor	100.00%	58.51%	38.24%	0.85%	2.40%
11 Mains, Overall	100.00%	38.47%	57.06%	1.08%	3.39%
12 Modified O&M Expense	69,702	26,848	35,194	1,968	5,692
13 Modified O&M Expense	100.00%	38.52%	50.49%	2.82%	8.17%
14 Net Plant	100.00%	47.80%	49.19%	0.83%	2.18%
15 Other Production Exp	100.00%	36.03%	54.47%	2.39%	7.11%
16 Prod-Stor-Tran-Dis	243,946	120,543	116,671	1,925	4,808
17 Prod-Stor-Tran-Dis	100.00%	49.41%	47.83%	0.79%	1.97%
18 Rate Base	100.00%	46.09%	50.45%	0.92%	2.54%
19 Rt Base, w/o Work Cash	168,696	77,699	85,103	1,570	4,325
20 Rt Base, w/o Work Cash	100.00%	46.06%	50.45%	0.93%	2.56%
21 Transmission & Distribution	218,191	110,148	101,311	1,925	4,808
22 Tran & Distrib	100.00%	50.48%	46.43%	0.88%	2.20%
23 Labor w/o A&G	4,545	2,659	1,738	39	109
24 Labor w/o A&G	100.00%	58.51%	38.24%	0.85%	2.40%
Component Allocators					
25 Mod Present Rev	388.92%	106.72%	94.63%	93.52%	94.05%
26 Mod Rate Base	334.45%	130.06%	75.12%	68.20%	61.06%
27 1/2 Mod Rt Bs, 1/2 Mod Pres Rv	361.68%	118.39%	84.88%	80.86%	77.55%

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ALLOCATORS

External Allocators

	ND	Res	C&I	Sm Int	Lg Int	
<b>Customer-Related</b>						
1 Bills		776,092	659,380	115,772	652	288
2 Meter & Regul. Weightings			1.00	2.57	14.52	28.07
3 Meter (Wtd Bills)		974,443	659,380	297,508	9,470	8,085
4 Service Weightings			1.00	2.38	6.86	6.33
5 Service (Wtd Bills)		941,329	659,380	275,655	4,472	1,822
6 Records & Collect Weightings			1.00	1.17	61.08	61.08
7 Records & Collect (Wtd Bills)		851,987	659,380	135,188	39,827	17,592
8 Cust Information Weightings			1.00	1.25	63.71	29.86
9 Cust Information (Wtd Bills)		854,319	659,380	144,802	41,537	8,600
10 Customers		100.00%	84.96%	14.92%	0.08%	0.04%
11 Meter & Regul Study		100.00%	67.67%	30.53%	0.97%	0.83%
12 Service Study		100.00%	70.05%	29.28%	0.48%	0.19%
13 Record & Coll Study		100.00%	77.39%	15.87%	4.67%	2.06%
14 Uncollectibles Study		100.00%	82.99%	17.01%	0.00%	0.00%
15 Cust Inform Study		100.00%	77.18%	16.95%	4.86%	1.01%
<b>Energy-Related</b>						
16 Cal Yr Sales Dkt, W/o Trans		12,668,979	4,285,129	6,418,871	497,468	1,467,512
17 Transportation Dkt		1,668,899	0	1,571,440	0	97,460
18 Cal Yr Sales Dkt, W/ Trans	31.1%	14,337,878	4,285,129	7,990,310	497,468	1,564,971
19 CIP Exempt Dkt		0	0	0	0	0
20 Sales Dkt, W/o CIP Exempt		14,337,878	4,285,129	7,990,310	497,468	1,564,971
21 Sales, W/o Transp		100.00%	33.82%	50.67%	3.93%	11.58%
22 Sales, W/ Transp		100.00%	29.89%	55.73%	3.47%	10.91%
23 Sales, W/o CIP Exempt		100.00%	29.89%	55.73%	3.47%	10.91%
<b>Demand-Related</b>						
24 Design Day Demand Dkt		126,491	51,053	75,438	0	0
25 Avg Daily Firm Dkt, W/ Trans		33,631	11,740	21,891	0	0
26 Excess Design Day		92,860	39,313	53,547	0	0
27 Design Day		100.00%	40.36%	59.64%	0.00%	0.00%
28 Excess Design Day		100.00%	42.34%	57.66%	0.00%	0.00%
<b>Miscellaneous (only alloc to class, not component)</b>						
29 Present Retail Revenue		89,990	35,610	45,208	2,472	6,700
30 Gross Receipts Tax		100.00%	56.19%	36.38%	4.35%	2.45%
31 Present Retail Revenue		100.00%	39.57%	50.24%	2.75%	7.45%
32 Late Payment Penalty		100.00%	89.95%	9.50%	0.33%	0.22%

**Table 2: Comparison of Class Costs of Service Under Current Rates (\$000)**

Rate Class	NSP CCOSS		NSP CCOSS w/o Minimum Size		Increase (Decrease)
	Operating Income	Rate of Return	Operating Income	Rate of Return	
(A)	(B)	(C)	(D)	(E)	(F)
Residential	\$1,075	1.07%	\$2,215	2.86%	(\$3,451)
C&I Firm	\$4,213	6.63%	\$3,180	3.75%	\$4,051
Small Interruptible	\$318	30.28%	\$294	18.96%	(\$599)
Large Interruptible	\$628	24.32%	\$546	12.79%	(\$82)
Total	\$6,234	3.71%	\$6,234	3.71%	\$0

**Table 5: Tariff Rate Adjustments**

Rate Class	Billing Determinant	NSP Current Revenue	NSP Proposed Class Revenue	PSC Change to Class Revenue	Adjusted Class Revenue	PSC Proposed Rate
(A)	(B)	(C)	(D)	(E)	(F)	(G)
Residential Delivery Service	659,380	\$14,671,197	\$16,484,491	(\$1,813,294)	\$14,671,197	\$22.25
Residential Distribution	42,851,288		\$2,637,497	(\$277,818)	\$2,359,678	\$0.05507
C&I Firm DSC	79,903,103		\$14,913,914	\$223,234	\$15,137,149	\$0.18944
Small Interruptible DSC	4,974,676		\$723,766	\$160,664	\$884,429	\$0.17779
Large Interruptible DSC	15,649,711		\$1,773,125	\$74,214	\$1,847,339	\$0.11804

**Table 3: Comparison of Class Revenue Requirement Apportionment (\$000)**

Rate Class	NSP				PSC Corrected CCOSS		
	Current Revenue	Proposed Revenue	Increase (Decrease)	Percent Increase (Decrease)	Proposed Revenue	Increase (Decrease)	Percent Increase (Decrease)
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Residential	\$35,610	\$40,061	\$4,451	12.50%	\$38,611	\$3,001	8.43%
C&I Firm	\$45,208	\$48,471	\$3,263	7.22%	\$49,516	\$4,308	9.53%
Small Interruptible	\$2,472	\$2,662	\$190	7.69%	\$2,870	\$398	16.11%
Large Interruptible	\$6,700	\$7,242	\$542	8.09%	\$7,440	\$740	11.04%
Total	\$89,990	\$98,436	\$8,446	9.39%	\$98,437	\$8,447	9.39%

**Table 4: Comparison of Class Revenue Requirement Apportionment (\$000)**

Rate Class	NSP Proposed Revenue	PSC Proposed Revenue	Increase (Decrease)
(A)	(B)	(C)	(D)
Residential	\$40,061	\$37,970	(\$2,091)
C&I Firm	\$48,471	\$48,694	\$223
Small Interruptible	\$2,662	\$2,823	\$161
Large Interruptible	\$7,242	\$7,316	\$74
Total	\$98,436	\$96,803	(\$1,633)

