

Exhibit No.: 007
Issue: Return on Equity
Witness: Robert B. Hevert
Type of Exhibit: Direct Testimony
Sponsoring Party: Union Electric Company
File No.: GR-2019-0077
Date Testimony Prepared: December 3, 2018

MISSOURI PUBLIC SERVICE COMMISSION

FILE NO: GR-2019-0077

DIRECT TESTIMONY

OF

ROBERT B. HEVERT

ON BEHALF OF

**UNION ELECTRIC COMPANY
D/B/A AMEREN MISSOURI**

**Westborough, Massachusetts
December 2018**

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GLOSSARY OF FREQUENTLY USED TERMS

TERM	DESCRIPTION
Beta Coefficient	A component of the CAPM that measures the risk of a given stock relative to the risk of the overall market.
Bond Yield Plus Risk Premium Approach	A risk premium model used to estimate the Cost of Equity. The Bond Yield Plus Risk Premium approach assumes that investors required a risk premium over the cost of debt as compensation for assuming the greater risk of common equity investment. The model is expressed as a bond yield plus equity risk premium.
Capital Asset Pricing Model (“CAPM”)	A risk premium-based model used to estimate the Cost of Equity, assuming the stock is added to a well-diversified portfolio. The CAPM assumes that investors are compensated for the time value of money (represented by the Risk-Free Rate), and risk (represented by the combination of the Beta Coefficient and the Market Risk Premium).
Constant Growth DCF Model	A form of the DCF model that assumes cash flows will grow at a constant rate, in perpetuity. The model simplifies to a form that expresses the Cost of Equity as the sum of the expected dividend yield and the expected growth rate.
Cost of Equity	The return required by investors to invest in equity securities. The terms “Return on Equity” and “Cost of Equity” are used interchangeably.
Discounted Cash Flow (“DCF”) Model	A model used to estimate the Cost of Equity based on expected cash flows. The Cost of Equity equals the discount rate that sets the current market price equal to the present value of expected cash flows.
Dividend Yield	For a given stock, the current annualized dividend divided by its current market price.
Gross Domestic Product (“GDP”)	The value of all finished goods and services produced within a country during a given period of time (usually measured annually). GDP includes public and private consumption, government expenditures, investments, and net exports (that is, exports minus imports).
Market Return	The expected return on the equity market, taken as a portfolio.
Market Risk Premium	The additional compensation required by investing in the equity market as a portfolio over the Risk-Free rate. The Market Risk Premium is a component of the CAPM.

TERM	DESCRIPTION
Proxy Group	A group of publicly traded companies used as the “proxy” for the subject company (in this case, Ameren Missouri). Proxy companies are sometimes referred to as “Comparable Companies”.
Return on Equity (“ROE”)	The return required by investors to invest in equity securities. The terms “Return on Equity” and “Cost of Equity” are used interchangeably. Please note that the ROE in this context is distinct from the accounting measure sometimes referred to as the “Return on Average Common Equity”.
Risk-Free Rate	The rate of return on an asset with no risk of default.
Risk Premium	The additional compensation required by investors for taking on additional increments of risk. Risk Premium-based approaches are used in addition to the DCF and CAPM to estimate the Cost of Equity.
Treasury Yield	The return on Treasury securities; the yield on long-term Treasury bonds is considered to be a measure of the Risk-Free Rate.

DIRECT TESTIMONY

OF

ROBERT B. HEVERT

FILE NO. GR-2019-0077

1 **I. INTRODUCTION AND SUMMARY OF RECOMMENDATIONS**

2 **Q. Please state your name and business address.**

3 A. My name is Robert B. Hevert and my business address is ScottMadden, Inc.,
4 1900 West Park Drive, Suite 250, Westborough, MA 01581.

5 **Q. On whose behalf are you submitting this testimony?**

6 A. I am submitting this direct testimony (“Direct Testimony”) before the Missouri
7 Public Service Commission (“Commission”) on behalf of Union Electric Company d/b/a Ameren
8 Missouri (“Ameren Missouri” or the “Company”).

9 **Q. Please describe your educational background.**

10 A. I hold a Bachelor’s degree in Business and Economics from the University of
11 Delaware, and an MBA with a concentration in Finance from the University of Massachusetts. I
12 also hold the Chartered Financial Analyst designation.

13 **Q. Please describe your experience in the energy and utility industries.**

14 A. I have worked in regulated industries for over 30 years, having served as an
15 executive and manager with consulting firms, a financial officer of a publicly-traded natural gas
16 utility, and an analyst at a telecommunications utility. In my role as a consultant, I have advised
17 numerous energy and utility clients on a wide range of financial and economic issues, including
18 corporate and asset-based transactions, asset and enterprise valuation, transaction due diligence,
19 and strategic matters. As an expert witness, I have provided testimony in more than 250

1 proceedings regarding various financial and regulatory matters before numerous state utility
2 regulatory agencies (including this Commission), the Federal Energy Regulatory Commission,
3 U.S. Federal Court, and the Alberta Utilities Commission. A summary of my professional and
4 educational background, including a list of my testimony in prior proceedings, is included in
5 Attachment A to my Direct Testimony.

6 **II. PURPOSE AND OVERVIEW OF TESTIMONY**

7 **Q. What is the purpose of your Direct Testimony?**

8 A. My Direct Testimony presents evidence and provides a recommendation regarding
9 the Company's Return on Equity ("ROE").¹ My analyses and conclusions are supported by the
10 data presented in Schedules RBH-D1 through RBH-D7, which have been prepared by me or under
11 my direction.

12 **Q. What are your conclusions regarding the appropriate Cost of Equity for the** 13 **Company?**

14 A. My analyses indicate that an ROE in the range of 10.00 percent to 10.60 percent
15 represents the range of equity investors' required return for investment in a natural gas utility such
16 as Ameren Missouri in today's capital markets. Based on the quantitative and qualitative analyses
17 discussed throughout my Direct Testimony, and taking into consideration the Commission's
18 decisions in prior proceedings, I propose an ROE of 10.30 percent.

19 I note that the Cost of Equity, which is the return required by equity investors to assume
20 the risks of ownership, is a market-based concept. As opposed to the earned Return on Common
21 Equity, which is a directly observable accounting measure, the Cost of Equity is unobservable and
22 must be estimated based on carefully discerned market data. As a consequence, there may be

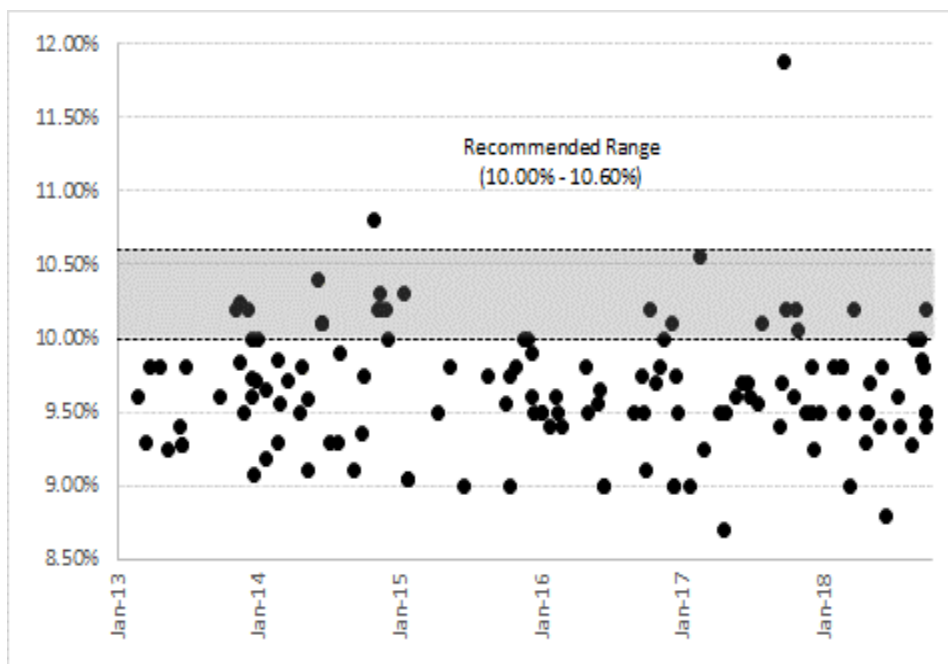
¹ Throughout my Direct Testimony, I interchangeably use the terms "ROE" and "Cost of Equity."

1 differences of opinion among analysts as to the data, assumptions and models used in estimating
2 the Cost of Equity.

3 **Q. Have you considered your proposed ROE in the context of returns recently**
4 **authorized for natural gas utilities in other jurisdictions?**

5 A. Yes. As the Commission noted in prior Orders, it is appropriate to look to
6 authorized ROEs in other jurisdictions to evaluate the reasonableness of ROE proposals.² As
7 shown in Chart 1, below, my proposed range is consistent with returns recently authorized since
8 2013 for natural gas utilities.

Chart 1: Natural Gas Authorized Returns³



² See, for example the consolidated cases, *In the Matters of the Laclede Gas Company's Request to Increase Its Revenues for Gas Service*, File No. GR-2017-0215, and *In the Matter of the Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase Its Revenues for Gas Service*, File No. GR-2017-0216, Amended Report and Order (March 7, 2018), at 31.

³ Source: S&P Global Market Intelligence.

1 **Q. Please provide a brief overview of the analyses that led to your ROE**
2 **recommendation.**

3 A. Because all financial models are subject to various assumptions and constraints,
4 equity analysts and investors tend to use multiple methods to develop their return requirements. I
5 therefore relied on three widely-accepted approaches to develop my ROE recommendation: (1) the
6 Constant Growth Discounted Cash Flow (“DCF”) model; (2) the Capital Asset Pricing Model
7 (“CAPM”); and (3) the Bond Yield Plus Risk Premium approach. As discussed in Sections V and
8 VI, I considered the results of those methods in the context of general capital market factors. Based
9 on those analyses, I concluded that a range of 10.00 percent to 10.60 percent represents reasonable
10 estimates of the Company’s Cost of Equity.

11 **Q. How is the remainder of your Direct Testimony organized?**

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

13 Section III – Provides a summary of issues regarding Cost of Equity estimation in
14 regulatory proceedings and discusses the regulatory guidelines pertinent to the
15 development of the cost of capital;

16 Section IV – Explains my selection of the proxy group used to develop my
17 analytical results;

18 Section V – Explains my analyses and the analytical bases for my ROE
19 recommendation;

20 Section VI – Highlights the current capital market conditions and their effect on the
21 Company’s Cost of Equity;

22 Section VII – Summarizes my conclusions and recommendations.

1 **III. SUMMARY OF ISSUES SURROUNDING COST OF EQUITY ESTIMATION IN**
2 **REGULATORY PROCEEDINGS**

3 **Q. Before addressing the specific aspects of this proceeding, please provide an**
4 **overview of the issues surrounding the Cost of Equity in regulatory proceedings, generally.**

5 A. In very general terms, the Cost of Equity is the return that investors require to make
6 an equity investment in a firm. That is, investors will only provide funds to a firm if the return
7 that they *expect* is equal to, or greater than, the return that they *require* to accept the risk of
8 providing funds to the firm. From the firm’s perspective, that required return, whether it is
9 provided to debt or equity investors, has a cost. Individually, we speak of the “Cost of Debt” and
10 the “Cost of Equity;” together, they are referred to as the “Cost of Capital.”

11 The Cost of Capital (including the costs of both debt and equity) is based on the economic
12 principle of “opportunity costs.” Investing in any asset, whether debt or equity securities, implies
13 a forgone opportunity to invest in alternative assets. For any investment to be sensible, its expected
14 return must be at least equal to the return expected on alternative, comparable investment
15 opportunities. If it is not, investors will sell the “over-valued” security, and buy the “under-valued”
16 security until the expected returns on the two are aligned.

17 Although both debt and equity have required costs, they differ in certain fundamental ways.
18 Most noticeably, the Cost of Debt is contractually defined and can be directly observed as the
19 interest rate or yield on debt securities.⁴ The Cost of Equity, on the other hand, is neither directly
20 observable nor a contractual obligation. Rather, equity investors have a claim on cash flows only
21 after debt holders are paid; the uncertainty (or risk) associated with those residual cash flows

⁴ The observed interest rate may be adjusted to reflect issuance or other directly observable costs.

1 determines the Cost of Equity. Because equity investors bear that additional “residual risk,” they
2 require higher returns than debt holders. In that basic sense, equity and debt investors differ: they
3 invest in different securities, face different risks, and require different returns.

4 Whereas the Cost of Debt can be directly observed, the Cost of Equity must be estimated
5 or inferred based on market data and various financial models. As discussed throughout my Direct
6 Testimony, each of those models is subject to its own set of assumptions, which may be more or
7 less applicable under differing market conditions. In addition, because the Cost of Equity is
8 premised on opportunity costs, the models typically are applied to a group of “comparable” or
9 “proxy” companies. The choice of models (including their inputs), the selection of proxy
10 companies, and the interpretation of the model results all require the application of reasoned
11 judgment. That judgment should consider data and information, both quantitative and qualitative,
12 that is not necessarily included in the models themselves.

13 In the end, the estimated Cost of Equity should reflect the return that investors require in
14 light of the subject company’s risks, and the returns available on comparable investments. A given
15 utility stock may require a higher return based on the risks to which it is exposed relative to other
16 utilities. That is, utilities may be viewed as a “sector,” however, that does not mean that all utilities
17 require the same return. The assessment of relative risk and its effect on the Cost of Equity requires
18 the application of reasoned, experienced judgment applied to a variety of data, much of which is
19 qualitative in nature.

20 **Q. Please now provide a brief summary of the regulatory guidelines established**
21 **for the purpose of determining the ROE.**

22 A. The United States Supreme Court (the “Court”) established the guiding principles
23 for establishing a fair return for capital in two cases: (1) *Bluefield Water Works and Improvement*

1 *Co. v. Public Service Comm'n of West Virginia*, 262 U.S. 679 (1923) (“*Bluefield*”); and
2 (2) *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) (“*Hope*”). In those
3 cases, the Court recognized that the fair rate of return on equity should be: (1) comparable to
4 returns investors expect to earn on other investments of similar risk; (2) sufficient to assure
5 confidence in the company’s financial integrity; and (3) adequate to maintain and support the
6 company’s credit and to attract capital.

7 **Q. Does Missouri precedent provide similar guidance?**

8 A. Yes. In a prior order, the Commission cited the *Hope* and *Bluefield* decisions at
9 some length and acknowledged its authority and responsibility to set “just and reasonable” rates
10 for public utility service, stating that:

11 The standard for rates is “just and reasonable,” a standard founded on
12 constitutional provisions, as the United States Supreme Court has
13 explained. But the Commission must also consider the customers.
14 Balancing the interests of investor and consumer is not reducible to a
15 single formula, and making pragmatic adjustments is part of the
16 Commission’s duty. Thus, the law requires a just and reasonable end,
17 but does not specify a means. The Commission is charged with
18 approving rate schedules that are as “just and reasonable” to consumers
19 as they are to the utility.⁵

20 Based on those standards, the authorized ROE should provide the Company with the
21 opportunity to earn a fair and reasonable return, and should enable efficient access to external
22 capital under a variety of market conditions.

23 In addition, the Missouri Court of Appeals provided the following guidance:

24 The cases also recognize that the fixing of rates is a matter largely of
25 prophecy and because of this commissions, in carrying out their
26 functions, necessarily deal in what are called ‘zones of reasonableness,’

⁵ *In the Matter of Kansas City Power & Light Company’s Request for Authority to Implement a General Rate Increase for Electric Service*, File No. ER-2014-0370, Report and Order (Sep. 15, 2015), at 11.

1 the result of which is that they have some latitude in exercising this most
2 difficult function.⁶

3 That is, the Commission has found it appropriate to consider both quantitative and
4 qualitative information when developing its zone of reasonableness. Consistent with Missouri
5 precedent, I discuss throughout my Direct Testimony that the estimation of the market required
6 ROE (and the zone of reasonableness) does not lend itself to a strict mathematical solution.

7 **Q. Why is it important for a utility to be allowed the opportunity to earn a return**
8 **adequate to attract equity capital at reasonable terms?**

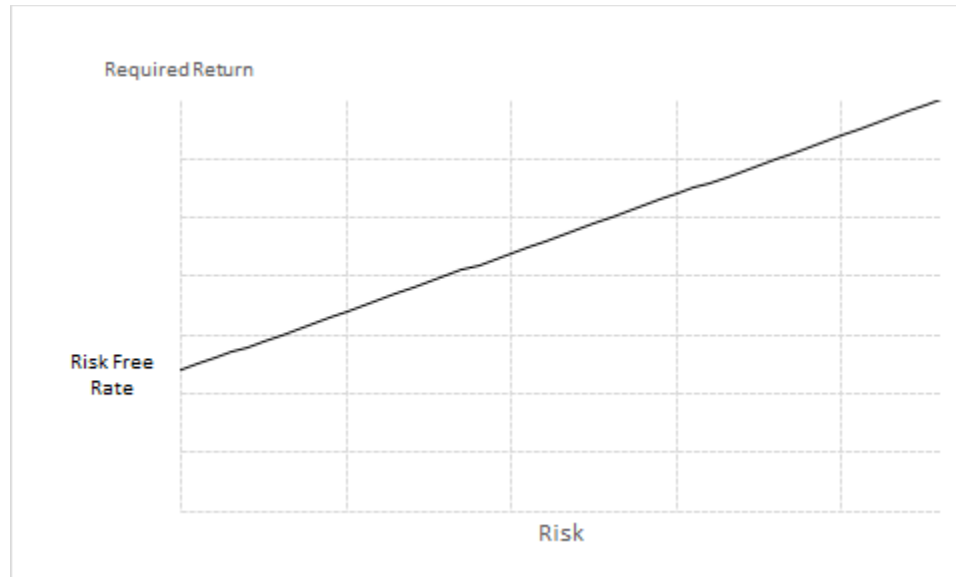
9 A. A return that is adequate to attract capital at reasonable terms enables the utility to
10 provide service while maintaining its financial integrity. As discussed above, and in keeping with
11 the *Hope* and *Bluefield* standards, that return should be commensurate with the returns expected
12 elsewhere in the market for investments of equivalent risk. The consequence of the Commission's
13 order in this case, therefore, should be to provide Ameren Missouri with the opportunity to earn a
14 return on equity that is: (1) adequate to attract capital at reasonable terms; (2) sufficient to ensure
15 its financial integrity; and (3) commensurate with returns on investments in enterprises having
16 corresponding risks. To the extent Ameren Missouri is provided a reasonable opportunity to earn
17 its market-based Cost of Equity, neither customers nor shareholders should be disadvantaged. In
18 fact, a return that is adequate to attract capital at reasonable terms enables the Company to provide
19 safe, reliable natural gas utility service while maintaining its financial integrity.

20 **Q. How is the *Hope* and *Bluefield* “comparable risk” standard reflected in the**
21 **Cost of Equity estimation process?**

⁶ The consolidated cases, *In the Matters of the Laclede Gas Company's Request to Increase Its Revenues for Gas Service*, File No. GR-2017-0215, and *In the Matter of the Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase Its Revenues for Gas Service*, File No. GR-2017-0216, Amended Report and Order (March 7, 2018), at 34, citing *State ex rel. Laclede Gas Co. v. Public Service Commission*, 535 S.W.2d 561, 570 -571 (Mo. App. 1976).

1 A. The “comparable risk” standard is a natural outcome of the risk/return relationship,
2 which is a fundamental principle of finance. Under the risk/return relationship, investors require
3 a higher return for taking on greater risk. Risk, in turn, relates to the uncertainty of a given
4 outcome. As illustrated in Chart 2 (below), as risk increases, so does the required return.

Chart 2: Risk and Return Principle Illustration



5 The “comparable risk” standard indicates that the required return for companies with
6 “corresponding risks” should be the same. As a practical matter, however, no two companies are
7 identical, and no single model provides the most reliable estimate of investors’ required returns
8 under all market conditions. In essence, practitioners and academics recognize that financial
9 models are simply tools to be used in the ROE estimation process, and that strict adherence to any
10 single approach, or to the specific results of any single approach, can lead to flawed or misleading
11 conclusions. That position is consistent with another of the *Hope* and *Bluefield* principles — that
12 the analytical result, rather than the methodology employed, controls in arriving at ROE
13 determinations.

1 **IV. PROXY GROUP SELECTION**

2 **Q. As a preliminary matter, why is it necessary to select a group of proxy**
3 **companies to determine the Cost of Equity for the Company?**

4 A. Because the ROE is market-based, and given that Ameren Missouri is not a publicly
5 traded entity, it is necessary to establish a group of comparable, publicly traded companies to serve
6 as its “proxy.” Even if the Company were publicly traded, it is possible that transitory events, such
7 as asset impairment charges that are subsequently reversed, or temporary trading activity
8 associated with unfounded rumors, could bias its market value in one way or another over a given
9 period of time. A significant benefit of using a proxy group is that it moderates the effects of
10 anomalous, temporary events associated with any one company. Please see Appendix A to this
11 Direct Testimony for a description of how I selected the companies in the proxy group. Applying
12 the screening criteria discussed in Appendix A results in a proxy group that, when taken as a whole,
13 is fundamentally comparable to Ameren Missouri’s investment profile.

14 **Q. Please provide a summary profile of Ameren Missouri.**

15 A. Ameren Missouri, which is a wholly owned subsidiary of Ameren Corporation,
16 provides natural gas distribution service to approximately 130,000 retail customers and electric
17 service to approximately 1.2 million retail customers in Missouri.⁷ Ameren Corporation’s and
18 Ameren Missouri’s current long-term issuer credit ratings are as follows:

Table 1: Current Credit Ratings⁸

	S&P	Moody’s	FitchRatings
Ameren Corporation	BBB+ (outlook: Positive)	Baa1 (outlook: Stable)	BBB+ (outlook: Stable)
Ameren Missouri	BBB+ (outlook: Positive)	Baa1 (outlook: Stable)	BBB+ (outlook: Stable)

⁷ Source: Bloomberg Professional.

⁸ Source: Bloomberg Professional.

1 **Q. What companies are included in your proxy group?**

2 A. Table 2 (below) identifies the eight companies included in the proxy group.

Table 2: Proxy Group Screening Results

Company	Ticker
Atmos Energy Corporation	ATO
Chesapeake Utilities Corporation ⁹	CPK
New Jersey Resources Corporation	NJR
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
South Jersey Industries, Inc.	SJI
Southwest Gas Corporation	SWX
Spire Inc.	SR

3 **Q. Does the use of a proxy group suggest that the ROE estimates will be tightly**
4 **clustered around the average results?**

5 A. No, it does not. Even with carefully selected proxy groups, it is common for
6 analytical results to reflect a seemingly wide range.¹⁰ Despite the care taken to select comparable
7 proxy companies, market expectations regarding future risks and growth opportunities will vary
8 from company to company. Although selecting proxy companies and developing the range of
9 results are critical issues, an equally important concern is how to select the Cost of Equity *from*
10 that range. That selection necessarily considers a wide range of both quantitative and qualitative
11 information; as noted earlier, it is not an entirely mathematical analysis.

⁹ Even though Chesapeake Utilities Corp. is not publicly rated by S&P, its Value Line Financial Strength Rating of B++ is comparable to the rest of the proxy group. CPK also has a National Association of Insurance Commissioners (“NAIC”) rating of “NAIC I,” which is equivalent to ratings in the “A” category for both Moody's and Standard & Poor's. *See*, Chesapeake Utilities Corporation, Northeast Road Show, January 2018, at 16; National Association of Insurance Commissioners, CRP Credit Rating Equivalent to SVO Designations, November 2017.

¹⁰ In Appendix B, I provide more substantive descriptions of the models used to estimate the ROE.

1 V. COST OF EQUITY ESTIMATION

2 Q. Please briefly discuss the ROE in the context of the regulated rate of return.

3 A. Regulated utilities primarily use common stock and long-term debt to finance their
4 capital investments. The Weighted Average Cost of Capital (or overall rate of return) weighs the
5 costs of the individual sources of capital by their respective book values.

6 Q. How have you determined the investor-required ROE?

7 A. Because the Cost of Equity is not directly observable, it must be estimated based
8 on both quantitative and qualitative information. Although a number of empirical models have
9 been developed for that purpose, all are subject to limiting assumptions or other constraints.
10 Consequently, many finance texts recommend using multiple approaches to estimate the Cost of
11 Equity as detailed in Appendix B.¹¹ When faced with the task of estimating the Cost of Equity,
12 analysts and investors are inclined to gather and evaluate as much relevant data as reasonably can
13 be analyzed and, therefore, rely on multiple analytical approaches.

14 As a practical matter, no individual model is more reliable than all others under all market
15 conditions. Therefore, it is important to use multiple methodologies to mitigate the effects of
16 assumptions and inputs associated with any single approach. The use of multiple methods, and
17 the consideration given to them, recently was addressed by the FERC. In its October 16, 2018
18 *Order Directing Briefs*, FERC found that although it “previously relied solely on the DCF model
19 to produce the evidentiary zone of reasonableness...”, it is “...concerned that relying on that
20 methodology alone will not produce just and reasonable results.”¹² As FERC explained, because
21 the Cost of Equity depends on what the market expects, it is important to understand “how

¹¹ See, e.g., Eugene Brigham, Louis Gapenski, *Financial Management: Theory and Practice*, 7th Ed., 1994, at 341, and Tom Copeland, Tim Koller and Jack Murrin, *Valuation: Measuring and Managing the Value of Companies*, 3rd ed., 2000, at 214.

¹² Docket No. EL11-66-001, *et al.*, *Order Directing Briefs*, at 30.

1 investors analyze and compare their investment opportunities.”¹³ FERC also explained that,
2 although certain investors may give some weight to the DCF approach, other investors “place
3 greater weight on one or more of the other methods....”¹⁴ As a consequence, I have considered
4 the results of the Constant Growth DCF model, the Capital Asset Pricing Model, and the Bond
5 Yield Plus Risk Premium approach.

6 **Q. Why did you select those three models?**

7 A. I selected those models for two reasons. First, because the purpose of ROE analyses
8 is to estimate the return that investors require, it is important to use the models on which those
9 investors rely. As discussed in Appendix B, the models that I apply are commonly used in practice.
10 Second, the models focus on different aspects of return requirements, and provide different insights
11 to investors’ views of risk and return. Using multiple models provides a broader, and therefore a
12 more reliable perspective on investors’ return requirements.

13 **Q. Please briefly describe the Constant Growth DCF model.**

14 A. The Constant Growth DCF approach defines the Cost of Equity as the sum of
15 (1) the expected dividend yield, and (2) expected long-term growth. The expected dividend yield
16 generally equals the expected annual dividend divided by the current stock price, and the growth
17 rate is based on analysts’ expectations of earnings growth. Under the model’s strict assumptions,
18 the growth rate equals the rate of capital appreciation (that is, the growth in the stock price).¹⁵ In
19 that regard, it does not matter whether the investor holds the stock in perpetuity, or whether they
20 hold the stock for some period of time, collect the dividends, then sell at the prevailing market
21 price. Under the model’s assumptions, the result is the same regardless of the holding period.

¹³ *Ibid.*, at 33.

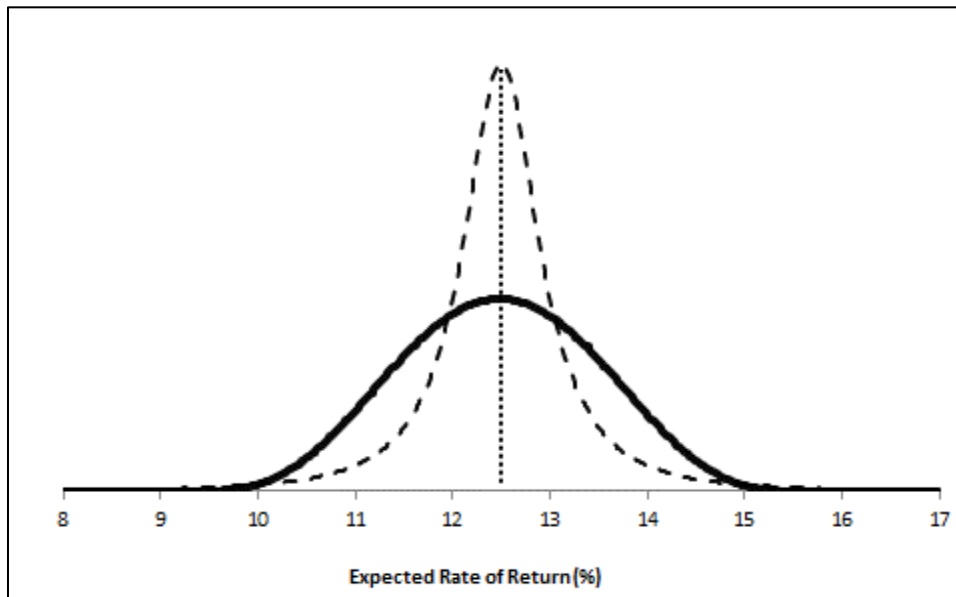
¹⁴ *Ibid.*, at 35.

¹⁵ As discussed in Appendix B, the model assumes that earnings, dividends, book value, and the stock price all grow at the same constant rate in perpetuity.

1 **Q. Please briefly describe the Capital Asset Pricing Model.**

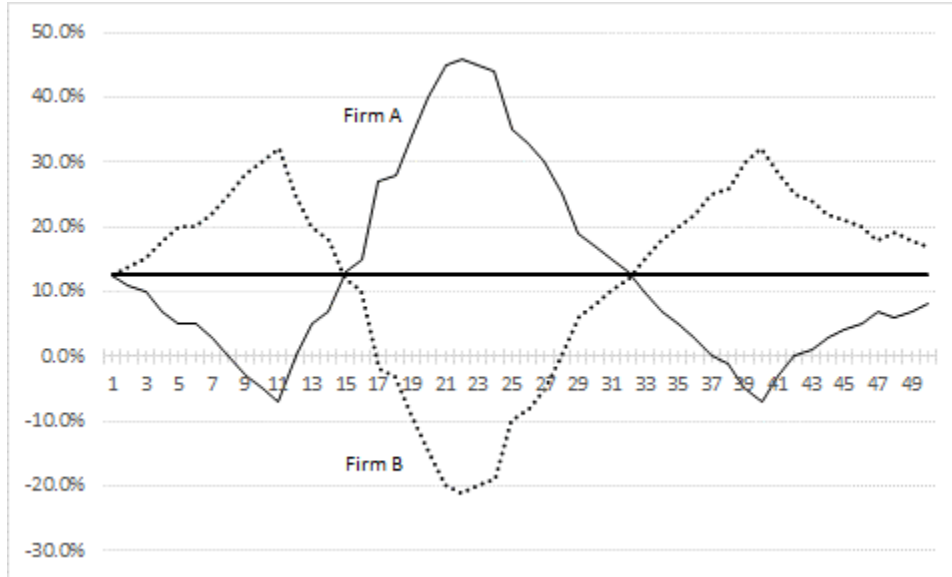
2 A. Whereas DCF models focus on expected cash flows, Risk Premium-based models
3 such as the CAPM focus on the additional return that investors require for taking on additional
4 risk. In finance, “risk” generally refers to the variation in expected returns, rather than the expected
5 return, itself. Consider two firms, X and Y, with expected returns, and the expected variation in
6 returns noted in Chart 3, below. Although the two have the same expected return (12.50 percent),
7 Firm Y’s are far more variable. From that perspective, Firm Y would be considered the riskier
8 investment.

Chart 3: Expected Return and Risk



9 Now consider two other firms, Firm A and Firm B. Both have expected returns of 12.50
10 percent, and both are equally risky as measured by their volatility. But as Firm A’s returns go up,
11 Firm B’s returns go down. That is, the returns are negatively correlated.

Chart 4: Relative Risk



1 If we were to combine Firms A and B into a portfolio, we would expect a 12.50 percent
2 return with no uncertainty because of the opposing symmetry of their risk profiles. That is, we
3 can diversify the risk away. As long as two stocks are not perfectly correlated, we can achieve
4 diversification benefits by combining them into a portfolio. That is the essence of the Capital
5 Asset Pricing Model; because we can combine firms into a portfolio, the only risk that matters is
6 the risk that remains after diversification, *i.e.*, the “non-diversifiable” risk.

7 The CAPM defines the Cost of Equity as the sum of the “risk-free” rate, and a premium to
8 reflect the additional risk associated with equity investments. The “risk-free” rate is the yield on
9 a security viewed as having no default risk, such as long-term Treasury bonds. The risk-free rate
10 essentially sets the baseline of the CAPM. That is, an investor would expect a higher return than
11 the risk-free rate to purchase an asset that carries risk. The difference between that higher return
12 (*i.e.*, the required return) and the risk-free rate is the risk premium.

13 **Risk-Free Rate + Risk Premium = Required Return [1]**

1 The risk premium is defined as a security’s Beta coefficient multiplied by the risk premium
2 of the overall market (the “Market Risk Premium” or “MRP”). The Beta coefficient is a measure
3 of the subject company’s risk relative to the overall market, *i.e.*, the “non-diversifiable” risk. A
4 Beta coefficient of 1.00 means that the security is equally as risky as the overall market; a value
5 below 1.00 represents a security with less risk than the overall market, and a value over 1.00
6 represents a security with more risk than the overall market.

7 **Risk-Free Rate + Beta coefficient x Market Risk Premium = Required Return [2]**

8 **Q. Please briefly describe the Bond Yield Plus Risk Premium.**

9 A. This approach is based on the basic financial principle that equity investors bear the
10 risk associated with ownership and therefore require a premium over the return they would have
11 earned as a bondholder. That is, because returns to equity holders are more risky than returns to
12 bondholders, equity investors must be compensated for bearing that additional risk (that difference
13 often is referred to as the “Equity Risk Premium”). Bond Yield Plus Risk Premium approaches
14 estimate the Cost of Equity as the sum of the Equity Risk Premium and the yield on a particular
15 class of bonds.

16 **Bond Yield + Equity Risk Premium = Required Return [3]**

17 **Q. What are the results of your DCF-based analysis?**

18 A. The results of the model described above are provided in Table 3, below.¹⁶

¹⁶ See Appendix B for a more detailed description of the models, assumptions, and inputs described in Section V.

Table 3: Summary of DCF Results¹⁷

	<i>Median Low</i>	<i>Mean</i>	<i>Median High</i>
<i>Constant Growth DCF Results</i>			
30-Day Average	7.80%	9.83%	12.52%
90-Day Average	7.88%	9.88%	12.59%
180-Day Average	8.02%	9.99%	12.75%

1 **Q. Please now summarize your remaining analytical results.**

2 A. The Risk Premium-based results, including the CAPM and Bond Yield Plus Risk
3 Premium methods, are provided below.

Table 4: Summary of Risk Premium Results

	<i>Bloomberg Derived Market Risk Premium</i>	<i>Value Line Derived Market Risk Premium</i>
<i>CAPM Results</i>		
<i>Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (3.19%)	10.50%	11.36%
Near Term Projected 30-Year Treasury (3.52%)	10.82%	11.68%
<i>Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (3.19%)	11.43%	12.40%
Near Term Projected 30-Year Treasury (3.52%)	11.76%	12.73%
<i>Bond Yield Plus Risk Premium Results</i>		
Current 30-Year Treasury (3.19%)	9.88%	
Near Term Projected 30-Year Treasury (3.52%)	9.94%	
Long Term Projected 30-Year Treasury (4.30%)	10.17%	

¹⁷ For the purposes of my Direct Testimony, I have put more emphasis on the median results of my Constant Growth DCF analysis, because the mean results are affected by an anomalously high growth rate for Northwest Natural Gas Company of 30.50% from Value Line due to the company's significant losses in 2017.

1 **VI. CAPITAL MARKET ENVIRONMENT**

2 **Q. Do economic conditions influence the required cost of capital and required**
3 **return on common equity?**

4 A. Yes. As discussed in Section V, the models used to estimate the Cost of Equity are
5 meant to reflect, and therefore are influenced by, current and expected capital market conditions.
6 As such, it is important to assess the reasonableness of any financial model's results in the context
7 of observable market data. To the extent a given model's assumptions are misaligned with such
8 data, or its results inconsistent with basic financial principles, it is appropriate to consider whether
9 alternative estimation techniques are likely to provide more meaningful and reliable results.

10 **Q. Do you have any general observations regarding the relationship between**
11 **current capital market conditions and the Company's Cost of Equity?**

12 A. Yes. Although the Federal Reserve completed its Quantitative Easing initiative in
13 October 2014, it was not until December 2015 that it raised the Federal Funds rate and began the
14 process of monetary policy normalization.¹⁸ A significant analytical issue is how investors likely
15 will react as that process continues, and eventually is completed. For example, increasing interest
16 rates may be seen as an indication of expanding macroeconomic growth, in which case we
17 reasonably could expect the growth rate component of the DCF model to increase. At the same
18 time, sectors that historically have included dividend-paying companies may lose value, if only on
19 a relative basis, as increasing interest rates provide investors with alternative sources of current
20 income, increasing dividend yields. Those dynamics likely affect other models in different ways,
21 increasing the risk of focusing on a single method. A more reasoned approach is to understand the

¹⁸ See Federal Reserve Press Release, December 16, 2015.

1 relationships among capital market and macroeconomic variables, and to consider how those
2 factors may affect different models and their results.

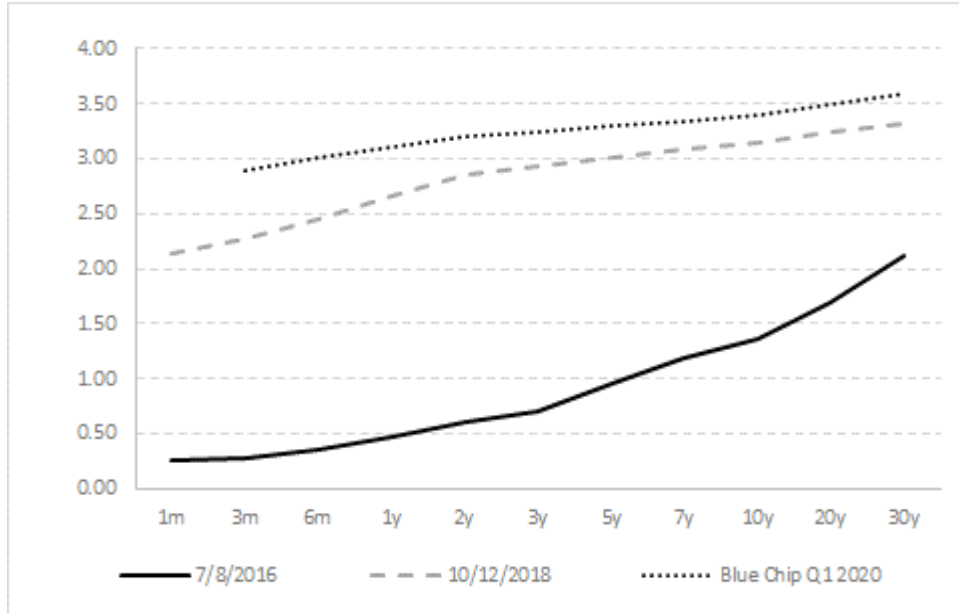
3 **Q. Does your recommendation also consider the current interest rate**
4 **environment?**

5 A. Yes, it does. From an analytical perspective, it is important that the inputs and
6 assumptions used to arrive at an ROE recommendation, including assessments of capital market
7 conditions, are consistent with the recommendation itself. Although I appreciate that all analyses
8 require an element of judgment, the application of that judgment must be made in the context of
9 the quantitative and qualitative information available to the analyst and the capital market
10 environment in which the analyses were undertaken. Because the Cost of Equity is forward-
11 looking, the salient issue is whether investors see the likelihood of increased interest rates during
12 the period in which the rates set in this proceeding will be in effect.

13 Although the Federal Reserve's market intervention policies kept interest rates historically
14 low, since July 8, 2016 (when the 30-year Treasury yield fell to its secular low of 2.11 percent),
15 interest rates have risen. As the Federal Reserve increased the Federal Funds target rate seven
16 times between December 2016 and October 12, 2018 to 2.00 percent - 2.25 percent, short-term
17 and long-term interest rates also increased (*see* Chart 5 below).¹⁹

¹⁹ Federal Reserve Board Schedule H.15. 1-year, 10-year and 30-year Treasury yields increased by 218 basis points, 178 basis points and 121 basis points, respectively, July 8, 2016 to October 12, 2018.

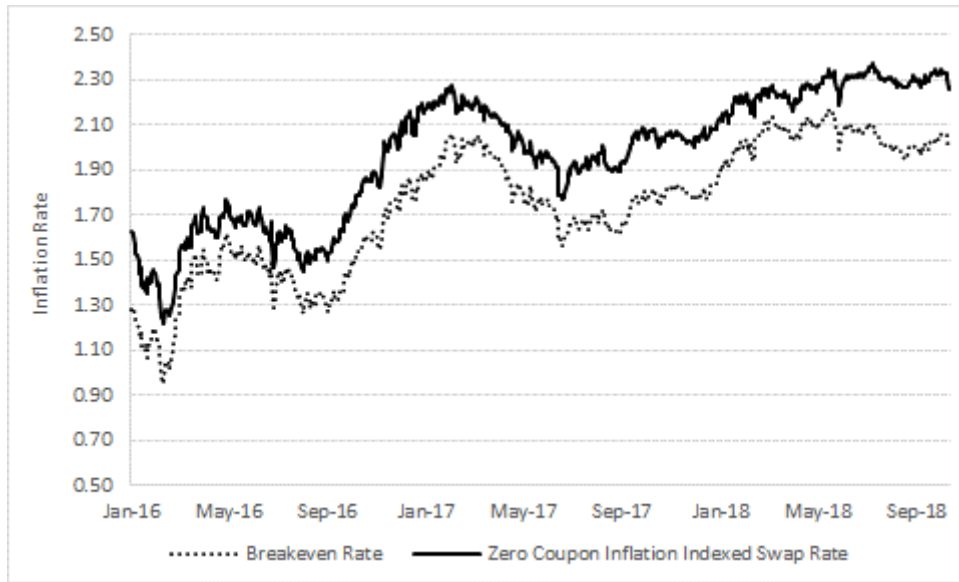
Chart 5: Treasury Yield Curve: 7/8/2016, 10/12/2018 and Projected Q1 2020²⁰



1 The significant increase in the 10- and 30-year yields from July 2016 to October 2018 is
2 highly related to increasing inflation. To that point, leading up to and following the November
3 2016 Presidential election, expected inflation, as measured by the breakeven forward inflation rate
4 and zero-coupon inflation index swaps, also increased. Although those measures of forward
5 inflation fell somewhat between February and June 2017, they have increased since that period,
6 such that they are similar to, but above, the Federal Reserve’s 2.00 percent inflation target (*see*
7 Chart 6, below).

²⁰ Sources: Federal Reserve Board Schedule H.15.; *Blue Chip Financial Forecasts*, Vol. 37, No. 10, October 1, 2018, at 2. 3-year, 7-year and 20-year projected Treasury yields interpolated.

Chart 6: Five-Year Forward Inflation²¹



1 Lastly, in October 2017, the Federal Reserve initiated its balance sheet normalization
2 program that includes gradual reductions to its security holdings by decreasing its reinvestment
3 activities.²² In a press conference following the June 2018 Federal Open Market Committee
4 meeting, Chairman Powell discussed the recent increases in the Federal Funds rate and
5 expectations for continued rate increases, noting a strong labor market and increases in household
6 spending and business fixed investment.²³

7 **Q. Does market-based data indicate that investors see a probability of increasing**
8 **interest rates?**

9 A. Yes, observable market data demonstrate investors expect interest rates to increase
10 in the near future. Data compiled by CME Group indicates that investors see a near certainty of
11 further Federal Funds rate increases, even after the seven increases since December 14, 2016. As

²¹ Source: Bloomberg Professional.

²² See: <https://www.federalreserve.gov/monetarypolicy/policy-normalization.htm> and Federal Open Market Committee (“FOMC”) Press Release, June 14, 2017.

²³ Transcript of Chairman Powell’s Press Conference, June 13, 2018.

1 shown in Table 5 (below), the market expects at least one additional rate hike (98.70 percent
2 probability) and possibly two or more (88.50 percent) by December 2019.

Table 5: Probability of Federal Funds Rate Increases²⁴

Target Rate (bps)	Federal Reserve Meeting Date								
	12/19/18	1/30/19	3/20/19	5/1/19	6/19/19	7/31/19	9/18/19	10/30/19	12/11/19
200-225	24.2%	23.2%	7.0%	6.3%	2.8%	2.5%	1.7%	1.6%	1.3%
225-250	75.8%	73.6%	38.4%	35.3%	19.4%	17.5%	12.6%	11.7%	10.2%
250-275		3.2%	52.3%	50.9%	42.3%	39.7%	32.5%	30.8%	28.0%
275-300			2.3%	7.3%	31.3%	32.5%	34.8%	34.6%	34.1%
300-325				0.2%	4.1%	7.2%	15.4%	17.0%	19.6%
325-350					0.1%	0.6%	2.7%	3.8%	5.7%
350-375							0.2%	0.4%	0.9%
375-400									0.1%

3 Similarly, consensus near-term forecasts of the 30-year Treasury yield reported by *Blue*
4 *Chip Financial Forecast* indicate the market expects long-term rates to rise by another
5 approximately 40 basis points by the first quarter of 2020.²⁵ Importantly, the potential for rising
6 rates represents risk for utility investors, because, as noted above, sectors that historically have
7 included dividend-paying companies (such as utilities) may lose value, if only on a relative basis,
8 as increasing interest rates provide investors with alternative sources of current income.

9 **Q. Has market volatility changed with the Federal Reserve’s move toward**
10 **monetary policy normalization?**

11 A. Yes, it has. A visible and widely reported measure of expected volatility is the
12 Cboe Options Exchange (Cboe) Volatility Index, often referred to as the VIX. As Cboe explains,
13 the VIX “is a calculation designed to produce a measure of constant, 30-day expected volatility of
14 the U.S. stock market, derived from real-time, mid-quote prices of S&P 500[®] Index call and put

²⁴ See <http://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html>, accessed November 9, 2018.

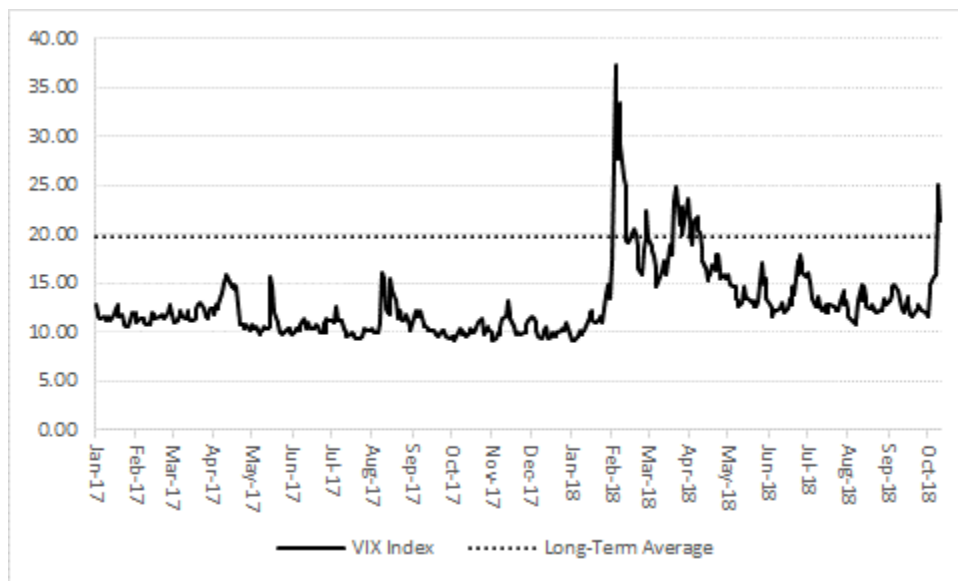
²⁵ *Blue Chip Financial Forecast*, Vol. 37, No. 10, October 1, 2018, at 2.

1 options.”²⁶ Simply, the VIX is a market-based measure of expected volatility. Because volatility
2 is a measure of risk, increases in the VIX, or in its volatility, are a broad indicator of expected
3 increases in market risk.

4 Although the VIX is not expressed as a percentage, it should be understood as such. That
5 is, if the VIX stood at 15.00, it would be interpreted as an expected standard deviation in annual
6 market returns of 15.00 percent over the coming 30 days. Since 2000, the VIX has averaged about
7 19.68, which is highly consistent with the long-term standard deviation on annual market returns
8 (19.80 percent, as reported by Duff & Phelps).

9 As Chart 7 (below) demonstrates, in 2017, market volatility was well below its long-term
10 average and moved within a somewhat narrow range; the VIX averaged about 11.09, with a
11 standard deviation of 1.356. In 2018, however, the VIX average increased to 15.231 with a
12 standard deviation of 4.380. That is, from 2017 to 2018, both the level and the volatility of market
13 volatility increased.

Chart 7: VIX Since January 2017²⁷



²⁶ Source: <http://www.cboe.com/vix>.

²⁷ Source: Bloomberg Professional.

1 Table 6 (below) further demonstrates the increase in market uncertainty from 2017 to 2018.
2 As that table notes, the standard deviation (the volatility of volatility) in 2018 is about 3.20 times
3 higher than its 2017 level (1.356).

Table 6: VIX Levels and Volatility²⁸

VIX Level and Volatility	
Long-term Average	19.680
2018 Average	15.231
2018 Maximum	37.320
2018 Minimum	9.150
2018 Standard Deviation	4.380
2017 Average	11.090
2017 Maximum	16.040
2017 Minimum	9.140
2017 Standard Deviation	1.356

4 **Q. Is market volatility expected to increase from its current levels?**

5 A. Yes, it is. One means of assessing market expectations regarding the future level
6 of volatility is to review Cboe's "Term Structure of Volatility." As Cboe points out:

7 The implied volatility term structure observed in SPX options markets
8 is analogous to the term structure of interest rates observed in fixed
9 income markets. Similar to the calculation of forward rates of interest,
10 it is possible to observe the option market's expectation of future market
11 volatility through use of the SPX implied volatility term structure.²⁹

12 Cboe's term structure data is upward sloping, indicating market expectations of increasing
13 volatility. The expected VIX value in December 2020 is about 20.05, suggesting investors see a
14 reversion to long-term average volatility over the coming months.³⁰ That increase in expected
15 volatility makes intuitive sense, given the Federal Reserve's movement toward normalizing
16 monetary policy. That policy change includes reducing the liquidity provided to the financial

²⁸ Source: Bloomberg Professional.

²⁹ Source: <http://www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data>.

³⁰ Source: <http://www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data>, accessed October 12, 2018.

1 markets during the Federal Reserve’s Quantitative Easing initiatives. Because that liquidity had
2 the effect of dampening volatility as it was added to the markets, it stands to reason that volatility
3 will increase as liquidity is diminished.

4 **Q. Does the Federal Reserve’s tightening of monetary policy have other**
5 **implications for the assessment of capital markets?**

6 A. Yes. It is important to recognize that the Federal Reserve’s reduction in monetary
7 stimulus is related to expectations of improved economic and financial conditions, and sustained
8 growth in the overall economy. When increasing the Federal Funds rate on September 26, 2018,
9 the Federal Open Market Committee noted the labor market continued to improve and that
10 economic activity, including household spending and business fixed investment, was rising at a
11 strong rate.³¹ From that perspective, we would expect to see higher growth estimates for
12 companies in the overall economy, including the utility sector.

13 **Q. Have you also considered the effect of the recently enacted Tax Cut and Jobs**
14 **Act (“TCJA”)?**

15 A. Yes, I have. The major rating agencies have observed that a reduction in utilities’
16 revenue associated with lower income taxes and the potential return of excess accumulated
17 deferred income taxes also may reduce utilities’ cash flow.³² Leading up to and subsequent to the
18 signing of the TCJA, utilities underperformed the market, which resulted in higher dividend yields
19 as rating agencies and investors re-evaluated utilities relative to other market sectors. To the extent
20 investors now view utilities as less attractive relative to other sectors, investors will require a higher
21 return to remain invested in the proxy companies. As that occurs, the proxy companies’ prices

³¹ *Federal Reserve Press Release* dated September 26, 2018.

³² *See S&P Global Market Intelligence, Rating agencies warn tax reform could drag US utility sector credit quality*, January 25, 2018.

1 will fall, and their dividend yields will increase. Because rating agencies have begun to discuss
2 the consequences of the TCJA for utilities' cash flow, one reasonably can assume equity investors
3 also have begun to recognize those concerns.

4 **Q. What concerns have the major rating agencies raised as they consider the**
5 **implications of the TCJA for utilities' cash flow?**

6 A. As Fitch Ratings pointed out, “[a]bsent mitigating strategies on the regulatory front,
7 this is expected to lead to weaker credit metrics and negative rating actions for issuers with limited
8 headroom to absorb the leverage creep.”³³ In a similar vein, Standard & Poor’s observed that the
9 TCJA is “...negative for credit quality because the combination of a lower tax rate and the loss of
10 stimulus provisions related to bonus depreciation or full expensing of capital spending will create
11 headwinds in operating cash-flow generation capabilities as customer rates are lowered in response
12 to the new tax code.”³⁴ Moody’s stated the following:

13 Tax reform is credit negative for US regulated utilities because the lower
14 21% statutory tax rate reduces cash collected from customers, while the
15 loss of bonus depreciation reduces tax deferrals, all else being equal.
16 Moody's calculates that the recent changes in tax laws will dilute a
17 utility's ratio of cash flow before changes in working capital to debt by
18 approximately 150 - 250 basis points on average, depending to some
19 degree on the size of the company's capital expenditure programs. From
20 a leverage perspective, Moody's estimates that debt to total
21 capitalization ratios will increase, based on the lower value of deferred
22 tax liabilities.³⁵

23 All three rating agencies, therefore, have observed the negative effects of the TCJA on utilities'
24 cash flows, and the potential consequences for their credit profiles.

³³ Fitch Ratings Special Report, *Tax Reform Impact on the U.S. Utilities, Power & Gas Sector*, January 24, 2018.

³⁴ S&P Global Ratings, *U.S. Tax Reform: For Utilities' Credit Quality, Challenges Abound*, January 24, 2018.

³⁵ Moody's Investors' Service, *Rating Action: Moody's changes outlooks on 25 US regulated utilities primarily impacted by tax reform*, January 19, 2018.

1 **Q. Has Moody’s recently updated its review of the utility sector?**

2 A. Yes. On June 18, 2018, Moody’s changed its outlook on the U.S. regulated utility
3 sector to “negative” from “stable.” Moody’s explained that its change in outlook “...primarily
4 reflects a degradation in key financial credit ratios, specifically the ratio of cash flow from
5 operations to debt, funds from operations (“FFO”) to debt and retained cash flow to debt, as well
6 as certain book leverage ratios.”³⁶ The sector’s outlook could remain “negative” if cash flow-
7 based metrics continue to decline, or if there emerge signs of a more “contentious” regulatory
8 environment (which, Moody’s notes, is not fully reflected in lower authorized returns). Moody’s
9 also noted that “[m]anagement teams’ defensive efforts and a few initial signs of supportive
10 regulatory responses to tax reform are important first steps in addressing the sector’s increased
11 financial risk,” and explained that in its view, “it will take longer than 12-18 months for the sector
12 to exhibit a material financial improvement from these actions.”³⁷

13 **Q. What conclusions do you draw from the data and information discussed**
14 **above?**

15 A. There is little question that the TCJA has increased cash flow-related risks, and the
16 potentially dilutive effects of additional equity issuances, for utilities. Those risks are manifested
17 in the sector’s significant underperformance relative to the broad market, and in the comments of
18 financial participants such as Moody’s, S&P, and Fitch. Further, because non-regulated
19 companies may benefit from the TCJA in ways utilities cannot, it is reasonable to conclude
20 investors have begun to see utilities as less attractive relative to other industry sectors. In addition,
21 to the extent the TCJA accelerates economic growth and inflation, and increases the potential for

³⁶ See Moody’s Investors Service, Announcement: *Moody’s changes the US regulated utility sector outlook to negative from stable*, June 18, 2018.

³⁷ *Ibid.*

1 widening federal budget deficits, investors may see further reason to expect increasing interest
2 rates.³⁸ Because all three effects weigh against utilities, we should focus on the upper end of the
3 range of analytical results.

4 **Q. Are you recommending a higher ROE in this proceeding in connection with**
5 **the TCJA?**

6 A. No, I am not. Rather, I recommend that the Commission consider the capital market
7 implications of the TCJA as part of its review. Based on the data and information discussed above,
8 it is my view that the TCJA, and its implications for utilities' cash flows and credit profiles, provide
9 further support for my ROE range and recommendation.

10 **Q. What conclusions do you draw from your analyses of the current capital**
11 **market environment, and how do those conclusions affect your ROE recommendation?**

12 A. From an analytical perspective, it is important that the inputs and assumptions used
13 to arrive at an ROE determination, including assessments of capital market conditions, are
14 consistent with the conclusion itself. Although all analyses require an element of judgment, the
15 application of that judgment must be made in the context of the quantitative and qualitative
16 information available to the analyst and the capital market environment in which the analyses were
17 undertaken. Because the application of financial models and interpretation of their results often is
18 the subject of differences among analysts in regulatory proceedings, it is important to review and
19 consider a variety of data points. That approach enables us to put in context both quantitative
20 analyses and the associated recommendations. Further, because all models produce ranges of
21 results, it is important to consider the type of information discussed above to determine where the

³⁸ *Blue Chip Financial Forecasts*, October 1, 2018, at 1.

1 Company's ROE falls within those ranges. As discussed throughout my testimony, doing so
2 supports my recommended range of 10.00 percent to 10.60 percent.

3 **VII. CONCLUSIONS AND RECOMMENDATION**

4 **Q. What is your conclusion regarding the Company's Cost of Equity?**

5 A. As discussed in Section V (and as shown in Schedules RBH-D1 through RBH-D7),
6 I have performed several analyses to estimate Ameren Missouri's Cost of Equity. In light of those
7 results, and taking into consideration other relevant and observable market data, I believe that an
8 ROE in the range of 10.00 percent to 10.60 percent represents the range of returns required by
9 equity investors under current and expected market conditions. Within that range, I conclude that
10 an ROE of 10.30 percent represents a reasonable estimate of the Cost of Equity for Ameren
11 Missouri. As discussed earlier in my testimony, my recommendation reflects analytical results
12 based on a proxy group of natural gas utilities, and takes into consideration capital market
13 conditions.

14 **Q. Does this conclude your Direct Testimony?**

15 A. Yes, it does.

1 **Appendix A**

2 **A. Proxy Group Selection**

3 **Q. How did you select the companies included in your proxy group?**

4 A. I began with the universe of companies that Value Line classifies as Natural Gas
5 Utilities, which includes 10 domestic U.S. utilities, and applied the following screening criteria:

6 • Because certain of the models used in my analyses assume that earnings and
7 dividends grow over time, I excluded companies that do not consistently pay
8 quarterly cash dividends;

9 • To ensure that the growth rates used in my analyses are not biased by a single
10 analyst, all the companies in my proxy group have been covered by at least two
11 utility industry equity analysts;

12 • All the companies in my proxy group have investment grade senior unsecured bond
13 and/or corporate credit ratings from S&P;

14 • To incorporate companies that are primarily regulated gas distribution utilities, I
15 included companies with at least 60.00 percent of operating income derived from
16 regulated natural gas utility operations; and

17 • I eliminated companies currently known to be party to a merger, or other significant
18 transaction.

19 **Q. Did you include Ameren Corporation in your proxy group?**

20 A. No. To avoid the circular logic that would otherwise occur, it has been my
21 consistent practice to exclude the subject company (or its parent) from the proxy group. That is,
22 it would be inappropriate to include Ameren Corporation in the proxy group because Ameren
23 Missouri is a subsidiary of Ameren Corporation. Because Ameren Corporation's earnings are
24 affected by Ameren Missouri's operations, Ameren Corporation is not an appropriate "proxy".

- 1 **Q. What companies met those screening criteria?**
- 2 A. The criteria discussed above resulted in a proxy group of the following eight
- 3 companies:

Table 7: Proxy Group Screening Results

Company	Ticker
Atmos Energy Corporation	ATO
Chesapeake Utilities Corporation ³⁹	CPK
New Jersey Resources Corporation	NJR
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
South Jersey Industries, Inc.	SJI
Southwest Gas Corporation	SWX
Spire Inc.	SR

³⁹ Even though Chesapeake Utilities Corp. is not publicly rated by S&P, its Value Line Financial Strength Rating of B++ is comparable to the rest of the proxy group. CPK also has a National Association of Insurance Commissioners (NAIC) rating of “NAIC 1,” which is equivalent to ratings in the “A” category for both Moody's and Standard& Poor's. See, Chesapeake Utilities Corporation, Northeast Road Show, January 2018, at 16; National Association of Insurance Commissioners, CRP Credit Rating Equivalent to SVO Designations, November 2017.

1 **Appendix B**

2 **A. Constant Growth Discounted Cash Flow Model**

3 **Q. Please more fully describe the Constant Growth DCF approach.**

4 A. The Constant Growth DCF approach is based on the theory that a stock's current
5 price represents the present value of all expected future cash flows. DCF theory assumes that an
6 investor buys a stock for an expected total return rate which is derived from cash flows received
7 in the form of dividends plus appreciation in market price (the expected growth rate). In its
8 simplest form, the Constant Growth DCF model expresses the Cost of Equity as the discount rate
9 that sets the current price equal to expected cash flows:

10
$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_\infty}{(1+k)^\infty} \quad [4]$$

11 Where P represents the current stock price, $D_1 \dots D_\infty$ represent expected future dividends,
12 and k is the discount rate, or required ROE. Equation [4] is a standard present value calculation
13 that can be simplified and rearranged into the familiar form:

14
$$k = \frac{D_0 (1+g)}{P} + g \quad [5]$$

15 Equation [5] often is referred to as the "Constant Growth DCF" model, in which the first
16 term is the expected dividend yield and the second term is the expected long-term annual growth
17 rate in perpetuity.

18 **Q. What assumptions underlie the Constant Growth DCF model?**

19 A. The Constant Growth DCF model assumes: (1) a constant average annual growth
20 rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant Price to Earnings
21 multiple; and (4) a discount rate greater than the expected growth rate. The model also assumes
22 that the current Cost of Equity will remain constant, also in perpetuity.

1 **Q. What market data did you use to calculate the dividend yield in your Constant**
2 **Growth DCF model?**

3 A. The dividend yield is based on the proxy companies' current annualized dividend,
4 and average closing stock prices over the 30-, 90-, and 180-trading day periods as of October 12,
5 2018.

6 **Q. Why did you use three averaging periods to calculate an average stock price?**

7 A. I did so to ensure that the model's results are not skewed by anomalous events that
8 may affect stock prices on any given trading day. At the same time, the averaging period should
9 be reasonably representative of expected capital market conditions over the long term. In my view,
10 using 30-, 90-, and 180-day averaging periods reasonably balances those concerns.

11 **Q. Did you make any adjustments to the dividend yield to account for periodic**
12 **growth in dividends?**

13 A. Yes, I did. Because utility companies tend to increase their quarterly dividends at
14 different times throughout the year, it is reasonable to assume that dividend increases will be
15 evenly distributed over calendar quarters. Given that assumption, it is appropriate to calculate the
16 expected dividend yield by applying one-half of the long-term growth rate to the current dividend
17 yield. That adjustment ensures that the expected dividend yield is, on average, representative of
18 the coming twelve-month period, and does not overstate the dividends to be paid during that time.

19 **Q. Is it important to select appropriate measures of long-term growth in applying**
20 **the DCF model?**

21 A. Yes. In its Constant Growth form, the DCF model (*i.e.*, as presented in Equation
22 [5] above) assumes a single growth estimate in perpetuity. Accordingly, in order to reduce the
23 long-term growth rate to a single measure, one must assume a fixed payout ratio, and the same

1 constant growth rate for earnings per share (“EPS”), dividends per share, and book value per share.
2 Since dividend growth can only be sustained by earnings growth, the model should incorporate a
3 variety of measures of long-term earnings growth. That can be accomplished by averaging those
4 measures of long-term growth that tend to be least influenced by capital allocation decisions that
5 companies may make in response to near-term changes in the business environment. Because such
6 decisions may directly affect near-term dividend payout ratios, estimates of earnings growth are
7 more indicative of long-term investor expectations than are dividend growth estimates. For the
8 purposes of the Constant Growth DCF model, therefore, growth in EPS represents the appropriate
9 measure of long-term growth.

10 **Q. Please summarize the findings of academic research on the appropriate**
11 **measure for estimating equity returns using the DCF model.**

12 A. The relationship between various growth rates and stock valuation metrics has been
13 the subject of much academic research.⁴⁰ As noted over 40 years ago by Charles Phillips in The
14 Economics of Regulation:

15 For many years, it was thought that investors bought utility stocks
16 largely on the basis of dividends. More recently, however, studies
17 indicate that the market is valuing utility stocks with reference to total
18 per share earnings, so that the earnings-price ratio has assumed
19 increased emphasis in rate cases.⁴¹

20 Philips’ conclusion continues to hold true. Subsequent academic research has clearly and
21 consistently indicated that measures of earnings and cash flow are strongly related to returns, and
22 that analysts’ forecasts of growth are superior to other measures of growth in predicting stock

⁴⁰ See Robert S. Harris, *Using Analysts’ Growth Forecasts to Estimate Shareholder Required Rate of Return*, Financial Management (Spring 1986).

⁴¹ Charles F. Phillips, Jr., The Economics of Regulation, at 285 (Rev. ed. 1969).

1 prices.⁴² For example, Vander Weide and Carleton state that, “[our] results ... are consistent with
2 the hypothesis that investors use analysts’ forecasts, rather than historically oriented growth
3 calculations, in making stock buy-and-sell decisions.”⁴³ Other research specifically notes the
4 importance of analysts’ growth estimates in determining the Cost of Equity, and in the valuation
5 of equity securities. Dr. Robert Harris noted that “a growing body of knowledge shows that
6 analysts’ earnings forecast are indeed reflected in stock prices.” Citing Cragg and Malkiel,
7 Dr. Harris notes that those authors “found that the evaluations of companies that analysts make are
8 the sorts of ones on which market valuation is based.”⁴⁴ Similarly, Brigham, Shome and Vinson
9 noted that “evidence in the current literature indicates that (i) analysts’ forecasts are superior to
10 forecasts based solely on time series data; and (ii) investors do rely on analysts’ forecasts.”⁴⁵

11 To that point, the research of Vander Weide and Carleton demonstrates that earnings
12 growth projections have a statistically significant relationship to stock valuation levels, while
13 dividend growth rates do not.⁴⁶ Those findings suggest that investors form their investment
14 decisions based on expectations of growth in earnings, not dividends. Consequently, earnings
15 growth, not dividend growth, is the appropriate estimate for the purpose of the Constant Growth
16 DCF model.

⁴² See, e.g., Andreas C. Christofi, Petros C. Christofi, Marcus Lori and Donald M. Moliver, *Evaluating Common Stocks Using Value Line’s Projected Cash Flows and Implied Growth Rate*, Journal of Investing (Spring 1999); Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts’ Growth Forecasts*, Financial Management, 21 (Summer 1992); and Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

⁴³ James H. Vander Weide and Willard T. Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

⁴⁴ Robert S. Harris, *Using Analysts’ Growth Forecasts to Estimate Shareholder Required Rate of Return*, Financial Management (Spring 1986).

⁴⁵ Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility’s Cost of Equity*, Financial Management (Spring 1985).

⁴⁶ See Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

1 **Q. Please summarize your inputs to the Constant Growth DCF model.**

2 A. I applied the DCF model to the proxy group of natural gas utility companies using
3 the following inputs for the price and dividend terms:

- 4 • The average daily closing prices for the 30-, 90-, and 180-trading days ended
5 October 12, 2018, for the term P_0 ; and
- 6 • The annualized dividend per share as of October 12, 2018, for the term D_0 ;
- 7 • I then calculated my DCF results using each of the following growth terms:
 - 8 ○ The Zacks consensus long-term earnings growth estimates;
 - 9 ○ The First Call consensus long-term earnings growth estimates;
 - 10 ○ The Value Line long-term earnings growth estimates; and
 - 11 ○ The Retention Growth estimates.⁴⁷

12 **Q. Please describe the Retention Growth estimate as applied in your DCF model.**

13 A. The Retention Growth model, which is a generally recognized and widely taught
14 method of estimating long-term growth, is an alternative approach to the use of analysts' earnings
15 growth estimates. In essence, the model is premised on the proposition that a firm's growth is a
16 function of its expected earnings, and the extent to which it retains earnings to invest in the
17 enterprise. In its simplest form, the model represents long-term growth as the product of the
18 retention ratio (*i.e.*, the percentage of earnings not paid out as dividends (referred to below as "b")
19 and the expected return on book equity (referred to below as "r")). Thus, the simple "b x r" form
20 of the model projects growth as a function of internally generated funds. That form of the model
21 is limiting, however, in that it does not provide for growth funded from external equity.

⁴⁷ See Schedule RBH-D2.

1 The “br + sv” form of the Retention Growth estimate used in my DCF analysis is meant to
2 reflect growth from both internally generated funds (*i.e.*, the “br” term) and from issuances of
3 equity (*i.e.*, the “sv” term). The first term, which is the product of the retention ratio (*i.e.*, “b”, or
4 the portion of net income not paid in dividends) and the expected Return on Equity (*i.e.*, “r”),
5 represents the portion of net income that is “plowed back” into the Company as a means of funding
6 growth. The “sv” term is represented as:

$$7 \quad \left(\frac{m}{b} - 1 \right) \times \text{Growth rate in Common Shares} \quad [6]$$

8 where $\frac{m}{b}$ is the Market-to-Book ratio. In this form, the “sv” term reflects an element of growth as
9 the product of (a) the growth in shares outstanding, and (b) that portion of the market-to-book ratio
10 that exceeds unity. As shown in Schedule RBH-D2, all of the components of the Retention Growth
11 model can be derived from data provided by Value Line.

12 **Q. How did you calculate the DCF results?**

13 A. For each proxy company, I calculated the mean, mean high, and mean low results.
14 For the mean result, I combined the average of the EPS growth rate estimates reported by Value
15 Line, Zacks, First Call, and the Retention Growth method with the subject company’s dividend
16 yield for each proxy company and then calculated the average result for those estimates. I
17 calculated the high DCF result by combining the maximum EPS growth rate estimate as reported
18 by Value Line, Zacks, First Call, and the Retention Growth method with the subject company’s
19 dividend yield. The mean high result simply is the average of those estimates. I used the same
20 approach to calculate the low DCF result, using instead the minimum of the Value Line, Zacks,
21 First Call, and the Retention Growth method estimate for each proxy company, and calculating the
22 average result for those estimates.

1 **Q. What are the results of your Constant Growth DCF analysis?**

2 A. My Constant Growth DCF results are summarized in Table 8, below (*see* also
3 Schedule RBH-D1).

Table 8: Constant Growth DCF Results⁴⁸

	<i>Median Low</i>	<i>Mean</i>	<i>Median High</i>
30-Day Average	7.80%	9.83%	12.52%
90-Day Average	7.88%	9.88%	12.59%
180-Day Average	8.02%	9.99%	12.75%

4 **Q. Did you undertake any additional analyses to support your recommendation?**

5 A. Yes. As noted earlier, I also applied the CAPM and Bond Yield Plus Risk Premium
6 approaches.

7 **B. Capital Asset Pricing Model**

8 **Q. Please describe the general form of the CAPM.**

9 A. The CAPM is a risk premium method that estimates the Cost of Equity for a given
10 security as a function of a risk-free return plus a risk premium (to compensate investors for the
11 non-diversifiable or “systematic” risk of that security). The CAPM describes the relationship
12 between a security’s investment risk and the market rate of return. The CAPM assumes that all
13 other risk, *i.e.*, all non-market or unsystematic risk, can be eliminated through diversification. The
14 risk that cannot be eliminated through diversification is called market, or systematic, risk. In
15 addition, the CAPM presumes that investors require compensation only for systematic risk that is
16 the result of macroeconomic and other events that affect the returns on all assets.

⁴⁸ *See* Schedule RBH-D1.

1 As shown in Equation [7], the CAPM is defined by four components, each of which
2 theoretically must be a forward-looking estimate:

3
$$k = r_f + \beta(r_m - r_f) \quad [7]$$

4 where:

5 k = the required market ROE for a security;

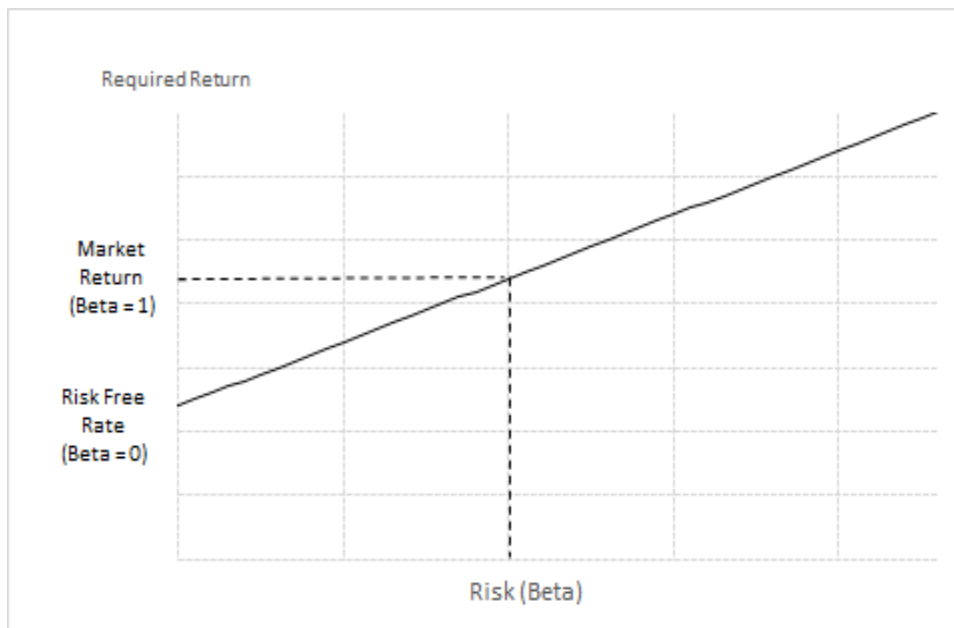
6 β = the Beta coefficient of that security;

7 r_f = the risk-free rate of return; and

8 r_m = the required return on the market as a whole.

9 Equation [7] describes the Security Market Line, or the CAPM risk-return relationship,
10 which is graphically depicted in Chart 8 below. The intercept is the risk-free rate (r_f) which has a
11 beta of zero, the slope is the expected market risk premium ($r_m - r_f$). By definition, r_m , the return
12 on the market has a beta of 1.00. CAPM states that in well-behaving capital markets, the expected
13 equity risk premium on a given security is proportional to its Beta coefficient.

Chart 8: Security Market Line (“SML”)



1 Intuitively, higher Beta coefficients indicate that the subject company's returns have been
2 relatively volatile, and have moved in tandem with the overall market. Consequently, if a company
3 has a Beta coefficient of 1.00, it is as risky as the market and does not provide any diversification
4 benefit.

5 In Equation [7], the term $(r_m - r_f)$ represents the Market Risk Premium.⁴⁹ According to the
6 theory underlying the CAPM, since unsystematic risk can be diversified away by adding securities
7 to investment portfolios, the market will not compensate investors for bearing that risk. Therefore,
8 investors should be concerned only with systematic or non-diversifiable risk. Non-diversifiable
9 risk is measured by the Beta coefficient, which is defined as:

10
$$\beta_j = \frac{\sigma_j}{\sigma_m} \times \rho_{j,m} \quad [8]$$

11 Where σ_j is the standard deviation of returns for company "j," σ_m is the standard deviation
12 of returns for the broad market (as measured, for example, by the S&P 500 Index), and $\rho_{j,m}$ is the
13 correlation of returns in between company j and the broad market. The Beta coefficient therefore
14 represents both relative volatility (*i.e.*, the standard deviation) of returns, and the correlation in
15 returns between the subject company and the overall market.

16 **Q. What assumptions did you include in your CAPM analysis?**

17 A. I used two different measures of the risk-free rate: (1) the current 30-day average
18 yield on 30-year Treasury bonds (*i.e.*, 3.19 percent)⁵⁰; and (2) the projected 30-year Treasury yield
19 (*i.e.*, 3.52 percent).⁵¹

⁴⁹ The Market Risk Premium is defined as the incremental return of the market portfolio over the risk-free rate.

⁵⁰ Source: Bloomberg Professional Services

⁵¹ Source: *Blue Chip Financial Forecast*, Vol. 37, No. 10, October 1, 2018, at 2.

1 **Q. Why have you relied upon the 30-year Treasury yield for your CAPM**
2 **analysis?**

3 A. In determining the security most relevant to the application of the CAPM, it is
4 important to select the term (or maturity) that best matches the life of the underlying investment.
5 Natural gas utilities typically are long-duration investments and, as such, the 30-year Treasury
6 yield is more suitable for the purpose of calculating the Cost of Equity.

7 **Q. Please describe your *ex-ante* approach to estimating the Market Risk Premium**
8 **(“MRP”).**

9 A. The approach is based on the market required return, less the current 30-year
10 Treasury yield. To estimate the market required return, I calculated the market capitalization
11 weighted average ROE based on the Constant Growth DCF model. To do so, I relied on data from
12 two sources: (1) Bloomberg; and (2) Value Line.⁵² With respect to Bloomberg-derived growth
13 estimates, I calculated the expected dividend yield (using the same one-half growth rate
14 assumption described earlier), and combined that amount with the projected earnings growth rate
15 to arrive at the market capitalization weighted average DCF result. I performed that calculation
16 for each of the S&P 500 companies for which Bloomberg provided consensus growth rates. I then
17 subtracted the current 30-year Treasury yield from that amount to arrive at the market DCF-derived
18 *ex-ante* market risk premium estimate. In the case of Value Line, I performed the same calculation,
19 again using all companies for which five-year earnings growth rates were available. The results
20 of those calculations are provided in Schedule RBH-D3.

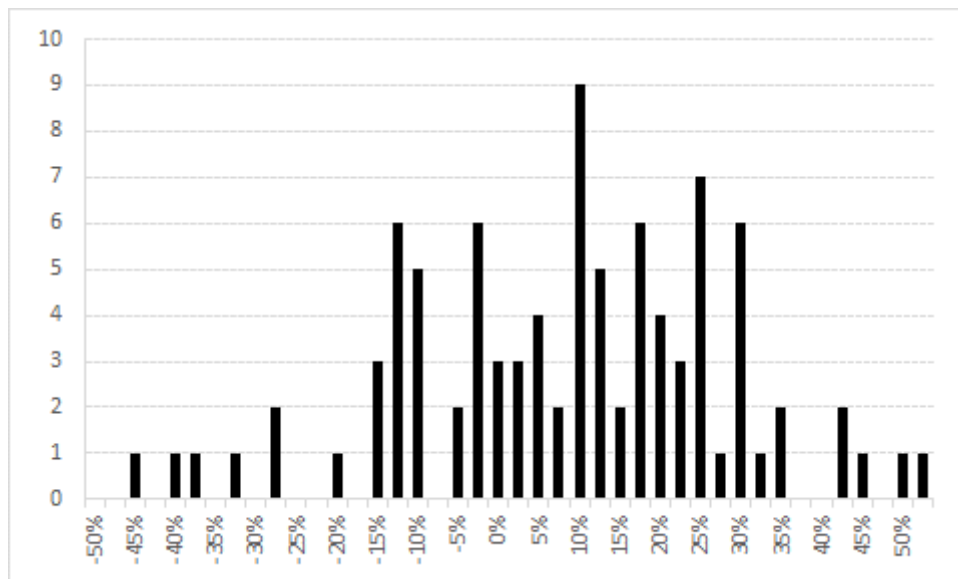
⁵² See Schedule RBH-D3.

1 As discussed above, each input to the CAPM should be forward-looking. Witnesses in
2 prior rate cases have relied on historical measures of the MRP.⁵³ While it may be instructive to
3 review historical MRPs to inform the reasonableness of an *ex-ante* estimate (as I have done below),
4 they do not include investors' expectations, and therefore are not appropriate for use in the CAPM.
5 As such, I believe my *ex-ante* approach is reasonable.

6 **Q. Have you undertaken any analyses to determine the reasonableness of the *ex-***
7 ***ante* MRP calculation?**

8 A. Yes, I have considered how often various ranges of MRPs have been observed over
9 the 1926 to 2017 period. To perform that analysis, I gathered the annual Market Risk Premia
10 reported by Duff & Phelps and produced a histogram of those observations. The results of that
11 analysis, which are presented in Chart 9, demonstrate that MRPs in the range of approximately
12 12.81 percent (the average of my MRP estimates) and higher occurred quite often.

Chart 9: Frequency Distribution of MRP, 1926 -2017⁵⁴



⁵³ See, for example, Staff Report, Revenue Requirement and Cost of Service, Kansas City Power & Light Company, Case No. ER-2014-0370, at 55.

⁵⁴ Source: Duff & Phelps, 2018 SBBJ, Appendix A-1, A-7.

1 **Q. How did you apply your expected Market Risk Premium and risk-free rate**
2 **estimates?**

3 A. I relied on the *ex-ante* Market Risk Premia discussed above, together with the
4 current and near-term projected 30-year Treasury yields as inputs to my CAPM analysis.

5 **Q. What Beta coefficient did you use in your CAPM model?**

6 A. As shown in Schedule RBH-D4, I considered the Beta coefficients reported by two
7 sources: Bloomberg and Value Line. While both of those services adjust their calculated (or
8 “raw”) Beta coefficients to reflect the tendency of the Beta coefficient to regress to the market
9 mean of 1.00, Value Line calculates the Beta coefficient over a five-year period, while
10 Bloomberg’s calculation is based on two years of data.

11 **Q. What are the results of your CAPM analysis?**

12 A. As shown in Table 9 the CAPM analysis suggest an ROE range of 10.50 percent to
13 12.73 percent (*see* also Schedule RBH-D5).

Table 9: Summary of CAPM Results⁵⁵

	<i>Bloomberg Derived Market Risk Premium</i>	<i>Value Line Derived Market Risk Premium</i>
<i>Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (3.19%)	10.50%	11.36%
Near Term Projected 30-Year Treasury (3.52%)	10.82%	11.68%
<i>Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (3.19%)	11.43%	12.40%
Near Term Projected 30-Year Treasury (3.52%)	11.76%	12.73%

⁵⁵ See Schedule RBH-D5.

1 **C. Bond Yield Plus Risk Premium Approach**

2 **Q. Please describe the Bond Yield Plus Risk Premium approach.**

3 A. This approach is based on the basic financial tenet of risk and return, namely, that
4 equity investors bear the residual risk associated with ownership and therefore require a premium
5 over the return they would have earned as a bondholder. In other words, since returns to equity
6 holders are more risky than returns to bondholders, equity investors must be compensated for
7 bearing that additional risk. Risk premium approaches, therefore, estimate the Cost of Equity as
8 the sum of the equity risk premium and the yield on a particular class of bonds. As noted in my
9 discussion of the CAPM, since the equity risk premium is not directly observable, it typically is
10 estimated using a variety of approaches, some of which incorporate *ex-ante*, or forward-looking
11 estimates of the Cost of Equity, and others that consider historical, or *ex-post*, estimates. An
12 alternative approach is to use actual authorized returns for natural gas utilities to estimate the
13 Equity Risk Premium.

14 **Q. Please explain how you performed your Bond Yield Plus Risk Premium**
15 **analysis.**

16 A. As indicated above, I first defined the Risk Premium as the difference between the
17 authorized ROE and the then-prevailing level of long-term (*i.e.*, 30-year) Treasury yield. I then
18 gathered data for 1,101 natural gas utility rate proceedings between January 1, 1980 and
19 October 12, 2018. In addition to the authorized ROE, I also calculated the average period between
20 the filing of the case and the date of the final order (the “lag period”). To reflect the prevailing
21 level of interest rates during the pendency of the proceedings, I calculated the average 30-year
22 Treasury yield over the average lag period (approximately 187 days).

1 Because the data cover a number of economic cycles, the analysis also may be used to
2 assess the stability of the Equity Risk Premium. Prior research, for example, has shown that the
3 Equity Risk Premium is inversely related to the level of interest rates. That analysis is particularly
4 relevant given the relatively low, but increasing level of current Treasury yields.

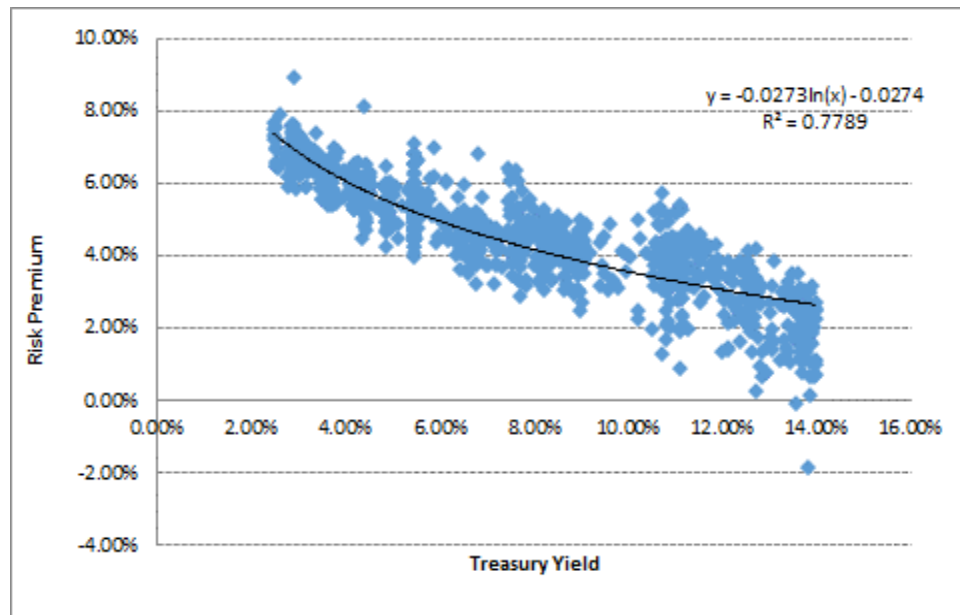
5 **Q. How did you analyze the relationship between interest rates and the Equity**
6 **Risk Premium?**

7 A. The basic method used was regression analysis, in which the observed Equity Risk
8 Premium is the dependent variable, and the average 30-year Treasury yield is the independent
9 variable. Relative to the long-term historical average, the analytical period includes interest rates
10 and authorized ROEs that are quite high during one period (*i.e.*, the 1980s) and that are quite low
11 during another (*i.e.*, the post-Lehman bankruptcy period). To account for that variability, I used
12 the semi-log regression, in which the Equity Risk Premium is expressed as a function of the natural
13 log of the 30-year Treasury yield:

14
$$RP = \alpha + \beta(LN(T_{30}))$$
 [9]

15 As shown on Chart 10 (below), the semi-log form is useful when measuring an absolute
16 change in the dependent variable (in this case, the Risk Premium) relative to a proportional change
17 in the independent variable (the 30-year Treasury yield).

Chart 10: Equity Risk Premium⁵⁶



1 As Chart 10 illustrates, over time there has been a statistically significant, negative
 2 relationship between the 30-year Treasury yield and the Equity Risk Premium. Consequently,
 3 simply applying the long-term average Equity Risk Premium of 4.62 percent would significantly
 4 understate the Cost of Equity and produce results well below any reasonable estimate. Based on
 5 the regression coefficients in Chart 10, however, the implied ROE is between 9.88 percent and
 6 10.17 percent (*see* Table 10 and Schedule RBH-D6).

Table 10: Summary of Bond Yield Plus Risk Premium Results⁵⁷

	<i>Return on Equity</i>
Current 30-Year Treasury (3.19%)	9.88%
Near Term Projected 30-Year Treasury (3.52%)	9.94%
Long Term Projected 30-Year Treasury (4.30%)	10.17%

⁵⁶ See Schedule RBH-D6.

⁵⁷ See Schedule RBH-D6.

1 **Q. Has the Commission considered authorized ROEs in other jurisdictions in**
2 **setting the authorized ROE for a subject company?**

3 A. Yes, it has. For example, in Docket No. GR-2017-0216 the Commission
4 determined that recently authorized ROEs for utilities throughout the United States supported its
5 authorized ROE, noting:

6 The Commission mentions the average allowed return on equity
7 because Spire Missouri must compete with other utilities all over the
8 country for the same capital. Therefore, the average allowed return on
9 equity provides a reasonableness test for the recommendations offered
10 by the return on equity experts.⁵⁸

11 The Bond Yield Plus Risk Premium approach relies on the same data over an
12 approximately 38-year period, while also considering the inverse relationship between Treasury
13 yields and the Equity Risk Premium. That is, the Bond Yield Plus Risk Premium approach
14 provides additional information beyond a simple average of authorized ROEs in that it accounts
15 for different market environments and considers the long-term relationship between the inputs to
16 the analysis.

17 **Q. Have you provided an alternative Bond Yield Plus Risk Premium analysis to**
18 **account for how market conditions may affect the inverse relationship between interest rates**
19 **and the Equity Risk Premium?**

20 A. To address the prospect that the market conditions affect the relationship between
21 interest rates and the Equity Risk Premium, I first calculated the “credit spread”, or the difference
22 between the Moody’s Baa-Utility Bond yield and the 30-Year Treasury yield. To reflect the risk
23 of equity investments, I calculated the market volatility as measured by the CBOE Volatility Index

⁵⁸ See, the consolidated cases, *In the Matters of the Laclede Gas Company’s Request to Increase Its Revenues for Gas Service*, File No. GR-2017-0215, and *In the Matter of the Laclede Gas Company d/b/a Missouri Gas Energy’s Request to Increase Its Revenues for Gas Service*, File No. GR-2017-0216, Amended Report and Order (March 7, 2018), at 30.

1 (the “VIX”) since 1990, the first year for which data was available. I then performed a regression
2 analysis in which the Equity Risk Premium is the dependent variable, and Treasury yields, credit
3 spreads, and the VIX were the explanatory variables. There were four principal findings from
4 those analyses (*see* Schedule RBH-D7):

- 5 1. Credit spreads and the VIX do not negate the statistically significant inverse
6 relationship between Treasury yields and the Equity Risk Premium:
- 7 2. There is a high degree of correlation between credit spreads and the VIX, indicating
8 that the two move closely together. That is, the “relative risk” of the two is not a
9 meaningful factor.
- 10 3. Based on the current, and projected Treasury yields, the expected ROE falls in the
11 range of 9.69 percent to 9.95 percent. Those results overlap with my recommended
12 range, are consistent with the results of my updated Bond Yield Plus Risk Premium
13 analysis (*see* Schedule RBH-D7).
- 14 4. Lastly, please note that neither the VIX nor credit spreads added significantly to the
15 explanatory value of the regression equations.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company)
d/b/a Ameren Missouri's Tariffs to Increase Its)
Revenues for Natural Gas Service.)

File No. GR-2019-0077

AFFIDAVIT OF ROBERT B. HEVERT

COMMONWEALTH OF MASSACHUSETTS)
) ss
COUNTY OF WORCESTER)

Robert B. Hevert, being first duly sworn on his oath, states:

1. My name is Robert B. Hevert and my office is located in Westborough, Massachusetts and I am a Partner of ScottMadden, Inc.


2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Union Electric Company d/b/a Ameren Missouri consisting of 48 pages and Appendices A & B, Attachment A, Schedule(s) and Schedules RBH-D1 to RBH-D7, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.



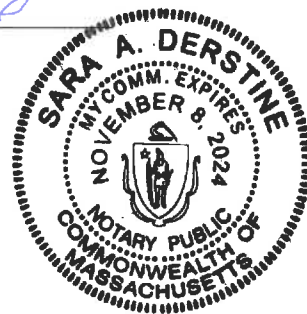
Robert B. Hevert

Subscribed and sworn to before me this 27th day of November, 2018.



Notary Public

My commission expires: 11/8/2024



Summary

Bob Hevert is a financial and economic consultant with more than 30 years of broad experience in the energy and utility industries. He has an extensive background in the areas of corporate finance, mergers and acquisitions, project finance, asset and business unit valuation, rate and regulatory matters, energy market assessment, and corporate strategic planning. He has provided expert testimony on a wide range of financial, strategic, and economic matters on more than 250 occasions at the state, provincial, and federal levels.

Prior to joining ScottMadden, Bob served as managing partner at Sussex Economic Advisors, LLC. Throughout the course of his career, he has worked with numerous leading energy companies and financial institutions throughout North America. He has provided expert testimony and support of litigation in various regulatory proceedings on a variety of energy and economic issues. Bob earned a B.S. in business and economics from the University of Delaware and an M.B.A. with a concentration in finance from the University of Massachusetts at Amherst. Bob also holds the Chartered Financial Analyst designation.

Areas of Specialization

- Regulation and rates
- Utilities
- Fossil/hydro generation
- Markets and RTOs
- Nuclear generation
- Mergers and acquisitions
- Regulatory strategy and rate case support
- Capital project planning
- Strategic and business planning

Recent Expert Testimony Submission/Appearance

- Federal Energy Regulatory Commission – Return on Equity
- New Jersey Board of Public Utilities – Merger Approval
- New Mexico Public Regulation Commission – Cost of Capital and Financial Integrity
- United States District Court – PURPA and FERC Regulations
- Alberta Utilities Commission – Return on Equity and Capital Structure

Recent Assignments

- Provided expert testimony on the cost of capital for ratemaking purposes before numerous state utility regulatory agencies, the Alberta Utilities Commission, and the Federal Energy Regulatory Commission
- For an independent electric transmission provider in Texas, prepared an expert report on the economic damages with respect to failure to meet guaranteed completion dates. The report was filed as part of an arbitration proceeding and included a review of the ratemaking implications of economic damages
- Advised the board of directors of a publicly traded electric and natural gas combination utility on dividend policy issues, earnings payout trends and related capital market considerations
- Assisted a publicly traded utility with a strategic buy-side evaluation of a gas utility with more than \$1 billion in assets. The assignment included operational performance benchmarking, calculation of merger synergies, risk analysis, and review of the regulatory implications of the transaction
- Provided testimony before the Arkansas Public Service Commission in support of the acquisition of SourceGas LLC by Black Hills Corporation. The testimony addressed certain balance sheet capitalization and credit rating issues
- For the State of Maine Public Utility Commission, prepared a report that summarized the Northeast and Atlantic Canada natural gas power markets and analyzed the potential benefits and costs associated with natural gas pipeline expansions. The independent report was filed at the Maine Public Utility Commission

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Regulatory Commission of Alaska				
Cook Inlet Natural Gas Storage Alaska, LLC	06/18	Cook Inlet Natural Gas Storage Alaska, LLC	Docket No. U-18-043	Return on Equity
ENSTAR Natural Gas Company	06/16	ENSTAR Natural Gas Company	Matter No. TA 285-4	Return on Equity
ENSTAR Natural Gas Company	08/14	ENSTAR Natural Gas Company	Matter No. TA 262-4	Return on Equity
Alberta Utilities Commission				
AltaLink, L.P., and EPCOR Distribution & Transmission, Inc., and FortisAlberta Inc.	10/17	AltaLink, L.P., and EPCOR Distribution & Transmission, Inc., and FortisAlberta Inc.	2018 General Cost of Capital, Proceeding ID. 22570	Rate of Return
EPCOR Energy Alberta G.P. Inc.	01/17	EPCOR Energy Alberta G.P. Inc.	Proceeding 22357	Energy Price Setting Plan
AltaLink, L.P., and EPCOR Distribution & Transmission, Inc.	02/16	AltaLink, L.P., and EPCOR Distribution & Transmission, Inc.	2016 General Cost of Capital, Proceeding ID. 20622	Rate of Return
Arizona Corporation Commission				
Southwest Gas Corporation	05/16	Southwest Gas Corporation	Docket No. G-01551A-16-0107	Return on Equity
Southwest Gas Corporation	11/10	Southwest Gas Corporation	Docket No. G-01551A-10-0458	Return on Equity
Arkansas Public Service Commission				
Oklahoma Gas and Electric Company	09/16	Oklahoma Gas and Electric Company	Docket No. 16-052-U	Return on Equity
SourceGas Arkansas, Inc.	12/15	SourceGas Arkansas, Inc.	Docket No. 15-078-U	Response to Direct Testimony by Arkansas Attorney General related to Compliance Issues
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Arkansas Gas	11/15	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Arkansas Gas	Docket No. 15-098-U	Return on Equity
SourceGas Arkansas, Inc.	04/15	SourceGas Arkansas, Inc.	Docket No. 15-011-U	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Arkansas Gas	01/07	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Arkansas Gas	Docket No. 06-161-U	Return on Equity
California Public Utilities Commission				
Southwest Gas Corporation	12/12	Southwest Gas Corporation	Docket No. A-12-12-024	Return on Equity
Colorado Public Utilities Commission				
Atmos Energy Corporation	06/17	Atmos Energy Corporation	Docket No. 17AL-0429G	Return on Equity
Xcel Energy, Inc.	03/15	Public Service Company of Colorado	Docket No. 15AL-0135G	Return on Equity (gas)
Xcel Energy, Inc.	06/14	Public Service Company of Colorado	Docket No. 14AL-0660E	Return on Equity (electric)
Xcel Energy, Inc.	12/12	Public Service Company of Colorado	Docket No. 12AL-1268G	Return on Equity (gas)
Xcel Energy, Inc.	11/11	Public Service Company of Colorado	Docket No. 11AL-947E	Return on Equity (electric)

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Xcel Energy, Inc.	12/10	Public Service Company of Colorado	Docket No. 10AL-963G	Return on Equity (electric)
Atmos Energy Corporation	07/09	Atmos Energy Colorado-Kansas Division	Docket No. 09AL-507G	Return on Equity (gas)
Xcel Energy, Inc.	12/06	Public Service Company of Colorado	Docket No. 06S-656G	Return on Equity (gas)
Xcel Energy, Inc.	04/06	Public Service Company of Colorado	Docket No. 06S-234EG	Return on Equity (electric)
Xcel Energy, Inc.	08/05	Public Service Company of Colorado	Docket No. 05S-369ST	Return on Equity (steam)
Xcel Energy, Inc.	05/05	Public Service Company of Colorado	Docket No. 05S-246G	Return on Equity (gas)
Connecticut Public Utilities Regulatory Authority				
Connecticut Light and Power Company	11/17	Connecticut Light and Power Company	Docket No. 17-10-46	Return on Equity
Connecticut Light and Power Company	06/14	Connecticut Light and Power Company	Docket No. 14-05-06	Return on Equity
Southern Connecticut Gas Company	09/08	Southern Connecticut Gas Company	Docket No. 08-08-17	Return on Equity
Southern Connecticut Gas Company	12/07	Southern Connecticut Gas Company	Docket No. 05-03-17PH02	Return on Equity
Connecticut Natural Gas Corporation	12/07	Connecticut Natural Gas Corporation	Docket No. 06-03-04PH02	Return on Equity
Council of the City of New Orleans				
Entergy New Orleans, LLC	09/18	Entergy New Orleans, LLC	Docket No. UD-18-07	Return on Equity
Delaware Public Service Commission				
Delmarva Power & Light Company	08/17	Delmarva Power & Light Company	Docket No. 17-0977 (Electric)	Return on Equity
Delmarva Power & Light Company	08/17	Delmarva Power & Light Company	Docket No. 17-0978 (Gas)	Return on Equity
Delmarva Power & Light Company	05/16	Delmarva Power & Light Company	Case No. 16-649 (Electric)	Return on Equity
Delmarva Power & Light Company	05/16	Delmarva Power & Light Company	Case No. 16-650 (Gas)	Return on Equity
Delmarva Power & Light Company	03/13	Delmarva Power & Light Company	Case No. 13-115	Return on Equity
Delmarva Power & Light Company	12/12	Delmarva Power & Light Company	Case No. 12-546	Return on Equity
Delmarva Power & Light Company	03/12	Delmarva Power & Light Company	Case No. 11-528	Return on Equity
District of Columbia Public Service Commission				
Potomac Electric Power Company	12/17	Potomac Electric Power Company	Formal Case No. 1150	Return on Equity
Potomac Electric Power Company	06/16	Potomac Electric Power Company	Formal Case No. 1139	Return on Equity
Washington Gas Light Company	02/16	Washington Gas Light Company	Formal Case No. 1137	Return on Equity
Potomac Electric Power Company	03/13	Potomac Electric Power Company	Formal Case No. 1103-2013-E	Return on Equity
Potomac Electric Power Company	07/11	Potomac Electric Power Company	Formal Case No. 1087	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Federal Energy Regulatory Commission				
Sabine Pipeline, LLC	09/15	Sabine Pipeline, LLC	Docket No. RP15-1322-000	Return on Equity
NextEra Energy Transmission West, LLC	07/15	NextEra Energy Transmission West, LLC	Docket No. ER15-2239-000	Return on Equity
Maritimes & Northeast Pipeline, LLC	05/15	Maritimes & Northeast Pipeline, LLC	Docket No. RP15-1026-000	Return on Equity
Public Service Company of New Mexico	12/12	Public Service Company of New Mexico	Docket No. ER13-685-000	Return on Equity
Public Service Company of New Mexico	10/10	Public Service Company of New Mexico	Docket No. ER11-1915-000	Return on Equity
Portland Natural Gas Transmission System	05/10	Portland Natural Gas Transmission System	Docket No. RP10-729-000	Return on Equity
Florida Gas Transmission Company, LLC	10/09	Florida Gas Transmission Company, LLC	Docket No. RP10-21-000	Return on Equity
Maritimes and Northeast Pipeline, LLC	07/09	Maritimes and Northeast Pipeline, LLC	Docket No. RP09-809-000	Return on Equity
Spectra Energy	02/08	Saltville Gas Storage	Docket No. RP08-257-000	Return on Equity
Panhandle Energy Pipelines	08/07	Panhandle Energy Pipelines	Docket No. PL07-2-000	Response to draft policy statement regarding inclusion of MLPs in proxy groups for determination of gas pipeline ROEs
Southwest Gas Storage Company	08/07	Southwest Gas Storage Company	Docket No. RP07-541-000	Return on Equity
Southwest Gas Storage Company	06/07	Southwest Gas Storage Company	Docket No. RP07-34-000	Return on Equity
Sea Robin Pipeline LLC	06/07	Sea Robin Pipeline LLC	Docket No. RP07-513-000	Return on Equity
Transwestern Pipeline Company	09/06	Transwestern Pipeline Company	Docket No. RP06-614-000	Return on Equity
GPU International and Aquila	11/00	GPU International	Docket No. EC01-24-000	Market Power Study
Florida Public Service Commission				
Florida Power & Light Company	03/16	Florida Power & Light Company	Docket No. 160021-EI	Return on Equity
Tampa Electric Company	04/13	Tampa Electric Company	Docket No. 130040-EI	Return on Equity
Georgia Public Service Commission				
Atlanta Gas Light Company	05/10	Atlanta Gas Light Company	Docket No. 31647-U	Return on Equity
Hawaii Public Utilities Commission				
Maui Electric Company, Limited	10/17	Maui Electric Company, Limited	Docket No. 2017-0150	Return on Equity
Hawaiian Electric Company, Inc.	12/16	Hawaiian Electric Company, Inc.	Docket No. 2016-0328	Return on Equity
Hawai'i Electric Light Company, Inc.	09/16	Hawai'i Electric Light Company, Inc.	Docket No. 2015-0170	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Maui Electric Company, Limited	12/14	Maui Electric Company, Limited	Docket No. 2014-0318 RP15-1322-000	Return on Equity
Hawaiian Electric Company, Inc.	06/14	Hawaiian Electric Company, Inc.	Docket No. 2013-0373	Return on Equity
Hawai'i Electric Light Company, Inc.	08/12	Hawai'i Electric Light Company, Inc.	Docket No. 2012-0099	Return on Equity
Illinois Commerce Commission				
Ameren Illinois Company d/b/a Ameren Illinois	01/18	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 18-0463	Return on Equity
Ameren Illinois Company d/b/a Ameren Illinois	01/15	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 15-0142	Return on Equity
Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities	04/14	Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities	Docket No. 14-0371	Return on Equity
Ameren Illinois Company d/b/a Ameren Illinois	01/13	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 13-0192	Return on Equity
Ameren Illinois Company d/b/a Ameren Illinois	02/11	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 11-0279	Return on Equity (electric)
Ameren Illinois Company d/b/a Ameren Illinois	02/11	Ameren Illinois Company d/b/a Ameren Illinois	Docket No. 11-0282	Return on Equity (gas)
Indiana Utility Regulatory Commission				
Indiana Michigan Power Company	7/17	Indiana Michigan Power Company	Cause No. 44967	Return on Equity
Duke Energy Indiana, Inc.	12/15	Duke Energy Indiana, Inc.	Cause No. 44720	Return on Equity
Duke Energy Indiana, Inc.	12/14	Duke Energy Indiana, Inc.	Cause No. 44526	Return on Equity
Northern Indiana Public Service Company	05/09	Northern Indiana Public Service Company	Cause No. 43894	Assessment of Valuation Approaches
Kansas Corporation Commission				
Kansas City Power & Light Company	05/18	Kansas City Power & Light Company	Docket No. 18-KCPE-480-RTS	Return on Equity
Westar Energy	02/18	Westar Energy	Docket No. 18-WSEE-328-RTS	Return on Equity
Great Plains Energy, Inc. and Kansas City Power & Light Company	01/17	Great Plains Energy, Inc. and Kansas City Power & Light Company	Docket No. 16-KCPE-593-ACQ	Response to Direct Testimony by Commission Staff related to the ratemaking capital structure processes
Kansas City Power & Light Company	01/15	Kansas City Power & Light Company	Docket No. 15-KCPE-116-RTS	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Maine Public Utilities Commission				
Northern Utilities, Inc.	05/17	Northern Utilities, Inc.	Docket No. 2017-00065	Return on Equity
Central Maine Power Company	06/11	Central Maine Power Company	Docket No. 2010-327	Response to Bench Analysis provided by Commission Staff relating to the Company's credit and collections processes
Maryland Public Service Commission				
Washington Gas Light Company	05/18	Washington Gas Light Company	Case No. 9481	Return on Equity
Potomac Electric Power Company	01/18	Potomac Electric Power Company	Case No. 9472	Return on Equity
Delmarva Power & Light Company	07/17	Delmarva Power & Light Company	Case No. 9455	Return on Equity
Potomac Electric Power Company	03/17	Potomac Electric Power Company	Case No. 9443	Return on Equity
Delmarva Power & Light Company	06/16	Delmarva Power & Light Company	Case No. 9424	Return on Equity
Potomac Electric Power Company	06/16	Potomac Electric Power Company	Case No. 9418	Return on Equity
Potomac Electric Power Company	12/13	Potomac Electric Power Company	Case No. 9336	Return on Equity
Delmarva Power & Light Company	03/13	Delmarva Power & Light Company	Case No. 9317	Return on Equity
Potomac Electric Power Company	11/12	Potomac Electric Power Company	Case No. 9311	Return on Equity
Potomac Electric Power Company	12/11	Potomac Electric Power Company	Case No. 9286	Return on Equity
Delmarva Power & Light Company	12/11	Delmarva Power & Light Company	Case No. 9285	Return on Equity
Delmarva Power & Light Company	12/10	Delmarva Power & Light Company	Case No. 9249	Return on Equity
Massachusetts Department of Public Utilities				
Boston Gas Company, Colonial Gas Company each d/b/a National Grid	11/17	Boston Gas Company, Colonial Gas Company each d/b/a National Grid	DPU 17-170	Return on Equity
NSTAR Electric Company Western and Massachusetts Electric Company each d/b/a Eversource Energy	01/17	NSTAR Electric Company Western Massachusetts Electric Company each d/b/a Eversource Energy	DPU 17-05	Return on Equity
National Grid	11/15	Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid	DPU 15-155	Return on Equity
Fitchburg Gas and Electric Light Company d/b/a Unitil	06/15	Fitchburg Gas and Electric Light Company d/b/a Unitil	DPU 15-80	Return on Equity
NSTAR Gas Company	12/14	NSTAR Gas Company	DPU 14-150	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Fitchburg Gas and Electric Light Company d/b/a Unitil	07/13	Fitchburg Gas and Electric Light Company d/b/a Unitil	DPU 13-90	Return on Equity
Bay State Gas Company d/b/a Columbia Gas of Massachusetts	04/12	Bay State Gas Company d/b/a Columbia Gas of Massachusetts	DPU 12-25	Capital Cost Recovery
National Grid	08/09	Massachusetts Electric Company d/b/a National Grid	DPU 09-39	Revenue Decoupling and Return on Equity
National Grid	08/09	Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid	DPU 09-38	Return on Equity – Solar Generation
Bay State Gas Company	04/09	Bay State Gas Company	DPU 09-30	Return on Equity
NSTAR Electric	09/04	NSTAR Electric	DTE 04-85	Divestiture of Power Purchase Agreement
NSTAR Electric	08/04	NSTAR Electric	DTE 04-78	Divestiture of Power Purchase Agreement
NSTAR Electric	07/04	NSTAR Electric	DTE 04-68	Divestiture of Power Purchase Agreement
NSTAR Electric	07/04	NSTAR Electric	DTE 04-61	Divestiture of Power Purchase Agreement
NSTAR Electric	06/04	NSTAR Electric	DTE 04-60	Divestiture of Power Purchase Agreement
Unitil Corporation	01/04	Fitchburg Gas and Electric	DTE 03-52	Integrated Resource Plan; Gas Demand Forecast
Bay State Gas Company	01/93	Bay State Gas Company	DPU 93-14	Divestiture of Shelf Registration
Bay State Gas Company	01/91	Bay State Gas Company	DPU 91-25	Divestiture of Shelf Registration
Michigan Public Service Commission				
Indiana Michigan Power Company	05/17	Indiana Michigan Power Company	Case No. U-18370	Return on Equity
Minnesota Public Utilities Commission				
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	08/17	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	Docket No. G-008/GR-17-285	Return on Equity
ALLETE, Inc., d/b/a Minnesota Power Inc.	11/16	ALLETE, Inc., d/b/a Minnesota Power Inc.	Docket No. E015/GR-16-664	Return on Equity
Otter Tail Power Corporation	02/16	Otter Tail Power Company	Docket No. E017/GR-15-1033	Return on Equity
Minnesota Energy Resources Corporation	09/15	Minnesota Energy Resources Corporation	Docket No. G-011/GR-15-736	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	08/15	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	Docket No. G-008/GR-15-424	Return on Equity
Xcel Energy, Inc.	11/13	Northern States Power Company	Docket No. E002/GR-13-868	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	08/13	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	Docket No. G-008/GR-13-316	Return on Equity
Xcel Energy, Inc.	11/12	Northern States Power Company	Docket No. E002/GR-12-961	Return on Equity
Otter Tail Power Corporation	04/10	Otter Tail Power Company	Docket No. E-017/GR-10-239	Return on Equity
Minnesota Power a division of ALLETE, Inc.	11/09	Minnesota Power	Docket No. E-015/GR-09-1151	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	11/08	CenterPoint Energy Minnesota Gas	Docket No. G-008/GR-08-1075	Return on Equity
Otter Tail Power Corporation	10/07	Otter Tail Power Company	Docket No. E-017/GR-07-1178	Return on Equity
Xcel Energy, Inc.	11/05	Northern States Power Company -Minnesota	Docket No. E-002/GR-05-1428	Return on Equity (electric)
Xcel Energy, Inc.	09/04	Northern States Power Company - Minnesota	Docket No. G-002/GR-04-1511	Return on Equity (gas)
Mississippi Public Service Commission				
CenterPoint Energy Resources, Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Mississippi Gas	07/09	CenterPoint Energy Mississippi Gas	Docket No. 09-UN-334	Return on Equity
Missouri Public Service Commission				
KCP&L Greater Missouri Operations Company	01/18	KCP&L Greater Missouri Operations Company	Case No. ER-2018-0146	Return on Equity
Kansas City Power & Light Company	01/18	Kansas City Power & Light Company	Case No. ER-2018-0145	Return on Equity
Laclede Gas Company and Missouri Gas Energy	11/17	Laclede Gas Company and Missouri Gas Energy	Case No. GR-2017-0215 Case No. GR-2017-0216	Goodwill Adjustment on Capital Structure
Liberty Utilities (Midstates Natural Gas) Corp. d/b/a/ Liberty Utilities	09/17	Liberty Utilities (Midstates Natural Gas) Corp. d/b/a/ Liberty Utilities	Case No. GR-2018-0013	New Ratemaking Mechanisms
Union Electric Company d/b/a Ameren Missouri	07/16	Union Electric Company d/b/a Ameren Missouri	Case No. ER-2016-0179	Return on Equity (electric)
Kansas City Power & Light Company	07/16	Kansas City Power & Light Company	Case No. ER-2016-0285	Return on Equity (electric)
Kansas City Power & Light Company	02/16	Kansas City Power & Light Company	Case No. ER-2016-0156	Return on Equity (electric)
Kansas City Power & Light Company	10/14	Kansas City Power & Light Company	Case No. ER-2014-0370	Return on Equity (electric)

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Union Electric Company d/b/a Ameren Missouri	07/14	Union Electric Company d/b/a Ameren Missouri	Case No. ER-2014-0258	Return on Equity (electric)
Union Electric Company d/b/a Ameren Missouri	06/14	Union Electric Company d/b/a Ameren Missouri	Case No. EC-2014-0223	Return on Equity (electric)
Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities	02/14	Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities	Case No. GR-2014-0152	Return on Equity
Laclede Gas Company	12/12	Laclede Gas Company	Case No. GR-2013-0171	Return on Equity
Union Electric Company d/b/a Ameren Missouri	02/12	Union Electric Company d/b/a Ameren Missouri	Case No. ER-2012-0166	Return on Equity (electric)
Union Electric Company d/b/a AmerenUE	09/10	Union Electric Company d/b/a AmerenUE	Case No. ER-2011-0028	Return on Equity (electric)
Union Electric Company d/b/a AmerenUE	06/10	Union Electric Company d/b/a AmerenUE	Case No. GR-2010-0363	Return on Equity (gas)
Montana Public Service Commission				
Northwestern Corporation	09/12	Northwestern Corporation d/b/a Northwestern Energy	Docket No. D2012.9.94	Return on Equity (gas)
Nevada Public Utilities Commission				
Southwest Gas Corporation	05/18	Southwest Gas Corporation	Docket No. 18-05031	Return on Equity (gas)
Southwest Gas Corporation	04/12	Southwest Gas Corporation	Docket No. 12-04005	Return on Equity (gas)
Nevada Power Company	06/11	Nevada Power Company	Docket No. 11-06006	Return on Equity (electric)
New Hampshire Public Utilities Commission				
Northern Utilities, Inc.	06/17	Northern Utilities, Inc.	Docket No. DG 17-070	Return on Equity
Liberty Utilities d/b/a EnergyNorth Natural Gas	04/17	Liberty Utilities d/b/a EnergyNorth Natural Gas	Docket No. DG 17-048	Return on Equity
Unitil Energy Systems, Inc.	04/16	Unitil Energy Systems, Inc.	Docket No. DE 16-384	Return on Equity
Liberty Utilities d/b/a Granite State Electric Company	04/16	Liberty Utilities d/b/a Granite State Electric Company	Docket No. DE 16-383	Return on Equity
Liberty Utilities d/b/a EnergyNorth Natural Gas	08/14	Liberty Utilities d/b/a EnergyNorth Natural Gas	Docket No. DG 14-180	Return on Equity
Liberty Utilities d/b/a Granite State Electric Company	03/13	Liberty Utilities d/b/a Granite State Electric Company	Docket No. DE 13-063	Return on Equity
EnergyNorth Natural Gas d/b/a National Grid NH	02/10	EnergyNorth Natural Gas d/b/a National Grid NH	Docket No. DG 10-017	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Unitil Energy Systems, Inc., EnergyNorth Natural Gas, Inc. d/b/a National Grid NH, Granite State Electric Company d/b/a National Grid, and Northern Utilities, Inc. – New Hampshire Division	08/08	Unitil Energy Systems, Inc., EnergyNorth Natural Gas, Inc. d/b/a National Grid NH, Granite State Electric Company d/b/a National Grid, and Northern Utilities, Inc. – New Hampshire Division	Docket No. DG 07-072	Carrying Charge Rate on Cash Working Capital
New Jersey Board of Public Utilities				
Atlantic City Electric Company	10/18	Atlantic City Electric Company	Docket No. OE18020196	Return on Equity
Atlantic City Electric Company	08/18	Atlantic City Electric Company	Docket No. ER18080925	Return on Equity
Atlantic City Electric Company	06/18	Atlantic City Electric Company	Docket No. ER18060638	Return on Equity
Atlantic City Electric Company	03/17	Atlantic City Electric Company	Docket No. ER17030308	Return on Equity
Pivotal Utility Holdings, Inc.	08/16	Elizabethtown Gas	Docket No. GR16090826	Return on Equity
The Southern Company; AGL Resources Inc.; AMS Corp. and Pivotal Holdings, Inc. d/b/a Elizabethtown Gas	04/16	The Southern Company; AGL Resources Inc.; AMS Corp. and Pivotal Holdings, Inc. d/b/a Elizabethtown Gas	BPU Docket No. GM15101196	Merger Approval
Atlantic City Electric Company	03/16	Atlantic City Electric Company	Docket No. ER16030252	Return on Equity
Pepco Holdings, Inc.	03/14	Atlantic City Electric Company	Docket No. ER14030245	Return on Equity
Orange and Rockland Utilities	11/13	Rockland Electric Company	Docket No. ER13111135	Return on Equity
Atlantic City Electric Company	12/12	Atlantic City Electric Company	Docket No. ER12121071	Return on Equity
Atlantic City Electric Company	08/11	Atlantic City Electric Company	Docket No. ER11080469	Return on Equity
Pepco Holdings, Inc.	09/06	Atlantic City Electric Company	Docket No. EM06090638	Divestiture and Valuation of Electric Generating Assets
Pepco Holdings, Inc.	12/05	Atlantic City Electric Company	Docket No. EM05121058	Market Value of Electric Generation Assets; Auction
Conectiv	06/03	Atlantic City Electric Company	Docket No. EO03020091	Market Value of Electric Generation Assets; Auction Process
New Mexico Public Regulation Commission				
Public Service Company of New Mexico	12/16	Public Service Company of New Mexico	Case No. 16-00276-UT	Return on Equity (electric)
Public Service Company of New Mexico	08/15	Public Service Company of New Mexico	Case No. 15-00261-UT	Return on Equity (electric)
Public Service Company of New Mexico	12/14	Public Service Company of New Mexico	Case No. 14-00332-UT	Return on Equity (electric)
Public Service Company of New Mexico	12/14	Public Service Company of New Mexico	Case No. 13-00390-UT	Cost of Capital and Financial Integrity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Southwestern Public Service Company	02/11	Southwestern Public Service Company	Case No. 10-00395-UT	Return on Equity (electric)
Public Service Company of New Mexico	06/10	Public Service Company of New Mexico	Case No. 10-00086-UT	Return on Equity (electric)
Public Service Company of New Mexico	09/08	Public Service Company of New Mexico	Case No. 08-00273-UT	Return on Equity (electric)
Xcel Energy, Inc.	07/07	Southwestern Public Service Company	Case No. 07-00319-UT	Return on Equity (electric)
New York State Public Service Commission				
Consolidated Edison Company of New York, Inc.	01/15	Consolidated Edison Company of New York, Inc.	Case No. 15-E-0050	Return on Equity (electric)
Orange and Rockland Utilities, Inc.	11/14	Orange and Rockland Utilities, Inc.	Case Nos. 14-E-0493 and 14-G-0494	Return on Equity (electric and gas)
Consolidated Edison Company of New York, Inc.	01/13	Consolidated Edison Company of New York, Inc.	Case No. 13-E-0030	Return on Equity (electric)
Niagara Mohawk Corporation d/b/a National Grid for Electric Service	04/12	Niagara Mohawk Corporation d/b/a National Grid for Electric Service	Case No. 12-E-0201	Return on Equity (electric)
Niagara Mohawk Corporation d/b/a National Grid for Gas Service	04/12	Niagara Mohawk Corporation d/b/a National Grid for Gas Service	Case No. 12-G-0202	Return on Equity (gas)
Orange and Rockland Utilities, Inc.	07/11	Orange and Rockland Utilities, Inc.	Case No. 11-E-0408	Return on Equity (electric)
Orange and Rockland Utilities, Inc.	07/10	Orange and Rockland Utilities, Inc.	Case No. 10-E-0362	Return on Equity (electric)
Consolidated Edison Company of New York, Inc.	11/09	Consolidated Edison Company of New York, Inc.	Case No. 09-G-0795	Return on Equity (gas)
Consolidated Edison Company of New York, Inc.	11/09	Consolidated Edison Company of New York, Inc.	Case No. 09-S-0794	Return on Equity (steam)
Niagara Mohawk Power Corporation	07/01	Niagara Mohawk Power Corporation	Case No. 01-E-1046	Power Purchase and Sale Agreement; Standard Offer Service Agreement
North Carolina Utilities Commission				
Duke Energy Carolinas, LLC	08/17	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 1146	Return on Equity
Duke Energy Progress, LLC	06/17	Duke Energy Progress, LLC	Docket No. E-2, Sub 1142	Return on Equity
Public Service Company of North Carolina, Inc.	03/16	Public Service Company of North Carolina, Inc.	Docket No. G-5, Sub 565	Return on Equity
Dominion North Carolina Power	03/16	Dominion North Carolina Power	Docket No. E-22, Sub 532	Return on Equity
Duke Energy Carolinas, LLC	02/13	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 1026	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.	10/12	Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.	Docket No. E-2, Sub 1023	Return on Equity
Virginia Electric and Power Company d/b/a Dominion North Carolina Power	03/12	Virginia Electric and Power Company d/b/a Dominion North Carolina Power	Docket No. E-22, Sub 479	Return on Equity (electric)
Duke Energy Carolinas, LLC	07/11	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 989	Return on Equity (electric)
North Dakota Public Service Commission				
Otter Tail Power Company	11/17	Otter Tail Power Company	Docket No. 17-398	Return on Equity (electric)
Otter Tail Power Company	11/08	Otter Tail Power Company	Docket No. 08-862	Return on Equity (electric)
Oklahoma Corporation Commission				
CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Oklahoma Gas	03/16	CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Oklahoma Gas	Cause No. PUD201600094	Return on Equity
Oklahoma Gas & Electric Company	12/15	Oklahoma Gas & Electric Company	Cause No. PUD201500273	Return on Equity
Public Service Company of Oklahoma	07/15	Public Service Company of Oklahoma	Cause No. PUD201500208	Return on Equity
Oklahoma Gas & Electric Company	07/11	Oklahoma Gas & Electric Company	Cause No. PUD201100087	Return on Equity
CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Oklahoma Gas	03/09	CenterPoint Energy Oklahoma Gas	Cause No. PUD200900055	Return on Equity
Pennsylvania Public Utility Commission				
Pike County Light & Power Company	01/14	Pike County Light & Power Company	Docket No. R-2013-2397237	Return on Equity (electric & gas)
Veolia Energy Philadelphia, Inc.	12/13	Veolia Energy Philadelphia, Inc.	Docket No. R-2013-2386293	Return on Equity (steam)
Rhode Island Public Utilities Commission				
The Narragansett Electric Company d/b/a National Grid	11/17	The Narragansett Electric Company d/b/a National Grid	Docket No. 4770	Return on Equity (electric & gas)
The Narragansett Electric Company d/b/a National Grid	04/12	The Narragansett Electric Company d/b/a National Grid	Docket No. 4323	Return on Equity (electric & gas)
National Grid RI – Gas	08/08	National Grid RI – Gas	Docket No. 3943	Revenue Decoupling and Return on Equity
South Carolina Public Service Commission				
Duke Energy Carolinas, LLC	11/18	Duke Energy Carolinas, LLC	Docket No. 2018-319-E	Return on Equity
Duke Energy Progress, LLC	11/18	Duke Energy Progress, LLC	Docket No. 2018-318-E	Return on Equity
South Carolina Electric & Gas	08/18	South Carolina Electric & Gas	Docket No. 2017-370-E	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
South Carolina Electric & Gas	12/17	South Carolina Electric & Gas	Docket No. 2017-305-E	Return on Equity
Duke Energy Progress, LLC	07/16	Duke Energy Progress, LLC	Docket No. 2016-227-E	Return on Equity
Duke Energy Carolinas, LLC	03/13	Duke Energy Carolinas, LLC	Docket No. 2013-59-E	Return on Equity
South Carolina Electric & Gas	06/12	South Carolina Electric & Gas	Docket No. 2012-218-E	Return on Equity
Duke Energy Carolinas, LLC	08/11	Duke Energy Carolinas, LLC	Docket No. 2011-271-E	Return on Equity
South Carolina Electric & Gas	03/10	South Carolina Electric & Gas	Docket No. 2009-489-E	Return on Equity
South Dakota Public Utilities Commission				
Otter Tail Power Company	04/18	Otter Tail Power Company	Docket No. EL18-021	Return on Equity (electric)
Otter Tail Power Company	08/10	Otter Tail Power Company	Docket No. EL10-011	Return on Equity (electric)
Northern States Power Company	06/09	South Dakota Division of Northern States Power	Docket No. EL09-009	Return on Equity (electric)
Otter Tail Power Company	10/08	Otter Tail Power Company	Docket No. EL08-030	Return on Equity (electric)
Texas Public Utility Commission				
Texas-New Mexico Power Company	05/18	Texas-New Mexico Power Company	Docket No. 48401	Return on Equity
Entergy Texas, Inc.	05/18	Entergy Texas, Inc.	Docket No. 48371	Return on Equity
Southwestern Public Service Company	08/17	Southwestern Public Service Company	Docket No. 47527	Return on Equity
Oncor Electric Delivery Company, LLC	03/17	Oncor Electric Delivery Company, LLC	Docket No. 46957	Return on Equity
El Paso Electric Company	02/17	El Paso Electric Company	Docket No. 46831	Return on Equity
Southwestern Electric Power Company	12/16	Southwestern Electric Power Company	Docket No. 46449	Return on Equity (electric)
Sharyland Utilities, L.P.	04/16	Sharyland Utilities, L.P.	Docket No. 45414	Return on Equity
Southwestern Public Service Company	02/16	Southwestern Public Service Company	Docket No. 44524	Return on Equity (electric)
Wind Energy Transmission Texas, LLC	05/15	Wind Energy Transmission Texas, LLC	Docket No. 44746	Return on Equity
Cross Texas Transmission	12/14	Cross Texas Transmission	Docket No. 43950	Return on Equity
Southwestern Public Service Company	12/14	Southwestern Public Service Company	Docket No. 43695	Return on Equity (electric)
Sharyland Utilities, L.P.	05/13	Sharyland Utilities, L.P.	Docket No. 41474	Return on Equity
Wind Energy Texas Transmission, LLC	08/12	Wind Energy Texas Transmission, LLC	Docket No. 40606	Return on Equity
Southwestern Electric Power Company	07/12	Southwestern Electric Power Company	Docket No. 40443	Return on Equity
Oncor Electric Delivery Company, LLC	01/11	Oncor Electric Delivery Company, LLC	Docket No. 38929	Return on Equity
Texas-New Mexico Power Company	08/10	Texas-New Mexico Power Company	Docket No. 38480	Return on Equity (electric)

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
CenterPoint Energy Houston Electric LLC	06/10	CenterPoint Energy Houston Electric LLC	Docket No. 38339	Return on Equity
Xcel Energy, Inc.	05/10	Southwestern Public Service Company	Docket No. 38147	Return on Equity (electric)
Texas-New Mexico Power Company	08/08	Texas-New Mexico Power Company	Docket No. 36025	Return on Equity (electric)
Xcel Energy, Inc.	05/06	Southwestern Public Service Company	Docket No. 32766	Return on Equity (electric)
Texas Railroad Commission				
Atmos Energy Corporation – Mid-Tex Division	10/18	Atmos Energy Corporation – Mid-Tex Division	GUD 10779	Return on Equity
Atmos Energy Corporation – West Texas Division	06/18	Atmos Energy Corporation – West Texas Division	GUD 10743	Return on Equity
Atmos Energy Corporation – Mid-Texas Division	06/18	Atmos Energy Corporation – Mid-Texas Division	GUD 10742	Return on Equity
CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	11/17	CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	GUD 10669	Return on Equity
Atmos Pipeline - Texas	01/17	Atmos Pipeline - Texas	GUD 10580	Return on Equity
CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	12/16	CenterPoint Energy Resources Corp. D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas	GUD 10567	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	03/15	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10432	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	07/12	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10182	Return on Equity
Atmos Energy Corporation – West Texas Division	06/12	Atmos Energy Corporation – West Texas Division	GUD 10174	Return on Equity
Atmos Energy Corporation – Mid-Texas Division	06/12	Atmos Energy Corporation – Mid-Texas Division	GUD 10170	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	12/10	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10038	Return on Equity
Atmos Pipeline – Texas	09/10	Atmos Pipeline - Texas	GUD 10000	Return on Equity

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	07/09	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 9902	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Texas Gas	03/08	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Texas Gas	GUD 9791	Return on Equity
Utah Public Service Commission				
Questar Gas Company	12/07	Questar Gas Company	Docket No. 07-057-13	Return on Equity
Vermont Public Service Board				
Central Vermont Public Service Corporation; Green Mountain Power	02/12	Central Vermont Public Service Corporation; Green Mountain Power	Docket No. 7770	Merger Policy
Central Vermont Public Service Corporation	12/10	Central Vermont Public Service Corporation	Docket No. 7627	Return on Equity (electric)
Green Mountain Power	04/06	Green Mountain Power	Docket Nos. 7175 and 7176	Return on Equity (electric)
Vermont Gas Systems, Inc.	12/05	Vermont Gas Systems	Docket Nos. 7109 and 7160	Return on Equity (gas)
Virginia State Corporation Commission				
Virginia Electric and Power Company	03/17	Virginia Electric and Power Company	Case No. PUR-2017-00038	Return on Equity
Virginia Natural Gas, Inc.	03/17	Virginia Natural Gas, Inc.	Case No. PUE-2016-00143	Return on Equity
Virginia Electric and Power Company	10/16	Virginia Electric and Power Company	Case No. PUE-2016-00112; PUE-2016-00113; PUE-2016-00136	Return on Equity
Washington Gas Light Company	06/16	Washington Gas Light Company	Case No. PUE-2016-00001	Return on Equity
Virginia Electric and Power Company	06/16	Virginia Electric and Power Company	Case Nos. PUE-2016-00063; PUE-2016-00062; PUE-2016-00061; PUE-2016-00060; PUE-2016-00059	Return on Equity
Virginia Electric and Power Company	12/15	Virginia Electric and Power Company	Case Nos. PUE-2015-00058; PUE-2015-00059; PUE-2015-00060; PUE-2015-00061; PUE-2015-00075; PUE-2015-00089; PUE-2015-00102; PUE-2015-00104	Return on Equity
Virginia Electric and Power Company	03/15	Virginia Electric and Power Company	Case No. PUE-2015-00027	Return on Equity
Virginia Electric and Power Company	03/13	Virginia Electric and Power Company	Case No. PUE-2013-00020	Return on Equity
Virginia Natural Gas, Inc.	02/11	Virginia Natural Gas, Inc.	Case No. PUE-2010-00142	Capital Structure

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Columbia Gas of Virginia, Inc.	06/06	Columbia Gas of Virginia, Inc.	Case No. PUE-2005-00098	Merger Synergies
Dominion Resources	10/01	Virginia Electric and Power Company	Case No. PUE000584	Corporate Structure and Electric Generation Strategy

Expert Reports

United States District Court, District of South Carolina, Columbia Division				
South Carolina Electric & Gas Company	07/18	South Carolina Electric & Gas Company	Case No. 3:18-CV-01795-JMC	Return on Equity
United States District Court, Western District of Texas, Austin Division				
Southwestern Public Service Company	02/12	Southwestern Public Service Company	C.A. No. A-09-CA-917-SS	PURPA and FERC regulations
American Arbitration Association				
Confidential Client	11/14	Confidential Client	Confidential	Economic harm related to failure to perform

Constant Growth Discounted Cash Flow Model
30 Day Average Stock Price

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Sustainable Growth Estimate	Average Earnings Growth	Low ROE	Mean ROE	High ROE
Atmos Energy Corporation	ATO	\$1.94	\$93.79	2.07%	2.15%	6.50%	6.95%	7.50%	9.52%	7.62%	8.64%	9.76%	11.68%
Chesapeake Utilities Corporation	CPK	\$1.48	\$85.49	1.73%	1.80%	6.00%	6.00%	8.50%	11.88%	8.09%	7.78%	9.90%	13.71%
New Jersey Resources Corporation	NJR	\$1.17	\$46.23	2.53%	2.63%	7.00%	7.10%	9.50%	7.53%	7.78%	9.62%	10.41%	12.15%
Northwest Natural Gas Company	NWN	\$1.90	\$67.82	2.80%	2.96%	4.30%	4.50%	30.50%	7.09%	11.60%	7.16%	14.56%	33.73%
ONE Gas, Inc.	OGS	\$1.84	\$81.38	2.26%	2.34%	5.70%	5.50%	10.50%	6.14%	6.96%	7.82%	9.30%	12.88%
South Jersey Industries, Inc.	SJI	\$1.12	\$34.89	3.21%	3.37%	12.20%	12.00%	9.50%	5.53%	9.81%	8.83%	13.18%	15.61%
Southwest Gas Corporation	SWX	\$2.08	\$80.05	2.60%	2.68%	4.00%	4.00%	9.00%	6.79%	5.95%	6.65%	8.62%	11.72%
Spire Inc	SR	\$2.25	\$74.23	3.03%	3.11%	4.00%	3.53%	7.50%	6.41%	5.36%	6.61%	8.47%	10.64%
PROXY GROUP MEAN				2.53%	2.63%	6.21%	6.20%	11.56%	7.61%	7.90%	7.89%	10.53%	15.26%
PROXY GROUP MEDIAN				2.56%	2.65%	5.85%	5.75%	9.25%	6.94%	7.70%	7.80%	9.83%	12.52%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 30-trading day average as of October 12, 2018
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.5 x [9])
- [5] Source: Zacks
- [6] Source: Yahoo! Finance
- [7] Source: Value Line
- [8] Schedule RBH-D2
- [9] Equals Average([5], [6], [7], [8])
- [10] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7], [8])) + Minimum([5], [6], [7], [8])
- [11] Equals [4] + [9]
- [12] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7], [8])) + Maximum([5], [6], [7], [8])

Constant Growth Discounted Cash Flow Model
90 Day Average Stock Price

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Sustainable Growth Estimate	Average Earnings Growth	Low ROE	Mean ROE	High ROE
Atmos Energy Corporation	ATO	\$1.94	\$91.63	2.12%	2.20%	6.50%	6.95%	7.50%	9.52%	7.62%	8.69%	9.81%	11.73%
Chesapeake Utilities Corporation	CPK	\$1.48	\$83.31	1.78%	1.85%	6.00%	6.00%	8.50%	11.88%	8.09%	7.83%	9.94%	13.76%
New Jersey Resources Corporation	NJR	\$1.17	\$45.48	2.57%	2.67%	7.00%	7.10%	9.50%	7.53%	7.78%	9.66%	10.46%	12.19%
Northwest Natural Gas Company	NWN	\$1.90	\$64.85	2.93%	3.10%	4.30%	4.50%	30.50%	7.09%	11.60%	7.29%	14.70%	33.88%
ONE Gas, Inc.	OGS	\$1.84	\$77.65	2.37%	2.45%	5.70%	5.50%	10.50%	6.14%	6.96%	7.93%	9.41%	12.99%
South Jersey Industries, Inc.	SJI	\$1.12	\$33.72	3.32%	3.48%	12.20%	12.00%	9.50%	5.53%	9.81%	8.95%	13.29%	15.72%
Southwest Gas Corporation	SWX	\$2.08	\$78.52	2.65%	2.73%	4.00%	4.00%	9.00%	6.79%	5.95%	6.70%	8.67%	11.77%
Spire Inc	SR	\$2.25	\$72.88	3.09%	3.17%	4.00%	3.53%	7.50%	6.41%	5.36%	6.67%	8.53%	10.70%
PROXY GROUP MEAN				2.60%	2.71%	6.21%	6.20%	11.56%	7.61%	7.90%	7.97%	10.60%	15.34%
PROXY GROUP MEDIAN				2.61%	2.70%	5.85%	5.75%	9.25%	6.94%	7.70%	7.88%	9.88%	12.59%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 90-trading day average as of October 12, 2018

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [9])

[5] Source: Zacks

[6] Source: Yahoo! Finance

[7] Source: Value Line

[8] Schedule RBH-D2

[9] Equals Average([5], [6], [7], [8])

[10] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7], [8])) + Minimum([5], [6], [7], [8])

[11] Equals [4] + [9]

[12] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7], [8])) + Maximum([5], [6], [7], [8])

Constant Growth Discounted Cash Flow Model
180 Day Average Stock Price

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	
		Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Sustainable Growth Estimate	Average Earnings Growth	Low ROE	Mean ROE	High ROE	
Atmos Energy Corporation	ATO	\$1.94	\$87.70	2.21%	2.30%	6.50%	6.95%	7.50%	9.52%	7.62%	8.78%	9.91%	11.83%	
Chesapeake Utilities Corporation	CPK	\$1.48	\$78.19	1.89%	1.97%	6.00%	6.00%	8.50%	11.88%	8.09%	7.95%	10.06%	13.88%	
New Jersey Resources Corporation	NJR	\$1.17	\$42.95	2.72%	2.83%	7.00%	7.10%	9.50%	7.53%	7.78%	9.82%	10.61%	12.35%	
Northwest Natural Gas Company	NWN	\$1.90	\$61.30	3.10%	3.28%	4.30%	4.50%	30.50%	7.09%	11.60%	7.47%	14.88%	34.07%	
ONE Gas, Inc.	OGS	\$1.84	\$73.03	2.52%	2.61%	5.70%	5.50%	10.50%	6.14%	6.96%	8.09%	9.57%	13.15%	
South Jersey Industries, Inc.	SJI	\$1.12	\$31.53	3.55%	3.73%	12.20%	12.00%	9.50%	5.53%	9.81%	9.18%	13.54%	15.97%	
Southwest Gas Corporation	SWX	\$2.08	\$74.49	2.79%	2.88%	4.00%	4.00%	9.00%	6.79%	5.95%	6.85%	8.82%	11.92%	
Spire Inc	SR	\$2.25	\$71.10	3.16%	3.25%	4.00%	3.53%	7.50%	6.41%	5.36%	6.75%	8.61%	10.78%	
PROXY GROUP MEAN					2.74%	2.85%	6.21%	6.20%	11.56%	7.61%	7.90%	8.11%	10.75%	15.50%
PROXY GROUP MEDIAN					2.76%	2.85%	5.85%	5.75%	9.25%	6.94%	7.70%	8.02%	9.99%	12.75%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 180-trading day average as of October 12, 2018

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [9])

[5] Source: Zacks

[6] Source: Yahoo! Finance

[7] Source: Value Line

[8] Schedule RBH-D2

[9] Equals Average([5], [6], [7], [8])

[10] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7], [8])) + Minimum([5], [6], [7], [8])

[11] Equals [4] + [9]

[12] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7], [8])) + Maximum([5], [6], [7], [8])

Retention Growth Estimate

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	
Company	Ticker	Projected Earnings per share 2021-23	Projected Dividend Declared per share 2021-23	Retention Ratio (B)	Projected Book Value per Share 2021-23	Return on Book Value (R)	B x R	Projected Common Shares Outstanding 2019	Projected Common Shares Outstanding 2021-23	Common Shares Growth Rate	2018 High Price	2018 Low Price	2018 price midpoint	Projected Book Value per Share 2018	Market/Book Ratio	"S"	"V"	S x V	BR + SV
Atmos Energy Corporation	ATO	5.15	2.50	51.46%	46.55	11.06%	5.69%	116.00	130.00	3.83%	\$ 94.90	\$ 76.50	\$ 85.70	42.90	2.00	7.65%	49.94%	3.82%	9.52%
Chesapeake Utilities Corporation	CPK	4.50	2.00	55.56%	45.50	9.89%	5.49%	17.50	20.00	4.51%	\$ 87.30	\$ 66.40	\$ 76.85	31.80	2.42	10.89%	58.62%	6.38%	11.88%
New Jersey Resources Corporation	NJR	2.95	1.24	57.97%	22.70	13.00%	7.53%	86.50	86.50	0.00%	\$ 47.60	\$ 35.60	\$ 41.60	15.95	2.61	0.00%	61.66%	0.00%	7.53%
Northwest Natural Gas Company	NWN	3.50	2.20	37.14%	29.40	11.90%	4.42%	30.00	32.00	2.15%	\$ 66.60	\$ 51.50	\$ 59.05	26.35	2.24	4.82%	55.38%	2.67%	7.09%
ONE Gas, Inc.	OGS	4.75	2.50	47.37%	43.40	10.94%	5.18%	53.00	55.00	1.23%	\$ 80.70	\$ 62.20	\$ 71.45	40.25	1.78	2.18%	43.67%	0.95%	6.14%
South Jersey Industries, Inc.	SJI	2.30	1.35	41.30%	22.65	10.15%	4.19%	91.00	95.00	1.43%	\$ 35.40	\$ 26.00	\$ 30.70	15.85	1.94	2.77%	48.37%	1.34%	5.53%
Southwest Gas Corporation	SWX	5.40	2.60	51.85%	52.85	10.22%	5.30%	50.00	53.00	1.94%	\$ 81.70	\$ 62.50	\$ 72.10	40.80	1.77	3.43%	43.41%	1.49%	6.79%
Spire Inc	SR	5.00	2.50	50.00%	48.10	10.40%	5.20%	52.00	55.00	1.87%	\$ 77.30	\$ 60.10	\$ 68.70	41.60	1.65	3.09%	39.45%	1.22%	6.41%
			Average:	49.08%														Average:	7.61%

Notes:

- [1] Source: Value Line
[2] Source: Value Line
[3] Equals 1 - [2] / [1]
[4] Source: Value Line
[5] Equals [1] / [4]
[6] Equals [3] x [5]
[7] Source: Value Line
[8] Source: Value Line
[9] Equals ([8] / [7]) ^ 0.33 - 1
[10] Source: Value Line
[11] Source: Value Line
[12] Equals Average ([10], [11])
[13] Source: Value Line
[14] Equals [12] / [13]
[15] Equals [9] x [14]
[16] Equals 1 - (1 / [14])
[17] Equals [15] x [16]
[18] Equals [6] + [17]

Ex-Ante Market Risk Premium
Market DCF Method Based - Bloomberg

[1]	[2]	[3]
S&P 500	Current 30-Year	
Est. Required	Treasury (30-day	Implied Market
Market Return	average)	Risk Premium
15.29%	3.19%	12.10%

Company	Ticker	[4] Market Capitalization	[5] Weight in Index	[6] Estimated Dividend Yield	[7] Long-Term Growth Est.	[8] DCF Result	[9] Weighted DCF Result
Agilent Technologies Inc	A	21,115.29	0.09%	0.90%	10.35%	11.30%	0.0097%
American Airlines Group Inc	AAL	14,234.34	0.06%	1.37%	15.07%	16.54%	0.0096%
Advance Auto Parts Inc	AAP	12,232.30	0.05%	0.15%	18.46%	18.62%	0.0093%
Apple Inc	AAPL	1,072,774.86	4.36%	1.23%	9.84%	11.13%	0.4855%
AbbVie Inc	ABBV	137,329.39	0.56%	4.19%	10.15%	14.55%	0.0812%
AmerisourceBergen Corp	ABC	19,143.24	0.08%	1.72%	10.01%	11.82%	0.0092%
ABIOMED Inc	ABMD	17,267.83	0.07%	0.00%	36.00%	36.00%	0.0253%
Abbott Laboratories	ABT	121,626.96	0.49%	1.62%	13.00%	14.73%	0.0728%
Accenture PLC	ACN	102,313.88	0.42%	1.81%	10.40%	12.31%	0.0512%
Adobe Inc	ADBE	121,481.79	0.49%	0.00%	19.02%	19.02%	0.0940%
Analog Devices Inc	ADI	31,283.46	0.13%	2.25%	9.53%	11.89%	0.0151%
Archer-Daniels-Midland Co	ADM	27,331.98	0.11%	2.73%	11.40%	14.29%	0.0159%
Automatic Data Processing Inc	ADP	61,556.53	0.25%	1.96%	13.50%	15.59%	0.0390%
Alliance Data Systems Corp	ADS	11,731.56	0.05%	1.07%	12.51%	13.64%	0.0065%
Autodesk Inc	ADSK	30,208.45	0.12%	0.00%	55.23%	55.23%	0.0678%
Ameren Corp	AEE	15,569.75	0.06%	2.93%	8.24%	11.29%	0.0071%
American Electric Power Co Inc	AEP	34,949.02	0.14%	3.54%	5.47%	9.10%	0.0129%
AES Corp/VA	AES	9,693.66	0.04%	3.61%	8.59%	12.35%	0.0049%
Aetna Inc	AET	65,810.67	0.27%	0.99%	10.69%	11.73%	0.0314%
Aflac Inc	AFL	33,821.60	0.14%	2.37%	8.04%	10.51%	0.0145%
Allergan PLC	AGN	62,213.37	0.25%	1.58%	8.44%	10.09%	0.0255%
American International Group Inc	AIG	44,217.97	0.18%	2.59%	11.00%	13.73%	0.0247%
Apartment Investment & Management Co	AIV	6,585.16	0.03%	3.64%	6.20%	9.95%	0.0027%
Assurant Inc	AIZ	6,396.91	N/A	2.25%	N/A	N/A	N/A
Arthur J Gallagher & Co	AJG	13,011.11	0.05%	2.30%	10.32%	12.74%	0.0067%
Akamai Technologies Inc	AKAM	10,678.79	0.04%	0.00%	11.28%	11.28%	0.0049%
Albemarle Corp	ALB	10,312.49	0.04%	1.43%	13.03%	14.55%	0.0061%
Align Technology Inc	ALGN	26,304.83	0.11%	0.00%	32.59%	32.59%	0.0349%
Alaska Air Group Inc	ALK	7,597.61	0.03%	2.05%	3.73%	5.82%	0.0018%
Allstate Corp/The	ALL	32,255.01	0.13%	1.91%	7.10%	9.08%	0.0119%
Alleghen PLC	ALLE	7,958.43	0.03%	0.93%	11.23%	12.20%	0.0039%
Alexion Pharmaceuticals Inc	ALXN	27,175.44	0.11%	0.00%	16.34%	16.34%	0.0181%
Applied Materials Inc	AMAT	33,116.95	0.13%	1.79%	14.06%	15.98%	0.0215%
Advanced Micro Devices Inc	AMD	25,678.14	0.10%	0.00%	23.40%	23.40%	0.0244%
AMETEK Inc	AME	16,882.11	0.07%	0.77%	11.81%	12.62%	0.0087%
Affiliated Managers Group Inc	AMG	6,627.70	0.03%	0.97%	10.32%	11.33%	0.0031%
Amgen Inc	AMGN	127,765.03	0.52%	2.64%	7.67%	10.41%	0.0541%
Ameriprise Financial Inc	AMP	19,262.27	0.08%	2.61%	11.80%	14.56%	0.0114%
American Tower Corp	AMT	62,620.62	0.25%	2.21%	16.10%	18.48%	0.0471%
Amazon.com Inc	AMZN	872,378.77	3.55%	0.00%	53.66%	53.66%	1.9035%
Arista Networks Inc	ANET	16,638.54	0.07%	0.00%	26.03%	26.03%	0.0176%
ANSYS Inc	ANSS	13,394.92	0.05%	0.00%	13.83%	13.83%	0.0075%
Anthem Inc	ANTM	70,554.03	0.29%	1.11%	12.27%	13.45%	0.0386%
Aon PLC	AON	35,874.17	0.15%	1.06%	9.58%	10.69%	0.0156%
AO Smith Corp	AOS	8,148.17	0.03%	1.55%	10.33%	11.96%	0.0040%
Apache Corp	APA	17,261.59	0.07%	2.21%	2.04%	4.28%	0.0030%
Anadarko Petroleum Corp	APC	34,631.64	0.14%	1.26%	17.00%	18.37%	0.0259%
Air Products & Chemicals Inc	APD	34,704.26	0.14%	2.64%	12.14%	14.95%	0.0211%
Amphenol Corp	APH	25,538.98	0.10%	1.02%	11.81%	12.89%	0.0134%
Aptiv PLC	APTIV	19,595.91	0.08%	1.19%	13.07%	14.34%	0.0114%
Alexandria Real Estate Equities Inc	ARE	12,695.11	0.05%	3.07%	6.57%	9.74%	0.0050%
Arconic Inc	ARNC	10,436.65	0.04%	1.12%	16.00%	17.21%	0.0073%
Activision Blizzard Inc	ATVI	59,406.88	0.24%	0.44%	14.50%	14.97%	0.0362%
AvalonBay Communities Inc	AVB	23,882.81	0.10%	3.40%	6.74%	10.25%	0.0100%
Broadcom Inc	AVGO	96,312.42	0.39%	3.00%	13.10%	16.30%	0.0638%
Avery Dennison Corp	AVY	8,568.72	0.03%	2.02%	10.37%	12.49%	0.0044%
American Water Works Co Inc	AWK	15,834.58	0.06%	2.05%	8.22%	10.35%	0.0067%
American Express Co	AXP	88,688.59	0.36%	1.44%	17.30%	18.86%	0.0680%
AutoZone Inc	AZO	20,486.92	0.08%	0.00%	11.91%	11.91%	0.0099%
Boeing Co/The	BA	206,886.19	0.84%	1.93%	15.37%	17.44%	0.1467%
Bank of America Corp	BAC	284,265.59	1.16%	1.90%	14.10%	16.13%	0.1865%
Baxter International Inc	BAX	38,066.46	0.15%	1.02%	12.33%	13.42%	0.0208%
BB&T Corp	BBT	36,306.07	0.15%	3.33%	15.10%	18.68%	0.0276%
Best Buy Co Inc	BBY	19,891.69	0.08%	2.48%	12.46%	15.09%	0.0122%
Becton Dickinson and Co	BDX	64,916.27	0.26%	1.28%	15.23%	16.61%	0.0438%
Franklin Resources Inc	BEN	15,042.24	0.06%	11.99%	10.00%	22.59%	0.0138%
Brown-Forman Corp	BF/B	22,456.10	0.09%	1.41%	9.44%	10.91%	0.0100%
Brighthouse Financial Inc	BHF	5,149.46	0.02%	0.00%	12.30%	12.30%	0.0026%
Baker Hughes a GE Co	BHGE	33,916.32	0.14%	2.12%	33.00%	35.47%	0.0489%
Biogen Inc	BIIB	66,665.50	0.27%	0.00%	5.66%	5.66%	0.0154%
Bank of New York Mellon Corp/The	BK	49,097.28	0.20%	2.10%	7.80%	9.98%	0.0199%
Booking Holdings Inc	BKNG	85,790.02	0.35%	0.00%	13.73%	13.73%	0.0479%
BlackRock Inc	BLK	68,667.46	0.28%	2.77%	9.47%	12.38%	0.0346%
Ball Corp	BLL	15,187.16	0.06%	0.92%	5.60%	6.55%	0.0040%
Bristol-Myers Squibb Co	BMY	93,849.24	0.38%	2.79%	9.66%	12.58%	0.0480%
Broadridge Financial Solutions Inc	BR	13,671.39	0.06%	1.59%	10.00%	11.67%	0.0065%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Berkshire Hathaway Inc	BRK/B	510,159.24	2.07%	0.00%	-5.60%	-5.60%	-0.1162%
Boston Scientific Corp	BSX	51,154.39	0.21%	0.00%	22.04%	22.04%	0.0458%
BorgWarner Inc	BWA	7,905.63	0.03%	1.79%	6.52%	8.36%	0.0027%
Boston Properties Inc	BXP	17,711.95	0.07%	2.87%	6.03%	8.99%	0.0065%
Citigroup Inc	C	170,556.26	0.69%	2.21%	13.11%	15.45%	0.1072%
CA Inc	CA	18,273.85	0.07%	2.38%	3.20%	5.62%	0.0042%
Conagra Brands Inc	CAG	14,424.45	0.06%	2.42%	7.85%	10.37%	0.0061%
Cardinal Health Inc	CAH	15,482.03	0.06%	3.82%	9.36%	13.35%	0.0084%
Caterpillar Inc	CAT	84,435.81	0.34%	2.29%	27.65%	30.26%	0.1039%
Chubb Ltd	CB	58,210.86	0.24%	2.31%	10.83%	13.27%	0.0314%
Cboe Global Markets Inc	CBOE	11,194.18	0.05%	1.16%	12.92%	14.16%	0.0064%
CBRE Group Inc	CBRE	13,221.55	0.05%	0.00%	9.75%	9.75%	0.0052%
CBS Corp	CBS	20,418.10	0.08%	1.39%	16.37%	17.87%	0.0148%
Crown Castle International Corp	CCI	43,537.45	0.18%	4.07%	19.23%	23.69%	0.0419%
Carnival Corp	CCL	40,457.95	0.16%	3.30%	12.90%	16.41%	0.0270%
Cadence Design Systems Inc	CDNS	11,309.49	0.05%	0.00%	12.00%	12.00%	0.0055%
Celgene Corp	CELG	58,083.72	0.24%	0.00%	21.65%	21.65%	0.0511%
Cerner Corp	CERN	20,437.75	0.08%	0.00%	11.66%	11.66%	0.0097%
CF Industries Holdings Inc	CF	12,240.76	0.05%	2.29%	15.30%	17.76%	0.0088%
Citizens Financial Group Inc	CFG	17,186.43	0.07%	2.71%	14.50%	17.41%	0.0122%
Church & Dwight Co Inc	CHD	13,760.02	0.06%	1.55%	9.63%	11.25%	0.0063%
CH Robinson Worldwide Inc	CHRW	12,701.76	0.05%	2.05%	10.23%	12.38%	0.0064%
Charter Communications Inc	CHTR	79,554.18	0.32%	0.00%	45.75%	45.75%	0.1480%
Cigna Corp	CI	50,398.37	0.20%	0.02%	13.65%	13.67%	0.0280%
Cincinnati Financial Corp	CINF	11,764.64	N/A	3.16%	N/A	N/A	N/A
Colgate-Palmolive Co	CL	54,268.38	0.22%	2.65%	7.73%	10.49%	0.0231%
Clorox Co/The	CLX	18,494.66	0.08%	2.65%	6.62%	9.36%	0.0070%
Comerica Inc	CMA	14,522.65	0.06%	2.17%	18.95%	21.33%	0.0126%
Comcast Corp	CMCSA	158,626.53	0.65%	2.15%	14.85%	17.16%	0.1107%
CME Group Inc	CME	60,117.65	0.24%	3.14%	9.30%	12.59%	0.0308%
Chipotle Mexican Grill Inc	CMG	12,114.53	0.05%	0.00%	19.11%	19.11%	0.0094%
Cummins Inc	CMI	23,719.32	0.10%	3.03%	9.58%	12.75%	0.0123%
CMS Energy Corp	CMS	13,837.52	0.06%	2.92%	6.16%	9.18%	0.0052%
Centene Corp	CNC	28,904.24	0.12%	0.00%	15.27%	15.27%	0.0179%
CenterPoint Energy Inc	CNP	13,702.50	0.06%	4.11%	6.17%	10.40%	0.0058%
Capital One Financial Corp	COF	43,436.21	0.18%	1.76%	16.00%	17.90%	0.0316%
Cabot Oil & Gas Corp	COG	10,314.73	0.04%	1.01%	44.61%	45.85%	0.0192%
Rockwell Collins Inc	COL	22,075.96	0.09%	1.15%	12.82%	12.82%	0.0115%
Cooper Cos Inc/The	COO	12,590.57	0.05%	0.03%	10.80%	10.83%	0.0055%
ConocoPhillips	COP	85,797.50	0.35%	1.56%	6.00%	7.61%	0.0265%
Costco Wholesale Corp	COST	99,446.99	0.40%	1.03%	11.03%	12.12%	0.0490%
Coty Inc	COTY	8,281.37	0.03%	4.61%	13.15%	18.06%	0.0061%
Campbell Soup Co	CPB	11,154.34	0.05%	3.86%	3.46%	7.39%	0.0034%
Copart Inc	CPRT	11,784.70	0.05%	0.00%	10.00%	10.00%	0.0048%
salesforce.com Inc	CRM	111,038.16	0.45%	0.00%	26.12%	26.12%	0.1179%
Cisco Systems Inc	CSCO	208,955.68	0.85%	3.08%	7.18%	10.38%	0.0882%
CSX Corp	CSX	60,288.50	0.25%	1.25%	11.96%	13.29%	0.0326%
Cintas Corp	CTAS	19,986.30	0.08%	0.93%	11.85%	12.84%	0.0104%
CenturyLink Inc	CTL	22,315.35	0.09%	10.45%	-15.59%	-5.95%	-0.0054%
Cognizant Technology Solutions Corp	CTSH	41,875.48	0.17%	1.08%	14.03%	15.18%	0.0258%
Citrix Systems Inc	CTXS	13,909.06	0.06%	0.00%	9.00%	9.00%	0.0051%
CVS Health Corp	CVS	75,927.20	0.31%	2.80%	11.66%	14.63%	0.0452%
Chevron Corp	CVX	225,664.64	0.92%	3.81%	7.02%	10.96%	0.1006%
Concho Resources Inc	CXO	30,125.64	0.12%	0.00%	30.75%	30.75%	0.0377%
Dominion Energy Inc	D	46,659.26	0.19%	4.68%	5.60%	10.41%	0.0197%
Delta Air Lines Inc	DAL	35,686.45	0.15%	2.50%	14.35%	17.02%	0.0247%
Deere & Co	DE	47,742.78	0.19%	1.68%	7.33%	9.08%	0.0176%
Discover Financial Services	DFS	25,541.75	0.10%	2.02%	10.17%	12.29%	0.0128%
Dollar General Corp	DG	27,817.38	0.11%	1.10%	15.26%	16.44%	0.0186%
Quest Diagnostics Inc	DGX	13,700.83	0.06%	1.93%	9.20%	11.22%	0.0063%
DR Horton Inc	DHI	14,189.09	0.06%	1.32%	20.48%	21.94%	0.0127%
Danaher Corp	DHR	72,340.66	0.29%	0.60%	7.13%	7.75%	0.0228%
Walt Disney Co/The	DIS	167,478.39	0.68%	1.50%	12.98%	14.57%	0.0993%
Discovery Inc	DISCA	21,617.15	N/A	0.00%	N/A	N/A	N/A
DISH Network Corp	DISH	15,390.64	0.06%	0.00%	-12.71%	-12.71%	-0.0080%
Digital Realty Trust Inc	DLR	22,948.81	0.09%	3.74%	7.28%	11.15%	0.0104%
Dollar Tree Inc	DLTR	19,302.27	0.08%	0.00%	11.36%	11.36%	0.0089%
Dover Corp	DOV	12,138.28	0.05%	2.34%	12.50%	14.99%	0.0074%
Duke Realty Corp	DRE	9,578.41	0.04%	3.01%	5.34%	8.43%	0.0033%
Darden Restaurants Inc	DRI	13,250.03	0.05%	2.81%	10.54%	13.50%	0.0073%
DTE Energy Co	DTE	19,988.56	0.08%	3.23%	6.03%	9.36%	0.0076%
Duke Energy Corp	DUK	56,981.25	0.23%	4.57%	5.04%	9.73%	0.0225%
DaVita Inc	DVA	11,504.42	0.05%	0.00%	18.00%	18.00%	0.0084%
Devon Energy Corp	DVN	18,637.34	0.08%	0.86%	14.46%	15.38%	0.0117%
DowDuPont Inc	DWDP	137,658.10	0.56%	2.76%	8.37%	11.24%	0.0629%
DXC Technology Co	DXC	24,646.55	0.10%	0.87%	6.36%	7.25%	0.0073%
Electronic Arts Inc	EA	32,341.22	0.13%	0.00%	15.20%	15.20%	0.0200%
eBay Inc	EBAY	31,388.51	0.13%	0.00%	10.21%	10.21%	0.0130%
Ecolab Inc	ECL	42,174.16	0.17%	1.14%	13.03%	14.24%	0.0244%
Consolidated Edison Inc	ED	23,404.28	0.10%	3.80%	3.60%	7.47%	0.0071%
Equifax Inc	EFX	14,816.72	0.06%	1.27%	7.43%	8.75%	0.0053%
Edison International	EIX	22,366.94	0.09%	3.53%	5.40%	9.03%	0.0082%
Estee Lauder Cos Inc/The	EL	46,288.58	0.19%	1.30%	16.32%	17.73%	0.0334%
Eastman Chemical Co	EMN	11,654.19	0.05%	2.72%	5.90%	8.70%	0.0041%
Emerson Electric Co	EMR	45,199.24	0.18%	2.70%	11.20%	14.04%	0.0258%
EOG Resources Inc	EOG	70,766.75	0.29%	0.64%	12.14%	12.83%	0.0369%
Equinix Inc	EQIX	31,480.41	0.13%	2.29%	19.55%	22.06%	0.0282%
Equity Residential	EQR	23,080.23	0.09%	3.42%	5.69%	9.21%	0.0086%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
EQT Corp	EQT	11,985.60	0.05%	0.26%	17.50%	17.79%	0.0087%
Eversource Energy	ES	19,494.81	0.08%	3.29%	6.03%	9.42%	0.0075%
Express Scripts Holding Co	ESRX	53,012.57	0.22%	0.00%	6.60%	6.60%	0.0142%
Essex Property Trust Inc	ESS	15,760.88	0.06%	3.09%	5.94%	9.13%	0.0059%
E*TRADE Financial Corp	ETFC	12,931.82	0.05%	0.00%	28.57%	28.57%	0.0150%
Eaton Corp PLC	ETN	34,564.34	0.14%	3.28%	8.92%	12.35%	0.0174%
Entergy Corp	ETR	14,712.56	0.06%	4.42%	2.83%	7.30%	0.0044%
Evergy Inc	EVRG	15,111.28	0.06%	3.37%	8.19%	11.70%	0.0072%
Edwards Lifesciences Corp	EW	30,023.86	0.12%	0.00%	14.00%	14.00%	0.0171%
Exelon Corp	EXC	41,447.06	0.17%	3.22%	4.45%	7.74%	0.0131%
Expeditors International of Washington I	EXPD	11,663.05	0.05%	1.35%	11.60%	13.02%	0.0062%
Expedia Group Inc	EXPE	17,718.92	0.07%	1.03%	14.23%	15.32%	0.0110%
Extra Space Storage Inc	EXR	10,734.97	0.04%	3.93%	5.46%	9.49%	0.0041%
Ford Motor Co	F	34,436.68	0.14%	7.63%	-7.52%	-0.18%	-0.0003%
Fastenal Co	FAST	14,947.04	0.06%	2.94%	17.50%	20.70%	0.0126%
Facebook Inc	FB	443,881.00	1.81%	0.00%	21.09%	21.09%	0.3807%
Fortune Brands Home & Security Inc	FBHS	6,783.45	0.03%	1.66%	12.79%	14.55%	0.0040%
Freeport-McMoRan Inc	FCX	18,460.30	0.08%	1.44%	-16.60%	-15.28%	-0.0115%
FedEx Corp	FDX	58,237.00	0.24%	1.17%	15.60%	16.86%	0.0399%
FirstEnergy Corp	FE	18,104.30	0.07%	3.87%	-0.35%	3.51%	0.0026%
F5 Networks Inc	FFIV	10,201.06	0.04%	0.00%	10.27%	10.27%	0.0043%
Fidelity National Information Services I	FIS	33,664.66	0.14%	1.23%	4.40%	5.66%	0.0077%
Fiserv Inc	FISV	31,236.08	0.13%	0.00%	11.00%	11.00%	0.0140%
Fifth Third Bancorp	FITB	17,884.67	0.07%	2.83%	5.65%	8.56%	0.0062%
Foot Locker Inc	FL	5,710.33	0.02%	2.77%	4.91%	7.75%	0.0018%
FLIR Systems Inc	FLIR	7,737.38	N/A	1.13%	N/A	N/A	N/A
Fluor Corp	FLR	6,568.31	0.03%	1.80%	26.17%	28.21%	0.0075%
Flowserve Corp	FLS	6,547.86	0.03%	1.54%	19.90%	21.59%	0.0057%
FleetCor Technologies Inc	FLT	18,407.80	N/A	0.00%	N/A	N/A	N/A
FMC Corp	FMC	11,424.67	0.05%	0.83%	23.10%	24.03%	0.0112%
Twenty-First Century Fox Inc	FOX	83,829.81	0.34%	1.00%	9.95%	11.00%	0.0375%
Federal Realty Investment Trust	FRT	8,701.37	0.04%	3.43%	5.17%	8.69%	0.0031%
TechnipFMC PLC	FTI	13,680.44	0.06%	1.72%	9.85%	11.66%	0.0065%
Fortinet Inc	FTNT	13,522.50	0.05%	0.00%	19.30%	19.30%	0.0106%
Fortive Corp	FTV	26,399.53	0.11%	0.36%	14.07%	14.46%	0.0155%
General Dynamics Corp	GD	56,841.59	0.23%	1.90%	11.28%	13.28%	0.0307%
General Electric Co	GE	107,074.12	0.44%	3.90%	2.63%	6.58%	0.0287%
Gilead Sciences Inc	GILD	95,397.70	0.39%	3.10%	5.89%	9.08%	0.0352%
General Mills Inc	GIS	25,697.51	0.10%	4.61%	6.43%	11.19%	0.0117%
Corning Inc	GLW	26,025.78	0.11%	2.24%	8.98%	11.32%	0.0120%
General Motors Co	GM	44,852.14	0.18%	4.80%	10.78%	15.83%	0.0289%
Alphabet Inc	GOOG	775,629.81	3.15%	0.00%	18.22%	18.22%	0.5748%
Genuine Parts Co	GPC	13,919.50	0.06%	3.01%	5.68%	8.78%	0.0050%
Global Payments Inc	GPN	18,564.65	0.08%	0.03%	17.00%	17.04%	0.0129%
Gap Inc/The	GPS	10,260.17	0.04%	3.63%	10.22%	14.04%	0.0059%
Garmin Ltd	GRMN	11,816.80	0.05%	3.35%	5.98%	9.43%	0.0045%
Goldman Sachs Group Inc/The	GS	83,870.76	0.34%	1.49%	12.12%	13.70%	0.0467%
Goodyear Tire & Rubber Co/The	GT	4,880.15	N/A	2.62%	N/A	N/A	N/A
WW Grainger Inc	GWW	17,487.93	0.07%	1.78%	14.87%	16.78%	0.0119%
Halliburton Co	HAL	34,843.87	0.14%	1.82%	74.00%	76.49%	0.1084%
Hasbro Inc	HAS	12,479.37	0.05%	2.54%	8.13%	10.78%	0.0055%
Huntington Bancshares Inc/OH	HBAN	15,867.74	0.06%	3.47%	13.36%	17.06%	0.0110%
Hanesbrands Inc	HBI	5,897.90	0.02%	3.67%	5.04%	8.80%	0.0021%
HCA Healthcare Inc	HCA	46,321.72	0.19%	1.05%	13.58%	14.70%	0.0277%
HCP Inc	HCP	11,609.56	0.05%	5.99%	3.20%	9.28%	0.0044%
Home Depot Inc/The	HD	220,212.28	0.90%	2.12%	13.27%	15.53%	0.1391%
Hess Corp	HES	19,827.37	0.08%	1.57%	-21.61%	-20.21%	-0.0163%
HollyFrontier Corp	HFC	11,710.38	0.05%	2.01%	7.14%	9.23%	0.0044%
Hartford Financial Services Group Inc/Th	HIG	16,770.43	0.07%	2.33%	11.94%	11.94%	0.0081%
Huntington Ingalls Industries Inc	HII	9,800.78	0.04%	1.28%	27.50%	28.95%	0.0115%
Hilton Worldwide Holdings Inc	HLT	21,952.46	0.09%	0.82%	11.20%	12.07%	0.0108%
Harley-Davidson Inc	HOG	6,815.41	0.03%	3.62%	10.00%	13.80%	0.0038%
Hologic Inc	HOLX	10,895.80	0.04%	0.00%	8.74%	8.74%	0.0039%
Honeywell International Inc	HON	115,995.76	0.47%	1.95%	15.22%	17.32%	0.0817%
Helmerich & Payne Inc	HP	7,561.79	N/A	4.05%	N/A	N/A	N/A
Hewlett Packard Enterprise Co	HPE	22,692.82	0.09%	2.48%	9.30%	11.89%	0.0110%
HP Inc	HPQ	37,455.61	0.15%	2.36%	9.08%	11.55%	0.0176%
H&R Block Inc	HRB	5,279.83	0.02%	3.88%	10.00%	14.07%	0.0030%
Hormel Foods Corp	HRL	21,159.45	0.09%	1.87%	5.00%	6.92%	0.0060%
Harris Corp	HRS	18,198.24	N/A	1.66%	N/A	N/A	N/A
Henry Schein Inc	HSIC	12,853.71	0.05%	0.00%	9.96%	9.96%	0.0052%
Host Hotels & Resorts Inc	HST	14,225.37	0.06%	4.33%	2.97%	7.36%	0.0043%
Hershey Co/The	HSY	21,645.03	0.09%	2.67%	9.00%	11.79%	0.0104%
Humana Inc	HUM	43,856.98	0.18%	0.63%	14.50%	15.17%	0.0271%
International Business Machines Corp	IBM	128,563.40	0.52%	4.42%	4.25%	8.76%	0.0458%
Intercontinental Exchange Inc	ICE	42,032.90	0.17%	1.31%	8.82%	10.18%	0.0174%
IDEXX Laboratories Inc	IDXX	19,259.56	0.08%	0.00%	21.88%	21.88%	0.0171%
International Flavors & Fragrances Inc	IFF	13,963.12	0.06%	2.16%	9.20%	11.46%	0.0065%
Illumina Inc	ILMN	47,288.43	0.19%	0.00%	19.34%	19.34%	0.0372%
Incyte Corp	INCY	13,298.85	0.05%	0.00%	52.58%	52.58%	0.0284%
IHS Markit Ltd	INFO	20,433.53	0.08%	0.00%	11.70%	11.70%	0.0097%
Intel Corp	INTC	206,941.68	0.84%	2.54%	9.36%	12.01%	0.1011%
Intuit Inc	INTU	54,791.82	0.22%	0.84%	16.11%	17.02%	0.0379%
International Paper Co	IP	17,446.83	0.07%	4.54%	7.90%	12.62%	0.0090%
Interpublic Group of Cos Inc/The	IPG	8,224.52	0.03%	3.95%	5.82%	9.88%	0.0033%
IPG Photonics Corp	IPGP	7,396.39	0.03%	0.00%	12.00%	12.00%	0.0036%
IQVIA Holdings Inc	IQV	25,280.82	0.10%	0.00%	13.87%	13.87%	0.0143%
Ingersoll-Rand PLC	IR	23,829.37	0.10%	2.02%	11.44%	13.57%	0.0132%

Company	Ticker	[4] Market Capitalization	[5] Weight in Index	[6] Estimated Dividend Yield	[7] Long-Term Growth Est.	[8] DCF Result	[9] Weighted DCF Result
Iron Mountain Inc	IRM	9,039.35	0.04%	7.44%	10.10%	17.91%	0.0066%
Intuitive Surgical Inc	ISRG	60,515.99	0.25%	0.00%	14.02%	14.02%	0.0345%
Gartner Inc	IT	13,512.82	0.05%	0.00%	15.00%	15.00%	0.0082%
Illinois Tool Works Inc	ITW	43,820.57	0.18%	2.60%	9.99%	12.73%	0.0227%
Invesco Ltd	IVZ	8,192.33	0.03%	6.01%	6.05%	12.24%	0.0041%
JB Hunt Transport Services Inc	JBHT	11,950.21	0.05%	0.88%	13.46%	14.40%	0.0070%
Johnson Controls International plc	JCI	30,485.44	0.12%	3.16%	10.30%	13.62%	0.0169%
Jacobs Engineering Group Inc	JEC	10,217.10	0.04%	0.73%	17.01%	17.80%	0.0074%
Jefferies Financial Group Inc	JEF	6,889.97	0.03%	2.25%	18.00%	20.45%	0.0057%
Johnson & Johnson	JNJ	359,140.55	1.46%	2.68%	7.49%	10.27%	0.1499%
Juniper Networks Inc	JNPR	9,419.80	0.04%	2.53%	9.40%	12.05%	0.0046%
JPMorgan Chase & Co	JPM	359,446.56	1.46%	2.53%	9.10%	11.74%	0.1716%
Nordstrom Inc	JWN	10,365.09	0.04%	2.43%	8.43%	10.96%	0.0046%
Kellogg Co	K	23,556.41	0.10%	3.26%	8.33%	11.72%	0.0112%
KeyCorp	KEY	19,620.47	0.08%	3.03%	16.21%	19.49%	0.0155%
Kraft Heinz Co/The	KHC	66,127.90	0.27%	4.69%	5.27%	10.08%	0.0271%
Kimco Realty Corp	KIM	6,240.67	0.03%	7.62%	5.24%	13.06%	0.0033%
KLA-Tencor Corp	KLAC	14,429.07	0.06%	3.19%	7.37%	10.68%	0.0063%
Kimberly-Clark Corp	KMB	37,944.11	0.15%	3.66%	6.10%	9.88%	0.0152%
Kinder Morgan Inc/DE	KMI	38,641.58	0.16%	4.51%	12.00%	16.78%	0.0264%
CarMax Inc	KMX	11,849.80	0.05%	0.00%	13.12%	13.12%	0.0063%
Coca-Cola Co/The	KO	190,020.57	0.77%	3.44%	7.70%	11.28%	0.0871%
Michael Kors Holdings Ltd	KORS	9,498.35	0.04%	0.00%	3.66%	3.66%	0.0014%
Kroger Co/The	KR	21,466.51	0.09%	1.99%	6.30%	8.36%	0.0073%
Kohl's Corp	KSS	12,111.69	0.05%	3.40%	7.23%	10.75%	0.0053%
Kansas City Southern	KSU	10,478.46	0.04%	1.31%	8.70%	10.06%	0.0043%
Loews Corp	L	14,787.96	N/A	0.53%	N/A	N/A	N/A
L Brands Inc	LB	8,631.49	0.04%	7.66%	9.33%	17.35%	0.0061%
Leggett & Platt Inc	LEG	5,065.84	0.02%	3.83%	10.00%	14.02%	0.0029%
Lennar Corp	LEN	13,989.11	0.06%	0.37%	20.93%	21.34%	0.0121%
Laboratory Corp of America Holdings	LH	17,308.73	0.07%	0.00%	8.95%	8.95%	0.0063%
LKQ Corp	LKQ	9,074.87	0.04%	0.00%	13.15%	13.15%	0.0049%
L3 Technologies Inc	LLL	15,335.19	0.06%	1.66%	12.64%	14.40%	0.0090%
Eli Lilly & Co	LLY	118,654.18	0.48%	2.04%	11.86%	14.02%	0.0676%
Lockheed Martin Corp	LMT	93,299.97	0.38%	2.50%	21.41%	24.17%	0.0917%
Lincoln National Corp	LNC	13,910.89	N/A	2.09%	N/A	N/A	N/A
Alliant Energy Corp	LNT	10,104.33	0.04%	3.16%	5.86%	9.11%	0.0037%
Lowe's Cos Inc	LOW	85,159.88	0.35%	1.73%	15.22%	17.08%	0.0592%
Lam Research Corp	LRCX	21,869.91	0.09%	3.10%	13.55%	16.86%	0.0150%
Southwest Airlines Co	LUV	32,879.84	0.13%	1.02%	7.35%	8.41%	0.0112%
LyondellBasell Industries NV	LYB	37,959.09	0.15%	4.10%	8.00%	12.27%	0.0189%
Macy's Inc	M	10,246.75	0.04%	4.66%	0.50%	5.17%	0.0022%
Mastercard Inc	MA	212,072.76	0.86%	0.47%	21.33%	21.85%	0.1885%
Mid-America Apartment Communities Inc	MAA	10,767.56	N/A	3.93%	N/A	N/A	N/A
Macerich Co/The	MAC	7,010.23	0.03%	6.03%	6.72%	12.96%	0.0037%
Marriott International Inc/MD	MAR	40,767.64	0.17%	1.32%	14.46%	15.88%	0.0263%
Masco Corp	MAS	9,928.42	0.04%	1.33%	15.67%	17.11%	0.0069%
Mattel Inc	MAT	4,931.71	0.02%	0.00%	10.00%	10.00%	0.0020%
McDonald's Corp	MCD	127,091.62	0.52%	2.52%	8.69%	11.32%	0.0585%
Microchip Technology Inc	MCHP	16,079.18	0.07%	2.14%	14.05%	16.34%	0.0107%
McKesson Corp	MCK	26,128.05	0.11%	1.15%	5.80%	6.98%	0.0074%
Moody's Corp	MCO	29,922.97	0.12%	1.15%	8.00%	9.19%	0.0112%
Mondelez International Inc	MDLZ	60,304.99	0.25%	2.35%	9.91%	12.37%	0.0303%
Medtronic PLC	MDT	127,879.90	0.52%	2.09%	7.84%	10.02%	0.0521%
MetLife Inc	MET	43,603.75	0.18%	3.79%	13.58%	17.63%	0.0313%
MGM Resorts International	MGM	14,227.51	0.06%	1.81%	3.47%	5.32%	0.0031%
Mohawk Industries Inc	MHK	11,647.00	0.05%	0.00%	7.82%	7.82%	0.0037%
McCormick & Co Inc/MD	MKC	17,487.18	0.07%	1.56%	8.90%	10.53%	0.0075%
Martin Marietta Materials Inc	MLM	10,685.57	0.04%	1.06%	13.98%	15.11%	0.0066%
Marsh & McLennan Cos Inc	MMC	40,186.27	0.16%	2.16%	14.81%	17.13%	0.0280%
3M Co	MMM	116,284.39	0.47%	2.74%	8.70%	11.55%	0.0546%
Monster Beverage Corp	MNST	29,443.96	0.12%	0.00%	17.00%	17.00%	0.0204%
Altria Group Inc	MO	113,223.61	0.46%	4.93%	4.87%	9.92%	0.0457%
Mosaic Co/The	MOS	12,677.71	0.05%	0.30%	7.00%	7.31%	0.0038%
Marathon Petroleum Corp	MPC	55,335.65	N/A	2.30%	N/A	N/A	N/A
Merck & Co Inc	MRK	185,661.46	0.75%	2.78%	7.64%	10.52%	0.0794%
Marathon Oil Corp	MRO	17,527.11	0.07%	0.97%	5.00%	6.00%	0.0043%
Morgan Stanley	MS	75,776.22	0.31%	2.55%	12.85%	15.56%	0.0479%
MSCI Inc	MSCI	13,683.82	0.06%	1.23%	13.45%	14.77%	0.0082%
Microsoft Corp	MSFT	840,206.57	3.42%	1.65%	11.14%	12.88%	0.4400%
Motorola Solutions Inc	MSI	19,510.96	0.08%	1.75%	7.45%	9.27%	0.0074%
M&T Bank Corp	MTB	22,793.73	0.09%	2.24%	12.70%	15.08%	0.0140%
Mettler-Toledo International Inc	MTD	14,073.10	0.06%	0.00%	11.95%	11.95%	0.0068%
Micron Technology Inc	MU	49,257.16	0.20%	0.34%	-2.10%	-1.77%	-0.0035%
Mylan NV	MYL	16,554.86	0.07%	0.00%	6.07%	6.07%	0.0041%
Noble Energy Inc	NBL	15,271.38	0.06%	1.35%	40.40%	42.03%	0.0261%
Norwegian Cruise Line Holdings Ltd	NCLH	11,228.44	0.05%	0.15%	20.32%	20.48%	0.0094%
Nasdaq Inc	NDAQ	13,163.97	0.05%	2.13%	9.57%	11.80%	0.0063%
NextEra Energy Inc	NEE	79,870.97	0.32%	2.62%	8.38%	11.11%	0.0361%
Newmont Mining Corp	NEM	17,090.10	0.07%	1.75%	-3.00%	-1.28%	-0.0009%
Netflix Inc	NFLX	147,863.95	0.60%	0.00%	41.07%	41.07%	0.2469%
Newfield Exploration Co	NFX	5,036.41	0.02%	0.00%	19.17%	19.17%	0.0039%
NiSource Inc	NI	8,825.42	0.04%	3.18%	5.63%	8.90%	0.0032%
NIKE Inc	NKE	120,553.31	0.49%	1.12%	18.11%	19.33%	0.0948%
Nektar Therapeutics	NKTR	8,435.45	N/A	0.00%	N/A	N/A	N/A
Nielsen Holdings PLC	NLSN	9,288.68	0.04%	5.33%	12.00%	17.65%	0.0067%
Northrop Grumman Corp	NOC	52,649.70	0.21%	1.56%	15.18%	16.86%	0.0361%
National Oilwell Varco Inc	NOV	16,035.58	0.07%	0.48%	41.00%	41.58%	0.0271%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
NRG Energy Inc	NRG	11,035.72	0.04%	0.33%	42.01%	42.41%	0.0190%
Norfolk Southern Corp	NSC	47,658.27	0.19%	1.73%	10.20%	12.02%	0.0233%
NetApp Inc	NTAP	19,942.91	0.08%	2.08%	15.95%	18.19%	0.0148%
Northern Trust Corp	NTRS	22,116.06	0.09%	1.95%	16.31%	18.42%	0.0166%
Nucor Corp	NUE	19,236.85	0.08%	2.50%	5.65%	8.22%	0.0064%
NVIDIA Corp	NVDA	149,896.32	0.61%	0.25%	11.23%	11.49%	0.0700%
Newell Brands Inc	NWL	8,278.20	0.03%	5.25%	2.76%	8.08%	0.0027%
News Corp	NWS	7,573.41	0.03%	1.59%	26.30%	28.10%	0.0087%
Realty Income Corp	O	16,198.92	0.07%	4.71%	4.36%	9.17%	0.0060%
ONEOK Inc	OKE	26,739.44	0.11%	4.99%	26.88%	32.55%	0.0354%
Omnicom Group Inc	OMC	15,391.97	0.06%	3.55%	5.53%	9.18%	0.0057%
Oracle Corp	ORCL	179,505.68	0.73%	1.56%	7.90%	9.52%	0.0695%
O'Reilly Automotive Inc	ORLY	27,354.36	0.11%	0.00%	15.47%	15.47%	0.0172%
Occidental Petroleum Corp	OXY	58,852.96	0.24%	4.03%	14.30%	18.62%	0.0446%
Paychex Inc	PAYX	24,510.93	0.10%	3.34%	9.13%	12.62%	0.0126%
People's United Financial Inc	PBCT	6,056.34	0.02%	4.34%	2.00%	6.38%	0.0016%
PACCAR Inc	PCAR	21,779.25	0.09%	3.72%	6.03%	9.86%	0.0087%
PG&E Corp	PCG	24,445.74	0.10%	0.30%	5.05%	5.35%	0.0053%
Public Service Enterprise Group Inc	PEG	27,125.76	0.11%	3.35%	7.06%	10.53%	0.0116%
PepsiCo Inc	PEP	148,609.88	0.60%	3.42%	6.78%	10.32%	0.0624%
Pfizer Inc	PFE	256,643.15	1.04%	3.11%	6.76%	9.97%	0.1041%
Principal Financial Group Inc	PFJ	15,701.05	0.06%	3.81%	7.93%	11.89%	0.0076%
Procter & Gamble Co/The	PG	196,792.93	0.80%	3.71%	7.07%	10.92%	0.0874%
Progressive Corp/The	PGR	38,986.07	0.16%	1.68%	9.20%	10.95%	0.0174%
Parker-Hannifin Corp	PH	22,153.20	0.09%	1.79%	9.57%	11.44%	0.0103%
PulteGroup Inc	PHM	6,501.18	0.03%	1.60%	19.83%	21.59%	0.0057%
Packaging Corp of America	PKG	8,320.54	0.03%	3.07%	13.23%	13.23%	0.0045%
PerkinElmer Inc	PKI	9,629.43	0.04%	0.33%	16.35%	16.70%	0.0065%
Prologis Inc	PLD	39,369.84	0.16%	3.07%	6.81%	9.98%	0.0160%
Philip Morris International Inc	PM	127,951.46	0.52%	5.44%	9.77%	15.48%	0.0805%
PNC Financial Services Group Inc/The	PNC	57,694.21	0.23%	2.75%	9.10%	11.98%	0.0281%
Pentair PLC	PNR	6,840.75	0.03%	2.17%	11.01%	13.29%	0.0037%
Pinnacle West Capital Corp	PNW	9,125.89	0.04%	3.46%	4.56%	8.10%	0.0030%
PPG Industries Inc	PPG	23,013.50	0.09%	1.97%	8.06%	10.10%	0.0095%
PPL Corp	PPL	21,162.01	0.09%	5.42%	8.10%	13.74%	0.0118%
Perrigo Co PLC	PRGO	9,600.17	0.04%	1.03%	4.00%	5.05%	0.0020%
Prudential Financial Inc	PRU	40,765.92	0.17%	3.64%	6.00%	9.75%	0.0162%
Public Storage	PSA	34,299.23	0.14%	4.10%	4.56%	8.76%	0.0122%
Phillips 66	PSX	50,818.16	0.21%	2.84%	5.50%	8.42%	0.0174%
PVH Corp	PVH	9,669.98	0.04%	0.12%	10.98%	11.11%	0.0044%
Quanta Services Inc	PWR	4,678.86	0.02%	0.00%	16.50%	16.50%	0.0031%
Praxair Inc	PX	44,930.84	0.18%	2.12%	13.90%	16.17%	0.0295%
Pioneer Natural Resources Co	PXD	29,571.43	0.12%	0.15%	27.13%	27.30%	0.0328%
PayPal Holdings Inc	PYPL	93,545.64	0.38%	0.00%	19.34%	19.34%	0.0736%
QUALCOMM Inc	QCOM	94,449.15	0.38%	3.70%	12.32%	16.24%	0.0624%
Qorvo Inc	QRVO	9,131.75	0.04%	0.00%	12.62%	12.62%	0.0047%
Royal Caribbean Cruises Ltd	RCL	24,877.88	0.10%	2.09%	15.60%	17.85%	0.0181%
Everest Re Group Ltd	RE	8,701.80	0.04%	2.46%	10.00%	12.59%	0.0045%
Regency Centers Corp	REG	10,471.20	0.04%	3.60%	5.65%	9.36%	0.0040%
Regeneron Pharmaceuticals Inc	REGN	41,510.93	0.17%	0.00%	14.03%	14.03%	0.0237%
Regions Financial Corp	RF	19,061.71	0.08%	2.68%	12.14%	14.98%	0.0116%
Robert Half International Inc	RHI	7,821.80	0.03%	1.75%	17.10%	19.00%	0.0060%
Red Hat Inc	RHT	21,558.54	0.09%	0.00%	18.93%	18.93%	0.0166%
Raymond James Financial Inc	RJF	12,817.76	0.05%	1.21%	17.00%	18.32%	0.0095%
Ralph Lauren Corp	RL	9,850.82	0.04%	2.02%	6.87%	8.96%	0.0036%
ResMed Inc	RMD	14,732.93	0.06%	1.48%	12.15%	13.72%	0.0082%
Rockwell Automation Inc	ROK	21,281.65	0.09%	1.98%	12.34%	14.44%	0.0125%
Rollins Inc	ROL	12,250.51	0.05%	1.18%	10.00%	11.23%	0.0056%
Roper Technologies Inc	ROP	28,850.93	0.12%	0.58%	13.40%	14.01%	0.0164%
Ross Stores Inc	ROST	35,794.57	0.15%	0.92%	10.43%	11.39%	0.0166%
Republic Services Inc	RSG	22,980.05	0.09%	2.00%	11.92%	14.04%	0.0131%
Raytheon Co	RTN	54,681.49	0.22%	1.80%	14.87%	16.80%	0.0374%
SBA Communications Corp	SBAC	16,952.17	0.07%	0.00%	27.15%	27.15%	0.0187%
Starbucks Corp	SBUX	76,156.70	0.31%	2.28%	14.16%	16.60%	0.0514%
SCANA Corp	SCG	5,602.33	0.02%	2.13%	-2.79%	-0.69%	-0.0002%
Charles Schwab Corp/The	SCHW	66,215.59	0.27%	0.85%	21.69%	22.63%	0.0609%
Sealed Air Corp	SEE	5,523.49	0.02%	1.88%	3.89%	5.80%	0.0013%
Sherwin-Williams Co/The	SHW	38,003.27	0.15%	0.84%	11.57%	12.46%	0.0193%
SVB Financial Group	SIVB	15,432.52	0.06%	0.00%	8.50%	8.50%	0.0053%
JM Smucker Co/The	SJM	11,733.17	0.05%	3.19%	4.13%	7.38%	0.0035%
Schlumberger Ltd	SLB	82,119.77	0.33%	3.37%	20.00%	23.71%	0.0792%
SL Green Realty Corp	SLG	7,930.21	0.03%	3.62%	5.28%	8.99%	0.0029%
Snap-on Inc	SNA	9,511.10	0.04%	2.05%	7.95%	10.08%	0.0039%
Synopsys Inc	SNPS	13,093.58	N/A	0.00%	N/A	N/A	N/A
Southern Co/The	SO	44,196.05	0.18%	5.48%	4.00%	9.59%	0.0172%
Simon Property Group Inc	SPG	52,931.88	0.22%	4.63%	6.18%	10.96%	0.0236%
S&P Global Inc	SPGI	46,897.21	0.19%	1.07%	11.60%	12.73%	0.0243%
Stericycle Inc	SRCL	4,513.40	0.02%	0.15%	10.00%	10.16%	0.0019%
Sempra Energy	SRE	31,455.93	0.13%	3.11%	20.29%	23.72%	0.0303%
SunTrust Banks Inc	STI	28,708.17	0.12%	2.90%	12.64%	15.73%	0.0184%
State Street Corp	STT	30,907.18	0.13%	2.19%	11.92%	14.23%	0.0179%
Seagate Technology PLC	STX	12,377.29	0.05%	5.90%	-2.44%	3.39%	0.0017%
Constellation Brands Inc	STZ	42,662.48	0.17%	1.31%	11.30%	12.68%	0.0220%
Stanley Black & Decker Inc	SWK	19,856.08	0.08%	1.98%	10.65%	12.74%	0.0103%
Skyworks Solutions Inc	SWKS	15,608.98	0.06%	1.55%	12.26%	13.90%	0.0088%
Synchrony Financial	SYF	22,102.07	0.09%	2.40%	7.35%	9.84%	0.0088%
Stryker Corp	SYK	63,967.33	0.26%	1.08%	8.44%	9.57%	0.0249%
Symantec Corp	SYMC	12,175.94	0.05%	1.56%	8.34%	9.97%	0.0049%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Sysco Corp	SYU	35,833.84	0.15%	2.19%	11.37%	13.68%	0.0199%
AT&T Inc	T	234,199.50	0.95%	6.22%	4.85%	11.22%	0.1069%
Molson Coors Brewing Co	T	12,893.01	0.05%	2.82%	2.62%	5.48%	0.0029%
TransDigm Group Inc	TDG	17,019.59	0.07%	0.00%	14.28%	14.28%	0.0099%
TE Connectivity Ltd	TEL	27,496.88	0.11%	2.11%	9.25%	11.46%	0.0128%
Target Corp	TGT	44,534.56	0.18%	3.05%	7.15%	10.32%	0.0187%
Tiffany & Co	TIF	13,812.86	0.06%	1.90%	12.54%	14.56%	0.0082%
TJX Cos Inc/The	TJX	67,717.58	0.28%	1.44%	11.10%	12.62%	0.0347%
Torchmark Corp	TMK	9,430.67	0.04%	0.76%	13.17%	13.98%	0.0054%
Thermo Fisher Scientific Inc	TMO	93,211.08	0.38%	0.28%	11.00%	11.30%	0.0428%
Tapestry Inc	TPR	12,691.57	0.05%	3.13%	10.96%	14.26%	0.0074%
TripAdvisor Inc	TRIP	6,237.77	0.03%	0.00%	18.29%	18.29%	0.0046%
T Rowe Price Group Inc	TROW	24,370.14	0.10%	2.78%	12.49%	15.45%	0.0153%
Travelers Cos Inc/The	TRV	33,099.03	0.13%	2.47%	17.75%	20.44%	0.0275%
Tractor Supply Co	TSCO	10,556.81	0.04%	1.39%	13.54%	15.03%	0.0065%
Tyson Foods Inc	TSN	23,985.19	0.10%	1.93%	5.90%	7.88%	0.0077%
Total System Services Inc	TSS	17,136.35	0.07%	0.55%	14.62%	15.21%	0.0106%
Take-Two Interactive Software Inc	TTWO	14,689.53	0.06%	0.00%	10.00%	10.00%	0.0060%
Twitter Inc	TWTR	21,212.11	0.09%	0.00%	45.77%	45.77%	0.0395%
Texas Instruments Inc	TXN	98,279.20	0.40%	2.52%	11.05%	13.71%	0.0548%
Textron Inc	TXT	16,164.09	0.07%	0.13%	13.71%	13.85%	0.0091%
Under Armour Inc	UA	7,968.71	0.03%	0.00%	26.97%	26.97%	0.0087%
United Continental Holdings Inc	UAL	21,857.39	0.09%	0.00%	14.24%	14.24%	0.0127%
UDR Inc	UDR	10,195.89	0.04%	3.38%	5.38%	8.85%	0.0037%
Universal Health Services Inc	UHS	11,438.57	0.05%	0.29%	7.93%	8.23%	0.0038%
Ulta Beauty Inc	ULTA	16,475.11	0.07%	0.00%	20.50%	20.50%	0.0137%
UnitedHealth Group Inc	UNH	249,867.71	1.02%	1.33%	13.33%	14.75%	0.1498%
Unum Group	UNM	8,162.08	0.03%	2.59%	9.00%	11.70%	0.0039%
Union Pacific Corp	UNP	112,883.83	0.46%	1.92%	14.20%	16.26%	0.0746%
United Parcel Service Inc	UPS	99,490.26	0.40%	3.12%	8.97%	12.23%	0.0495%
United Rentals Inc	URI	11,409.33	0.05%	0.00%	23.52%	23.52%	0.0109%
US Bancorp	USB	82,739.20	0.34%	2.64%	7.45%	10.19%	0.0343%
United Technologies Corp	UTX	103,716.09	0.42%	2.18%	10.59%	12.89%	0.0544%
Visa Inc	V	284,917.26	1.16%	0.60%	18.18%	18.83%	0.2181%
Varian Medical Systems Inc	VAR	9,639.03	0.04%	0.00%	12.05%	12.05%	0.0047%
VF Corp	VFC	34,662.59	0.14%	2.04%	9.43%	11.57%	0.0163%
Viacom Inc	VIAB	12,795.18	0.05%	2.57%	6.68%	9.34%	0.0049%
Valero Energy Corp	VLO	46,265.84	0.19%	2.96%	17.15%	20.36%	0.0383%
Vulcan Materials Co	VMC	13,357.76	0.05%	1.11%	18.69%	19.91%	0.0108%
Vornado Realty Trust	VNO	12,833.45	0.05%	3.74%	3.88%	7.68%	0.0040%
Verisk Analytics Inc	VRSK	18,905.23	0.08%	0.00%	13.03%	13.03%	0.0100%
VeriSign Inc	VRSN	17,553.84	0.07%	0.00%	10.40%	10.40%	0.0074%
Vertex Pharmaceuticals Inc	VRTX	46,338.13	0.19%	0.00%	64.33%	64.33%	0.1212%
Ventas Inc	VTR	19,001.76	0.08%	5.95%	2.95%	8.99%	0.0069%
Verizon Communications Inc	VZ	222,008.90	0.90%	4.45%	5.54%	10.11%	0.0912%
Waters Corp	WAT	14,010.78	0.06%	0.00%	9.10%	9.10%	0.0052%
Walgreens Boots Alliance Inc	WBA	69,763.59	0.28%	2.36%	10.17%	12.65%	0.0359%
WellCare Health Plans Inc	WCG	15,380.78	0.06%	0.00%	16.54%	16.54%	0.0103%
Western Digital Corp	WDC	15,790.06	0.06%	3.70%	3.52%	7.28%	0.0047%
WEC Energy Group Inc	WEC	21,295.35	0.09%	3.27%	3.23%	6.55%	0.0057%
Welltower Inc	WELL	22,916.91	0.09%	5.65%	7.20%	13.05%	0.0122%
Wells Fargo & Co	WFC	245,521.48	1.00%	3.15%	13.41%	16.77%	0.1674%
Whirlpool Corp	WHR	6,704.89	0.03%	4.44%	9.46%	14.12%	0.0038%
Willis Towers Watson PLC	WLTW	17,954.66	0.07%	1.72%	15.35%	17.20%	0.0126%
Waste Management Inc	WM	37,962.89	0.15%	2.09%	11.61%	13.82%	0.0213%
Williams Cos Inc/The	WMB	32,294.76	0.13%	5.10%	-0.80%	4.28%	0.0056%
Walmart Inc	WMT	277,673.33	1.13%	2.22%	6.29%	8.58%	0.0969%
WestRock Co	WRK	10,870.34	0.04%	4.04%	6.50%	10.67%	0.0047%
Western Union Co/The	WU	8,010.26	0.03%	4.20%	4.20%	8.49%	0.0028%
Weyerhaeuser Co	WY	21,275.64	0.09%	4.72%	7.00%	11.88%	0.0103%
Wynn Resorts Ltd	WYNN	12,665.71	0.05%	2.42%	18.30%	20.94%	0.0108%
Cimarex Energy Co	XEC	8,870.98	0.04%	0.64%	72.92%	73.79%	0.0266%
Xcel Energy Inc	XEL	24,258.00	0.10%	3.19%	5.80%	9.09%	0.0090%
Xilinx Inc	XLNX	19,251.78	0.08%	1.89%	7.57%	9.53%	0.0075%
Exxon Mobil Corp	XOM	344,547.49	1.40%	3.98%	12.33%	16.55%	0.2318%
DENTSPLY SIRONA Inc	XRAY	7,975.51	0.03%	0.97%	6.93%	7.94%	0.0026%
Xerox Corp	XRX	6,433.67	0.03%	3.98%	2.05%	6.07%	0.0016%
Xylem Inc/NY	XYL	12,531.93	0.05%	1.20%	8.60%	9.85%	0.0050%
Yum! Brands Inc	YUM	27,943.17	0.11%	1.63%	12.83%	14.57%	0.0166%
Zimmer Biomet Holdings Inc	ZBH	25,089.79	0.10%	0.79%	3.64%	4.44%	0.0045%
Zions Bancorp NA	ZION	9,374.10	0.04%	2.11%	10.30%	12.52%	0.0048%
Zoetis Inc	ZTS	42,834.14	0.17%	0.56%	15.85%	16.46%	0.0287%
		24,591,339.31					15.29%

[1] Equals sum of Col. [9]

[2] Source: Bloomberg Professional

[3] Equals [1] - [2]

[4] Source: Bloomberg Professional

[5] Equals weight in S&P 500 based on market capitalization

[6] Source: Bloomberg Professional

[7] Source: Bloomberg Professional

[8] Equals (([6] x (1 + (0.5 x [7]))) + [7])

[9] Equals Col. [5] x Col. [8]

Ex-Ante Market Risk Premium
Market DCF Method Based - Value Line

[1]	[2]	[3]
S&P 500	Current 30-Year	
Est. Required	Treasury (30-day	Implied Market
Market Return	average)	Risk Premium
16.71%	3.19%	13.52%

Company	Ticker	[4] Market Capitalization	[5] Weight in Index	[6] Estimated Dividend Yield	[7] Long-Term Growth Est.	[8] DCF Result	[9] Weighted DCF Result
Agilent Technologies Inc	A	22,540.54	0.09%	0.85%	12.00%	12.90%	0.0119%
American Airlines Group Inc	AAL	17,462.23	0.07%	1.06%	1.50%	2.57%	0.0018%
Advance Auto Parts Inc	AAP	12,275.96	0.05%	0.15%	13.00%	13.16%	0.0066%
Apple Inc	AAPL	1,104,137.00	4.52%	1.37%	16.50%	17.98%	0.8120%
AbbVie Inc	ABBV	142,085.80	0.58%	4.09%	14.50%	18.89%	0.1097%
AmerisourceBergen Corp	ABC	19,746.21	0.08%	1.67%	8.50%	10.24%	0.0083%
ABIOMED Inc	ABMD	18,703.87	0.08%	0.00%	27.50%	27.50%	0.0210%
Abbott Laboratories	ABT	125,995.20	0.52%	1.56%	9.50%	11.13%	0.0574%
Accenture PLC	ACN	110,257.30	0.45%	1.70%	10.00%	11.79%	0.0531%
Adobe Inc	ADBE	128,956.00	0.53%	0.00%	27.00%	27.00%	0.1424%
Analog Devices Inc	ADI	33,446.59	0.14%	2.13%	13.00%	15.27%	0.0209%
Archer-Daniels-Midland Co	ADM	28,207.14	0.12%	2.70%	7.50%	10.30%	0.0119%
Automatic Data Processing Inc	ADP	66,352.17	0.27%	1.88%	12.50%	14.50%	0.0393%
Alliance Data Systems Corp	ADS	12,956.90	0.05%	0.97%	15.00%	16.04%	0.0085%
Autodesk Inc	ADSK	33,251.65	N/A	0.00%	N/A	N/A	N/A
Ameren Corp	AEE	15,591.60	0.06%	2.97%	7.50%	10.58%	0.0067%
American Electric Power Co Inc	AEP	34,780.93	0.14%	3.69%	4.50%	8.27%	0.0118%
AES Corp/VA	AES	9,598.79	N/A	3.58%	N/A	N/A	N/A
Aetna Inc	AET	66,887.81	0.27%	0.98%	10.00%	11.03%	0.0302%
Aflac Inc	AFL	35,779.48	0.15%	2.36%	8.50%	10.96%	0.0160%
Allergan PLC	AGN	65,098.09	0.27%	1.50%	4.50%	6.03%	0.0161%
American International Group Inc	AIG	48,036.44	0.20%	2.38%	52.00%	55.00%	0.1080%
Apartment Investment & Management Co	AIV	7,148.50	0.03%	3.51%	5.50%	9.11%	0.0027%
Assurant Inc	AIZ	6,795.86	0.03%	2.08%	7.50%	9.66%	0.0027%
Arthur J Gallagher & Co	AJG	13,825.56	0.06%	2.17%	17.00%	19.35%	0.0109%
Akamai Technologies Inc	AKAM	11,228.71	0.05%	0.00%	17.00%	17.00%	0.0078%
Albemarle Corp	ALB	11,301.72	0.05%	1.29%	10.00%	11.35%	0.0052%
Align Technology Inc	ALGN	28,743.22	0.12%	0.00%	30.50%	30.50%	0.0359%
Alaska Air Group Inc	ALK	8,232.49	0.03%	1.92%	2.00%	3.94%	0.0013%
Allstate Corp/The	ALL	34,505.68	0.14%	1.85%	12.00%	13.96%	0.0197%
Allegion PLC	ALLE	8,567.15	0.04%	0.93%	10.00%	10.98%	0.0038%
Alexion Pharmaceuticals Inc	ALXN	29,768.30	0.12%	0.00%	26.50%	26.50%	0.0323%
Applied Materials Inc	AMAT	37,245.87	0.15%	2.11%	19.00%	21.31%	0.0325%
Advanced Micro Devices Inc	AMD	27,085.50	N/A	0.00%	N/A	N/A	N/A
AMETEK Inc	AME	18,377.84	0.08%	0.71%	10.50%	11.25%	0.0085%
Affiliated Managers Group Inc	AMG	8,026.20	0.03%	1.09%	6.50%	7.63%	0.0025%
Amgen Inc	AMGN	132,052.00	0.54%	2.60%	8.50%	11.21%	0.0605%
Ameriprise Financial Inc	AMP	21,613.17	0.09%	2.37%	16.00%	18.56%	0.0164%
American Tower Corp	AMT	63,724.91	0.26%	2.33%	11.50%	13.96%	0.0364%
Amazon.com Inc	AMZN	929,887.50	3.80%	0.00%	51.00%	51.00%	1.9394%
Arista Networks Inc	ANET	19,276.63	0.08%	0.00%	19.00%	19.00%	0.0150%
ANSYS Inc	ANSS	14,775.24	0.06%	0.00%	12.00%	12.00%	0.0073%
Anthem Inc	ANTM	71,533.97	0.29%	1.09%	17.50%	18.69%	0.0547%
Aon PLC	AON	38,253.06	0.16%	1.02%	9.50%	10.57%	0.0165%
AO Smith Corp	AOS	8,605.68	0.04%	1.38%	12.50%	13.97%	0.0049%
Apache Corp	APA	18,541.61	N/A	2.06%	N/A	N/A	N/A
Anadarko Petroleum Corp	APC	34,565.26	N/A	1.45%	N/A	N/A	N/A
Air Products & Chemicals Inc	APD	37,210.46	0.15%	2.59%	8.00%	10.69%	0.0163%
Amphenol Corp	APH	27,512.34	0.11%	1.00%	10.00%	11.05%	0.0124%
Aptiv PLC	APTIV	21,937.11	0.09%	1.06%	10.00%	11.11%	0.0100%
Alexandria Real Estate Equities Inc	ARE	12,239.50	N/A	3.03%	N/A	N/A	N/A
Arconic Inc	ARNC	10,726.43	N/A	1.08%	N/A	N/A	N/A
Activision Blizzard Inc	ATVI	61,247.66	0.25%	0.47%	13.50%	14.00%	0.0351%
AvalonBay Communities Inc	AVB	24,473.02	0.10%	3.45%	6.50%	10.06%	0.0101%
Broadcom Inc	AVGO	102,494.20	0.42%	2.82%	44.50%	47.95%	0.2010%
Avery Dennison Corp	AVY	9,378.20	0.04%	2.02%	11.50%	13.64%	0.0052%
American Water Works Co Inc	AWK	15,823.56	0.06%	2.17%	10.00%	12.28%	0.0079%
American Express Co	AXP	92,764.15	0.38%	1.45%	9.00%	10.52%	0.0399%
AutoZone Inc	AZO	20,367.10	0.08%	0.00%	12.50%	12.50%	0.0104%
Boeing Co/The	BA	224,589.00	0.92%	1.98%	18.00%	20.16%	0.1851%
Bank of America Corp	BAC	304,687.00	1.25%	1.97%	13.00%	15.10%	0.1881%
Baxter International Inc	BAX	39,724.49	0.16%	1.02%	13.50%	14.59%	0.0237%
BB&T Corp	BBT	38,251.42	0.16%	3.32%	9.00%	12.47%	0.0195%
Best Buy Co Inc	BBY	20,189.40	0.08%	2.46%	12.00%	14.61%	0.0121%
Becton Dickinson and Co	BDX	67,795.37	0.28%	1.19%	10.00%	11.25%	0.0312%
Franklin Resources Inc	BEN	16,201.22	0.07%	3.30%	7.50%	10.92%	0.0072%
Brown-Forman Corp	BF/B	23,958.66	0.10%	1.41%	16.00%	17.52%	0.0172%
Brighthouse Financial Inc	BHF	N/A	N/A	0.00%	N/A	N/A	N/A
Baker Hughes a GE Co	BHGE	13,328.20	N/A	2.23%	N/A	N/A	N/A
Biogen Inc	BIIB	69,114.74	0.28%	0.00%	6.50%	6.50%	0.0184%
Bank of New York Mellon Corp/The	BK	52,677.10	0.22%	2.13%	9.00%	11.23%	0.0242%
Booking Holdings Inc	BKNG	92,346.91	0.38%	0.00%	13.50%	13.50%	0.0510%
BlackRock Inc	BLK	75,775.34	0.31%	2.64%	11.50%	14.29%	0.0443%
Ball Corp	BLL	15,878.25	0.06%	0.87%	22.00%	22.97%	0.0149%
Bristol-Myers Squibb Co	BMY	101,763.90	0.42%	2.57%	13.50%	16.24%	0.0676%
Broadridge Financial Solutions Inc	BR	14,963.96	0.06%	1.52%	14.00%	15.63%	0.0096%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Berkshire Hathaway Inc	BRK/B	-	N/A	0.00%	N/A	N/A	N/A
Boston Scientific Corp	BSX	52,489.78	0.21%	0.00%	17.50%	17.50%	0.0376%
BorgWarner Inc	BWA	8,972.93	0.04%	1.58%	9.00%	10.65%	0.0039%
Boston Properties Inc	BXP	18,389.37	0.08%	3.19%	3.50%	6.75%	0.0051%
Citigroup Inc	C	182,755.80	0.75%	2.48%	8.50%	11.09%	0.0829%
CA Inc	CA	18,207.04	0.07%	2.36%	10.50%	12.98%	0.0097%
Conagra Brands Inc	CAG	13,138.96	0.05%	2.53%	5.00%	7.59%	0.0041%
Cardinal Health Inc	CAH	16,666.49	0.07%	3.56%	11.00%	14.76%	0.0101%
Caterpillar Inc	CAT	93,160.45	0.38%	2.20%	19.00%	21.41%	0.0816%
Chubb Ltd	CB	62,327.11	0.25%	2.17%	9.50%	11.77%	0.0300%
Cboe Global Markets Inc	CBOE	10,698.37	0.04%	1.30%	17.00%	18.41%	0.0081%
CBRE Group Inc	CBRE	14,702.84	0.06%	0.00%	11.50%	11.50%	0.0069%
CBS Corp	CBS	21,119.54	0.09%	1.29%	10.50%	11.86%	0.0102%
Crown Castle International Corp	CCI	44,952.80	0.18%	4.25%	12.00%	16.51%	0.0303%
Carnival Corp	CCL	43,861.59	0.18%	3.24%	12.50%	15.94%	0.0286%
Cadence Design Systems Inc	CDNS	12,279.52	0.05%	0.00%	11.50%	11.50%	0.0058%
Celgene Corp	CELG	62,250.36	0.25%	0.00%	14.50%	14.50%	0.0369%
Cerner Corp	CERN	21,224.76	0.09%	0.00%	9.00%	9.00%	0.0078%
CF Industries Holdings Inc	CF	13,088.10	0.05%	2.23%	47.00%	49.75%	0.0266%
Citizens Financial Group Inc	CFG	18,926.55	0.08%	3.02%	12.50%	15.71%	0.0122%
Church & Dwight Co Inc	CHD	14,285.77	0.06%	1.49%	10.00%	11.56%	0.0068%
CH Robinson Worldwide Inc	CHRW	13,533.09	0.06%	1.89%	10.50%	12.49%	0.0069%
Charter Communications Inc	CHTR	75,281.60	0.31%	0.00%	19.50%	19.50%	0.0600%
Cigna Corp	CI	51,744.05	0.21%	0.02%	13.00%	13.02%	0.0276%
Cincinnati Financial Corp	CINF	12,438.90	0.05%	2.77%	7.00%	9.87%	0.0050%
Colgate-Palmolive Co	CL	56,333.61	0.23%	2.59%	10.50%	13.23%	0.0305%
Clorox Co/The	CLX	18,759.75	0.08%	2.62%	7.50%	10.22%	0.0078%
Comerica Inc	CMA	15,846.78	0.06%	2.59%	18.00%	20.82%	0.0135%
Comcast Corp	CMCSA	161,329.90	0.66%	2.16%	12.50%	14.80%	0.0976%
CME Group Inc	CME	61,286.76	0.25%	1.55%	4.50%	6.08%	0.0153%
Chipotle Mexican Grill Inc	CMG	12,453.38	0.05%	0.00%	18.50%	18.50%	0.0094%
Cummins Inc	CMI	25,359.09	0.10%	2.99%	9.00%	12.12%	0.0126%
CMS Energy Corp	CMS	13,851.31	0.06%	3.09%	7.00%	10.20%	0.0058%
Centene Corp	CNC	29,340.06	0.12%	0.00%	17.00%	17.00%	0.0204%
CenterPoint Energy Inc	CNP	11,772.60	0.05%	4.18%	8.50%	12.86%	0.0062%
Capital One Financial Corp	COF	46,230.21	0.19%	1.66%	9.00%	10.73%	0.0203%
Cabot Oil & Gas Corp	COG	10,495.58	N/A	1.01%	N/A	N/A	N/A
Rockwell Collins Inc	COL	23,156.44	0.09%	0.94%	12.50%	13.50%	0.0128%
Cooper Cos Inc/The	COO	13,150.45	0.05%	0.02%	16.50%	16.52%	0.0089%
ConocoPhillips	COP	90,968.80	N/A	1.46%	N/A	N/A	N/A
Costco Wholesale Corp	COST	101,615.30	0.42%	0.98%	9.00%	10.02%	0.0417%
Coty Inc	COTY	8,593.23	0.04%	4.37%	7.00%	11.52%	0.0040%
Campbell Soup Co	CPB	11,194.19	0.05%	3.76%	3.50%	7.33%	0.0034%
Copart Inc	CPRT	12,016.87	0.05%	0.00%	15.50%	15.50%	0.0076%
salesforce.com Inc	CRM	117,212.80	0.48%	0.00%	65.00%	65.00%	0.3116%
Cisco Systems Inc	CSCO	229,030.90	0.94%	2.73%	7.50%	10.33%	0.0968%
CSX Corp	CSX	64,127.41	0.26%	1.18%	17.50%	18.78%	0.0493%
Cintas Corp	CTAS	20,720.81	0.08%	0.92%	13.50%	14.48%	0.0123%
CenturyLink Inc	CTL	23,591.28	0.10%	9.88%	2.50%	12.50%	0.0121%
Cognizant Technology Solutions Corp	CTSH	44,138.00	0.18%	1.05%	11.50%	12.61%	0.0228%
Citrix Systems Inc	CTXS	14,690.14	0.06%	0.00%	7.00%	7.00%	0.0042%
CVS Health Corp	CVS	80,739.63	0.33%	2.52%	8.50%	11.13%	0.0367%
Chevron Corp	CVX	239,422.60	0.98%	3.62%	31.00%	35.18%	0.3445%
Concho Resources Inc	CXO	23,249.66	0.10%	0.00%	34.50%	34.50%	0.0328%
Dominion Energy Inc	D	46,231.26	0.19%	5.09%	6.50%	11.76%	0.0222%
Delta Air Lines Inc	DAL	37,027.69	0.15%	2.61%	10.50%	13.25%	0.0201%
Deere & Co	DE	50,924.21	0.21%	1.74%	16.50%	18.38%	0.0383%
Discover Financial Services	DFS	26,734.87	0.11%	2.06%	8.00%	10.14%	0.0111%
Dollar General Corp	DG	27,737.68	0.11%	1.11%	12.50%	13.68%	0.0155%
Quest Diagnostics Inc	DGX	14,059.68	0.06%	1.94%	10.00%	12.04%	0.0069%
DR Horton Inc	DHI	15,268.22	0.06%	1.24%	13.50%	14.82%	0.0093%
Danaher Corp	DHR	74,867.90	0.31%	0.60%	11.00%	11.63%	0.0356%
Walt Disney Co/The	DIS	174,195.00	0.71%	1.45%	9.00%	10.52%	0.0749%
Discovery Inc	DISCA	17,318.36	0.07%	0.00%	17.00%	17.00%	0.0120%
DISH Network Corp	DISH	16,938.11	0.07%	0.00%	1.00%	1.00%	0.0007%
Digital Realty Trust Inc	DLR	22,503.07	0.09%	3.88%	6.50%	10.51%	0.0097%
Dollar Tree Inc	DLTR	19,296.07	0.08%	0.00%	18.50%	18.50%	0.0146%
Dover Corp	DOV	13,021.58	0.05%	2.18%	13.00%	15.32%	0.0082%
Duke Realty Corp	DRE	9,889.02	0.04%	3.03%	7.00%	10.14%	0.0041%
Darden Restaurants Inc	DRI	13,421.25	0.05%	2.77%	12.00%	14.94%	0.0082%
DTE Energy Co	DTE	19,882.33	0.08%	3.46%	7.50%	11.09%	0.0090%
Duke Energy Corp	DUK	56,917.28	0.23%	4.69%	5.50%	10.32%	0.0240%
DaVita Inc	DVA	12,440.82	0.05%	0.00%	11.00%	11.00%	0.0056%
Devon Energy Corp	DVN	20,652.03	0.08%	0.80%	23.50%	24.39%	0.0206%
DowDuPont Inc	DWDP	150,444.90	N/A	2.50%	N/A	N/A	N/A
DXC Technology Co	DXC	26,181.48	0.11%	0.82%	13.50%	14.38%	0.0154%
Electronic Arts Inc	EA	34,773.05	0.14%	0.00%	11.50%	11.50%	0.0164%
eBay Inc	EBAY	32,271.07	0.13%	0.00%	13.00%	13.00%	0.0172%
Ecolab Inc	ECL	45,100.18	0.18%	1.05%	9.00%	10.10%	0.0186%
Consolidated Edison Inc	ED	23,822.60	0.10%	3.84%	3.00%	6.90%	0.0067%
Equifax Inc	EFX	15,442.50	0.06%	1.22%	8.00%	9.27%	0.0059%
Edison International	EIX	22,379.96	0.09%	3.65%	4.50%	8.23%	0.0075%
Estee Lauder Cos Inc/The	EL	50,371.66	0.21%	1.20%	13.50%	14.78%	0.0304%
Eastman Chemical Co	EMN	13,624.36	0.06%	2.32%	8.50%	10.92%	0.0061%
Emerson Electric Co	EMR	49,116.68	0.20%	2.50%	12.50%	15.16%	0.0304%
EOG Resources Inc	EOG	75,427.53	N/A	0.68%	N/A	N/A	N/A
Equinix Inc	EQIX	33,588.95	0.14%	2.35%	25.50%	28.15%	0.0387%
Equity Residential	EQR	23,906.45	0.10%	3.33%	-15.00%	-11.92%	-0.0117%

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Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
EQT Corp	EQT	11,691.36	0.05%	0.27%	40.50%	40.82%	0.0195%
Eversource Energy	ES	19,501.16	0.08%	3.38%	5.00%	8.46%	0.0068%
Express Scripts Holding Co	ESRX	53,545.64	0.22%	0.00%	13.50%	13.50%	0.0296%
Essex Property Trust Inc	ESS	16,064.99	0.07%	3.12%	0.50%	3.63%	0.0024%
E*TRADE Financial Corp	ETFC	13,740.26	0.06%	0.00%	17.50%	17.50%	0.0098%
Eaton Corp PLC	ETN	38,000.41	0.16%	3.01%	10.00%	13.16%	0.0205%
Entergy Corp	ETR	14,684.29	0.06%	4.48%	2.00%	6.52%	0.0039%
Evergy Inc	EVRG	-	N/A	3.39%	N/A	N/A	N/A
Edwards Lifesciences Corp	EW	31,992.95	0.13%	0.00%	15.00%	15.00%	0.0196%
Exelon Corp	EXC	41,769.84	0.17%	3.31%	8.00%	11.44%	0.0195%
Expeditors International of Washington I	EXPD	12,664.18	0.05%	1.23%	9.50%	10.79%	0.0056%
Expedia Group Inc	EXPE	18,987.56	0.08%	1.01%	21.00%	22.12%	0.0172%
Extra Space Storage Inc	EXR	10,686.65	0.04%	4.15%	5.00%	9.25%	0.0040%
Ford Motor Co	F	35,821.10	0.15%	6.56%	2.50%	9.14%	0.0134%
Fastenal Co	FAST	16,295.83	0.07%	2.82%	11.50%	14.48%	0.0097%
Facebook Inc	FB	459,235.40	1.88%	0.00%	26.00%	26.00%	0.4883%
Fortune Brands Home & Security Inc	FBHS	7,477.05	0.03%	1.52%	13.50%	15.12%	0.0046%
Freeport-McMoRan Inc	FCX	19,749.87	N/A	1.47%	N/A	N/A	N/A
FedEx Corp	FDX	63,883.09	0.26%	1.09%	11.00%	12.15%	0.0317%
FirstEnergy Corp	FE	17,734.87	0.07%	3.88%	3.00%	6.94%	0.0050%
F5 Networks Inc	FFIV	11,128.48	0.05%	0.00%	11.00%	11.00%	0.0050%
Fidelity National Information Services I	FIS	35,625.53	0.15%	1.19%	16.00%	17.29%	0.0252%
Fiserv Inc	FISV	32,678.87	0.13%	0.00%	10.00%	10.00%	0.0134%
Fifth Third Bancorp	FITB	19,327.62	0.08%	2.60%	7.00%	9.69%	0.0077%
Foot Locker Inc	FL	5,751.67	0.02%	2.92%	7.50%	10.53%	0.0025%
FLIR Systems Inc	FLIR	8,321.05	0.03%	1.11%	13.50%	14.68%	0.0050%
Fluor Corp	FLR	8,316.78	0.03%	1.42%	8.50%	9.98%	0.0034%
Flowserve Corp	FLS	7,113.78	0.03%	1.40%	7.50%	8.95%	0.0026%
FleetCor Technologies Inc	FLT	19,528.67	0.08%	0.00%	14.50%	14.50%	0.0116%
FMC Corp	FMC	12,287.68	0.05%	0.77%	22.50%	23.36%	0.0117%
Twenty-First Century Fox Inc	FOX	N/A	N/A	0.00%	N/A	N/A	N/A
Federal Realty Investment Trust	FRT	8,971.92	0.04%	3.32%	3.50%	6.88%	0.0025%
TechnipFMC PLC	FTI	N/A	N/A	0.00%	N/A	N/A	N/A
Fortinet Inc	FTNT	15,090.01	0.06%	0.00%	38.00%	38.00%	0.0235%
Fortive Corp	FTV	29,298.55	N/A	0.33%	N/A	N/A	N/A
General Dynamics Corp	GD	61,007.84	0.25%	1.81%	9.00%	10.89%	0.0272%
General Electric Co	GE	110,029.10	0.45%	3.79%	2.50%	6.34%	0.0285%
Gilead Sciences Inc	GILD	99,221.76	0.41%	2.98%	-6.50%	-3.62%	-0.0147%
General Mills Inc	GIS	25,834.97	0.11%	4.52%	4.50%	9.12%	0.0096%
Corning Inc	GLW	28,881.30	0.12%	2.02%	13.50%	15.66%	0.0185%
General Motors Co	GM	48,322.91	0.20%	4.56%	3.50%	8.14%	0.0161%
Alphabet Inc	GOOG	812,682.90	3.32%	0.00%	16.00%	16.00%	0.5318%
Genuine Parts Co	GPC	14,345.11	0.06%	2.95%	9.00%	12.08%	0.0071%
Global Payments Inc	GP	19,298.89	0.08%	0.03%	11.00%	11.03%	0.0087%
Gap Inc/The	GPS	10,437.35	0.04%	3.58%	7.00%	10.71%	0.0046%
Garmin Ltd	GRMN	13,053.42	0.05%	3.07%	10.50%	13.73%	0.0073%
Goldman Sachs Group Inc/The	GS	85,959.92	0.35%	1.41%	9.00%	10.47%	0.0368%
Goodyear Tire & Rubber Co/The	GT	5,505.51	0.02%	2.76%	12.50%	15.43%	0.0035%
WW Grainger Inc	GWW	19,766.47	0.08%	1.55%	9.50%	11.12%	0.0090%
Halliburton Co	HAL	36,821.31	N/A	1.72%	N/A	N/A	N/A
Hasbro Inc	HAS	12,915.85	0.05%	2.48%	9.50%	12.10%	0.0064%
Huntington Bancshares Inc/OH	HBAN	17,016.14	0.07%	3.63%	11.50%	15.34%	0.0107%
Hanesbrands Inc	HBI	6,211.48	0.03%	3.48%	5.50%	9.08%	0.0023%
HCA Healthcare Inc	HCA	48,275.93	0.20%	1.01%	14.00%	15.08%	0.0298%
HCP Inc	HCP	11,886.12	0.05%	5.96%	35.50%	42.52%	0.0207%
Home Depot Inc/The	HD	227,683.30	0.93%	2.25%	12.50%	14.89%	0.1386%
Hess Corp	HES	21,751.36	N/A	1.38%	N/A	N/A	N/A
HollyFrontier Corp	HFC	12,379.50	0.05%	1.91%	22.00%	24.12%	0.0122%
Hartford Financial Services Group Inc/The	HIG	17,771.02	0.07%	2.42%	13.00%	15.58%	0.0113%
Huntington Ingalls Industries Inc	HII	11,246.06	0.05%	1.11%	12.50%	13.68%	0.0063%
Hilton Worldwide Holdings Inc	HLT	24,964.78	0.10%	0.80%	9.50%	10.34%	0.0106%
Harley-Davidson Inc	HOG	7,270.08	0.03%	3.39%	9.00%	12.54%	0.0037%
Hologic Inc	HOLX	11,018.81	0.05%	0.00%	24.00%	24.00%	0.0108%
Honeywell International Inc	HON	122,315.50	0.50%	1.99%	10.00%	12.09%	0.0605%
Helmerich & Payne Inc	HP	7,769.89	0.03%	3.98%	56.50%	61.60%	0.0196%
Hewlett Packard Enterprise Co	HPE	24,971.70	0.10%	2.67%	7.50%	10.27%	0.0105%
HP Inc	HPQ	41,807.24	0.17%	2.23%	6.00%	8.30%	0.0142%
H&R Block Inc	HRB	5,150.06	0.02%	4.07%	8.50%	12.74%	0.0027%
Hormel Foods Corp	HRL	21,026.40	0.09%	1.97%	9.50%	11.56%	0.0099%
Harris Corp	HRS	19,944.37	0.08%	1.63%	13.50%	15.24%	0.0124%
Henry Schein Inc	HSIC	13,369.49	0.05%	0.00%	9.00%	9.00%	0.0049%
Host Hotels & Resorts Inc	HST	14,974.16	0.06%	4.05%	2.00%	6.09%	0.0037%
Hershey Co/The	HSY	21,496.56	0.09%	2.81%	7.00%	9.91%	0.0087%
Humana Inc	HUM	45,629.86	0.19%	0.62%	13.50%	14.16%	0.0264%
International Business Machines Corp	IBM	138,110.90	0.56%	4.26%	0.50%	4.77%	0.0269%
Intercontinental Exchange Inc	ICE	43,572.34	0.18%	1.27%	12.00%	13.35%	0.0238%
IDEXX Laboratories Inc	IDXX	20,023.83	0.08%	0.00%	17.00%	17.00%	0.0139%
International Flavors & Fragrances Inc	IFF	10,860.13	0.04%	2.17%	8.50%	10.76%	0.0048%
Illumina Inc	ILMN	50,672.37	0.21%	0.00%	15.00%	15.00%	0.0311%
Incyte Corp	INCY	14,059.35	N/A	0.00%	N/A	N/A	N/A
IHS Markit Ltd	INFO	21,042.56	0.09%	0.00%	19.50%	19.50%	0.0168%
Intel Corp	INTC	221,927.40	0.91%	2.49%	12.50%	15.15%	0.1375%
Intuit Inc	INTU	57,644.48	0.24%	0.84%	15.00%	15.90%	0.0375%
International Paper Co	IP	19,946.14	0.08%	3.90%	17.00%	21.23%	0.0173%
Interpublic Group of Cos Inc/The	IPG	9,059.60	0.04%	3.62%	9.50%	13.29%	0.0049%
IPG Photonics Corp	IPGP	8,274.57	0.03%	0.00%	13.00%	13.00%	0.0044%
IQVIA Holdings Inc	IQV	25,717.50	0.11%	0.00%	14.50%	14.50%	0.0153%
Ingersoll-Rand PLC	IR	25,568.66	0.10%	2.03%	12.00%	14.15%	0.0148%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Iron Mountain Inc	IRM	9,590.04	0.04%	7.04%	12.50%	19.98%	0.0078%
Intuitive Surgical Inc	ISRG	63,039.82	0.26%	0.00%	15.00%	15.00%	0.0387%
Gartner Inc	IT	14,185.62	0.06%	0.00%	14.50%	14.50%	0.0084%
Illinois Tool Works Inc	ITW	48,133.26	0.20%	2.79%	11.00%	13.94%	0.0274%
Invesco Ltd	IVZ	9,539.91	0.04%	5.17%	7.50%	12.86%	0.0050%
JB Hunt Transport Services Inc	JBHT	13,235.00	0.05%	0.81%	13.50%	14.36%	0.0078%
Johnson Controls International plc	JCI	33,639.41	0.14%	2.86%	3.00%	5.90%	0.0081%
Jacobs Engineering Group Inc	JEC	11,045.30	0.05%	0.77%	13.00%	13.82%	0.0062%
Jefferies Financial Group Inc	JEF	7,642.82	0.03%	2.18%	21.50%	23.91%	0.0075%
Johnson & Johnson	JNJ	373,778.70	1.53%	2.67%	11.00%	13.82%	0.2112%
Juniper Networks Inc	JNPR	10,261.88	0.04%	2.52%	4.50%	7.08%	0.0030%
JPMorgan Chase & Co	JPM	387,409.10	1.58%	2.78%	9.50%	12.41%	0.1966%
Nordstrom Inc	JWN	9,937.78	0.04%	2.50%	7.00%	9.59%	0.0039%
Kellogg Co	K	23,991.58	0.10%	3.24%	7.00%	10.35%	0.0102%
KeyCorp	KEY	21,644.81	0.09%	3.33%	12.50%	16.04%	0.0142%
Kraft Heinz Co/The	KHC	67,678.88	0.28%	4.68%	9.50%	14.40%	0.0399%
Kimco Realty Corp	KIM	6,699.67	0.03%	7.37%	-0.50%	6.85%	0.0019%
KLA-Tencor Corp	KLAC	15,797.63	0.06%	2.96%	15.50%	18.69%	0.0121%
Kimberly-Clark Corp	KMB	39,074.07	0.16%	3.56%	10.50%	14.25%	0.0228%
Kinder Morgan Inc/DE	KMI	40,266.53	0.16%	4.38%	57.00%	62.63%	0.1031%
CarMax Inc	KMX	12,776.86	0.05%	0.00%	11.50%	11.50%	0.0060%
Coca-Cola Co/The	KO	195,000.00	0.80%	3.51%	6.50%	10.12%	0.0807%
Michael Kors Holdings Ltd	KORS	9,934.66	0.04%	0.00%	7.00%	7.00%	0.0028%
Kroger Co/The	KR	22,937.66	0.09%	2.02%	5.00%	7.07%	0.0066%
Kohl's Corp	KSS	11,983.33	0.05%	3.40%	9.00%	12.55%	0.0062%
Kansas City Southern	KSU	11,643.50	0.05%	1.26%	12.50%	13.84%	0.0066%
Loews Corp	L	15,944.18	0.07%	0.50%	16.50%	17.04%	0.0111%
L Brands Inc	LB	7,936.50	N/A	8.32%	N/A	N/A	N/A
Leggett & Platt Inc	LEG	5,526.59	0.02%	3.58%	9.00%	12.74%	0.0029%
Lennar Corp	LEN	14,724.42	0.06%	0.36%	12.50%	12.88%	0.0078%
Laboratory Corp of America Holdings	LH	17,387.94	0.07%	0.00%	9.50%	9.50%	0.0068%
LKQ Corp	LKQ	9,642.69	0.04%	0.00%	13.00%	13.00%	0.0051%
L3 Technologies Inc	LLL	16,555.44	0.07%	1.58%	11.00%	12.67%	0.0086%
Eli Lilly & Co	LLY	121,349.90	0.50%	1.99%	12.00%	14.11%	0.0700%
Lockheed Martin Corp	LMT	99,519.58	0.41%	2.52%	13.00%	15.68%	0.0638%
Lincoln National Corp	LNC	15,175.81	0.06%	2.06%	7.50%	9.64%	0.0060%
Alliant Energy Corp	LNT	9,998.47	0.04%	3.13%	6.50%	9.73%	0.0040%
Lowe's Cos Inc	LOW	89,842.58	0.37%	1.79%	13.00%	14.91%	0.0548%
Lam Research Corp	LRCX	23,378.48	0.10%	2.95%	13.50%	16.65%	0.0159%
Southwest Airlines Co	LUV	35,286.51	0.14%	1.04%	10.00%	11.09%	0.0160%
LyondellBasell Industries NV	LYB	40,564.45	0.17%	3.85%	10.50%	14.55%	0.0241%
Macy's Inc	M	10,090.20	0.04%	4.59%	5.50%	10.22%	0.0042%
Mastercard Inc	MA	224,579.80	0.92%	0.46%	16.00%	16.50%	0.1515%
Mid-America Apartment Communities Inc	MAA	11,141.56	0.05%	3.76%	-4.50%	-0.82%	-0.0004%
Macerich Co/The	MAC	7,311.95	0.03%	5.94%	8.00%	14.18%	0.0042%
Marriott International Inc/MD	MAR	42,401.93	0.17%	1.34%	12.50%	13.92%	0.0241%
Masco Corp	MAS	11,019.65	0.05%	1.33%	15.50%	16.93%	0.0076%
Mattel Inc	MAT	4,997.78	0.02%	0.00%	26.50%	26.50%	0.0054%
McDonald's Corp	MCD	128,627.60	0.53%	2.80%	10.00%	12.94%	0.0681%
Microchip Technology Inc	MCHP	16,821.34	0.07%	2.10%	15.00%	17.26%	0.0119%
McKesson Corp	MCK	26,421.71	0.11%	1.18%	10.50%	11.74%	0.0127%
Moody's Corp	MCO	31,285.75	0.13%	1.08%	14.00%	15.16%	0.0194%
Mondelez International Inc	MDLZ	62,129.76	0.25%	2.46%	9.50%	12.08%	0.0307%
Medtronic PLC	MDT	131,090.70	0.54%	2.16%	8.00%	10.25%	0.0549%
MetLife Inc	MET	47,777.35	0.20%	3.58%	6.00%	9.69%	0.0189%
MGM Resorts International	MGM	14,474.00	0.06%	1.78%	33.00%	35.07%	0.0208%
Mohawk Industries Inc	MHK	12,765.15	0.05%	0.00%	7.00%	7.00%	0.0037%
McCormick & Co Inc/MD	MKC	17,868.26	0.07%	1.55%	10.00%	11.63%	0.0085%
Martin Marietta Materials Inc	MLM	11,720.23	0.05%	1.03%	14.50%	15.60%	0.0075%
Marsh & McLennan Cos Inc	MMC	42,229.29	0.17%	1.99%	9.00%	11.08%	0.0191%
3M Co	MMM	125,441.30	0.51%	2.54%	9.50%	12.16%	0.0624%
Monster Beverage Corp	MNST	30,921.02	0.13%	0.00%	14.50%	14.50%	0.0183%
Altria Group Inc	MO	116,533.00	0.48%	5.18%	10.50%	15.95%	0.0760%
Mosaic Co/The	MOS	13,020.77	0.05%	0.44%	9.00%	9.46%	0.0050%
Marathon Petroleum Corp	MPC	38,883.12	0.16%	2.37%	13.50%	16.03%	0.0255%
Merck & Co Inc	MRK	190,160.40	0.78%	2.70%	5.50%	8.27%	0.0643%
Marathon Oil Corp	MRO	20,256.88	N/A	0.84%	N/A	N/A	N/A
Morgan Stanley	MS	82,706.09	0.34%	2.54%	11.00%	13.68%	0.0463%
MSCI Inc	MSCI	15,325.47	0.06%	1.40%	22.00%	23.55%	0.0148%
Microsoft Corp	MSFT	867,355.10	3.55%	1.63%	13.50%	15.24%	0.5406%
Motorola Solutions Inc	MSI	20,440.06	0.08%	1.77%	12.00%	13.88%	0.0116%
M&T Bank Corp	MTB	24,397.69	0.10%	2.37%	12.00%	14.51%	0.0145%
Mettler-Toledo International Inc	MTD	15,422.65	0.06%	0.00%	11.00%	11.00%	0.0069%
Micron Technology Inc	MU	51,225.61	0.21%	0.00%	25.50%	25.50%	0.0534%
Mylan NV	MYL	18,574.19	0.08%	0.00%	14.00%	14.00%	0.0106%
Noble Energy Inc	NBL	15,291.80	N/A	1.40%	N/A	N/A	N/A
Norwegian Cruise Line Holdings Ltd	NCLH	12,186.86	0.05%	0.00%	16.50%	16.50%	0.0082%
Nasdaq Inc	NDAQ	14,119.29	0.06%	2.05%	9.50%	11.65%	0.0067%
NextEra Energy Inc	NEE	79,886.00	0.33%	2.79%	9.00%	11.92%	0.0389%
Newmont Mining Corp	NEM	16,199.33	0.07%	1.84%	6.00%	7.90%	0.0052%
Netflix Inc	NFLX	158,354.30	0.65%	0.00%	47.00%	47.00%	0.3044%
Newfield Exploration Co	NFX	5,699.78	0.02%	0.00%	26.00%	26.00%	0.0061%
NiSource Inc	NI	9,091.02	0.04%	3.11%	18.00%	21.39%	0.0080%
NIKE Inc	NKE	129,811.40	0.53%	1.00%	14.50%	15.57%	0.0827%
Nektar Therapeutics	NKTR	8,984.55	N/A	0.00%	N/A	N/A	N/A
Nielsen Holdings PLC	NLSN	9,622.59	0.04%	5.17%	4.00%	9.27%	0.0036%
Northrop Grumman Corp	NOC	55,428.46	0.23%	1.51%	13.00%	14.61%	0.0331%
National Oilwell Varco Inc	NOV	17,211.11	0.07%	0.44%	41.50%	42.03%	0.0296%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
NRG Energy Inc	NRG	11,111.57	N/A	0.33%	N/A	N/A	N/A
Norfolk Southern Corp	NSC	51,365.90	0.21%	1.75%	13.50%	15.37%	0.0323%
NetApp Inc	NTAP	21,816.60	0.09%	1.91%	19.50%	21.60%	0.0193%
Northern Trust Corp	NTRS	23,710.32	0.10%	2.07%	11.00%	13.18%	0.0128%
Nucor Corp	NUE	20,562.29	0.08%	2.34%	19.50%	22.07%	0.0186%
NVIDIA Corp	NVDA	169,808.30	0.69%	0.22%	23.00%	23.25%	0.1614%
Newell Brands Inc	NWL	9,705.42	0.04%	4.61%	9.50%	14.33%	0.0057%
News Corp	NWS	N/A	N/A	0.00%	N/A	N/A	N/A
Realty Income Corp	O	16,069.46	0.07%	4.76%	4.50%	9.37%	0.0062%
ONEOK Inc	OKE	28,157.19	0.12%	4.99%	20.50%	26.00%	0.0299%
Omnicom Group Inc	OMC	15,685.92	0.06%	3.43%	7.00%	10.55%	0.0068%
Oracle Corp	ORCL	188,530.20	0.77%	1.54%	8.50%	10.11%	0.0779%
O'Reilly Automotive Inc	ORLY	27,490.57	0.11%	0.00%	11.50%	11.50%	0.0129%
Occidental Petroleum Corp	OXY	62,844.77	N/A	3.82%	N/A	N/A	N/A
Paychex Inc	PAYX	25,988.01	0.11%	3.18%	11.00%	14.35%	0.0153%
People's United Financial Inc	PBCT	6,015.17	0.02%	4.05%	10.50%	14.76%	0.0036%
PACCAR Inc	PCAR	24,506.92	0.10%	3.35%	7.50%	10.98%	0.0110%
PG&E Corp	PCG	24,298.67	0.10%	0.00%	7.50%	7.50%	0.0075%
Public Service Enterprise Group Inc	PEG	26,359.20	0.11%	3.54%	4.00%	7.61%	0.0082%
PepsiCo Inc	PEP	150,533.30	0.62%	3.48%	7.50%	11.11%	0.0684%
Pfizer Inc	PFE	262,036.30	1.07%	3.04%	14.00%	17.25%	0.1849%
Principal Financial Group Inc	PFJ	17,238.22	0.07%	3.50%	5.00%	8.59%	0.0061%
Procter & Gamble Co/The	PG	204,643.80	0.84%	3.52%	10.50%	14.20%	0.1189%
Progressive Corp/The	PGR	41,421.57	0.17%	1.62%	15.50%	17.25%	0.0292%
Parker-Hannifin Corp	PH	24,492.62	0.10%	1.64%	14.00%	15.75%	0.0158%
PulteGroup Inc	PHM	6,764.97	0.03%	1.64%	15.50%	17.27%	0.0048%
Packaging Corp of America	PKG	10,088.82	0.04%	2.96%	9.50%	12.60%	0.0052%
PerkinElmer Inc	PKI	10,347.52	0.04%	0.30%	12.50%	12.82%	0.0054%
Prologis Inc	PLD	34,874.15	0.14%	3.02%	9.00%	12.16%	0.0173%
Philip Morris International Inc	PM	130,297.70	0.53%	5.44%	8.50%	14.17%	0.0755%
PNC Financial Services Group Inc/The	PNC	64,714.05	0.26%	2.73%	9.50%	12.36%	0.0327%
Pentair PLC	PNR	7,666.73	0.03%	1.60%	5.50%	7.14%	0.0022%
Pinnacle West Capital Corp	PNW	8,985.83	0.04%	3.61%	5.00%	8.70%	0.0032%
PPG Industries Inc	PPG	26,249.27	0.11%	1.77%	7.50%	9.34%	0.0100%
PPL Corp	PPL	20,973.84	0.09%	5.57%	2.00%	7.63%	0.0065%
Perrigo Co PLC	PRGO	9,791.77	0.04%	1.15%	2.50%	3.66%	0.0015%
Prudential Financial Inc	PRU	43,776.11	0.18%	3.44%	6.00%	9.54%	0.0171%
Public Storage	PSA	34,381.17	0.14%	4.35%	7.00%	11.50%	0.0162%
Phillips 66	PSX	54,643.64	0.22%	2.84%	8.00%	10.95%	0.0245%
PVH Corp	PVH	10,291.32	0.04%	0.11%	11.00%	11.12%	0.0047%
Quanta Services Inc	PWR	4,866.23	0.02%	0.00%	19.50%	19.50%	0.0039%
Praxair Inc	PX	47,688.72	0.20%	2.14%	10.00%	12.25%	0.0239%
Pioneer Natural Resources Co	PXD	30,873.25	0.13%	0.23%	77.00%	77.32%	0.0976%
PayPal Holdings Inc	PYPL	99,858.55	0.41%	0.00%	17.50%	17.50%	0.0715%
QUALCOMM Inc	QCOM	106,326.20	0.43%	3.43%	7.50%	11.06%	0.0481%
Qorvo Inc	QRVO	9,566.80	N/A	0.00%	N/A	N/A	N/A
Royal Caribbean Cruises Ltd	RCL	26,418.10	0.11%	2.23%	11.00%	13.35%	0.0144%
Everest Re Group Ltd	RE	9,270.32	0.04%	2.36%	10.00%	12.48%	0.0047%
Regency Centers Corp	REG	10,766.85	0.04%	3.52%	14.00%	17.77%	0.0078%
Regeneron Pharmaceuticals Inc	REGN	42,324.15	0.17%	0.00%	16.00%	16.00%	0.0277%
Regions Financial Corp	RF	21,571.62	0.09%	3.05%	12.50%	15.74%	0.0139%
Robert Half International Inc	RHI	8,394.83	0.03%	1.72%	8.50%	10.29%	0.0035%
Red Hat Inc	RHT	22,711.09	0.09%	0.00%	18.00%	18.00%	0.0167%
Raymond James Financial Inc	RJF	13,746.15	0.06%	1.34%	15.00%	16.44%	0.0092%
Ralph Lauren Corp	RL	10,264.02	0.04%	1.98%	6.00%	8.04%	0.0034%
ResMed Inc	RMD	15,669.67	0.06%	1.35%	11.00%	12.42%	0.0080%
Rockwell Automation Inc	ROK	23,355.03	0.10%	1.94%	10.00%	12.04%	0.0115%
Rollins Inc	ROL	12,885.71	0.05%	0.95%	12.50%	13.51%	0.0071%
Roper Technologies Inc	ROP	30,578.75	0.13%	0.56%	14.50%	15.10%	0.0189%
Ross Stores Inc	ROST	35,566.07	0.15%	0.98%	11.50%	12.54%	0.0182%
Republic Services Inc	RSG	23,322.73	0.10%	2.09%	13.50%	15.73%	0.0150%
Raytheon Co	RTN	59,339.85	0.24%	1.67%	11.00%	12.76%	0.0310%
SBA Communications Corp	SBAC	17,596.86	0.07%	0.00%	45.50%	45.50%	0.0327%
Starbucks Corp	SBUX	76,362.51	0.31%	2.65%	15.00%	17.85%	0.0557%
SCANA Corp	SCG	5,542.68	0.02%	1.26%	-15.50%	-14.34%	-0.0032%
Charles Schwab Corp/The	SCHW	69,818.39	0.29%	1.01%	16.00%	17.09%	0.0488%
Sealed Air Corp	SEE	6,180.06	0.03%	1.66%	19.00%	20.82%	0.0053%
Sherwin-Williams Co/The	SHW	41,020.41	0.17%	0.80%	13.00%	13.85%	0.0232%
SVB Financial Group	SIVB	17,059.98	0.07%	0.00%	21.50%	21.50%	0.0150%
JM Smucker Co/The	SJM	11,572.32	0.05%	3.34%	6.50%	9.95%	0.0047%
Schlumberger Ltd	SLB	86,991.88	0.36%	3.18%	28.00%	31.63%	0.1125%
SL Green Realty Corp	SLG	8,913.70	0.04%	3.59%	6.50%	10.21%	0.0037%
Snap-on Inc	SNA	10,187.15	0.04%	1.82%	8.00%	9.89%	0.0041%
Synopsys Inc	SNPS	13,234.76	0.05%	0.00%	10.50%	10.50%	0.0057%
Southern Co/The	SO	42,937.02	0.18%	5.68%	3.00%	8.77%	0.0154%
Simon Property Group Inc	SPG	52,610.76	0.22%	4.94%	3.00%	8.01%	0.0172%
S&P Global Inc	SPGI	48,517.68	0.20%	1.04%	13.50%	14.61%	0.0290%
Stericycle Inc	SRCL	4,671.51	0.02%	0.00%	8.00%	8.00%	0.0015%
Sempra Energy	SRE	31,250.08	0.13%	3.24%	9.50%	12.89%	0.0165%
SunTrust Banks Inc	STI	31,252.06	0.13%	3.05%	13.50%	16.76%	0.0214%
State Street Corp	STT	31,794.11	0.13%	2.20%	9.50%	11.80%	0.0153%
Seagate Technology PLC	STX	13,396.48	0.05%	5.40%	8.00%	13.62%	0.0075%
Constellation Brands Inc	STZ	42,455.30	0.17%	1.39%	11.00%	12.47%	0.0216%
Stanley Black & Decker Inc	SWK	22,230.82	0.09%	1.82%	10.00%	11.91%	0.0108%
Skyworks Solutions Inc	SWKS	16,361.69	0.07%	1.67%	13.50%	15.28%	0.0102%
Synchrony Financial	SYF	23,517.84	0.10%	2.67%	10.50%	13.31%	0.0128%
Stryker Corp	SYK	64,913.45	0.27%	1.08%	13.00%	14.15%	0.0376%
Symantec Corp	SYMC	12,687.99	0.05%	1.47%	7.50%	9.03%	0.0047%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Sysco Corp	SY	37,559.11	0.15%	2.08%	14.00%	16.23%	0.0249%
AT&T Inc	T	247,702.90	1.01%	5.95%	7.00%	13.16%	0.1333%
Molson Coors Brewing Co	TAP	13,243.65	0.05%	3.02%	11.50%	14.69%	0.0080%
TransDigm Group Inc	TDG	19,300.66	0.08%	0.00%	11.00%	11.00%	0.0087%
TE Connectivity Ltd	TEL	30,303.68	0.12%	2.04%	11.00%	13.15%	0.0163%
Target Corp	TGT	44,635.43	0.18%	3.02%	7.00%	10.13%	0.0185%
Tiffany & Co	TIF	14,779.80	0.06%	1.86%	12.00%	13.97%	0.0084%
TJX Cos Inc/The	TJX	68,458.19	0.28%	1.42%	12.50%	14.01%	0.0392%
Torchmark Corp	TMK	9,933.84	0.04%	0.73%	10.00%	10.77%	0.0044%
Thermo Fisher Scientific Inc	TMO	98,032.49	0.40%	0.28%	9.50%	9.79%	0.0393%
Tapestry Inc	TPR	13,938.15	0.06%	2.79%	13.50%	16.48%	0.0094%
TripAdvisor Inc	TRIP	7,087.83	0.03%	0.00%	8.50%	8.50%	0.0025%
T Rowe Price Group Inc	TROW	26,944.35	0.11%	2.58%	11.50%	14.23%	0.0157%
Travelers Cos Inc/The	TRV	35,012.48	0.14%	2.36%	5.50%	7.92%	0.0113%
Tractor Supply Co	TSCO	10,664.55	0.04%	1.51%	10.50%	12.09%	0.0053%
Tyson Foods Inc	TSN	21,955.80	0.09%	2.08%	10.00%	12.18%	0.0109%
Total System Services Inc	TSS	17,663.23	0.07%	0.54%	10.50%	11.07%	0.0080%
Take-Two Interactive Software Inc	TTWO	14,969.57	0.06%	0.00%	28.50%	28.50%	0.0174%
Twitter Inc	TWTR	21,368.87	N/A	0.00%	N/A	N/A	N/A
Texas Instruments Inc	TXN	103,156.10	0.42%	2.91%	12.00%	15.08%	0.0636%
Textron Inc	TXT	17,821.96	0.07%	0.11%	15.00%	15.12%	0.0110%
Under Armour Inc	UA	N/A	N/A	0.00%	N/A	N/A	N/A
United Continental Holdings Inc	UAL	23,490.47	0.10%	0.00%	6.00%	6.00%	0.0058%
UDR Inc	UDR	10,624.50	0.04%	3.25%	-1.50%	1.73%	0.0007%
Universal Health Services Inc	UHS	11,678.52	0.05%	0.32%	11.00%	11.34%	0.0054%
Ulta Beauty Inc	ULTA	16,464.80	0.07%	0.00%	21.00%	21.00%	0.0141%
UnitedHealth Group Inc	UNH	258,123.80	1.06%	1.34%	15.00%	16.44%	0.1735%
Unum Group	UNM	8,694.80	0.04%	2.62%	9.50%	12.24%	0.0044%
Union Pacific Corp	UNP	121,596.80	0.50%	1.95%	13.50%	15.58%	0.0775%
United Parcel Service Inc	UPS	100,886.60	0.41%	3.20%	8.50%	11.84%	0.0488%
United Rentals Inc	URI	13,542.32	0.06%	0.00%	14.00%	14.00%	0.0078%
US Bancorp	USB	87,824.88	0.36%	2.76%	7.50%	10.36%	0.0372%
United Technologies Corp	UTX	112,325.10	0.46%	1.99%	9.00%	11.08%	0.0509%
Visa Inc	V	298,656.60	1.22%	0.67%	14.50%	15.22%	0.1859%
Varian Medical Systems Inc	VAR	9,941.47	0.04%	0.00%	9.50%	9.50%	0.0039%
VF Corp	VFC	36,169.30	0.15%	2.01%	12.00%	14.13%	0.0209%
Viacom Inc	VIAB	13,322.46	0.05%	2.42%	4.00%	6.47%	0.0035%
Valero Energy Corp	VLO	50,219.75	0.21%	2.82%	10.00%	12.96%	0.0266%
Vulcan Materials Co	VMC	14,747.88	0.06%	1.00%	18.00%	19.09%	0.0115%
Vornado Realty Trust	VNO	13,489.78	0.06%	3.55%	-5.50%	-2.05%	-0.0011%
Verisk Analytics Inc	VRSK	19,496.73	0.08%	0.00%	9.00%	9.00%	0.0072%
VeriSign Inc	VRSN	18,964.95	0.08%	0.00%	12.00%	12.00%	0.0093%
Vertex Pharmaceuticals Inc	VRTX	48,076.03	N/A	0.00%	N/A	N/A	N/A
Ventas Inc	VTR	18,785.84	0.08%	6.13%	3.50%	9.74%	0.0075%
Verizon Communications Inc	VZ	227,339.10	0.93%	4.38%	4.50%	8.98%	0.0835%
Waters Corp	WAT	14,738.53	0.06%	0.00%	10.50%	10.50%	0.0063%
Walgreens Boots Alliance Inc	WBA	72,783.49	0.30%	2.40%	10.50%	13.03%	0.0388%
WellCare Health Plans Inc	WCG	13,880.01	0.06%	0.00%	21.00%	21.00%	0.0119%
Western Digital Corp	WDC	16,756.56	0.07%	3.53%	8.00%	11.67%	0.0080%
WEC Energy Group Inc	WEC	21,229.06	0.09%	3.43%	7.00%	10.55%	0.0092%
Welltower Inc	WELL	23,125.32	0.09%	5.69%	8.50%	14.43%	0.0136%
Wells Fargo & Co	WFC	259,473.60	1.06%	3.21%	6.00%	9.31%	0.0988%
Whirlpool Corp	WHR	7,422.35	0.03%	4.03%	8.00%	12.19%	0.0037%
Willis Towers Watson PLC	WLTW	18,648.68	N/A	1.68%	N/A	N/A	N/A
Waste Management Inc	WM	38,138.40	0.16%	2.09%	10.50%	12.70%	0.0198%
Williams Cos Inc/The	WMB	22,965.79	0.09%	4.90%	22.50%	27.95%	0.0263%
Walmart Inc	WMT	276,506.40	1.13%	2.21%	7.00%	9.29%	0.1050%
WestRock Co	WRK	13,160.61	0.05%	3.33%	9.50%	12.99%	0.0070%
Western Union Co/The	WU	8,345.82	0.03%	4.09%	7.00%	11.23%	0.0038%
Weyerhaeuser Co	WY	23,282.46	0.10%	4.43%	21.50%	26.41%	0.0251%
Wynn Resorts Ltd	WYNN	13,410.77	0.05%	2.43%	19.50%	22.17%	0.0122%
Cimarex Energy Co	XEC	9,359.96	0.04%	0.73%	39.00%	39.87%	0.0153%
Xcel Energy Inc	XEL	24,147.21	0.10%	3.29%	5.50%	8.88%	0.0088%
Xilinx Inc	XLNX	20,799.65	0.09%	1.75%	9.50%	11.33%	0.0096%
Exxon Mobil Corp	XOM	362,345.70	1.48%	3.86%	18.00%	22.21%	0.3291%
DENTSPLY SIRONA Inc	XRAY	8,041.42	0.03%	0.97%	6.50%	7.50%	0.0025%
Xerox Corp	XR	6,915.82	0.03%	3.69%	2.50%	6.24%	0.0018%
Xylem Inc/NY	XYL	14,420.08	0.06%	1.05%	15.50%	16.63%	0.0098%
Yum! Brands Inc	YUM	28,572.83	0.12%	1.74%	9.50%	11.32%	0.0132%
Zimmer Biomet Holdings Inc	ZBH	26,232.50	0.11%	0.77%	5.00%	5.79%	0.0062%
Zions Bancorp NA	ZION	10,068.55	0.04%	2.33%	14.50%	17.00%	0.0070%
Zoetis Inc	ZTS	43,922.15	0.18%	0.55%	0.135	14.09%	0.0253%
		24,452,595					16.71%

[1] Equals sum of Col. [9]
[2] Source: Bloomberg Professional
[3] Equals [1] - [2]
[4] Source: Value Line
[5] Equals weight in S&P 500 based on market capitalization
[6] Source: Value Line
[7] Source: Value Line
[8] Equals ([6] x (1 + (0.5 x [7]))) + [7]
[9] Equals Col. [5] x Col. [8]

Bloomberg and Value Line Beta Coefficients

Company	Ticker	[1] Bloomberg	[2] Value Line
Atmos Energy Corporation	ATO	0.526	0.60
Chesapeake Utilities Corporation	CPK	0.703	0.70
New Jersey Resources Corporation	NJR	0.706	0.70
Northwest Natural Gas Company	NWN	0.577	0.65
ONE Gas, Inc.	OGS	0.543	0.65
South Jersey Industries, Inc.	SJI	0.638	0.75
Southwest Gas Corporation	SWX	0.720	0.75
Spire Inc	SR	0.419	0.65
Mean		0.604	0.68

Notes:

[1] Source: Bloomberg Professional

[2] Source: Value Line

Capital Asset Pricing Model Results
Bloomberg and Value Line Derived Market Risk Premium

	[1]	[2]	[3]	[4]	[5]	[6]
	Ex-Ante Market Risk Premium				CAPM Result	
	Risk-Free Rate	Average Beta Coefficient	Bloomberg Market DCF Derived	Value Line Market DCF Derived	Bloomberg Market DCF Derived	Value Line Market DCF Derived
PROXY GROUP BLOOMBERG BETA COEFFICIENT						
Current 30-Year Treasury (30-day average) [7]	3.19%	0.604	12.10%	13.52%	10.50%	11.36%
Near-Term Projected 30-Year Treasury [8]	3.52%	0.604	12.10%	13.52%	10.82%	11.68%
Mean					10.66%	11.52%

	[1]	[2]	[3]	[4]	[5]	[6]
	Ex-Ante Market Risk Premium				CAPM Result	
	Risk-Free Rate	Average Beta Coefficient	Bloomberg Market DCF Derived	Value Line Market DCF Derived	Bloomberg Market DCF Derived	Value Line Market DCF Derived
PROXY GROUP VALUE LINE AVERAGE BETA COEFFICIENT						
Current 30-Year Treasury (30-day average) [7]	3.19%	0.681	12.10%	13.52%	11.43%	12.40%
Near-Term Projected 30-Year Treasury [8]	3.52%	0.681	12.10%	13.52%	11.76%	12.73%
Mean					11.60%	12.56%

Notes:

[1] See Notes [7] and [8]

[2] Source: Schedule RBH-D4

[3] Source: Schedule RBH-D3

[4] Source: Schedule RBH-D3

[5] Equals Col. [1] + (Col. [2] x Col. [3])

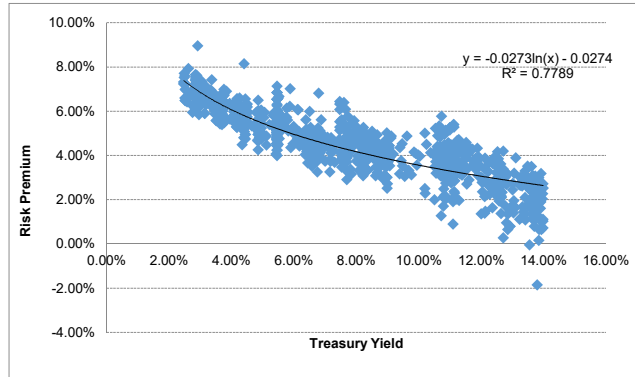
[6] Equals Col. [1] + (Col. [2] x Col. [4])

[7] Source: Bloomberg Professional

[8] Source: Blue Chip Financial Forecasts, Vol. 37, No. 10, October 1, 2018, at 2.

Bond Yield Plus Risk Premium

[1]	[2]	[3]	[4]	[5]	
Constant	Slope	30-Year Treasury Yield	Risk Premium	Return on Equity	
-2.74%	-2.73%				
		Current 30-Year Treasury	3.19%	6.68%	9.88%
		Near-Term Projected 30-Year Treasury	3.52%	6.42%	9.94%
		Long-Term Projected 30-Year Treasury	4.30%	5.87%	10.17%



Notes:

- [1] Constant of regression equation
- [2] Slope of regression equation
- [3] Source: Current = Bloomberg Professional, Near Term Projection = Blue Chip Financial Forecasts, Vol. 37, No. 10, October 1, 2018, at 2, Long Term Projection = Blue Chip Financial Forecasts, Vol. 37, No. 6, June 1, 2018, at 16.
- [4] Equals [1] + ln([3]) x [2]
- [5] Equals [3] + [4]
- [6] Source: S&P Global Market Intelligence
- [7] Source: S&P Global Market Intelligence
- [8] Source: Bloomberg Professional, equals 187-trading day average (i.e. lag period)
- [9] Equals [7] - [8]

Bond Yield Plus Risk Premium			
[6]	[7]	[8]	[9]
Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
1/3/1980	12.55%	9.39%	3.16%
1/4/1980	13.75%	9.40%	4.35%
1/14/1980	13.20%	9.44%	3.76%
1/18/1980	14.00%	9.47%	4.53%
1/31/1980	12.61%	9.56%	3.05%
2/8/1980	14.50%	9.63%	4.87%
2/14/1980	13.00%	9.67%	3.33%
2/15/1980	13.00%	9.69%	3.31%
2/29/1980	14.00%	9.86%	4.14%
3/5/1980	14.00%	9.91%	4.09%
3/7/1980	13.50%	9.95%	3.55%
3/14/1980	14.00%	10.04%	3.96%
3/27/1980	12.69%	10.20%	2.49%
4/1/1980	14.75%	10.26%	4.49%
4/29/1980	12.50%	10.51%	1.99%
5/7/1980	14.27%	10.56%	3.71%
5/8/1980	13.75%	10.56%	3.19%
5/19/1980	15.50%	10.62%	4.88%
5/27/1980	14.60%	10.65%	3.95%
5/29/1980	16.00%	10.67%	5.33%
6/10/1980	13.78%	10.71%	3.07%
6/25/1980	14.25%	10.74%	3.51%
7/9/1980	14.51%	10.77%	3.74%
7/17/1980	12.90%	10.79%	2.11%
7/18/1980	13.80%	10.79%	3.01%
7/22/1980	14.10%	10.79%	3.31%
7/23/1980	14.19%	10.79%	3.40%
8/1/1980	12.50%	10.80%	1.70%
8/11/1980	14.85%	10.81%	4.04%
8/21/1980	13.03%	10.84%	2.19%
8/28/1980	13.61%	10.87%	2.74%
8/28/1980	14.00%	10.87%	3.13%
9/4/1980	14.00%	10.90%	3.10%
9/24/1980	15.00%	10.98%	4.02%
10/9/1980	14.50%	11.05%	3.45%
10/9/1980	14.50%	11.05%	3.45%
10/24/1980	14.00%	11.09%	2.91%
10/27/1980	15.20%	11.10%	4.10%
10/27/1980	15.20%	11.10%	4.10%
10/28/1980	12.00%	11.10%	0.90%
10/28/1980	13.00%	11.10%	1.90%
10/31/1980	14.50%	11.12%	3.38%
11/4/1980	15.00%	11.12%	3.88%
11/6/1980	14.35%	11.13%	3.22%
11/10/1980	13.25%	11.14%	2.11%
11/17/1980	15.50%	11.15%	4.35%
11/19/1980	13.50%	11.14%	2.36%
12/5/1980	14.60%	11.13%	3.47%
12/8/1980	16.40%	11.13%	5.27%
12/12/1980	15.45%	11.15%	4.30%
12/17/1980	14.20%	11.16%	3.04%
12/17/1980	14.40%	11.16%	3.24%
12/18/1980	14.00%	11.16%	2.84%
12/22/1980	13.45%	11.16%	2.29%
12/26/1980	14.00%	11.15%	2.85%
12/30/1980	14.50%	11.14%	3.36%
12/31/1980	14.56%	11.14%	3.42%
1/7/1981	14.30%	11.13%	3.17%
1/12/1981	14.95%	11.14%	3.81%
1/26/1981	15.25%	11.20%	4.05%
1/30/1981	13.25%	11.23%	2.02%
2/1/1981	14.50%	11.33%	3.17%
2/20/1981	14.50%	11.40%	3.10%
3/12/1981	15.65%	11.60%	4.05%
3/25/1981	15.30%	11.74%	3.56%
4/1/1981	15.30%	11.82%	3.48%
4/9/1981	15.00%	11.91%	3.09%
4/29/1981	13.50%	12.12%	1.38%
4/29/1981	14.25%	12.12%	2.13%
4/30/1981	13.60%	12.14%	1.46%
4/30/1981	15.00%	12.14%	2.86%
5/21/1981	14.00%	12.37%	1.63%
6/3/1981	14.67%	12.45%	2.22%
6/22/1981	16.00%	12.57%	3.43%
6/25/1981	14.75%	12.60%	2.15%
7/2/1981	14.00%	12.64%	1.36%
7/10/1981	16.00%	12.69%	3.31%
7/14/1981	16.90%	12.71%	4.19%
7/21/1981	15.78%	12.78%	3.00%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
7/27/1981	13.77%	12.82%	0.95%
7/27/1981	15.50%	12.82%	2.68%
7/31/1981	13.50%	12.86%	0.64%
7/31/1981	14.20%	12.86%	1.34%
8/12/1981	13.72%	12.93%	0.79%
8/12/1981	13.72%	12.93%	0.79%
8/12/1981	14.41%	12.93%	1.48%
8/25/1981	15.45%	13.02%	2.43%
8/27/1981	14.43%	13.04%	1.39%
8/28/1981	15.00%	13.05%	1.95%
9/23/1981	14.34%	13.24%	1.10%
9/24/1981	16.25%	13.25%	3.00%
9/29/1981	14.50%	13.31%	1.19%
9/30/1981	15.94%	13.32%	2.62%
10/2/1981	14.80%	13.36%	1.44%
10/12/1981	16.25%	13.42%	2.83%
10/20/1981	15.25%	13.50%	1.75%
10/20/1981	16.50%	13.50%	3.00%
10/20/1981	17.00%	13.50%	3.50%
10/23/1981	15.50%	13.54%	1.96%
10/26/1981	13.50%	13.55%	-0.05%
10/29/1981	16.50%	13.60%	2.90%
11/4/1981	15.33%	13.62%	1.71%
11/6/1981	15.17%	13.64%	1.53%
11/12/1981	15.00%	13.64%	1.36%
11/25/1981	15.25%	13.66%	1.59%
11/25/1981	16.10%	13.66%	2.44%
11/25/1981	16.10%	13.66%	2.44%
11/30/1981	16.75%	13.65%	3.10%
12/1/1981	15.70%	13.65%	2.05%
12/1/1981	16.00%	13.65%	2.35%
12/15/1981	15.81%	13.69%	2.12%
12/17/1981	14.75%	13.70%	1.05%
12/22/1981	15.70%	13.72%	1.98%
12/22/1981	16.00%	13.72%	2.28%
12/30/1981	16.00%	13.74%	2.26%
12/30/1981	16.25%	13.74%	2.51%
1/4/1982	15.50%	13.75%	1.75%
1/14/1982	11.95%	13.80%	-1.85%
1/25/1982	16.25%	13.84%	2.41%
1/27/1982	16.84%	13.85%	2.99%
1/31/1982	14.00%	13.85%	0.15%
2/2/1982	16.24%	13.86%	2.38%
2/8/1982	15.50%	13.87%	1.63%
2/9/1982	14.95%	13.88%	1.07%
2/9/1982	15.75%	13.88%	1.87%
2/11/1982	16.00%	13.89%	2.11%
3/1/1982	15.96%	13.91%	2.05%
3/3/1982	15.00%	13.92%	1.08%
3/8/1982	17.10%	13.92%	3.18%
3/26/1982	16.00%	13.97%	2.03%
3/31/1982	16.25%	13.98%	2.27%
4/1/1982	16.50%	13.98%	2.52%
4/6/1982	15.00%	13.99%	1.01%
4/9/1982	16.50%	13.99%	2.51%
4/12/1982	15.10%	13.99%	1.11%
4/12/1982	16.70%	13.99%	2.71%
4/18/1982	14.70%	13.99%	0.71%
4/27/1982	15.00%	13.97%	1.03%
5/10/1982	14.57%	13.93%	0.64%
5/14/1982	15.80%	13.92%	1.88%
5/20/1982	15.82%	13.90%	1.92%
5/21/1982	15.50%	13.90%	1.60%
5/25/1982	16.25%	13.89%	2.36%
6/2/1982	14.50%	13.86%	0.64%
6/7/1982	16.00%	13.84%	2.16%
6/23/1982	15.50%	13.81%	1.69%
6/25/1982	16.50%	13.80%	2.70%
7/1/1982	15.55%	13.78%	1.77%
7/1/1982	16.00%	13.78%	2.22%
7/2/1982	15.10%	13.78%	1.32%
7/13/1982	16.80%	13.75%	3.05%
7/22/1982	14.50%	13.70%	0.80%
7/28/1982	16.10%	13.67%	2.43%
7/30/1982	14.82%	13.66%	1.16%
8/4/1982	15.58%	13.64%	1.94%
8/6/1982	16.50%	13.63%	2.87%
8/11/1982	17.11%	13.62%	3.49%
8/25/1982	16.00%	13.59%	2.41%
8/30/1982	16.25%	13.58%	2.67%
9/3/1982	15.50%	13.56%	1.94%
9/9/1982	16.04%	13.54%	2.50%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
9/15/1982	16.04%	13.52%	2.52%
9/17/1982	15.25%	13.51%	1.74%
9/29/1982	14.50%	13.43%	1.07%
9/30/1982	14.74%	13.41%	1.33%
9/30/1982	15.50%	13.41%	2.09%
9/30/1982	16.50%	13.41%	3.09%
9/30/1982	16.70%	13.41%	3.29%
10/1/1982	16.50%	13.40%	3.10%
10/8/1982	15.00%	13.33%	1.67%
10/15/1982	15.90%	13.25%	2.65%
10/19/1982	15.90%	13.22%	2.68%
10/27/1982	17.00%	13.12%	3.88%
10/28/1982	14.75%	13.10%	1.65%
11/2/1982	16.25%	13.07%	3.18%
11/4/1982	15.75%	13.03%	2.72%
11/5/1982	14.73%	13.01%	1.72%
11/17/1982	16.00%	12.86%	3.14%
11/23/1982	15.50%	12.78%	2.72%
11/24/1982	14.50%	12.77%	1.73%
11/24/1982	16.02%	12.77%	3.25%
11/30/1982	12.98%	12.72%	0.26%
11/30/1982	15.50%	12.72%	2.78%
11/30/1982	15.50%	12.72%	2.78%
11/30/1982	15.65%	12.72%	2.93%
11/30/1982	16.00%	12.72%	3.28%
11/30/1982	16.10%	12.72%	3.38%
12/3/1982	15.33%	12.68%	2.65%
12/8/1982	15.75%	12.63%	3.12%
12/13/1982	16.00%	12.58%	3.42%
12/14/1982	16.40%	12.56%	3.84%
12/17/1982	16.25%	12.51%	3.74%
12/20/1982	15.00%	12.50%	2.50%
12/21/1982	15.70%	12.49%	3.21%
12/28/1982	15.25%	12.42%	2.83%
12/28/1982	15.25%	12.42%	2.83%
12/29/1982	16.25%	12.40%	3.85%
12/29/1982	16.25%	12.40%	3.85%
1/11/1983	15.90%	12.25%	3.65%
1/12/1983	15.50%	12.24%	3.26%
1/18/1983	15.00%	12.18%	2.82%
1/24/1983	15.50%	12.13%	3.37%
1/24/1983	16.00%	12.13%	3.87%
1/28/1983	14.90%	12.07%	2.83%
1/31/1983	15.00%	12.06%	2.94%
2/10/1983	15.00%	11.97%	3.03%
2/25/1983	15.70%	11.84%	3.86%
3/2/1983	15.25%	11.79%	3.46%
3/16/1983	16.00%	11.62%	4.38%
3/21/1983	14.96%	11.56%	3.40%
3/23/1983	15.40%	11.53%	3.87%
3/23/1983	16.10%	11.53%	4.57%
3/24/1983	15.00%	11.51%	3.49%
4/12/1983	13.25%	11.30%	1.95%
4/29/1983	15.05%	11.09%	3.96%
5/3/1983	15.40%	11.06%	4.34%
5/9/1983	15.50%	11.00%	4.50%
5/19/1983	14.85%	10.90%	3.95%
5/31/1983	14.00%	10.84%	3.16%
6/2/1983	14.50%	10.82%	3.68%
6/7/1983	14.50%	10.80%	3.70%
6/9/1983	14.85%	10.79%	4.06%
6/20/1983	14.15%	10.74%	3.41%
6/20/1983	16.50%	10.74%	5.76%
6/27/1983	14.50%	10.71%	3.79%
6/30/1983	14.80%	10.70%	4.10%
6/30/1983	15.90%	10.70%	5.20%
7/1/1983	14.80%	10.70%	4.10%
7/5/1983	15.00%	10.70%	4.30%
7/8/1983	15.50%	10.69%	4.81%
7/19/1983	15.00%	10.71%	4.29%
7/19/1983	15.10%	10.71%	4.39%
8/18/1983	15.30%	10.83%	4.47%
8/19/1983	15.79%	10.84%	4.95%
8/29/1983	16.00%	10.87%	5.13%
8/31/1983	14.75%	10.88%	3.87%
8/31/1983	15.25%	10.88%	4.37%
9/8/1983	14.75%	10.92%	3.83%
9/16/1983	15.51%	10.95%	4.56%
9/26/1983	14.50%	10.99%	3.51%
9/28/1983	14.25%	11.00%	3.25%
9/30/1983	16.15%	11.01%	5.14%
9/30/1983	16.25%	11.01%	5.24%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
10/1/1983	16.25%	11.01%	5.24%
10/13/1983	15.52%	11.05%	4.47%
10/19/1983	15.20%	11.07%	4.13%
10/26/1983	14.75%	11.09%	3.66%
10/27/1983	14.88%	11.09%	3.79%
10/27/1983	15.33%	11.09%	4.24%
11/9/1983	14.82%	11.13%	3.69%
11/9/1983	16.51%	11.13%	5.38%
11/9/1983	16.51%	11.13%	5.38%
12/1/1983	14.50%	11.20%	3.30%
12/8/1983	15.90%	11.23%	4.67%
12/9/1983	15.30%	11.24%	4.06%
12/12/1983	14.50%	11.25%	3.25%
12/12/1983	15.50%	11.25%	4.25%
12/20/1983	15.40%	11.29%	4.11%
12/20/1983	16.00%	11.29%	4.71%
12/22/1983	15.75%	11.30%	4.45%
12/29/1983	15.00%	11.33%	3.67%
12/30/1983	15.00%	11.33%	3.67%
1/10/1984	15.90%	11.37%	4.53%
1/13/1984	15.50%	11.40%	4.10%
1/18/1984	15.53%	11.42%	4.11%
1/26/1984	15.90%	11.46%	4.44%
2/14/1984	14.25%	11.55%	2.70%
2/28/1984	14.50%	11.62%	2.88%
3/20/1984	16.00%	11.73%	4.27%
3/23/1984	15.50%	11.76%	3.74%
4/9/1984	15.20%	11.84%	3.36%
4/18/1984	16.20%	11.88%	4.32%
4/27/1984	15.85%	11.93%	3.92%
5/15/1984	13.35%	12.00%	1.35%
5/16/1984	15.00%	12.01%	2.99%
5/22/1984	14.40%	12.05%	2.35%
6/13/1984	15.50%	12.20%	3.30%
7/10/1984	16.00%	12.39%	3.61%
8/7/1984	16.69%	12.53%	4.16%
8/9/1984	15.33%	12.54%	2.79%
8/17/1984	14.82%	12.56%	2.26%
8/21/1984	14.64%	12.57%	2.07%
8/27/1984	14.52%	12.59%	1.93%
8/28/1984	14.75%	12.59%	2.16%
8/30/1984	15.60%	12.60%	3.00%
9/12/1984	15.60%	12.62%	2.98%
9/12/1984	15.90%	12.62%	3.28%
9/25/1984	16.25%	12.64%	3.61%
10/2/1984	14.80%	12.65%	2.15%
10/9/1984	14.75%	12.66%	2.09%
10/10/1984	15.50%	12.66%	2.84%
10/18/1984	15.00%	12.67%	2.33%
10/24/1984	15.50%	12.67%	2.83%
11/7/1984	15.00%	12.67%	2.33%
11/20/1984	15.92%	12.66%	3.26%
11/30/1984	15.50%	12.63%	2.87%
12/18/1984	15.00%	12.58%	2.42%
12/20/1984	15.00%	12.57%	2.43%
12/28/1984	15.75%	12.54%	3.21%
12/28/1984	16.25%	12.54%	3.71%
1/2/1985	16.00%	12.53%	3.47%
1/31/1985	14.75%	12.40%	2.35%
2/7/1985	14.85%	12.35%	2.50%
2/15/1985	15.00%	12.29%	2.71%
2/20/1985	14.50%	12.27%	2.23%
2/22/1985	14.86%	12.25%	2.61%
3/14/1985	15.50%	12.12%	3.38%
3/28/1985	14.80%	12.04%	2.76%
4/9/1985	15.50%	11.97%	3.53%
4/16/1985	15.70%	11.91%	3.79%
6/10/1985	15.75%	11.57%	4.18%
6/26/1985	14.82%	11.45%	3.37%
7/9/1985	15.00%	11.37%	3.63%
7/26/1985	14.50%	11.26%	3.24%
8/29/1985	14.50%	11.14%	3.36%
8/30/1985	14.38%	11.13%	3.25%
9/12/1985	15.25%	11.09%	4.16%
9/23/1985	15.30%	11.06%	4.24%
9/25/1985	14.50%	11.05%	3.45%
9/26/1985	13.80%	11.04%	2.76%
9/26/1985	14.50%	11.04%	3.46%
10/25/1985	15.25%	10.94%	4.31%
11/8/1985	12.94%	10.89%	2.05%
11/20/1985	14.90%	10.84%	4.06%
11/25/1985	13.30%	10.81%	2.49%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
12/6/1985	12.00%	10.73%	1.27%
12/11/1985	14.90%	10.69%	4.21%
12/20/1985	14.88%	10.60%	4.28%
12/20/1985	15.00%	10.60%	4.40%
12/20/1985	15.00%	10.60%	4.40%
12/30/1985	15.75%	10.54%	5.21%
12/31/1985	14.00%	10.53%	3.47%
12/31/1985	14.50%	10.53%	3.97%
1/17/1986	14.50%	10.39%	4.11%
2/1/1986	12.50%	10.22%	2.28%
2/12/1986	15.20%	10.21%	4.99%
3/11/1986	14.00%	9.99%	4.01%
4/2/1986	12.90%	9.78%	3.12%
4/28/1986	13.01%	9.48%	3.53%
5/21/1986	13.25%	9.19%	4.06%
5/28/1986	14.00%	9.13%	4.87%
5/29/1986	13.90%	9.11%	4.79%
6/2/1986	13.00%	9.09%	3.91%
6/11/1986	14.00%	8.99%	5.01%
6/13/1986	13.55%	8.95%	4.60%
6/27/1986	11.88%	8.78%	3.10%
7/14/1986	12.60%	8.60%	4.00%
7/30/1986	13.30%	8.40%	4.90%
8/14/1986	13.50%	8.23%	5.27%
9/5/1986	13.30%	8.02%	5.28%
9/23/1986	12.75%	7.91%	4.84%
10/30/1986	13.00%	7.67%	5.33%
10/31/1986	13.75%	7.66%	6.09%
11/10/1986	14.00%	7.61%	6.39%
11/19/1986	13.75%	7.57%	6.18%
11/25/1986	13.15%	7.54%	5.61%
12/22/1986	13.80%	7.48%	6.32%
12/30/1986	13.90%	7.47%	6.43%
1/20/1987	12.75%	7.48%	5.27%
1/23/1987	13.55%	7.48%	6.07%
1/27/1987	12.16%	7.47%	4.69%
2/13/1987	12.60%	7.48%	5.12%
2/24/1987	12.00%	7.48%	4.52%
3/30/1987	12.20%	7.47%	4.73%
3/31/1987	13.00%	7.47%	5.53%
5/5/1987	12.85%	7.60%	5.25%
5/28/1987	13.50%	7.73%	5.77%
6/15/1987	13.20%	7.81%	5.39%
6/30/1987	12.60%	7.85%	4.75%
7/10/1987	12.90%	7.89%	5.01%
7/27/1987	13.50%	7.94%	5.56%
8/25/1987	11.40%	8.09%	3.31%
9/18/1987	13.00%	8.28%	4.72%
10/20/1987	12.60%	8.56%	4.04%
10/20/1987	12.98%	8.56%	4.42%
11/12/1987	12.75%	8.69%	4.06%
11/13/1987	12.75%	8.69%	4.06%
11/24/1987	12.50%	8.75%	3.75%
12/8/1987	12.50%	8.83%	3.67%
12/22/1987	12.00%	8.91%	3.09%
12/31/1987	12.85%	8.95%	3.90%
12/31/1987	13.25%	8.95%	4.30%
1/15/1988	13.15%	9.00%	4.15%
1/20/1988	12.75%	9.00%	3.75%
1/29/1988	13.20%	9.01%	4.19%
2/4/1988	12.60%	9.00%	3.60%
3/23/1988	13.00%	8.97%	4.03%
5/27/1988	13.18%	9.04%	4.14%
6/14/1988	13.50%	9.02%	4.48%
6/17/1988	11.72%	9.01%	2.71%
6/24/1988	11.50%	8.99%	2.51%
7/1/1988	12.75%	8.97%	3.78%
7/8/1988	12.00%	8.95%	3.05%
7/18/1988	12.00%	8.92%	3.08%
7/20/1988	13.40%	8.92%	4.48%
8/8/1988	12.74%	8.93%	3.81%
9/20/1988	12.90%	8.95%	3.95%
9/26/1988	12.40%	8.95%	3.45%
9/27/1988	13.65%	8.96%	4.69%
9/30/1988	13.25%	8.96%	4.29%
10/13/1988	13.10%	8.95%	4.15%
10/21/1988	12.80%	8.96%	3.84%
10/25/1988	13.25%	8.96%	4.29%
10/26/1988	13.50%	8.97%	4.53%
10/27/1988	12.95%	8.97%	3.98%
10/28/1988	13.00%	8.97%	4.03%
11/15/1988	12.00%	9.00%	3.00%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
11/29/1988	12.75%	9.03%	3.72%
12/19/1988	13.00%	9.07%	3.93%
12/21/1988	12.90%	9.07%	3.83%
12/22/1988	13.50%	9.07%	4.43%
1/26/1989	12.60%	9.07%	3.53%
1/27/1989	13.00%	9.07%	3.93%
2/8/1989	13.37%	9.06%	4.31%
3/8/1989	13.00%	9.05%	3.95%
5/4/1989	13.00%	9.05%	3.95%
6/8/1989	13.50%	8.97%	4.53%
7/19/1989	11.80%	8.85%	2.95%
7/25/1989	12.80%	8.83%	3.97%
7/31/1989	13.00%	8.81%	4.19%
8/14/1989	12.50%	8.77%	3.73%
8/22/1989	12.80%	8.74%	4.06%
8/23/1989	12.90%	8.73%	4.17%
9/21/1989	12.10%	8.64%	3.46%
10/6/1989	13.00%	8.59%	4.41%
10/17/1989	12.41%	8.56%	3.85%
10/18/1989	13.25%	8.55%	4.70%
10/20/1989	12.90%	8.54%	4.36%
10/31/1989	13.60%	8.51%	5.09%
11/3/1989	12.93%	8.49%	4.44%
11/5/1989	13.20%	8.49%	4.71%
11/9/1989	12.60%	8.47%	4.13%
11/9/1989	13.00%	8.47%	4.53%
11/28/1989	12.75%	8.39%	4.36%
12/7/1989	13.25%	8.35%	4.90%
12/15/1989	13.00%	8.31%	4.69%
12/20/1989	12.90%	8.28%	4.62%
12/21/1989	12.80%	8.28%	4.52%
12/21/1989	12.90%	8.28%	4.62%
12/27/1989	12.50%	8.26%	4.24%
1/9/1990	13.00%	8.21%	4.79%
1/18/1990	12.50%	8.19%	4.31%
1/26/1990	12.10%	8.17%	3.93%
3/21/1990	12.80%	8.15%	4.65%
3/28/1990	13.00%	8.16%	4.84%
4/5/1990	12.20%	8.17%	4.03%
4/12/1990	13.25%	8.19%	5.06%
4/30/1990	12.45%	8.24%	4.21%
5/31/1990	12.40%	8.31%	4.09%
6/15/1990	13.20%	8.33%	4.87%
6/27/1990	12.90%	8.34%	4.56%
6/29/1990	13.25%	8.34%	4.91%
7/6/1990	12.10%	8.35%	3.75%
7/19/1990	11.70%	8.37%	3.33%
8/31/1990	12.50%	8.52%	3.98%
8/31/1990	12.50%	8.52%	3.98%
9/13/1990	12.50%	8.56%	3.94%
9/18/1990	12.75%	8.58%	4.17%
9/20/1990	12.50%	8.60%	3.90%
10/2/1990	13.00%	8.64%	4.36%
10/17/1990	11.90%	8.68%	3.22%
10/31/1990	12.95%	8.70%	4.25%
11/9/1990	13.25%	8.71%	4.54%
11/19/1990	13.00%	8.70%	4.30%
11/21/1990	12.10%	8.70%	3.40%
11/21/1990	12.50%	8.70%	3.80%
11/28/1990	12.75%	8.70%	4.05%
11/29/1990	12.75%	8.70%	4.05%
12/18/1990	13.10%	8.68%	4.42%
12/20/1990	12.50%	8.67%	3.83%
12/21/1990	12.50%	8.67%	3.83%
12/21/1990	13.00%	8.67%	4.33%
12/21/1990	13.60%	8.67%	4.93%
1/3/1991	13.02%	8.66%	4.36%
1/16/1991	13.25%	8.65%	4.60%
1/25/1991	11.70%	8.62%	3.08%
2/15/1991	12.70%	8.56%	4.14%
2/15/1991	12.80%	8.56%	4.24%
4/3/1991	13.00%	8.52%	4.48%
4/30/1991	12.45%	8.49%	3.96%
4/30/1991	13.00%	8.49%	4.51%
6/25/1991	11.70%	8.37%	3.33%
6/28/1991	12.50%	8.36%	4.14%
7/1/1991	11.70%	8.36%	3.34%
7/19/1991	12.10%	8.33%	3.77%
7/19/1991	12.30%	8.33%	3.97%
7/22/1991	12.90%	8.33%	4.57%
8/15/1991	12.25%	8.29%	3.96%
8/29/1991	13.30%	8.27%	5.03%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
9/27/1991	12.50%	8.24%	4.26%
9/30/1991	12.40%	8.23%	4.17%
10/3/1991	11.30%	8.23%	3.07%
10/9/1991	11.70%	8.22%	3.48%
10/15/1991	13.40%	8.21%	5.19%
11/1/1991	12.90%	8.20%	4.70%
11/8/1991	12.75%	8.20%	4.55%
11/26/1991	11.60%	8.19%	3.41%
11/26/1991	12.00%	8.19%	3.81%
11/27/1991	12.70%	8.18%	4.52%
12/6/1991	12.70%	8.17%	4.53%
12/10/1991	11.75%	8.17%	3.58%
12/19/1991	12.60%	8.15%	4.45%
12/19/1991	12.80%	8.15%	4.65%
12/30/1991	12.10%	8.12%	3.98%
1/22/1992	12.84%	8.07%	4.77%
1/31/1992	12.00%	8.05%	3.95%
2/20/1992	13.00%	8.02%	4.98%
2/27/1992	11.75%	8.01%	3.74%
3/18/1992	12.50%	7.97%	4.53%
5/15/1992	12.75%	7.88%	4.87%
6/24/1992	12.20%	7.85%	4.35%
6/29/1992	11.00%	7.85%	3.15%
7/14/1992	12.00%	7.84%	4.16%
7/22/1992	11.20%	7.83%	3.37%
8/10/1992	12.10%	7.79%	4.31%
8/26/1992	12.43%	7.76%	4.67%
9/30/1992	11.60%	7.72%	3.88%
10/6/1992	12.25%	7.71%	4.54%
10/13/1992	12.75%	7.71%	5.04%
10/23/1992	11.65%	7.71%	3.94%
10/28/1992	12.25%	7.71%	4.54%
10/29/1992	12.75%	7.71%	5.04%
10/30/1992	11.40%	7.71%	3.69%
11/9/1992	10.60%	7.70%	2.90%
11/25/1992	11.00%	7.68%	3.32%
11/25/1992	12.00%	7.68%	4.32%
12/3/1992	11.85%	7.67%	4.18%
12/16/1992	11.90%	7.65%	4.25%
12/22/1992	12.30%	7.64%	4.66%
12/22/1992	12.40%	7.64%	4.76%
12/30/1992	12.00%	7.62%	4.38%
12/31/1992	12.00%	7.62%	4.38%
1/12/1993	12.00%	7.60%	4.40%
1/12/1993	12.00%	7.60%	4.40%
2/2/1993	11.40%	7.55%	3.85%
2/22/1993	11.60%	7.49%	4.11%
4/23/1993	11.75%	7.28%	4.47%
5/3/1993	11.50%	7.26%	4.24%
5/3/1993	11.75%	7.26%	4.49%
6/3/1993	12.00%	7.20%	4.80%
6/7/1993	11.50%	7.20%	4.30%
6/22/1993	11.75%	7.17%	4.58%
7/21/1993	11.78%	7.09%	4.69%
7/21/1993	11.90%	7.09%	4.81%
7/23/1993	11.50%	7.08%	4.42%
7/29/1993	11.50%	7.05%	4.45%
8/12/1993	10.75%	6.99%	3.76%
8/24/1993	11.50%	6.94%	4.56%
8/31/1993	11.90%	6.90%	5.00%
9/1/1993	11.25%	6.89%	4.36%
9/1/1993	11.47%	6.89%	4.58%
9/27/1993	10.50%	6.76%	3.74%
9/29/1993	11.00%	6.75%	4.25%
9/30/1993	11.60%	6.74%	4.86%
10/8/1993	11.50%	6.69%	4.81%
10/14/1993	11.20%	6.67%	4.53%
10/15/1993	11.75%	6.66%	5.09%
10/25/1993	11.55%	6.62%	4.93%
10/28/1993	11.50%	6.60%	4.90%
10/29/1993	10.10%	6.59%	3.51%
10/29/1993	10.20%	6.59%	3.61%
10/29/1993	11.25%	6.59%	4.66%
11/2/1993	10.80%	6.58%	4.22%
11/12/1993	11.80%	6.54%	5.26%
11/23/1993	12.50%	6.51%	5.99%
11/26/1993	11.00%	6.51%	4.49%
12/1/1993	11.45%	6.50%	4.95%
12/16/1993	10.60%	6.46%	4.14%
12/16/1993	11.20%	6.46%	4.74%
12/21/1993	11.30%	6.46%	4.84%
12/22/1993	11.00%	6.45%	4.55%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
12/23/1993	10.10%	6.45%	3.65%
1/5/1994	11.50%	6.42%	5.08%
1/10/1994	11.00%	6.41%	4.59%
1/25/1994	12.00%	6.39%	5.61%
2/2/1994	10.40%	6.37%	4.03%
2/9/1994	10.70%	6.36%	4.34%
4/6/1994	11.24%	6.35%	4.89%
4/25/1994	11.00%	6.40%	4.60%
6/16/1994	10.50%	6.61%	3.89%
6/23/1994	10.60%	6.65%	3.95%
7/19/1994	10.70%	6.80%	3.90%
9/29/1994	10.90%	7.18%	3.72%
9/29/1994	11.00%	7.18%	3.82%
10/7/1994	11.87%	7.23%	4.64%
10/18/1994	11.50%	7.28%	4.22%
10/18/1994	11.50%	7.28%	4.22%
10/24/1994	11.00%	7.32%	3.68%
11/22/1994	12.12%	7.50%	4.62%
11/29/1994	11.30%	7.52%	3.78%
12/1/1994	11.00%	7.53%	3.47%
12/8/1994	11.50%	7.56%	3.94%
12/8/1994	11.70%	7.56%	4.14%
12/12/1994	11.82%	7.57%	4.25%
12/14/1994	11.50%	7.58%	3.92%
12/19/1994	11.50%	7.60%	3.90%
4/19/1995	11.00%	7.71%	3.29%
9/11/1995	11.30%	7.19%	4.11%
9/15/1995	10.40%	7.16%	3.24%
9/29/1995	11.50%	7.09%	4.41%
10/13/1995	10.76%	7.02%	3.74%
11/7/1995	12.50%	6.89%	5.61%
11/8/1995	11.10%	6.88%	4.22%
11/8/1995	11.30%	6.88%	4.42%
11/17/1995	10.90%	6.83%	4.07%
11/20/1995	11.40%	6.82%	4.58%
11/27/1995	13.60%	6.80%	6.80%
12/14/1995	11.30%	6.70%	4.60%
12/20/1995	11.60%	6.67%	4.93%
1/31/1996	11.30%	6.48%	4.82%
3/11/1996	11.60%	6.41%	5.19%
4/3/1996	11.13%	6.42%	4.71%
4/15/1996	10.50%	6.43%	4.07%
4/17/1996	10.77%	6.43%	4.34%
4/26/1996	10.60%	6.43%	4.17%
5/10/1996	11.00%	6.43%	4.57%
5/13/1996	11.25%	6.43%	4.82%
7/3/1996	11.25%	6.50%	4.75%
7/22/1996	11.25%	6.54%	4.71%
10/3/1996	10.00%	6.76%	3.24%
10/29/1996	11.30%	6.83%	4.47%
11/26/1996	11.30%	6.85%	4.45%
11/27/1996	11.30%	6.85%	4.45%
11/29/1996	11.00%	6.85%	4.15%
12/12/1996	11.96%	6.84%	5.12%
12/17/1996	11.50%	6.84%	4.66%
1/22/1997	11.30%	6.84%	4.46%
1/27/1997	11.25%	6.84%	4.41%
1/31/1997	11.25%	6.84%	4.41%
2/13/1997	11.00%	6.83%	4.17%
2/13/1997	11.80%	6.83%	4.97%
2/20/1997	11.80%	6.82%	4.98%
3/27/1997	10.75%	6.80%	3.95%
4/29/1997	11.70%	6.81%	4.89%
7/17/1997	12.00%	6.78%	5.22%
10/29/1997	10.75%	6.71%	4.04%
10/31/1997	11.25%	6.70%	4.55%
12/24/1997	10.75%	6.56%	4.19%
4/28/1998	10.90%	6.13%	4.77%
4/30/1998	12.20%	6.12%	6.08%
6/30/1998	11.00%	5.96%	5.04%
8/26/1998	10.93%	5.83%	5.10%
9/3/1998	11.40%	5.81%	5.59%
9/15/1998	11.90%	5.78%	6.12%
10/7/1998	11.06%	5.71%	5.35%
10/30/1998	11.40%	5.64%	5.76%
12/10/1998	12.20%	5.53%	6.67%
12/17/1998	12.10%	5.51%	6.59%
2/19/1999	11.15%	5.35%	5.80%
3/1/1999	10.65%	5.34%	5.31%
3/1/1999	10.65%	5.34%	5.31%
6/8/1999	11.25%	5.35%	5.90%
11/12/1999	10.25%	5.91%	4.34%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
12/14/1999	10.50%	5.98%	4.52%
1/28/2000	10.71%	6.15%	4.56%
2/17/2000	10.60%	6.18%	4.42%
5/25/2000	10.80%	6.19%	4.61%
6/19/2000	11.05%	6.18%	4.87%
6/22/2000	11.25%	6.18%	5.07%
7/17/2000	11.06%	6.16%	4.90%
7/20/2000	12.20%	6.15%	6.05%
8/11/2000	11.00%	6.11%	4.89%
9/27/2000	11.25%	6.02%	5.23%
9/29/2000	11.16%	6.02%	5.14%
10/5/2000	11.30%	6.00%	5.30%
11/28/2000	12.90%	5.89%	7.01%
11/30/2000	12.10%	5.88%	6.22%
2/5/2001	11.50%	5.77%	5.73%
3/15/2001	11.25%	5.68%	5.57%
5/8/2001	10.75%	5.62%	5.13%
10/24/2001	10.30%	5.54%	4.76%
10/24/2001	11.00%	5.54%	5.46%
1/9/2002	10.00%	5.51%	4.49%
1/30/2002	11.00%	5.49%	5.51%
1/31/2002	11.00%	5.49%	5.51%
4/17/2002	11.50%	5.47%	6.03%
4/29/2002	11.00%	5.47%	5.53%
6/11/2002	11.77%	5.47%	6.30%
6/20/2002	12.30%	5.47%	6.83%
8/28/2002	11.00%	5.47%	5.53%
9/11/2002	11.20%	5.47%	5.73%
9/12/2002	12.30%	5.47%	6.83%
10/28/2002	11.30%	5.47%	5.83%
10/30/2002	10.60%	5.47%	5.13%
11/1/2002	12.60%	5.47%	7.13%
11/7/2002	11.40%	5.47%	5.93%
11/8/2002	10.75%	5.47%	5.28%
11/20/2002	10.00%	5.47%	4.53%
11/20/2002	10.50%	5.47%	5.03%
12/4/2002	10.75%	5.47%	5.28%
12/30/2002	11.20%	5.47%	5.73%
1/6/2003	11.25%	5.47%	5.78%
2/28/2003	12.30%	5.47%	6.83%
3/7/2003	9.96%	5.47%	4.49%
3/12/2003	11.40%	5.47%	5.93%
3/20/2003	12.00%	5.47%	6.53%
4/3/2003	12.00%	5.47%	6.53%
5/2/2003	11.40%	5.47%	5.93%
5/15/2003	11.05%	5.47%	5.58%
6/26/2003	11.00%	5.47%	5.53%
7/1/2003	11.00%	5.47%	5.53%
7/29/2003	11.71%	5.47%	6.24%
8/22/2003	10.20%	5.47%	4.73%
9/17/2003	9.90%	5.47%	4.43%
9/25/2003	10.25%	5.47%	4.78%
10/17/2003	10.54%	5.47%	5.07%
10/22/2003	10.46%	5.47%	4.99%
10/22/2003	10.71%	5.47%	5.24%
10/30/2003	11.00%	5.47%	5.53%
10/31/2003	10.20%	5.47%	4.73%
10/31/2003	10.75%	5.47%	5.28%
11/10/2003	10.60%	5.47%	5.13%
12/9/2003	10.50%	5.47%	5.03%
12/18/2003	10.50%	5.47%	5.03%
12/19/2003	12.00%	5.47%	6.53%
12/19/2003	12.00%	5.47%	6.53%
1/13/2004	10.25%	5.47%	4.78%
1/13/2004	12.00%	5.47%	6.53%
2/9/2004	11.25%	5.47%	5.78%
3/16/2004	10.90%	5.47%	5.43%
3/16/2004	10.90%	5.47%	5.43%
5/25/2004	10.00%	5.47%	4.53%
6/2/2004	11.22%	5.47%	5.75%
6/30/2004	10.50%	5.47%	5.03%
7/8/2004	10.00%	5.47%	4.53%
7/22/2004	10.25%	5.47%	4.78%
8/26/2004	10.50%	5.47%	5.03%
8/26/2004	10.50%	5.47%	5.03%
9/9/2004	10.40%	5.47%	4.93%
9/21/2004	10.50%	5.47%	5.03%
9/27/2004	10.30%	5.47%	4.83%
9/27/2004	10.50%	5.47%	5.03%
10/20/2004	10.20%	5.47%	4.73%
11/30/2004	10.60%	5.47%	5.13%
12/8/2004	9.90%	5.47%	4.43%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
12/21/2004	11.50%	5.47%	6.03%
12/22/2004	11.50%	5.47%	6.03%
12/28/2004	10.25%	5.47%	4.78%
2/18/2005	10.30%	5.47%	4.83%
3/29/2005	11.00%	5.47%	5.53%
4/13/2005	10.60%	5.47%	5.13%
4/28/2005	11.00%	5.47%	5.53%
5/17/2005	10.00%	5.47%	4.53%
6/8/2005	10.18%	5.47%	4.71%
6/10/2005	10.90%	5.47%	5.43%
7/6/2005	10.50%	5.47%	5.03%
7/19/2005	11.50%	5.47%	6.03%
8/11/2005	10.40%	5.47%	4.93%
9/19/2005	9.45%	5.47%	3.98%
9/30/2005	10.51%	5.47%	5.04%
10/4/2005	9.90%	5.47%	4.43%
10/4/2005	10.75%	5.47%	5.28%
10/14/2005	10.40%	5.47%	4.93%
10/31/2005	10.25%	5.47%	4.78%
11/2/2005	9.70%	5.47%	4.23%
11/30/2005	10.00%	5.47%	4.53%
12/9/2005	9.70%	5.47%	4.23%
12/12/2005	11.00%	5.47%	5.53%
12/20/2005	10.13%	5.47%	4.66%
12/21/2005	10.40%	5.47%	4.93%
12/21/2005	11.00%	5.47%	5.53%
12/22/2005	10.20%	5.47%	4.73%
12/22/2005	11.00%	5.47%	5.53%
12/28/2005	10.00%	5.47%	4.53%
1/5/2006	11.00%	5.47%	5.53%
1/25/2006	11.20%	5.47%	5.73%
1/25/2006	11.20%	5.47%	5.73%
2/3/2006	10.50%	5.47%	5.03%
2/15/2006	9.50%	5.44%	4.06%
4/26/2006	10.60%	5.22%	5.38%
7/24/2006	9.60%	5.13%	4.47%
7/24/2006	10.00%	5.13%	4.87%
9/20/2006	11.00%	5.06%	5.94%
9/26/2006	10.75%	5.05%	5.70%
10/20/2006	9.80%	4.99%	4.81%
11/2/2006	9.71%	4.97%	4.74%
11/9/2006	10.00%	4.96%	5.04%
11/21/2006	11.00%	4.97%	6.03%
12/5/2006	10.20%	4.97%	5.23%
1/5/2007	10.40%	4.96%	5.44%
1/9/2007	11.00%	4.95%	6.05%
1/11/2007	10.90%	4.95%	5.95%
1/19/2007	10.80%	4.94%	5.86%
1/26/2007	10.00%	4.94%	5.06%
2/8/2007	10.40%	4.92%	5.48%
3/14/2007	10.10%	4.87%	5.23%
3/20/2007	10.25%	4.86%	5.39%
3/21/2007	11.35%	4.86%	6.49%
3/22/2007	10.50%	4.86%	5.64%
3/29/2007	10.00%	4.85%	5.15%
6/13/2007	10.75%	4.82%	5.93%
6/29/2007	9.53%	4.84%	4.69%
6/29/2007	10.10%	4.84%	5.26%
7/3/2007	10.25%	4.85%	5.40%
7/13/2007	9.50%	4.86%	4.64%
7/24/2007	10.40%	4.87%	5.53%
8/1/2007	10.15%	4.87%	5.28%
8/29/2007	10.50%	4.90%	5.60%
9/10/2007	9.71%	4.91%	4.80%
9/19/2007	10.00%	4.91%	5.09%
9/25/2007	9.70%	4.91%	4.79%
10/8/2007	10.48%	4.92%	5.56%
10/19/2007	10.50%	4.91%	5.59%
10/25/2007	9.65%	4.91%	4.74%
11/15/2007	10.00%	4.89%	5.11%
11/20/2007	9.90%	4.89%	5.01%
11/27/2007	10.00%	4.88%	5.12%
11/29/2007	10.90%	4.88%	6.02%
12/14/2007	10.80%	4.87%	5.93%
12/18/2007	10.40%	4.86%	5.54%
12/19/2007	9.80%	4.86%	4.94%
12/19/2007	9.80%	4.86%	4.94%
12/19/2007	10.20%	4.86%	5.34%
12/21/2007	9.10%	4.86%	4.24%
1/8/2008	10.75%	4.84%	5.91%
1/17/2008	10.75%	4.82%	5.93%
1/17/2008	10.75%	4.82%	5.93%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
2/5/2008	9.99%	4.78%	5.21%
2/5/2008	10.19%	4.78%	5.41%
2/13/2008	10.20%	4.77%	5.43%
3/31/2008	10.00%	4.66%	5.34%
5/28/2008	10.50%	4.55%	5.95%
6/24/2008	10.00%	4.54%	5.46%
6/27/2008	10.00%	4.54%	5.46%
7/31/2008	10.70%	4.51%	6.19%
7/31/2008	10.82%	4.51%	6.31%
8/27/2008	10.25%	4.51%	5.74%
9/2/2008	10.25%	4.51%	5.74%
9/19/2008	10.70%	4.49%	6.21%
9/24/2008	10.68%	4.48%	6.20%
9/24/2008	10.68%	4.48%	6.20%
9/24/2008	10.68%	4.48%	6.20%
9/30/2008	10.20%	4.48%	5.72%
10/3/2008	10.30%	4.48%	5.82%
10/8/2008	10.15%	4.47%	5.68%
10/20/2008	10.06%	4.47%	5.59%
10/24/2008	10.60%	4.47%	6.13%
10/24/2008	10.60%	4.47%	6.13%
11/21/2008	10.50%	4.43%	6.07%
11/21/2008	10.50%	4.43%	6.07%
11/21/2008	10.50%	4.43%	6.07%
11/24/2008	10.50%	4.43%	6.07%
12/3/2008	10.39%	4.39%	6.00%
12/24/2008	10.00%	4.27%	5.73%
12/26/2008	10.10%	4.26%	5.84%
12/29/2008	10.20%	4.25%	5.95%
1/13/2009	10.45%	4.17%	6.28%
2/2/2009	10.05%	4.08%	5.97%
3/9/2009	10.30%	3.95%	6.35%
3/25/2009	10.17%	3.89%	6.28%
4/2/2009	10.75%	3.85%	6.90%
5/5/2009	10.75%	3.77%	6.98%
5/15/2009	10.20%	3.75%	6.45%
5/29/2009	9.54%	3.74%	5.80%
6/3/2009	10.10%	3.74%	6.36%
6/22/2009	10.00%	3.77%	6.23%
6/29/2009	10.21%	3.77%	6.44%
6/30/2009	9.31%	3.77%	5.54%
7/17/2009	9.26%	3.78%	5.48%
7/17/2009	10.50%	3.78%	6.72%
10/16/2009	10.40%	4.06%	6.34%
10/26/2009	10.10%	4.10%	6.00%
10/28/2009	10.15%	4.10%	6.05%
10/28/2009	10.15%	4.10%	6.05%
10/30/2009	9.95%	4.11%	5.84%
11/20/2009	9.45%	4.17%	5.28%
12/14/2009	10.50%	4.22%	6.28%
12/16/2009	10.75%	4.23%	6.52%
12/17/2009	10.30%	4.24%	6.06%
12/18/2009	10.40%	4.24%	6.16%
12/18/2009	10.40%	4.24%	6.16%
12/18/2009	10.50%	4.24%	6.26%
12/22/2009	10.20%	4.25%	5.95%
12/22/2009	10.40%	4.25%	6.15%
12/28/2009	10.85%	4.27%	6.58%
12/29/2009	10.38%	4.27%	6.11%
1/11/2010	10.24%	4.32%	5.92%
1/21/2010	10.23%	4.35%	5.88%
1/21/2010	10.33%	4.35%	5.98%
1/26/2010	10.40%	4.36%	6.04%
2/10/2010	10.00%	4.39%	5.61%
2/23/2010	10.50%	4.41%	6.09%
3/9/2010	9.60%	4.41%	5.19%
3/24/2010	10.13%	4.41%	5.72%
3/31/2010	10.70%	4.43%	6.27%
4/1/2010	9.50%	4.43%	5.07%
4/2/2010	10.10%	4.43%	5.67%
4/8/2010	10.35%	4.44%	5.91%
4/29/2010	9.19%	4.46%	4.73%
4/29/2010	9.40%	4.46%	4.94%
4/29/2010	9.40%	4.46%	4.94%
5/17/2010	10.55%	4.45%	6.10%
5/24/2010	10.05%	4.45%	5.60%
6/3/2010	11.00%	4.45%	6.55%
6/16/2010	10.00%	4.45%	5.55%
6/18/2010	10.30%	4.45%	5.85%
8/9/2010	12.55%	4.41%	8.14%
8/17/2010	10.10%	4.39%	5.71%
9/16/2010	9.60%	4.32%	5.28%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
9/16/2010	10.00%	4.32%	5.68%
9/16/2010	10.00%	4.32%	5.68%
9/16/2010	10.30%	4.32%	5.98%
10/21/2010	10.40%	4.22%	6.18%
11/2/2010	9.75%	4.19%	5.56%
11/2/2010	9.75%	4.19%	5.56%
11/3/2010	10.75%	4.19%	6.56%
11/19/2010	10.20%	4.16%	6.04%
12/1/2010	10.00%	4.15%	5.85%
12/6/2010	9.56%	4.14%	5.42%
12/6/2010	10.09%	4.14%	5.95%
12/9/2010	10.25%	4.14%	6.11%
12/14/2010	10.33%	4.14%	6.19%
12/17/2010	10.10%	4.14%	5.96%
12/20/2010	10.10%	4.13%	5.97%
12/23/2010	9.92%	4.13%	5.79%
1/6/2011	10.35%	4.11%	6.24%
1/12/2011	10.30%	4.11%	6.19%
1/13/2011	10.30%	4.11%	6.19%
3/10/2011	10.10%	4.16%	5.94%
3/31/2011	9.45%	4.19%	5.26%
4/18/2011	10.05%	4.23%	5.82%
5/26/2011	10.50%	4.29%	6.21%
6/21/2011	10.00%	4.33%	5.67%
6/29/2011	8.83%	4.35%	4.48%
8/1/2011	9.20%	4.40%	4.80%
9/1/2011	10.10%	4.33%	5.77%
11/14/2011	9.60%	3.96%	5.64%
12/13/2011	9.50%	3.79%	5.71%
12/20/2011	10.00%	3.75%	6.25%
12/22/2011	10.40%	3.73%	6.67%
1/10/2012	9.06%	3.64%	5.42%
1/10/2012	9.45%	3.64%	5.81%
1/10/2012	9.45%	3.64%	5.81%
1/23/2012	10.20%	3.58%	6.62%
1/31/2012	10.00%	3.54%	6.46%
4/24/2012	9.50%	3.20%	6.30%
4/24/2012	9.75%	3.20%	6.55%
5/7/2012	9.80%	3.16%	6.64%
5/22/2012	9.60%	3.12%	6.48%
5/24/2012	9.70%	3.11%	6.59%
6/7/2012	10.30%	3.07%	7.23%
6/15/2012	10.40%	3.06%	7.34%
6/18/2012	9.60%	3.05%	6.55%
7/2/2012	9.75%	3.04%	6.71%
10/24/2012	10.30%	2.93%	7.37%
10/26/2012	9.50%	2.93%	6.57%
10/31/2012	9.30%	2.93%	6.37%
10/31/2012	9.90%	2.93%	6.97%
10/31/2012	10.00%	2.93%	7.07%
11/1/2012	9.45%	2.92%	6.53%
11/8/2012	10.10%	2.92%	7.18%
11/9/2012	10.30%	2.91%	7.39%
11/26/2012	10.00%	2.90%	7.10%
11/28/2012	10.40%	2.89%	7.51%
11/28/2012	10.50%	2.89%	7.61%
12/4/2012	10.00%	2.89%	7.11%
12/4/2012	10.50%	2.89%	7.61%
12/20/2012	9.50%	2.86%	6.64%
12/20/2012	10.10%	2.86%	7.24%
12/20/2012	10.25%	2.86%	7.39%
12/20/2012	10.30%	2.86%	7.44%
12/20/2012	10.40%	2.86%	7.54%
12/20/2012	10.50%	2.86%	7.64%
12/26/2012	9.80%	2.85%	6.95%
2/22/2013	9.60%	2.85%	6.75%
3/14/2013	9.30%	2.88%	6.42%
3/27/2013	9.80%	2.91%	6.89%
4/23/2013	9.80%	2.94%	6.86%
5/10/2013	9.25%	2.96%	6.29%
6/13/2013	9.40%	3.01%	6.39%
6/18/2013	9.28%	3.02%	6.26%
6/18/2013	9.28%	3.02%	6.26%
6/25/2013	9.80%	3.03%	6.77%
9/23/2013	9.60%	3.32%	6.28%
11/6/2013	10.20%	3.42%	6.78%
11/13/2013	9.84%	3.43%	6.41%
11/14/2013	10.25%	3.43%	6.82%
11/22/2013	9.50%	3.45%	6.05%
12/5/2013	10.20%	3.49%	6.71%
12/13/2013	9.60%	3.51%	6.09%
12/16/2013	9.73%	3.51%	6.22%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
12/17/2013	10.00%	3.51%	6.49%
12/18/2013	9.08%	3.52%	5.56%
12/23/2013	9.72%	3.53%	6.19%
12/30/2013	10.00%	3.55%	6.45%
1/21/2014	9.65%	3.62%	6.03%
1/22/2014	9.18%	3.62%	5.56%
2/20/2014	9.30%	3.69%	5.61%
2/21/2014	9.85%	3.69%	6.16%
2/28/2014	9.55%	3.70%	5.85%
3/16/2014	9.72%	3.72%	6.00%
4/21/2014	9.50%	3.72%	5.78%
4/22/2014	9.80%	3.72%	6.08%
5/8/2014	9.10%	3.71%	5.39%
5/8/2014	9.59%	3.71%	5.88%
6/6/2014	10.40%	3.67%	6.73%
6/12/2014	10.10%	3.66%	6.44%
6/12/2014	10.10%	3.66%	6.44%
6/12/2014	10.10%	3.66%	6.44%
7/7/2014	9.30%	3.63%	5.67%
7/25/2014	9.30%	3.60%	5.70%
7/31/2014	9.90%	3.60%	6.30%
9/4/2014	9.10%	3.52%	5.58%
9/24/2014	9.35%	3.47%	5.88%
9/30/2014	9.75%	3.46%	6.29%
10/29/2014	10.80%	3.38%	7.42%
11/6/2014	10.20%	3.36%	6.84%
11/14/2014	10.20%	3.35%	6.85%
11/14/2014	10.30%	3.35%	6.95%
11/26/2014	10.20%	3.32%	6.88%
12/3/2014	10.00%	3.30%	6.70%
1/13/2015	10.30%	3.18%	7.12%
1/21/2015	9.05%	3.15%	5.90%
1/21/2015	9.05%	3.15%	5.90%
4/9/2015	9.50%	2.90%	6.60%
5/11/2015	9.80%	2.83%	6.97%
6/17/2015	9.00%	2.81%	6.19%
8/21/2015	9.75%	2.79%	6.96%
10/7/2015	9.55%	2.81%	6.74%
10/13/2015	9.75%	2.82%	6.93%
10/15/2015	9.00%	2.82%	6.18%
10/30/2015	9.80%	2.86%	6.94%
11/19/2015	10.00%	2.89%	7.11%
12/3/2015	10.00%	2.90%	7.10%
12/9/2015	9.60%	2.91%	6.69%
12/11/2015	9.90%	2.91%	6.99%
12/18/2015	9.50%	2.92%	6.58%
1/6/2016	9.50%	2.95%	6.55%
1/6/2016	9.50%	2.95%	6.55%
1/28/2016	9.40%	2.97%	6.43%
2/10/2016	9.60%	2.96%	6.64%
2/16/2016	9.50%	2.95%	6.55%
2/29/2016	9.40%	2.93%	6.47%
4/29/2016	9.80%	2.83%	6.97%
5/5/2016	9.49%	2.83%	6.66%
6/1/2016	9.55%	2.80%	6.75%
6/3/2016	9.65%	2.80%	6.85%
6/15/2016	9.00%	2.78%	6.22%
6/15/2016	9.00%	2.78%	6.22%
9/2/2016	9.50%	2.58%	6.92%
9/23/2016	9.75%	2.53%	7.22%
9/27/2016	9.50%	2.52%	6.98%
9/29/2016	9.11%	2.52%	6.59%
10/13/2016	10.20%	2.49%	7.71%
10/28/2016	9.70%	2.48%	7.22%
11/9/2016	9.80%	2.48%	7.32%
11/18/2016	10.00%	2.49%	7.51%
12/9/2016	10.10%	2.52%	7.58%
12/15/2016	9.00%	2.53%	6.47%
12/15/2016	9.00%	2.53%	6.47%
12/20/2016	9.75%	2.54%	7.21%
12/22/2016	9.50%	2.54%	6.96%
1/24/2017	9.00%	2.59%	6.41%
2/21/2017	10.55%	2.63%	7.92%
3/1/2017	9.25%	2.64%	6.61%
4/11/2017	9.50%	2.74%	6.76%
4/20/2017	8.70%	2.76%	5.94%
4/28/2017	9.50%	2.79%	6.71%
5/23/2017	9.60%	2.85%	6.75%
6/6/2017	9.70%	2.88%	6.82%
6/22/2017	9.70%	2.91%	6.79%
6/30/2017	9.60%	2.92%	6.68%
7/20/2017	9.55%	2.95%	6.60%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
7/31/2017	10.10%	2.96%	7.14%
9/13/2017	9.40%	2.94%	6.46%
9/19/2017	9.70%	2.93%	6.77%
9/22/2017	11.88%	2.93%	8.95%
9/27/2017	10.20%	2.92%	7.28%
10/20/2017	9.60%	2.91%	6.69%
10/26/2017	10.20%	2.91%	7.29%
10/30/2017	10.05%	2.90%	7.15%
11/21/2017	9.50%	2.88%	6.62%
12/5/2017	9.50%	2.87%	6.63%
12/7/2017	9.80%	2.86%	6.94%
12/13/2017	9.25%	2.86%	6.39%
12/28/2017	9.50%	2.84%	6.66%
1/31/2018	9.80%	2.84%	6.96%
2/21/2018	9.80%	2.85%	6.95%
2/21/2018	9.80%	2.85%	6.95%
2/28/2018	9.50%	2.85%	6.65%
3/15/2018	9.00%	2.87%	6.13%
3/26/2018	10.19%	2.88%	7.31%
4/26/2018	9.50%	2.91%	6.59%
4/27/2018	9.30%	2.91%	6.39%
5/2/2018	9.50%	2.91%	6.59%
5/3/2018	9.70%	2.91%	6.79%
5/29/2018	9.40%	2.94%	6.46%
6/6/2018	9.80%	2.95%	6.85%
6/14/2018	8.80%	2.97%	5.83%
7/16/2018	9.60%	2.98%	6.62%
7/20/2018	9.40%	2.99%	6.41%
8/24/2018	9.28%	3.02%	6.26%
8/28/2018	10.00%	3.02%	6.98%
9/13/2018	10.00%	3.04%	6.96%
9/14/2018	10.00%	3.04%	6.96%
9/19/2018	9.85%	3.05%	6.80%
9/20/2018	9.80%	3.05%	6.75%
9/26/2018	9.40%	3.06%	6.34%
9/26/2018	10.20%	3.06%	7.14%
9/28/2018	9.50%	3.06%	6.44%
9/28/2018	9.50%	3.06%	6.44%

of Cases: 1,101
Average: 4.62%

Alternative Bond Yield Plus Risk Premium Analyses

	[1]	[2]	[3]	[4]
	30-Year Treasury Yield	Moody's Utility Baa Yield	Moody's Utility Baa Credit Spread	VIX
30-Day Average	3.19%	4.78%	1.59%	14.13
Near-Term Projected	3.52%	4.78%	1.27%	14.13
Long-Term Projected	4.30%	4.78%	0.48%	14.13

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.8467
R Square	0.7169
Adjusted R Square	0.7154
Standard Error	0.0052
Observations	570

ANOVA

	df	SS	MS	F	Significance F
Regression	3	0.038439993	0.0128133	477.7772341	1.2694E-154
Residual	566	0.015179345	2.682E-05		
Total	569	0.053619337			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.0259	0.0025	-10.4228	0.0000	-0.0307	-0.0210	-0.0307	-0.0210
LN (30-Year Treasury)	-0.0254	0.0008	-31.5456	0.0000	-0.0270	-0.0238	-0.0270	-0.0238
Moody's Utility Baa Credit Spread	0.0781	0.0656	1.1906	0.2343	-0.0507	0.2070	-0.0507	0.2070
VIX	0.0001	0.0001	2.3678	0.0182	0.0000	0.0003	0.0000	0.0003

	Risk Premium	Return on Equity
Regression Result - Credit Spread, VIX	6.49%	9.69%
Regression Result - Credit Spread, VIX	6.22%	9.74%
Regression Result - Credit Spread, VIX	5.65%	9.95%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional; 30-day average as of October 12, 2018
- [3] Equals [2] - [1]
- [4] Source: Bloomberg Professional; 30-day average as of October 12, 2018
- [5] Source: SNL Financial
- [6] Source: SNL Financial
- [7] Source: Bloomberg Professional, equals 187-trading day average (i.e. lag period) as of October 12, 2018
- [8] Source: Bloomberg Professional, equals 187-trading day average (i.e. lag period) as of October 12, 2018
- [9] Equals LN[8]
- [10] Equals [8] - [7]
- [11] Source: Bloomberg Professional, equals 187-trading day average (i.e. lag period) as of October 12, 2018
- [12] Equals [6] - [7]

[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
1/3/1980	12.55%	9.39%		-2.37			3.16%
1/4/1980	13.75%	9.40%		-2.36			4.35%
1/14/1980	13.20%	9.44%		-2.36			3.76%
1/18/1980	14.00%	9.47%		-2.36			4.53%
1/31/1980	12.61%	9.56%		-2.35			3.05%
2/8/1980	14.50%	9.63%		-2.34			4.87%
2/14/1980	13.00%	9.67%		-2.34			3.33%
2/15/1980	13.00%	9.69%		-2.33			3.31%
2/29/1980	14.00%	9.86%		-2.32			4.14%
3/5/1980	14.00%	9.91%		-2.31			4.09%
3/7/1980	13.50%	9.95%		-2.31			3.55%
3/14/1980	14.00%	10.04%		-2.30			3.96%
3/27/1980	12.69%	10.20%		-2.28			2.49%
4/1/1980	14.75%	10.26%		-2.28			4.49%
4/29/1980	12.50%	10.51%		-2.25			1.99%
5/7/1980	14.27%	10.56%		-2.25			3.71%
5/8/1980	13.75%	10.56%		-2.25			3.19%
5/19/1980	15.50%	10.62%		-2.24			4.88%
5/27/1980	14.60%	10.65%		-2.24			3.95%
5/29/1980	16.00%	10.67%		-2.24			5.33%
6/10/1980	13.78%	10.71%		-2.23			3.07%
6/25/1980	14.25%	10.74%		-2.23			3.51%
7/9/1980	14.51%	10.77%		-2.23			3.74%
7/17/1980	12.90%	10.79%		-2.23			2.11%
7/18/1980	13.80%	10.79%		-2.23			3.01%
7/22/1980	14.10%	10.79%		-2.23			3.31%
7/23/1980	14.19%	10.79%		-2.23			3.40%
8/1/1980	12.50%	10.80%		-2.23			1.70%
8/11/1980	14.85%	10.81%		-2.22			4.04%
8/21/1980	13.03%	10.84%		-2.22			2.19%
8/28/1980	13.61%	10.87%		-2.22			2.74%
8/28/1980	14.00%	10.87%		-2.22			3.13%
9/4/1980	14.00%	10.90%		-2.22			3.10%
9/24/1980	15.00%	10.98%		-2.21			4.02%
10/9/1980	14.50%	11.05%		-2.20			3.45%
10/9/1980	14.50%	11.05%		-2.20			3.45%
10/24/1980	14.00%	11.09%		-2.20			2.91%
10/27/1980	15.20%	11.10%		-2.20			4.10%
10/27/1980	15.20%	11.10%		-2.20			4.10%
10/28/1980	12.00%	11.10%		-2.20			0.90%
10/28/1980	13.00%	11.10%		-2.20			1.90%
10/31/1980	14.50%	11.12%		-2.20			3.38%
11/4/1980	15.00%	11.12%		-2.20			3.88%
11/6/1980	14.35%	11.13%		-2.20			3.22%
11/10/1980	13.25%	11.14%		-2.19			2.11%
11/17/1980	15.50%	11.15%		-2.19			4.35%
11/19/1980	13.50%	11.14%		-2.19			2.36%
12/5/1980	14.60%	11.13%		-2.20			3.47%
12/8/1980	16.40%	11.13%		-2.20			5.27%
12/12/1980	15.45%	11.15%		-2.19			4.30%
12/17/1980	14.20%	11.16%		-2.19			3.04%
12/17/1980	14.40%	11.16%		-2.19			3.24%
12/18/1980	14.00%	11.16%		-2.19			2.84%
12/22/1980	13.45%	11.16%		-2.19			2.29%
12/26/1980	14.00%	11.15%		-2.19			2.85%
12/30/1980	14.50%	11.14%		-2.19			3.36%
12/31/1980	14.56%	11.14%		-2.19			3.42%
1/7/1981	14.30%	11.13%		-2.20			3.17%
1/12/1981	14.95%	11.14%		-2.19			3.81%
1/26/1981	15.25%	11.20%		-2.19			4.05%
1/30/1981	13.25%	11.23%		-2.19			2.02%
2/11/1981	14.50%	11.33%		-2.18			3.17%
2/20/1981	14.50%	11.40%		-2.17			3.10%
3/12/1981	15.65%	11.60%		-2.15			4.05%
3/25/1981	15.30%	11.74%		-2.14			3.56%
4/1/1981	15.30%	11.82%		-2.14			3.48%
4/9/1981	15.00%	11.91%		-2.13			3.09%
4/29/1981	13.50%	12.12%		-2.11			1.38%
4/29/1981	14.25%	12.12%		-2.11			2.13%
4/30/1981	13.60%	12.14%		-2.11			1.46%
4/30/1981	15.00%	12.14%		-2.11			2.86%
5/21/1981	14.00%	12.37%		-2.09			1.63%
6/3/1981	14.67%	12.45%		-2.08			2.22%
6/22/1981	16.00%	12.57%		-2.07			3.43%
6/25/1981	14.75%	12.60%		-2.07			2.15%
7/2/1981	14.00%	12.64%		-2.07			1.36%
7/10/1981	16.00%	12.69%		-2.06			3.31%
7/14/1981	16.90%	12.71%		-2.06			4.19%
7/21/1981	15.78%	12.78%		-2.06			3.00%
7/27/1981	13.77%	12.82%		-2.05			0.95%

Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
7/27/1981	15.50%	12.82%		-2.05			2.68%
7/31/1981	13.50%	12.86%		-2.05			0.64%
7/31/1981	14.20%	12.86%		-2.05			1.34%
8/12/1981	13.72%	12.93%		-2.05			0.79%
8/12/1981	13.72%	12.93%		-2.05			0.79%
8/12/1981	14.41%	12.93%		-2.05			1.48%
8/25/1981	15.45%	13.02%		-2.04			2.43%
8/27/1981	14.43%	13.04%		-2.04			1.39%
8/28/1981	15.00%	13.05%		-2.04			1.95%
9/23/1981	14.34%	13.24%		-2.02			1.10%
9/24/1981	16.25%	13.25%		-2.02			3.00%
9/29/1981	14.50%	13.31%		-2.02			1.19%
9/30/1981	15.94%	13.32%		-2.02			2.62%
10/2/1981	14.80%	13.36%		-2.01			1.44%
10/12/1981	16.25%	13.42%		-2.01			2.83%
10/20/1981	15.25%	13.50%		-2.00			1.75%
10/20/1981	16.50%	13.50%		-2.00			3.00%
10/20/1981	17.00%	13.50%		-2.00			3.50%
10/23/1981	15.50%	13.54%		-2.00			1.96%
10/26/1981	13.50%	13.55%		-2.00			-0.05%
10/29/1981	16.50%	13.60%		-2.00			2.90%
11/4/1981	15.33%	13.62%		-1.99			1.71%
11/6/1981	15.17%	13.64%		-1.99			1.53%
11/12/1981	15.00%	13.64%		-1.99			1.36%
11/25/1981	15.25%	13.66%		-1.99			1.59%
11/25/1981	16.10%	13.66%		-1.99			2.44%
11/25/1981	16.10%	13.66%		-1.99			2.44%
11/30/1981	16.75%	13.65%		-1.99			3.10%
12/1/1981	15.70%	13.65%		-1.99			2.05%
12/1/1981	16.00%	13.65%		-1.99			2.35%
12/15/1981	15.81%	13.69%		-1.99			2.12%
12/17/1981	14.75%	13.70%		-1.99			1.05%
12/22/1981	15.70%	13.72%		-1.99			1.98%
12/22/1981	16.00%	13.72%		-1.99			2.28%
12/30/1981	16.00%	13.74%		-1.98			2.26%
12/30/1981	16.25%	13.74%		-1.98			2.51%
1/4/1982	15.50%	13.75%		-1.98			1.75%
1/14/1982	11.95%	13.80%		-1.98			-1.85%
1/25/1982	16.25%	13.84%		-1.98			2.41%
1/27/1982	16.84%	13.85%		-1.98			2.99%
1/31/1982	14.00%	13.85%		-1.98			0.15%
2/2/1982	16.24%	13.86%		-1.98			2.38%
2/8/1982	15.50%	13.87%		-1.98			1.63%
2/9/1982	14.95%	13.88%		-1.97			1.07%
2/9/1982	15.75%	13.88%		-1.97			1.87%
2/11/1982	16.00%	13.89%		-1.97			2.11%
3/1/1982	15.96%	13.91%		-1.97			2.05%
3/3/1982	15.00%	13.92%		-1.97			1.08%
3/8/1982	17.10%	13.92%		-1.97			3.18%
3/26/1982	16.00%	13.97%		-1.97			2.03%
3/31/1982	16.25%	13.98%		-1.97			2.27%
4/1/1982	16.50%	13.98%		-1.97			2.52%
4/6/1982	15.00%	13.99%		-1.97			1.01%
4/9/1982	16.50%	13.99%		-1.97			2.51%
4/12/1982	15.10%	13.99%		-1.97			1.11%
4/12/1982	16.70%	13.99%		-1.97			2.71%
4/18/1982	14.70%	13.99%		-1.97			0.71%
4/27/1982	15.00%	13.97%		-1.97			1.03%
5/10/1982	14.57%	13.93%		-1.97			0.64%
5/14/1982	15.80%	13.92%		-1.97			1.88%
5/20/1982	15.82%	13.90%		-1.97			1.92%
5/21/1982	15.50%	13.90%		-1.97			1.60%
5/25/1982	16.25%	13.89%		-1.97			2.36%
6/2/1982	14.50%	13.86%		-1.98			0.64%
6/7/1982	16.00%	13.84%		-1.98			2.16%
6/23/1982	15.50%	13.81%		-1.98			1.69%
6/25/1982	16.50%	13.80%		-1.98			2.70%
7/1/1982	15.55%	13.78%		-1.98			1.77%
7/1/1982	16.00%	13.78%		-1.98			2.22%
7/2/1982	15.10%	13.78%		-1.98			1.32%
7/13/1982	16.80%	13.75%		-1.98			3.05%
7/22/1982	14.50%	13.70%		-1.99			0.80%
7/28/1982	16.10%	13.67%		-1.99			2.43%
7/30/1982	14.82%	13.66%		-1.99			1.16%
8/4/1982	15.58%	13.64%		-1.99			1.94%
8/6/1982	16.50%	13.63%		-1.99			2.87%
8/11/1982	17.11%	13.62%		-1.99			3.49%
8/25/1982	16.00%	13.59%		-2.00			2.41%
8/30/1982	16.25%	13.58%		-2.00			2.67%
9/3/1982	15.50%	13.56%		-2.00			1.94%
9/9/1982	16.04%	13.54%		-2.00			2.50%

Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
9/15/1982	16.04%	13.52%		-2.00			2.52%
9/17/1982	15.25%	13.51%		-2.00			1.74%
9/29/1982	14.50%	13.43%		-2.01			1.07%
9/30/1982	14.74%	13.41%		-2.01			1.33%
9/30/1982	15.50%	13.41%		-2.01			2.09%
9/30/1982	16.50%	13.41%		-2.01			3.09%
9/30/1982	16.70%	13.41%		-2.01			3.29%
10/1/1982	16.50%	13.40%		-2.01			3.10%
10/8/1982	15.00%	13.33%		-2.02			1.67%
10/15/1982	15.90%	13.25%		-2.02			2.65%
10/19/1982	15.90%	13.22%		-2.02			2.68%
10/27/1982	17.00%	13.12%		-2.03			3.88%
10/28/1982	14.75%	13.10%		-2.03			1.65%
11/2/1982	16.25%	13.07%		-2.04			3.18%
11/4/1982	15.75%	13.03%		-2.04			2.72%
11/5/1982	14.73%	13.01%		-2.04			1.72%
11/17/1982	16.00%	12.86%		-2.05			3.14%
11/23/1982	15.50%	12.78%		-2.06			2.72%
11/24/1982	14.50%	12.77%		-2.06			1.73%
11/24/1982	16.02%	12.77%		-2.06			3.25%
11/30/1982	12.98%	12.72%		-2.06			0.26%
11/30/1982	15.50%	12.72%		-2.06			2.78%
11/30/1982	15.50%	12.72%		-2.06			2.78%
11/30/1982	15.65%	12.72%		-2.06			2.93%
11/30/1982	16.00%	12.72%		-2.06			3.28%
11/30/1982	16.10%	12.72%		-2.06			3.38%
12/3/1982	15.33%	12.68%		-2.07			2.65%
12/8/1982	15.75%	12.63%		-2.07			3.12%
12/13/1982	16.00%	12.58%		-2.07			3.42%
12/14/1982	16.40%	12.56%		-2.07			3.84%
12/17/1982	16.25%	12.51%		-2.08			3.74%
12/20/1982	15.00%	12.50%		-2.08			2.50%
12/21/1982	15.70%	12.49%		-2.08			3.21%
12/28/1982	15.25%	12.42%		-2.09			2.83%
12/28/1982	15.25%	12.42%		-2.09			2.83%
12/29/1982	16.25%	12.40%		-2.09			3.85%
12/29/1982	16.25%	12.40%		-2.09			3.85%
1/11/1983	15.90%	12.25%		-2.10			3.65%
1/12/1983	15.50%	12.24%		-2.10			3.26%
1/18/1983	15.00%	12.18%		-2.11			2.82%
1/24/1983	15.50%	12.13%		-2.11			3.37%
1/24/1983	16.00%	12.13%		-2.11			3.87%
1/28/1983	14.90%	12.07%		-2.11			2.83%
1/31/1983	15.00%	12.06%		-2.12			2.94%
2/10/1983	15.00%	11.97%		-2.12			3.03%
2/25/1983	15.70%	11.84%		-2.13			3.86%
3/2/1983	15.25%	11.79%		-2.14			3.46%
3/16/1983	16.00%	11.62%		-2.15			4.38%
3/21/1983	14.96%	11.56%		-2.16			3.40%
3/23/1983	15.40%	11.53%		-2.16			3.87%
3/23/1983	16.10%	11.53%		-2.16			4.57%
3/24/1983	15.00%	11.51%		-2.16			3.49%
4/12/1983	13.25%	11.30%		-2.18			1.95%
4/29/1983	15.05%	11.09%		-2.20			3.96%
5/3/1983	15.40%	11.06%		-2.20			4.34%
5/9/1983	15.50%	11.00%		-2.21			4.50%
5/19/1983	14.85%	10.90%		-2.22			3.95%
5/31/1983	14.00%	10.84%		-2.22			3.16%
6/2/1983	14.50%	10.82%		-2.22			3.68%
6/7/1983	14.50%	10.80%		-2.23			3.70%
6/9/1983	14.85%	10.79%		-2.23			4.06%
6/20/1983	14.15%	10.74%		-2.23			3.41%
6/20/1983	16.50%	10.74%		-2.23			5.76%
6/27/1983	14.50%	10.71%		-2.23			3.79%
6/30/1983	14.80%	10.70%		-2.23			4.10%
6/30/1983	15.90%	10.70%		-2.23			5.20%
7/1/1983	14.80%	10.70%		-2.24			4.10%
7/5/1983	15.00%	10.70%		-2.24			4.30%
7/8/1983	15.50%	10.69%		-2.24			4.81%
7/19/1983	15.00%	10.71%		-2.23			4.29%
7/19/1983	15.10%	10.71%		-2.23			4.39%
8/18/1983	15.30%	10.83%		-2.22			4.47%
8/19/1983	15.79%	10.84%		-2.22			4.95%
8/29/1983	16.00%	10.87%		-2.22			5.13%
8/31/1983	14.75%	10.88%		-2.22			3.87%
8/31/1983	15.25%	10.88%		-2.22			4.37%
9/8/1983	14.75%	10.92%		-2.21			3.83%
9/16/1983	15.51%	10.95%		-2.21			4.56%
9/26/1983	14.50%	10.99%		-2.21			3.51%
9/28/1983	14.25%	11.00%		-2.21			3.25%
9/30/1983	16.15%	11.01%		-2.21			5.14%

Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
9/30/1983	16.25%	11.01%		-2.21			5.24%
10/1/1983	16.25%	11.01%		-2.21			5.24%
10/13/1983	15.52%	11.05%		-2.20			4.47%
10/19/1983	15.20%	11.07%		-2.20			4.13%
10/26/1983	14.75%	11.09%		-2.20			3.66%
10/27/1983	14.88%	11.09%		-2.20			3.79%
10/27/1983	15.33%	11.09%		-2.20			4.24%
11/9/1983	14.82%	11.13%		-2.20			3.69%
11/9/1983	16.51%	11.13%		-2.20			5.38%
11/9/1983	16.51%	11.13%		-2.20			5.38%
12/1/1983	14.50%	11.20%		-2.19			3.30%
12/8/1983	15.90%	11.23%		-2.19			4.67%
12/9/1983	15.30%	11.24%		-2.19			4.06%
12/12/1983	14.50%	11.25%		-2.19			3.25%
12/12/1983	15.50%	11.25%		-2.19			4.25%
12/20/1983	15.40%	11.29%		-2.18			4.11%
12/20/1983	16.00%	11.29%		-2.18			4.71%
12/22/1983	15.75%	11.30%		-2.18			4.45%
12/29/1983	15.00%	11.33%		-2.18			3.67%
12/30/1983	15.00%	11.33%		-2.18			3.67%
1/10/1984	15.90%	11.37%		-2.17			4.53%
1/13/1984	15.50%	11.40%		-2.17			4.10%
1/18/1984	15.53%	11.42%		-2.17			4.11%
1/26/1984	15.90%	11.46%		-2.17			4.44%
2/14/1984	14.25%	11.55%		-2.16			2.70%
2/28/1984	14.50%	11.62%		-2.15			2.88%
3/20/1984	16.00%	11.73%		-2.14			4.27%
3/23/1984	15.50%	11.76%		-2.14			3.74%
4/9/1984	15.20%	11.84%		-2.13			3.36%
4/18/1984	16.20%	11.88%		-2.13			4.32%
4/27/1984	15.85%	11.93%		-2.13			3.92%
5/15/1984	13.35%	12.00%		-2.12			1.35%
5/16/1984	15.00%	12.01%		-2.12			2.99%
5/22/1984	14.40%	12.05%		-2.12			2.35%
6/13/1984	15.50%	12.20%		-2.10			3.30%
7/10/1984	16.00%	12.39%		-2.09			3.61%
8/7/1984	16.69%	12.53%		-2.08			4.16%
8/9/1984	15.33%	12.54%		-2.08			2.79%
8/17/1984	14.82%	12.56%		-2.07			2.26%
8/21/1984	14.64%	12.57%		-2.07			2.07%
8/27/1984	14.52%	12.59%		-2.07			1.93%
8/28/1984	14.75%	12.59%		-2.07			2.16%
8/30/1984	15.60%	12.60%		-2.07			3.00%
9/12/1984	15.60%	12.62%		-2.07			2.98%
9/12/1984	15.90%	12.62%		-2.07			3.28%
9/25/1984	16.25%	12.64%		-2.07			3.61%
10/2/1984	14.80%	12.65%		-2.07			2.15%
10/9/1984	14.75%	12.66%		-2.07			2.09%
10/10/1984	15.50%	12.66%		-2.07			2.84%
10/18/1984	15.00%	12.67%		-2.07			2.33%
10/24/1984	15.50%	12.67%		-2.07			2.83%
11/7/1984	15.00%	12.67%		-2.07			2.33%
11/20/1984	15.92%	12.66%		-2.07			3.26%
11/30/1984	15.50%	12.63%		-2.07			2.87%
12/18/1984	15.00%	12.58%		-2.07			2.42%
12/20/1984	15.00%	12.57%		-2.07			2.43%
12/28/1984	15.75%	12.54%		-2.08			3.21%
12/28/1984	16.25%	12.54%		-2.08			3.71%
1/2/1985	16.00%	12.53%		-2.08			3.47%
1/31/1985	14.75%	12.40%		-2.09			2.35%
2/7/1985	14.85%	12.35%		-2.09			2.50%
2/15/1985	15.00%	12.29%		-2.10			2.71%
2/20/1985	14.50%	12.27%		-2.10			2.23%
2/22/1985	14.86%	12.25%		-2.10			2.61%
3/14/1985	15.50%	12.12%		-2.11			3.38%
3/28/1985	14.80%	12.04%		-2.12			2.76%
4/9/1985	15.50%	11.97%		-2.12			3.53%
4/16/1985	15.70%	11.91%		-2.13			3.79%
6/10/1985	15.75%	11.57%		-2.16			4.18%
6/26/1985	14.82%	11.45%		-2.17			3.37%
7/9/1985	15.00%	11.37%		-2.17			3.63%
7/26/1985	14.50%	11.26%		-2.18			3.24%
8/29/1985	14.50%	11.14%		-2.19			3.36%
8/30/1985	14.38%	11.13%		-2.20			3.25%
9/12/1985	15.25%	11.09%		-2.20			4.16%
9/23/1985	15.30%	11.06%		-2.20			4.24%
9/25/1985	14.50%	11.05%		-2.20			3.45%
9/26/1985	13.80%	11.04%		-2.20			2.76%
9/26/1985	14.50%	11.04%		-2.20			3.46%
10/25/1985	15.25%	10.94%		-2.21			4.31%
11/8/1985	12.94%	10.89%		-2.22			2.05%

Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
11/20/1985	14.90%	10.84%		-2.22			4.06%
11/25/1985	13.30%	10.81%		-2.22			2.49%
12/6/1985	12.00%	10.73%		-2.23			1.27%
12/11/1985	14.90%	10.69%		-2.24			4.21%
12/20/1985	14.88%	10.60%		-2.24			4.28%
12/20/1985	15.00%	10.60%		-2.24			4.40%
12/20/1985	15.00%	10.60%		-2.24			4.40%
12/30/1985	15.75%	10.54%		-2.25			5.21%
12/31/1985	14.00%	10.53%		-2.25			3.47%
12/31/1985	14.50%	10.53%		-2.25			3.97%
1/17/1986	14.50%	10.39%		-2.26			4.11%
2/11/1986	12.50%	10.22%		-2.28			2.28%
2/12/1986	15.20%	10.21%		-2.28			4.99%
3/11/1986	14.00%	9.99%		-2.30			4.01%
4/2/1986	12.90%	9.78%		-2.33			3.12%
4/28/1986	13.01%	9.48%		-2.36			3.53%
5/21/1986	13.25%	9.19%		-2.39			4.06%
5/28/1986	14.00%	9.13%		-2.39			4.87%
5/29/1986	13.90%	9.11%		-2.40			4.79%
6/2/1986	13.00%	9.09%		-2.40			3.91%
6/11/1986	14.00%	8.99%		-2.41			5.01%
6/13/1986	13.55%	8.95%		-2.41			4.60%
6/27/1986	11.88%	8.78%		-2.43			3.10%
7/14/1986	12.60%	8.60%		-2.45			4.00%
7/30/1986	13.30%	8.40%		-2.48			4.90%
8/14/1986	13.50%	8.23%		-2.50			5.27%
9/5/1986	13.30%	8.02%		-2.52			5.28%
9/23/1986	12.75%	7.91%		-2.54			4.84%
10/30/1986	13.00%	7.67%		-2.57			5.33%
10/31/1986	13.75%	7.66%		-2.57			6.09%
11/10/1986	14.00%	7.61%		-2.58			6.39%
11/19/1986	13.75%	7.57%		-2.58			6.18%
11/25/1986	13.15%	7.54%		-2.58			5.61%
12/22/1986	13.80%	7.48%		-2.59			6.32%
12/30/1986	13.90%	7.47%		-2.59			6.43%
1/20/1987	12.75%	7.48%		-2.59			5.27%
1/23/1987	13.55%	7.48%		-2.59			6.07%
1/27/1987	12.16%	7.47%		-2.59			4.69%
2/13/1987	12.60%	7.48%		-2.59			5.12%
2/24/1987	12.00%	7.48%		-2.59			4.52%
3/30/1987	12.20%	7.47%		-2.59			4.73%
3/31/1987	13.00%	7.47%		-2.59			5.53%
5/5/1987	12.85%	7.60%		-2.58			5.25%
5/28/1987	13.50%	7.73%		-2.56			5.77%
6/15/1987	13.20%	7.81%		-2.55			5.39%
6/30/1987	12.60%	7.85%		-2.54			4.75%
7/10/1987	12.90%	7.89%		-2.54			5.01%
7/27/1987	13.50%	7.94%		-2.53			5.56%
8/25/1987	11.40%	8.09%		-2.51			3.31%
9/18/1987	13.00%	8.28%		-2.49			4.72%
10/20/1987	12.60%	8.56%		-2.46			4.04%
10/20/1987	12.98%	8.56%		-2.46			4.42%
11/12/1987	12.75%	8.69%		-2.44			4.06%
11/13/1987	12.75%	8.69%		-2.44			4.06%
11/24/1987	12.50%	8.75%		-2.44			3.75%
12/8/1987	12.50%	8.83%		-2.43			3.67%
12/22/1987	12.00%	8.91%		-2.42			3.09%
12/31/1987	12.85%	8.95%		-2.41			3.90%
12/31/1987	13.25%	8.95%		-2.41			4.30%
1/15/1988	13.15%	9.00%		-2.41			4.15%
1/20/1988	12.75%	9.00%		-2.41			3.75%
1/29/1988	13.20%	9.01%		-2.41			4.19%
2/4/1988	12.60%	9.00%		-2.41			3.60%
3/23/1988	13.00%	8.97%		-2.41			4.03%
5/27/1988	13.18%	9.04%		-2.40			4.14%
6/14/1988	13.50%	9.02%		-2.41			4.48%
6/17/1988	11.72%	9.01%		-2.41			2.71%
6/24/1988	11.50%	8.99%		-2.41			2.51%
7/1/1988	12.75%	8.97%		-2.41			3.78%
7/8/1988	12.00%	8.95%		-2.41			3.05%
7/18/1988	12.00%	8.92%		-2.42			3.08%
7/20/1988	13.40%	8.92%		-2.42			4.48%
8/8/1988	12.74%	8.93%		-2.42			3.81%
9/20/1988	12.90%	8.95%		-2.41			3.95%
9/26/1988	12.40%	8.95%		-2.41			3.45%
9/27/1988	13.65%	8.96%		-2.41			4.69%
9/30/1988	13.25%	8.96%		-2.41			4.29%
10/13/1988	13.10%	8.95%		-2.41			4.15%
10/21/1988	12.80%	8.96%		-2.41			3.84%
10/25/1988	13.25%	8.96%		-2.41			4.29%
10/26/1988	13.50%	8.97%		-2.41			4.53%

Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
10/27/1988	12.95%	8.97%		-2.41			3.98%
10/28/1988	13.00%	8.97%		-2.41			4.03%
11/15/1988	12.00%	9.00%		-2.41			3.00%
11/29/1988	12.75%	9.03%		-2.40			3.72%
12/19/1988	13.00%	9.07%		-2.40			3.93%
12/21/1988	12.90%	9.07%		-2.40			3.83%
12/22/1988	13.50%	9.07%		-2.40			4.43%
1/26/1989	12.60%	9.07%		-2.40			3.53%
1/27/1989	13.00%	9.07%		-2.40			3.93%
2/8/1989	13.37%	9.06%		-2.40			4.31%
3/8/1989	13.00%	9.05%		-2.40			3.95%
5/4/1989	13.00%	9.05%		-2.40			3.95%
6/8/1989	13.50%	8.97%		-2.41			4.53%
7/19/1989	11.80%	8.85%		-2.43			2.95%
7/25/1989	12.80%	8.83%		-2.43			3.97%
7/31/1989	13.00%	8.81%		-2.43			4.19%
8/14/1989	12.50%	8.77%		-2.43			3.73%
8/22/1989	12.80%	8.74%		-2.44			4.06%
8/23/1989	12.90%	8.73%		-2.44			4.17%
9/21/1989	12.10%	8.64%		-2.45			3.46%
10/6/1989	13.00%	8.59%		-2.45			4.41%
10/17/1989	12.41%	8.56%		-2.46			3.85%
10/18/1989	13.25%	8.55%		-2.46			4.70%
10/20/1989	12.90%	8.54%		-2.46			4.36%
10/31/1989	13.60%	8.51%		-2.46			5.09%
11/3/1989	12.93%	8.49%		-2.47			4.44%
11/5/1989	13.20%	8.49%		-2.47			4.71%
11/9/1989	12.60%	8.47%		-2.47			4.13%
11/9/1989	13.00%	8.47%		-2.47			4.53%
11/28/1989	12.75%	8.39%		-2.48			4.36%
12/7/1989	13.25%	8.35%		-2.48			4.90%
12/15/1989	13.00%	8.31%		-2.49			4.69%
12/20/1989	12.90%	8.28%		-2.49			4.62%
12/21/1989	12.80%	8.28%		-2.49			4.52%
12/21/1989	12.90%	8.28%		-2.49			4.62%
12/27/1989	12.50%	8.26%		-2.49			4.24%
1/9/1990	13.00%	8.21%		-2.50		19.54	4.79%
1/18/1990	12.50%	8.19%		-2.50		21.80	4.31%
1/26/1990	12.10%	8.17%		-2.50		22.87	3.93%
3/21/1990	12.80%	8.15%		-2.51		22.42	4.65%
3/28/1990	13.00%	8.16%		-2.51		22.28	4.84%
4/5/1990	12.20%	8.17%		-2.50		22.14	4.03%
4/12/1990	13.25%	8.19%		-2.50		22.04	5.06%
4/30/1990	12.45%	8.24%		-2.50		21.99	4.21%
5/31/1990	12.40%	8.31%		-2.49		21.17	4.09%
6/15/1990	13.20%	8.33%		-2.49		20.80	4.87%
6/27/1990	12.90%	8.34%		-2.48		20.52	4.56%
6/29/1990	13.25%	8.34%		-2.48		20.45	4.91%
7/6/1990	12.10%	8.35%		-2.48		20.33	3.75%
7/19/1990	11.70%	8.37%		-2.48		20.13	3.33%
8/31/1990	12.50%	8.52%		-2.46		21.24	3.98%
8/31/1990	12.50%	8.52%		-2.46		21.24	3.98%
9/13/1990	12.50%	8.56%		-2.46		21.59	3.94%
9/18/1990	12.75%	8.58%		-2.46		21.72	4.17%
9/20/1990	12.50%	8.60%		-2.45		21.79	3.90%
10/2/1990	13.00%	8.64%		-2.45		22.16	4.36%
10/17/1990	11.90%	8.68%		-2.44		22.57	3.22%
10/31/1990	12.95%	8.70%		-2.44		22.77	4.25%
11/9/1990	13.25%	8.71%		-2.44		22.99	4.54%
11/19/1990	13.00%	8.70%		-2.44		23.01	4.30%
11/21/1990	12.10%	8.70%		-2.44		22.99	3.40%
11/21/1990	12.50%	8.70%		-2.44		22.99	3.80%
11/28/1990	12.75%	8.70%		-2.44		23.00	4.05%
11/29/1990	12.75%	8.70%		-2.44		23.02	4.05%
12/18/1990	13.10%	8.68%		-2.44		23.23	4.42%
12/20/1990	12.50%	8.67%		-2.44		23.26	3.83%
12/21/1990	12.50%	8.67%		-2.44		23.27	3.83%
12/21/1990	13.00%	8.67%		-2.44		23.27	4.33%
12/21/1990	13.60%	8.67%		-2.44		23.27	4.93%
1/3/1991	13.02%	8.66%		-2.45		23.45	4.36%
1/16/1991	13.25%	8.65%		-2.45		23.97	4.60%
1/25/1991	11.70%	8.62%		-2.45		24.10	3.08%
2/15/1991	12.70%	8.56%		-2.46		24.39	4.14%
2/15/1991	12.80%	8.56%		-2.46		24.39	4.24%
4/3/1991	13.00%	8.52%		-2.46		24.66	4.48%
4/30/1991	12.45%	8.49%		-2.47		24.51	3.96%
4/30/1991	13.00%	8.49%		-2.47		24.51	4.51%
6/25/1991	11.70%	8.37%		-2.48		22.04	3.33%
6/28/1991	12.50%	8.36%		-2.48		21.88	4.14%
7/1/1991	11.70%	8.36%		-2.48		21.83	3.34%
7/19/1991	12.10%	8.33%		-2.49		21.00	3.77%

Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
7/19/1991	12.30%	8.33%		-2.49		21.00	3.97%
7/22/1991	12.90%	8.33%		-2.49		20.94	4.57%
8/15/1991	12.25%	8.29%		-2.49		19.70	3.96%
8/29/1991	13.30%	8.27%		-2.49		19.39	5.03%
9/27/1991	12.50%	8.24%		-2.50		18.70	4.26%
9/30/1991	12.40%	8.23%		-2.50		18.64	4.17%
10/3/1991	11.30%	8.23%		-2.50		18.45	3.07%
10/9/1991	11.70%	8.22%		-2.50		18.14	3.48%
10/15/1991	13.40%	8.21%		-2.50		17.80	5.19%
11/1/1991	12.90%	8.20%		-2.50		17.31	4.70%
11/8/1991	12.75%	8.20%		-2.50		17.13	4.55%
11/26/1991	11.60%	8.19%		-2.50		16.95	3.41%
11/26/1991	12.00%	8.19%		-2.50		16.95	3.81%
11/27/1991	12.70%	8.18%		-2.50		16.95	4.52%
12/6/1991	12.70%	8.17%		-2.50		16.95	4.53%
12/10/1991	11.75%	8.17%		-2.51		17.00	3.58%
12/19/1991	12.60%	8.15%		-2.51		17.08	4.45%
12/19/1991	12.80%	8.15%		-2.51		17.08	4.65%
12/30/1991	12.10%	8.12%		-2.51		17.06	3.98%
1/22/1992	12.84%	8.07%		-2.52		17.13	4.77%
1/31/1992	12.00%	8.05%		-2.52		17.10	3.95%
2/20/1992	13.00%	8.02%		-2.52		17.16	4.98%
2/27/1992	11.75%	8.01%		-2.52		17.18	3.74%
3/18/1992	12.50%	7.97%		-2.53		17.29	4.53%
5/15/1992	12.75%	7.88%		-2.54		17.14	4.87%
6/24/1992	12.20%	7.85%		-2.54		16.94	4.35%
6/29/1992	11.00%	7.85%		-2.54		16.92	3.15%
7/14/1992	12.00%	7.84%		-2.55		16.77	4.16%
7/22/1992	11.20%	7.83%		-2.55		16.65	3.37%
8/10/1992	12.10%	7.79%		-2.55		16.52	4.31%
8/26/1992	12.43%	7.76%		-2.56		16.24	4.67%
9/30/1992	11.60%	7.72%		-2.56		15.63	3.88%
10/6/1992	12.25%	7.71%		-2.56		15.63	4.54%
10/13/1992	12.75%	7.71%		-2.56		15.69	5.04%
10/23/1992	11.65%	7.71%		-2.56		15.69	3.94%
10/28/1992	12.25%	7.71%		-2.56		15.66	4.54%
10/29/1992	12.75%	7.71%		-2.56		15.65	5.04%
10/30/1992	11.40%	7.71%		-2.56		15.64	3.69%
11/9/1992	10.60%	7.70%		-2.56		15.57	2.90%
11/25/1992	11.00%	7.68%		-2.57		15.38	3.32%
11/25/1992	12.00%	7.68%		-2.57		15.38	4.32%
12/3/1992	11.85%	7.67%		-2.57		15.21	4.18%
12/16/1992	11.90%	7.65%		-2.57		14.95	4.25%
12/22/1992	12.30%	7.64%		-2.57		14.85	4.66%
12/22/1992	12.40%	7.64%		-2.57		14.85	4.76%
12/30/1992	12.00%	7.62%	8.61%	-2.57	0.99%	14.73	4.38%
12/31/1992	12.00%	7.62%	8.61%	-2.57	0.99%	14.71	4.38%
1/12/1993	12.00%	7.60%	8.62%	-2.58	1.02%	14.57	4.40%
1/12/1993	12.00%	7.60%	8.62%	-2.58	1.02%	14.57	4.40%
2/2/1993	11.40%	7.55%	8.56%	-2.58	1.02%	14.22	3.85%
2/22/1993	11.60%	7.49%	8.49%	-2.59	1.00%	14.16	4.11%
4/23/1993	11.75%	7.28%	8.29%	-2.62	1.01%	13.90	4.47%
5/3/1993	11.50%	7.26%	8.28%	-2.62	1.02%	13.89	4.24%
5/3/1993	11.75%	7.26%	8.28%	-2.62	1.02%	13.89	4.49%
6/3/1993	12.00%	7.20%	8.26%	-2.63	1.05%	13.82	4.80%
6/7/1993	11.50%	7.20%	8.25%	-2.63	1.06%	13.82	4.30%
6/22/1993	11.75%	7.17%	8.24%	-2.64	1.07%	13.76	4.58%
7/21/1993	11.78%	7.09%	8.20%	-2.65	1.11%	13.12	4.69%
7/21/1993	11.90%	7.09%	8.20%	-2.65	1.11%	13.12	4.81%
7/23/1993	11.50%	7.08%	8.19%	-2.65	1.12%	13.07	4.42%
7/29/1993	11.50%	7.05%	8.19%	-2.65	1.13%	12.97	4.45%
8/12/1993	10.75%	6.99%	8.16%	-2.66	1.17%	12.80	3.76%
8/24/1993	11.50%	6.94%	8.13%	-2.67	1.19%	12.71	4.56%
8/31/1993	11.90%	6.90%	8.11%	-2.67	1.21%	12.69	5.00%
9/1/1993	11.25%	6.89%	8.11%	-2.68	1.22%	12.69	4.36%
9/1/1993	11.47%	6.89%	8.11%	-2.68	1.22%	12.69	4.58%
9/27/1993	10.50%	6.76%	8.03%	-2.69	1.27%	12.78	3.74%
9/29/1993	11.00%	6.75%	8.02%	-2.70	1.27%	12.77	4.25%
9/30/1993	11.60%	6.74%	8.01%	-2.70	1.27%	12.77	4.86%
10/8/1993	11.50%	6.69%	7.97%	-2.70	1.28%	12.75	4.81%
10/14/1993	11.20%	6.67%	7.94%	-2.71	1.27%	12.75	4.53%
10/15/1993	11.75%	6.66%	7.93%	-2.71	1.27%	12.74	5.09%
10/25/1993	11.55%	6.62%	7.89%	-2.72	1.28%	12.73	4.93%
10/28/1993	11.50%	6.60%	7.87%	-2.72	1.28%	12.73	4.90%
10/29/1993	10.10%	6.59%	7.87%	-2.72	1.28%	12.72	3.51%
10/29/1993	10.20%	6.59%	7.87%	-2.72	1.28%	12.72	3.61%
10/29/1993	11.25%	6.59%	7.87%	-2.72	1.28%	12.72	4.66%
11/2/1993	10.80%	6.58%	7.86%	-2.72	1.28%	12.71	4.22%
11/12/1993	11.80%	6.54%	7.83%	-2.73	1.29%	12.71	5.26%
11/23/1993	12.50%	6.51%	7.81%	-2.73	1.30%	12.74	5.99%
11/26/1993	11.00%	6.51%	7.81%	-2.73	1.30%	12.75	4.49%

Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
12/1/1993	11.45%	6.50%	7.80%	-2.73	1.31%	12.74	4.95%
12/16/1993	10.60%	6.46%	7.78%	-2.74	1.32%	12.61	4.14%
12/16/1993	11.20%	6.46%	7.78%	-2.74	1.32%	12.61	4.74%
12/21/1993	11.30%	6.46%	7.78%	-2.74	1.32%	12.59	4.84%
12/22/1993	11.00%	6.45%	7.77%	-2.74	1.32%	12.57	4.55%
12/23/1993	10.10%	6.45%	7.77%	-2.74	1.32%	12.56	3.65%
1/5/1994	11.50%	6.42%	7.75%	-2.75	1.33%	12.45	5.08%
1/10/1994	11.00%	6.41%	7.75%	-2.75	1.33%	12.45	4.59%
1/25/1994	12.00%	6.39%	7.72%	-2.75	1.34%	12.37	5.61%
2/2/1994	10.40%	6.37%	7.71%	-2.75	1.34%	12.29	4.03%
2/9/1994	10.70%	6.36%	7.70%	-2.76	1.34%	12.28	4.34%
4/6/1994	11.24%	6.35%	7.69%	-2.76	1.33%	12.80	4.89%
4/25/1994	11.00%	6.40%	7.72%	-2.75	1.33%	13.14	4.60%
6/16/1994	10.50%	6.61%	7.93%	-2.72	1.31%	13.38	3.89%
6/23/1994	10.60%	6.65%	7.96%	-2.71	1.31%	13.38	3.95%
7/19/1994	10.70%	6.80%	8.10%	-2.69	1.30%	13.53	3.90%
9/29/1994	10.90%	7.18%	8.41%	-2.63	1.23%	13.48	3.72%
9/29/1994	11.00%	7.18%	8.41%	-2.63	1.23%	13.48	3.82%
10/7/1994	11.87%	7.23%	8.46%	-2.63	1.23%	13.62	4.64%
10/18/1994	11.50%	7.28%	8.52%	-2.62	1.24%	13.72	4.22%
10/18/1994	11.50%	7.28%	8.52%	-2.62	1.24%	13.72	4.22%
10/24/1994	11.00%	7.32%	8.55%	-2.62	1.24%	13.82	3.68%
11/22/1994	12.12%	7.50%	8.73%	-2.59	1.24%	14.15	4.62%
11/29/1994	11.30%	7.52%	8.76%	-2.59	1.24%	14.18	3.78%
12/1/1994	11.00%	7.53%	8.77%	-2.59	1.24%	14.19	3.47%
12/8/1994	11.50%	7.56%	8.80%	-2.58	1.24%	14.21	3.94%
12/8/1994	11.70%	7.56%	8.80%	-2.58	1.24%	14.21	4.14%
12/12/1994	11.82%	7.57%	8.81%	-2.58	1.24%	14.22	4.25%
12/14/1994	11.50%	7.58%	8.82%	-2.58	1.24%	14.23	3.92%
12/19/1994	11.50%	7.60%	8.84%	-2.58	1.24%	14.22	3.90%
4/19/1995	11.00%	7.71%	9.00%	-2.56	1.29%	13.26	3.29%
9/11/1995	11.30%	7.19%	8.54%	-2.63	1.35%	12.24	4.11%
9/15/1995	10.40%	7.16%	8.51%	-2.64	1.35%	12.21	3.24%
9/29/1995	11.50%	7.09%	8.45%	-2.65	1.36%	12.20	4.41%
10/13/1995	10.76%	7.02%	8.38%	-2.66	1.36%	12.32	3.74%
11/7/1995	12.50%	6.89%	8.26%	-2.68	1.38%	12.52	5.61%
11/8/1995	11.10%	6.88%	8.26%	-2.68	1.38%	12.53	4.22%
11/8/1995	11.30%	6.88%	8.26%	-2.68	1.38%	12.53	4.42%
11/17/1995	10.90%	6.83%	8.22%	-2.68	1.39%	12.57	4.07%
11/20/1995	11.40%	6.82%	8.21%	-2.68	1.39%	12.58	4.58%
11/27/1995	13.60%	6.80%	8.20%	-2.69	1.40%	12.58	6.80%
12/14/1995	11.30%	6.70%	8.12%	-2.70	1.42%	12.51	4.60%
12/20/1995	11.60%	6.67%	8.09%	-2.71	1.42%	12.54	4.93%
1/31/1996	11.30%	6.48%	7.95%	-2.74	1.46%	12.65	4.82%
3/11/1996	11.60%	6.41%	7.90%	-2.75	1.49%	13.13	5.19%
4/3/1996	11.13%	6.42%	7.91%	-2.75	1.49%	13.69	4.71%
4/15/1996	10.50%	6.43%	7.93%	-2.74	1.50%	13.90	4.07%
4/17/1996	10.77%	6.43%	7.93%	-2.74	1.50%	13.94	4.34%
4/26/1996	10.60%	6.43%	7.94%	-2.74	1.51%	14.02	4.17%
5/10/1996	11.00%	6.43%	7.95%	-2.74	1.52%	14.20	4.57%
5/13/1996	11.25%	6.43%	7.95%	-2.74	1.52%	14.21	4.82%
7/3/1996	11.25%	6.50%	8.02%	-2.73	1.52%	14.88	4.75%
7/22/1996	11.25%	6.54%	8.07%	-2.73	1.52%	15.12	4.71%
10/3/1996	10.00%	6.76%	8.24%	-2.69	1.48%	16.29	3.24%
10/29/1996	11.30%	6.83%	8.28%	-2.68	1.45%	16.54	4.47%
11/26/1996	11.30%	6.85%	8.29%	-2.68	1.44%	16.62	4.45%
11/27/1996	11.30%	6.85%	8.29%	-2.68	1.44%	16.62	4.45%
11/29/1996	11.00%	6.85%	8.29%	-2.68	1.44%	16.62	4.15%
12/12/1996	11.96%	6.84%	8.28%	-2.68	1.44%	16.65	5.12%
12/17/1996	11.50%	6.84%	8.28%	-2.68	1.44%	16.70	4.66%
1/22/1997	11.30%	6.84%	8.26%	-2.68	1.42%	17.01	4.46%
1/27/1997	11.25%	6.84%	8.26%	-2.68	1.41%	17.06	4.41%
1/31/1997	11.25%	6.84%	8.25%	-2.68	1.41%	17.11	4.41%
2/13/1997	11.00%	6.83%	8.23%	-2.68	1.40%	17.30	4.17%
2/13/1997	11.80%	6.83%	8.23%	-2.68	1.40%	17.30	4.97%
2/20/1997	11.80%	6.82%	8.22%	-2.68	1.40%	17.40	4.98%
3/27/1997	10.75%	6.80%	8.18%	-2.69	1.38%	17.90	3.95%
4/29/1997	11.70%	6.81%	8.18%	-2.69	1.37%	18.11	4.89%
7/17/1997	12.00%	6.78%	8.13%	-2.69	1.36%	19.25	5.22%
10/29/1997	10.75%	6.71%	8.04%	-2.70	1.33%	21.14	4.04%
10/31/1997	11.25%	6.70%	8.04%	-2.70	1.34%	21.32	4.55%
12/24/1997	10.75%	6.56%	7.91%	-2.72	1.36%	23.07	4.19%
4/28/1998	10.90%	6.13%	7.53%	-2.79	1.40%	23.82	4.77%
4/30/1998	12.20%	6.12%	7.52%	-2.79	1.40%	23.82	6.08%
6/30/1998	11.00%	5.96%	7.39%	-2.82	1.43%	23.34	5.04%
8/26/1998	10.93%	5.83%	7.31%	-2.84	1.48%	22.69	5.10%
9/3/1998	11.40%	5.81%	7.30%	-2.85	1.49%	23.15	5.59%
9/15/1998	11.90%	5.78%	7.29%	-2.85	1.51%	23.72	6.12%
10/7/1998	11.06%	5.71%	7.27%	-2.86	1.56%	24.70	5.35%
10/30/1998	11.40%	5.64%	7.26%	-2.87	1.61%	25.81	5.76%
12/10/1998	12.20%	5.53%	7.24%	-2.89	1.71%	26.80	6.67%

Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
12/17/1998	12.10%	5.51%	7.24%	-2.90	1.73%	27.07	6.59%
2/19/1999	11.15%	5.35%	7.23%	-2.93	1.89%	28.36	5.80%
3/1/1999	10.65%	5.34%	7.24%	-2.93	1.90%	28.53	5.31%
3/1/1999	10.65%	5.34%	7.24%	-2.93	1.90%	28.53	5.31%
6/8/1999	11.25%	5.35%	7.39%	-2.93	2.04%	28.27	5.90%
11/12/1999	10.25%	5.91%	7.92%	-2.83	2.01%	24.09	4.34%
12/14/1999	10.50%	5.98%	7.99%	-2.82	2.01%	23.54	4.52%
1/28/2000	10.71%	6.15%	8.14%	-2.79	1.99%	23.40	4.56%
2/17/2000	10.60%	6.18%	8.18%	-2.78	2.00%	23.18	4.42%
5/25/2000	10.80%	6.19%	8.36%	-2.78	2.17%	23.92	4.61%
6/19/2000	11.05%	6.18%	8.39%	-2.78	2.21%	23.79	4.87%
6/22/2000	11.25%	6.18%	8.39%	-2.78	2.21%	23.69	5.07%
7/17/2000	11.06%	6.16%	8.40%	-2.79	2.25%	23.32	4.90%
7/20/2000	12.20%	6.15%	8.40%	-2.79	2.25%	23.26	6.05%
8/11/2000	11.00%	6.11%	8.41%	-2.79	2.30%	22.99	4.89%
9/27/2000	11.25%	6.02%	8.42%	-2.81	2.40%	22.44	5.23%
9/29/2000	11.16%	6.02%	8.42%	-2.81	2.40%	22.38	5.14%
10/5/2000	11.30%	6.00%	8.42%	-2.81	2.42%	22.33	5.30%
11/28/2000	12.90%	5.89%	8.40%	-2.83	2.52%	22.94	7.01%
11/30/2000	12.10%	5.88%	8.40%	-2.83	2.52%	23.00	6.22%
2/5/2001	11.50%	5.77%	8.31%	-2.85	2.53%	22.93	5.73%
3/15/2001	11.25%	5.68%	8.18%	-2.87	2.50%	23.12	5.57%
5/8/2001	10.75%	5.62%	8.11%	-2.88	2.48%	24.69	5.13%
10/24/2001	10.30%	5.54%	8.01%	-2.89	2.47%	25.71	4.76%
10/24/2001	11.00%	5.54%	8.01%	-2.89	2.47%	25.71	5.46%
1/9/2002	10.00%	5.51%	8.06%	-2.90	2.55%	25.45	4.49%
1/30/2002	11.00%	5.49%	8.07%	-2.90	2.57%	25.13	5.51%
1/31/2002	11.00%	5.49%	8.07%	-2.90	2.58%	25.11	5.51%
4/17/2002	11.50%	5.47%	8.12%	-2.91	2.65%	24.72	6.03%
4/29/2002	11.00%	5.47%	8.12%	-2.91	2.65%	24.61	5.53%
6/11/2002	11.77%	5.47%	8.18%	-2.91	2.71%	24.38	6.30%
6/20/2002	12.30%	5.47%	8.19%	-2.91	2.72%	23.88	6.83%
8/28/2002	11.00%	5.47%	8.17%	-2.91	2.70%	24.55	5.53%
9/11/2002	11.20%	5.47%	8.14%	-2.91	2.67%	25.11	5.73%
9/12/2002	12.30%	5.47%	8.14%	-2.91	2.67%	25.17	6.83%
10/28/2002	11.30%	5.47%	8.09%	-2.91	2.62%	27.59	5.83%
10/30/2002	10.60%	5.47%	8.08%	-2.91	2.61%	27.69	5.13%
11/1/2002	12.60%	5.47%	8.08%	-2.91	2.61%	27.73	7.13%
11/7/2002	11.40%	5.47%	8.07%	-2.91	2.60%	27.91	5.93%
11/8/2002	10.75%	5.47%	8.07%	-2.91	2.60%	27.95	5.28%
11/20/2002	10.00%	5.47%	8.05%	-2.91	2.58%	28.21	4.53%
11/20/2002	10.50%	5.47%	8.05%	-2.91	2.58%	28.21	5.03%
12/4/2002	10.75%	5.47%	8.03%	-2.91	2.56%	28.49	5.28%
12/30/2002	11.20%	5.47%	7.96%	-2.91	2.49%	29.36	5.73%
1/6/2003	11.25%	5.47%	7.94%	-2.91	2.47%	29.50	5.78%
2/28/2003	12.30%	5.47%	7.75%	-2.91	2.28%	31.45	6.83%
3/7/2003	9.96%	5.47%	7.72%	-2.91	2.25%	31.65	4.49%
3/12/2003	11.40%	5.47%	7.69%	-2.91	2.22%	31.79	5.93%
3/20/2003	12.00%	5.47%	7.66%	-2.91	2.19%	31.96	6.53%
4/3/2003	12.00%	5.47%	7.60%	-2.91	2.13%	32.01	6.53%
5/2/2003	11.40%	5.47%	7.47%	-2.91	2.00%	30.57	5.93%
5/15/2003	11.05%	5.47%	7.41%	-2.91	1.94%	29.85	5.58%
6/26/2003	11.00%	5.47%	7.21%	-2.91	1.74%	27.57	5.53%
7/1/2003	11.00%	5.47%	7.19%	-2.91	1.72%	27.29	5.53%
7/29/2003	11.71%	5.47%	7.05%	-2.91	1.58%	25.61	6.24%
8/22/2003	10.20%	5.47%	6.98%	-2.91	1.51%	24.69	4.73%
9/17/2003	9.90%	5.47%	6.92%	-2.91	1.45%	23.88	4.43%
9/25/2003	10.25%	5.47%	6.89%	-2.91	1.42%	23.61	4.78%
10/17/2003	10.54%	5.47%	6.84%	-2.91	1.37%	23.06	5.07%
10/22/2003	10.46%	5.47%	6.83%	-2.91	1.36%	22.83	4.99%
10/22/2003	10.71%	5.47%	6.83%	-2.91	1.36%	22.83	5.24%
10/30/2003	11.00%	5.47%	6.81%	-2.91	1.34%	22.37	5.53%
10/31/2003	10.20%	5.47%	6.81%	-2.91	1.34%	22.28	4.73%
10/31/2003	10.75%	5.47%	6.81%	-2.91	1.34%	22.28	5.28%
11/10/2003	10.60%	5.47%	6.79%	-2.91	1.32%	21.73	5.13%
12/9/2003	10.50%	5.47%	6.75%	-2.91	1.28%	20.22	5.03%
12/18/2003	10.50%	5.47%	6.73%	-2.91	1.26%	19.70	5.03%
12/19/2003	12.00%	5.47%	6.73%	-2.91	1.26%	19.64	6.53%
12/19/2003	12.00%	5.47%	6.73%	-2.91	1.26%	19.64	6.53%
1/13/2004	10.25%	5.47%	6.69%	-2.91	1.22%	18.87	4.78%
1/13/2004	12.00%	5.47%	6.69%	-2.91	1.22%	18.87	6.53%
2/9/2004	11.25%	5.47%	6.65%	-2.91	1.18%	18.41	5.78%
3/16/2004	10.90%	5.47%	6.63%	-2.91	1.16%	17.87	5.43%
3/16/2004	10.90%	5.47%	6.63%	-2.91	1.16%	17.87	5.43%
5/25/2004	10.00%	5.47%	6.57%	-2.91	1.10%	17.29	4.53%
6/2/2004	11.22%	5.47%	6.56%	-2.91	1.09%	17.20	5.75%
6/30/2004	10.50%	5.47%	6.56%	-2.91	1.09%	16.76	5.03%
7/8/2004	10.00%	5.47%	6.56%	-2.91	1.09%	16.65	4.53%
7/22/2004	10.25%	5.47%	6.54%	-2.91	1.07%	16.51	4.78%
8/26/2004	10.50%	5.47%	6.52%	-2.91	1.05%	16.43	5.03%
8/26/2004	10.50%	5.47%	6.52%	-2.91	1.05%	16.43	5.03%

Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
9/9/2004	10.40%	5.47%	6.50%	-2.91	1.03%	16.32	4.93%
9/21/2004	10.50%	5.47%	6.49%	-2.91	1.02%	16.22	5.03%
9/27/2004	10.30%	5.47%	6.48%	-2.91	1.01%	16.17	4.83%
9/27/2004	10.50%	5.47%	6.48%	-2.91	1.01%	16.17	5.03%
10/20/2004	10.20%	5.47%	6.46%	-2.91	0.99%	15.99	4.73%
11/30/2004	10.60%	5.47%	6.43%	-2.91	0.96%	15.74	5.13%
12/8/2004	9.90%	5.47%	6.43%	-2.91	0.96%	15.60	4.43%
12/21/2004	11.50%	5.47%	6.43%	-2.91	0.96%	15.24	6.03%
12/22/2004	11.50%	5.47%	6.43%	-2.91	0.96%	15.21	6.03%
12/28/2004	10.25%	5.47%	6.43%	-2.91	0.96%	15.14	4.78%
2/18/2005	10.30%	5.47%	6.30%	-2.91	0.83%	14.32	4.83%
3/29/2005	11.00%	5.47%	6.18%	-2.91	0.71%	13.98	5.53%
4/13/2005	10.60%	5.47%	6.14%	-2.91	0.67%	13.86	5.13%
4/28/2005	11.00%	5.47%	6.10%	-2.91	0.63%	13.85	5.53%
5/17/2005	10.00%	5.47%	6.06%	-2.91	0.59%	13.65	4.53%
6/8/2005	10.18%	5.47%	6.01%	-2.91	0.54%	13.48	4.71%
6/10/2005	10.90%	5.47%	6.00%	-2.91	0.53%	13.47	5.43%
7/6/2005	10.50%	5.47%	5.96%	-2.91	0.49%	13.26	5.03%
7/19/2005	11.50%	5.47%	5.94%	-2.91	0.47%	13.06	6.03%
8/11/2005	10.40%	5.47%	5.91%	-2.91	0.44%	12.77	4.93%
9/19/2005	9.45%	5.47%	5.86%	-2.91	0.39%	12.79	3.98%
9/30/2005	10.51%	5.47%	5.85%	-2.91	0.38%	12.80	5.04%
10/4/2005	9.90%	5.47%	5.85%	-2.91	0.38%	12.79	4.43%
10/4/2005	10.75%	5.47%	5.85%	-2.91	0.38%	12.79	5.28%
10/14/2005	10.40%	5.47%	5.85%	-2.91	0.38%	12.90	4.93%
10/31/2005	10.25%	5.47%	5.87%	-2.91	0.40%	13.00	4.78%
11/2/2005	9.70%	5.47%	5.88%	-2.91	0.41%	13.03	4.23%
11/30/2005	10.00%	5.47%	5.92%	-2.91	0.44%	13.04	4.53%
12/9/2005	9.70%	5.47%	5.92%	-2.91	0.45%	12.99	4.23%
12/12/2005	11.00%	5.47%	5.92%	-2.91	0.45%	12.99	5.53%
12/20/2005	10.13%	5.47%	5.93%	-2.91	0.46%	12.90	4.66%
12/21/2005	10.40%	5.47%	5.93%	-2.91	0.46%	12.88	4.93%
12/21/2005	11.00%	5.47%	5.93%	-2.91	0.46%	12.88	5.53%
12/22/2005	10.20%	5.47%	5.93%	-2.91	0.46%	12.86	4.73%
12/22/2005	11.00%	5.47%	5.93%	-2.91	0.46%	12.86	5.53%
12/28/2005	10.00%	5.47%	5.93%	-2.91	0.46%	12.81	4.53%
1/5/2006	11.00%	5.47%	5.93%	-2.91	0.46%	12.78	5.53%
1/25/2006	11.20%	5.47%	5.94%	-2.91	0.47%	12.57	5.73%
1/25/2006	11.20%	5.47%	5.94%	-2.91	0.47%	12.57	5.73%
2/3/2006	10.50%	5.47%	5.94%	-2.91	0.47%	12.50	5.03%
2/15/2006	9.50%	5.44%	5.95%	-2.91	0.52%	12.42	4.06%
4/26/2006	10.60%	5.22%	6.10%	-2.95	0.88%	12.45	5.38%
7/24/2006	9.60%	5.13%	6.34%	-2.97	1.21%	13.16	4.47%
7/24/2006	10.00%	5.13%	6.34%	-2.97	1.21%	13.16	4.87%
9/20/2006	11.00%	5.06%	6.39%	-2.98	1.32%	13.38	5.94%
9/26/2006	10.75%	5.05%	6.39%	-2.99	1.34%	13.41	5.70%
10/20/2006	9.80%	4.99%	6.41%	-3.00	1.41%	13.37	4.81%
11/2/2006	9.71%	4.97%	6.41%	-3.00	1.44%	13.29	4.74%
11/9/2006	10.00%	4.96%	6.41%	-3.00	1.45%	13.24	5.04%
11/21/2006	11.00%	4.97%	6.41%	-3.00	1.44%	13.17	6.03%
12/5/2006	10.20%	4.97%	6.40%	-3.00	1.43%	13.12	5.23%
1/5/2007	10.40%	4.96%	6.37%	-3.00	1.41%	13.08	5.44%
1/9/2007	11.00%	4.95%	6.36%	-3.00	1.41%	13.07	6.05%
1/11/2007	10.90%	4.95%	6.36%	-3.01	1.41%	13.06	5.95%
1/19/2007	10.80%	4.94%	6.35%	-3.01	1.40%	13.03	5.86%
1/26/2007	10.00%	4.94%	6.34%	-3.01	1.40%	13.00	5.06%
2/8/2007	10.40%	4.92%	6.32%	-3.01	1.40%	12.93	5.48%
3/14/2007	10.10%	4.87%	6.26%	-3.02	1.38%	12.50	5.23%
3/20/2007	10.25%	4.86%	6.25%	-3.02	1.38%	12.46	5.39%
3/21/2007	11.35%	4.86%	6.24%	-3.02	1.38%	12.45	6.49%
3/22/2007	10.50%	4.86%	6.24%	-3.02	1.38%	12.43	5.64%
3/29/2007	10.00%	4.85%	6.23%	-3.03	1.38%	12.39	5.15%
6/13/2007	10.75%	4.82%	6.17%	-3.03	1.35%	12.23	5.93%
6/29/2007	9.53%	4.84%	6.19%	-3.03	1.35%	12.44	4.69%
6/29/2007	10.10%	4.84%	6.19%	-3.03	1.35%	12.44	5.26%
7/3/2007	10.25%	4.85%	6.20%	-3.03	1.35%	12.47	5.40%
7/13/2007	9.50%	4.86%	6.21%	-3.02	1.35%	12.63	4.64%
7/24/2007	10.40%	4.87%	6.21%	-3.02	1.34%	12.83	5.53%
8/1/2007	10.15%	4.87%	6.22%	-3.02	1.35%	13.18	5.28%
8/29/2007	10.50%	4.90%	6.27%	-3.02	1.37%	14.71	5.60%
9/10/2007	9.71%	4.91%	6.29%	-3.01	1.38%	15.21	4.80%
9/19/2007	10.00%	4.91%	6.30%	-3.01	1.39%	15.71	5.09%
9/25/2007	9.70%	4.91%	6.31%	-3.01	1.40%	15.89	4.79%
10/8/2007	10.48%	4.92%	6.33%	-3.01	1.41%	16.20	5.56%
10/19/2007	10.50%	4.91%	6.34%	-3.01	1.42%	16.59	5.59%
10/25/2007	9.65%	4.91%	6.34%	-3.01	1.43%	16.80	4.74%
11/15/2007	10.00%	4.89%	6.35%	-3.02	1.46%	17.90	5.11%
11/20/2007	9.90%	4.89%	6.35%	-3.02	1.47%	18.13	5.01%
11/27/2007	10.00%	4.88%	6.36%	-3.02	1.48%	18.34	5.12%
11/29/2007	10.90%	4.88%	6.36%	-3.02	1.48%	18.41	6.02%
12/14/2007	10.80%	4.87%	6.38%	-3.02	1.52%	18.84	5.93%

Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
12/18/2007	10.40%	4.86%	6.39%	-3.02	1.53%	18.96	5.54%
12/19/2007	9.80%	4.86%	6.39%	-3.02	1.53%	19.00	4.94%
12/19/2007	9.80%	4.86%	6.39%	-3.02	1.53%	19.00	4.94%
12/19/2007	10.20%	4.86%	6.39%	-3.02	1.53%	19.00	5.34%
12/21/2007	9.10%	4.86%	6.39%	-3.02	1.53%	19.06	4.24%
1/8/2008	10.75%	4.84%	6.40%	-3.03	1.57%	19.51	5.91%
1/17/2008	10.75%	4.82%	6.41%	-3.03	1.59%	19.95	5.93%
1/17/2008	10.75%	4.82%	6.41%	-3.03	1.59%	19.95	5.93%
2/5/2008	9.99%	4.78%	6.42%	-3.04	1.63%	20.88	5.21%
2/5/2008	10.19%	4.78%	6.42%	-3.04	1.63%	20.88	5.41%
2/13/2008	10.20%	4.77%	6.43%	-3.04	1.66%	21.32	5.43%
3/31/2008	10.00%	4.66%	6.47%	-3.07	1.80%	23.25	5.34%
5/28/2008	10.50%	4.55%	6.53%	-3.09	1.98%	22.97	5.95%
6/24/2008	10.00%	4.54%	6.58%	-3.09	2.04%	22.83	5.46%
6/27/2008	10.00%	4.54%	6.59%	-3.09	2.05%	22.91	5.46%
7/31/2008	10.70%	4.51%	6.66%	-3.10	2.15%	23.52	6.19%
7/31/2008	10.82%	4.51%	6.66%	-3.10	2.15%	23.52	6.31%
8/27/2008	10.25%	4.51%	6.73%	-3.10	2.23%	23.00	5.74%
9/2/2008	10.25%	4.51%	6.74%	-3.10	2.23%	22.96	5.74%
9/19/2008	10.70%	4.49%	6.77%	-3.10	2.29%	23.33	6.21%
9/24/2008	10.68%	4.48%	6.79%	-3.10	2.30%	23.59	6.20%
9/24/2008	10.68%	4.48%	6.79%	-3.10	2.30%	23.59	6.20%
9/24/2008	10.68%	4.48%	6.79%	-3.10	2.30%	23.59	6.20%
9/30/2008	10.20%	4.48%	6.81%	-3.11	2.33%	23.93	5.72%
10/3/2008	10.30%	4.48%	6.84%	-3.11	2.36%	24.24	5.82%
10/8/2008	10.15%	4.47%	6.86%	-3.11	2.39%	24.73	5.68%
10/20/2008	10.06%	4.47%	6.95%	-3.11	2.48%	26.28	5.59%
10/24/2008	10.60%	4.47%	7.00%	-3.11	2.54%	27.13	6.13%
10/24/2008	10.60%	4.47%	7.00%	-3.11	2.54%	27.13	6.13%
11/21/2008	10.50%	4.43%	7.25%	-3.12	2.82%	31.33	6.07%
11/21/2008	10.50%	4.43%	7.25%	-3.12	2.82%	31.33	6.07%
11/21/2008	10.50%	4.43%	7.25%	-3.12	2.82%	31.33	6.07%
11/24/2008	10.50%	4.43%	7.27%	-3.12	2.84%	31.53	6.07%
12/3/2008	10.39%	4.39%	7.33%	-3.13	2.94%	32.61	6.00%
12/24/2008	10.00%	4.27%	7.45%	-3.15	3.18%	34.69	5.73%
12/26/2008	10.10%	4.26%	7.45%	-3.16	3.19%	34.79	5.84%
12/29/2008	10.20%	4.25%	7.46%	-3.16	3.21%	34.90	5.95%
1/13/2009	10.45%	4.17%	7.52%	-3.18	3.34%	35.94	6.28%
2/2/2009	10.05%	4.08%	7.59%	-3.20	3.51%	37.80	5.97%
3/9/2009	10.30%	3.95%	7.71%	-3.23	3.76%	41.33	6.35%
3/25/2009	10.17%	3.89%	7.78%	-3.25	3.90%	42.65	6.28%
4/2/2009	10.75%	3.85%	7.82%	-3.26	3.97%	43.23	6.90%
5/5/2009	10.75%	3.77%	7.94%	-3.28	4.17%	44.81	6.98%
5/15/2009	10.20%	3.75%	7.97%	-3.28	4.22%	45.32	6.45%
5/29/2009	9.54%	3.74%	8.01%	-3.29	4.27%	45.82	5.80%
6/3/2009	10.10%	3.74%	8.02%	-3.28	4.28%	45.95	6.36%
6/22/2009	10.00%	3.77%	8.05%	-3.28	4.28%	45.99	6.23%
6/29/2009	10.21%	3.77%	8.03%	-3.28	4.26%	45.72	6.44%
6/30/2009	9.31%	3.77%	8.03%	-3.28	4.26%	45.64	5.54%
7/17/2009	9.26%	3.78%	7.96%	-3.27	4.18%	43.64	5.48%
7/17/2009	10.50%	3.78%	7.96%	-3.27	4.18%	43.64	6.72%
10/16/2009	10.40%	4.06%	7.23%	-3.20	3.16%	32.97	6.34%
10/26/2009	10.10%	4.10%	7.17%	-3.20	3.07%	32.26	6.00%
10/28/2009	10.15%	4.10%	7.15%	-3.19	3.05%	32.06	6.05%
10/28/2009	10.15%	4.10%	7.15%	-3.19	3.05%	32.06	6.05%
10/30/2009	9.95%	4.11%	7.13%	-3.19	3.02%	31.89	5.84%
11/20/2009	9.45%	4.17%	7.02%	-3.18	2.85%	30.16	5.28%
12/14/2009	10.50%	4.22%	6.88%	-3.16	2.66%	28.27	6.28%
12/16/2009	10.75%	4.23%	6.86%	-3.16	2.63%	28.02	6.52%
12/17/2009	10.30%	4.24%	6.85%	-3.16	2.62%	27.91	6.06%
12/18/2009	10.40%	4.24%	6.84%	-3.16	2.60%	27.80	6.16%
12/18/2009	10.40%	4.24%	6.84%	-3.16	2.60%	27.80	6.16%
12/18/2009	10.50%	4.24%	6.84%	-3.16	2.60%	27.80	6.26%
12/22/2009	10.20%	4.25%	6.82%	-3.16	2.57%	27.57	5.95%
12/22/2009	10.40%	4.25%	6.82%	-3.16	2.57%	27.57	6.15%
12/28/2009	10.85%	4.27%	6.79%	-3.15	2.53%	27.19	6.58%
12/29/2009	10.38%	4.27%	6.79%	-3.15	2.51%	27.07	6.11%
1/11/2010	10.24%	4.32%	6.71%	-3.14	2.39%	26.25	5.92%
1/21/2010	10.23%	4.35%	6.64%	-3.14	2.29%	25.56	5.88%
1/21/2010	10.33%	4.35%	6.64%	-3.14	2.29%	25.56	5.98%
1/26/2010	10.40%	4.36%	6.61%	-3.13	2.25%	25.38	6.04%
2/10/2010	10.00%	4.39%	6.51%	-3.13	2.12%	24.84	5.61%
2/23/2010	10.50%	4.41%	6.45%	-3.12	2.04%	24.44	6.09%
3/9/2010	9.60%	4.41%	6.37%	-3.12	1.96%	23.86	5.19%
3/24/2010	10.13%	4.41%	6.31%	-3.12	1.89%	23.13	5.72%
3/31/2010	10.70%	4.43%	6.29%	-3.12	1.86%	22.90	6.27%
4/1/2010	9.50%	4.43%	6.28%	-3.12	1.86%	22.84	5.07%
4/2/2010	10.10%	4.43%	6.28%	-3.12	1.85%	22.84	5.67%
4/8/2010	10.35%	4.44%	6.27%	-3.11	1.83%	22.55	5.91%
4/29/2010	9.19%	4.46%	6.21%	-3.11	1.75%	21.95	4.73%
4/29/2010	9.40%	4.46%	6.21%	-3.11	1.75%	21.95	4.94%

Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
4/29/2010	9.40%	4.46%	6.21%	-3.11	1.75%	21.95	4.94%
5/17/2010	10.55%	4.45%	6.18%	-3.11	1.73%	22.12	6.10%
5/24/2010	10.05%	4.45%	6.17%	-3.11	1.72%	22.47	5.60%
6/3/2010	11.00%	4.45%	6.17%	-3.11	1.72%	22.69	6.55%
6/16/2010	10.00%	4.45%	6.17%	-3.11	1.72%	23.02	5.55%
6/18/2010	10.30%	4.45%	6.17%	-3.11	1.72%	23.03	5.85%
8/9/2010	12.55%	4.41%	6.14%	-3.12	1.73%	23.24	8.14%
8/17/2010	10.10%	4.39%	6.12%	-3.12	1.72%	23.30	5.71%
9/16/2010	9.60%	4.32%	6.04%	-3.14	1.72%	23.54	5.28%
9/16/2010	10.00%	4.32%	6.04%	-3.14	1.72%	23.54	5.68%
9/16/2010	10.00%	4.32%	6.04%	-3.14	1.72%	23.54	5.68%
9/16/2010	10.30%	4.32%	6.04%	-3.14	1.72%	23.54	5.98%
10/21/2010	10.40%	4.22%	5.95%	-3.17	1.74%	23.70	6.18%
11/2/2010	9.75%	4.19%	5.94%	-3.17	1.75%	23.57	5.56%
11/2/2010	9.75%	4.19%	5.94%	-3.17	1.75%	23.57	5.56%
11/3/2010	10.75%	4.19%	5.93%	-3.17	1.75%	23.53	6.56%
11/19/2010	10.20%	4.16%	5.91%	-3.18	1.75%	23.36	6.04%
12/1/2010	10.00%	4.15%	5.89%	-3.18	1.75%	23.45	5.85%
12/6/2010	9.56%	4.14%	5.89%	-3.18	1.75%	23.46	5.42%
12/6/2010	10.09%	4.14%	5.89%	-3.18	1.75%	23.46	5.95%
12/9/2010	10.25%	4.14%	5.89%	-3.18	1.75%	23.46	6.11%
12/14/2010	10.33%	4.14%	5.89%	-3.19	1.75%	23.47	6.19%
12/17/2010	10.10%	4.14%	5.89%	-3.19	1.75%	23.47	5.96%
12/20/2010	10.10%	4.13%	5.88%	-3.19	1.75%	23.46	5.97%
12/23/2010	9.92%	4.13%	5.88%	-3.19	1.75%	23.44	5.79%
1/6/2011	10.35%	4.11%	5.87%	-3.19	1.75%	23.48	6.24%
1/12/2011	10.30%	4.11%	5.86%	-3.19	1.76%	23.48	6.19%
1/13/2011	10.30%	4.11%	5.86%	-3.19	1.76%	23.49	6.19%
3/10/2011	10.10%	4.16%	5.87%	-3.18	1.71%	21.21	5.94%
3/31/2011	9.45%	4.19%	5.85%	-3.17	1.66%	20.60	5.26%
4/18/2011	10.05%	4.23%	5.85%	-3.16	1.62%	20.07	5.82%
5/26/2011	10.50%	4.29%	5.87%	-3.15	1.58%	18.92	6.21%
6/21/2011	10.00%	4.33%	5.88%	-3.14	1.55%	18.57	5.67%
6/29/2011	8.83%	4.35%	5.89%	-3.13	1.54%	18.46	4.48%
8/1/2011	9.20%	4.40%	5.90%	-3.12	1.50%	18.34	4.80%
9/1/2011	10.10%	4.33%	5.82%	-3.14	1.49%	20.25	5.77%
11/14/2011	9.60%	3.96%	5.57%	-3.23	1.61%	24.91	5.64%
12/13/2011	9.50%	3.79%	5.46%	-3.27	1.67%	25.86	5.71%
12/20/2011	10.00%	3.75%	5.44%	-3.28	1.69%	26.01	6.25%
12/22/2011	10.40%	3.73%	5.43%	-3.29	1.69%	26.03	6.67%
1/10/2012	9.06%	3.64%	5.37%	-3.31	1.73%	26.31	5.42%
1/10/2012	9.45%	3.64%	5.37%	-3.31	1.73%	26.31	5.81%
1/10/2012	9.45%	3.64%	5.37%	-3.31	1.73%	26.31	5.81%
1/23/2012	10.20%	3.58%	5.33%	-3.33	1.75%	26.50	6.62%
1/31/2012	10.00%	3.54%	5.31%	-3.34	1.77%	26.60	6.46%
4/24/2012	9.50%	3.20%	5.11%	-3.44	1.91%	26.35	6.30%
4/24/2012	9.75%	3.20%	5.11%	-3.44	1.91%	26.35	6.55%
5/7/2012	9.80%	3.16%	5.10%	-3.46	1.94%	25.75	6.64%
5/22/2012	9.60%	3.12%	5.08%	-3.47	1.96%	24.80	6.48%
5/24/2012	9.70%	3.11%	5.08%	-3.47	1.97%	24.63	6.59%
6/7/2012	10.30%	3.07%	5.06%	-3.48	1.99%	24.13	7.23%
6/15/2012	10.40%	3.06%	5.06%	-3.49	2.00%	23.75	7.34%
6/18/2012	9.60%	3.05%	5.06%	-3.49	2.00%	23.67	6.55%
7/2/2012	9.75%	3.04%	5.05%	-3.49	2.01%	22.50	6.71%
10/24/2012	10.30%	2.93%	4.92%	-3.53	2.00%	17.72	7.37%
10/26/2012	9.50%	2.93%	4.92%	-3.53	1.99%	17.71	6.57%
10/31/2012	9.30%	2.93%	4.91%	-3.53	1.99%	17.71	6.37%
10/31/2012	9.90%	2.93%	4.91%	-3.53	1.99%	17.71	6.97%
10/31/2012	10.00%	2.93%	4.91%	-3.53	1.99%	17.71	7.07%
11/1/2012	9.45%	2.92%	4.91%	-3.53	1.99%	17.71	6.53%
11/8/2012	10.10%	2.92%	4.89%	-3.53	1.98%	17.70	7.18%
11/9/2012	10.30%	2.91%	4.89%	-3.54	1.97%	17.70	7.39%
11/26/2012	10.00%	2.90%	4.86%	-3.54	1.96%	17.58	7.10%
11/28/2012	10.40%	2.89%	4.85%	-3.54	1.96%	17.55	7.51%
11/28/2012	10.50%	2.89%	4.85%	-3.54	1.96%	17.55	7.61%
12/4/2012	10.00%	2.89%	4.84%	-3.54	1.95%	17.50	7.11%
12/4/2012	10.50%	2.89%	4.84%	-3.54	1.95%	17.50	7.61%
12/20/2012	9.50%	2.86%	4.80%	-3.55	1.94%	17.55	6.64%
12/20/2012	10.10%	2.86%	4.80%	-3.55	1.94%	17.55	7.24%
12/20/2012	10.25%	2.86%	4.80%	-3.55	1.94%	17.55	7.39%
12/20/2012	10.30%	2.86%	4.80%	-3.55	1.94%	17.55	7.44%
12/20/2012	10.40%	2.86%	4.80%	-3.55	1.94%	17.55	7.54%
12/20/2012	10.50%	2.86%	4.80%	-3.55	1.94%	17.55	7.64%
12/26/2012	9.80%	2.85%	4.79%	-3.56	1.94%	17.60	6.95%
2/22/2013	9.60%	2.85%	4.72%	-3.56	1.87%	16.58	6.75%
3/14/2013	9.30%	2.88%	4.70%	-3.55	1.82%	15.88	6.42%
3/27/2013	9.80%	2.91%	4.69%	-3.54	1.79%	15.58	6.89%
4/23/2013	9.80%	2.94%	4.66%	-3.53	1.72%	15.25	6.86%
5/10/2013	9.25%	2.96%	4.63%	-3.52	1.67%	14.97	6.29%
6/13/2013	9.40%	3.01%	4.63%	-3.50	1.61%	14.87	6.39%
6/18/2013	9.28%	3.02%	4.63%	-3.50	1.61%	14.91	6.26%

Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
6/18/2013	9.28%	3.02%	4.63%	-3.50	1.61%	14.91	6.26%
6/25/2013	9.80%	3.03%	4.64%	-3.50	1.60%	15.04	6.77%
9/23/2013	9.60%	3.32%	4.89%	-3.41	1.57%	14.33	6.28%
11/6/2013	10.20%	3.42%	4.97%	-3.38	1.56%	14.46	6.78%
11/13/2013	9.84%	3.43%	4.98%	-3.37	1.55%	14.47	6.41%
11/14/2013	10.25%	3.43%	4.99%	-3.37	1.55%	14.46	6.82%
11/22/2013	9.50%	3.45%	5.00%	-3.37	1.55%	14.36	6.05%
12/5/2013	10.20%	3.49%	5.03%	-3.36	1.54%	14.38	6.71%
12/13/2013	9.60%	3.51%	5.04%	-3.35	1.54%	14.45	6.09%
12/16/2013	9.73%	3.51%	5.05%	-3.35	1.54%	14.46	6.22%
12/17/2013	10.00%	3.51%	5.05%	-3.35	1.54%	14.48	6.49%
12/18/2013	9.08%	3.52%	5.05%	-3.35	1.53%	14.48	5.56%
12/23/2013	9.72%	3.53%	5.06%	-3.34	1.53%	14.49	6.19%
12/30/2013	10.00%	3.55%	5.07%	-3.34	1.53%	14.47	6.45%
1/21/2014	9.65%	3.62%	5.12%	-3.32	1.51%	14.38	6.03%
1/22/2014	9.18%	3.62%	5.13%	-3.32	1.51%	14.38	5.56%
2/20/2014	9.30%	3.69%	5.18%	-3.30	1.49%	14.72	5.61%
2/21/2014	9.85%	3.69%	5.18%	-3.30	1.48%	14.72	6.16%
2/28/2014	9.55%	3.70%	5.18%	-3.30	1.48%	14.69	5.85%
3/16/2014	9.72%	3.72%	5.19%	-3.29	1.46%	14.60	6.00%
4/21/2014	9.50%	3.72%	5.15%	-3.29	1.42%	14.46	5.78%
4/22/2014	9.80%	3.72%	5.15%	-3.29	1.42%	14.46	6.08%
5/8/2014	9.10%	3.71%	5.12%	-3.29	1.41%	14.50	5.39%
5/8/2014	9.59%	3.71%	5.12%	-3.29	1.41%	14.50	5.88%
6/6/2014	10.40%	3.67%	5.05%	-3.31	1.38%	14.16	6.73%
6/12/2014	10.10%	3.66%	5.04%	-3.31	1.38%	14.10	6.44%
6/12/2014	10.10%	3.66%	5.04%	-3.31	1.38%	14.10	6.44%
6/12/2014	10.10%	3.66%	5.04%	-3.31	1.38%	14.10	6.44%
7/7/2014	9.30%	3.63%	4.99%	-3.32	1.36%	13.77	5.67%
7/25/2014	9.30%	3.60%	4.95%	-3.32	1.35%	13.54	5.70%
7/31/2014	9.90%	3.60%	4.94%	-3.33	1.35%	13.55	6.30%
9/4/2014	9.10%	3.52%	4.87%	-3.35	1.35%	13.57	5.58%
9/24/2014	9.35%	3.47%	4.83%	-3.36	1.36%	13.48	5.88%
9/30/2014	9.75%	3.46%	4.82%	-3.36	1.37%	13.53	6.29%
10/29/2014	10.80%	3.38%	4.78%	-3.39	1.40%	13.96	7.42%
11/6/2014	10.20%	3.36%	4.77%	-3.39	1.41%	13.88	6.84%
11/14/2014	10.20%	3.35%	4.76%	-3.40	1.42%	13.84	6.85%
11/14/2014	10.30%	3.35%	4.76%	-3.40	1.42%	13.84	6.95%
11/26/2014	10.20%	3.32%	4.75%	-3.41	1.43%	13.78	6.88%
12/3/2014	10.00%	3.30%	4.75%	-3.41	1.44%	13.76	6.70%
1/13/2015	10.30%	3.18%	4.70%	-3.45	1.52%	14.14	7.12%
1/21/2015	9.05%	3.15%	4.69%	-3.46	1.54%	14.34	5.90%
1/21/2015	9.05%	3.15%	4.69%	-3.46	1.54%	14.34	5.90%
4/9/2015	9.50%	2.90%	4.61%	-3.54	1.71%	15.35	6.60%
5/11/2015	9.80%	2.83%	4.61%	-3.56	1.78%	15.29	6.97%
6/17/2015	9.00%	2.81%	4.65%	-3.57	1.84%	15.46	6.19%
8/21/2015	9.75%	2.79%	4.77%	-3.58	1.98%	15.08	6.96%
10/7/2015	9.55%	2.81%	4.90%	-3.57	2.09%	16.58	6.74%
10/13/2015	9.75%	2.82%	4.92%	-3.57	2.10%	16.49	6.93%
10/15/2015	9.00%	2.82%	4.93%	-3.57	2.10%	16.46	6.18%
10/30/2015	9.80%	2.86%	5.00%	-3.56	2.14%	16.28	6.94%
11/19/2015	10.00%	2.89%	5.07%	-3.55	2.19%	16.33	7.11%
12/3/2015	10.00%	2.90%	5.12%	-3.54	2.22%	16.40	7.10%
12/9/2015	9.60%	2.91%	5.14%	-3.54	2.24%	16.42	6.69%
12/11/2015	9.90%	2.91%	5.15%	-3.54	2.24%	16.50	6.99%
12/18/2015	9.50%	2.92%	5.18%	-3.53	2.26%	16.67	6.58%
1/6/2016	9.50%	2.95%	5.25%	-3.52	2.30%	16.86	6.55%
1/6/2016	9.50%	2.95%	5.25%	-3.52	2.30%	16.86	6.55%
1/28/2016	9.40%	2.97%	5.32%	-3.52	2.36%	17.78	6.43%
2/10/2016	9.60%	2.96%	5.35%	-3.52	2.39%	18.23	6.64%
2/16/2016	9.50%	2.95%	5.35%	-3.52	2.40%	18.44	6.55%
2/29/2016	9.40%	2.93%	5.37%	-3.53	2.44%	18.79	6.47%
4/29/2016	9.80%	2.83%	5.31%	-3.56	2.48%	18.97	6.97%
5/5/2016	9.49%	2.83%	5.30%	-3.57	2.48%	19.02	6.66%
6/1/2016	9.55%	2.80%	5.24%	-3.57	2.44%	18.29	6.75%
6/3/2016	9.65%	2.80%	5.23%	-3.58	2.43%	18.15	6.85%
6/15/2016	9.00%	2.78%	5.19%	-3.58	2.41%	17.87	6.22%
6/15/2016	9.00%	2.78%	5.19%	-3.58	2.41%	17.87	6.22%
9/2/2016	9.50%	2.58%	4.81%	-3.66	2.24%	16.81	6.92%
9/23/2016	9.75%	2.53%	4.72%	-3.68	2.19%	16.49	7.22%
9/27/2016	9.50%	2.52%	4.70%	-3.68	2.18%	16.46	6.98%
9/29/2016	9.11%	2.52%	4.69%	-3.68	2.17%	16.40	6.59%
10/13/2016	10.20%	2.49%	4.63%	-3.69	2.14%	15.86	7.71%
10/28/2016	9.70%	2.48%	4.57%	-3.70	2.09%	15.37	7.22%
11/9/2016	9.80%	2.48%	4.53%	-3.70	2.05%	15.10	7.32%
11/18/2016	10.00%	2.49%	4.51%	-3.69	2.02%	14.85	7.51%
12/9/2016	10.10%	2.52%	4.48%	-3.68	1.96%	14.48	7.58%
12/15/2016	9.00%	2.53%	4.47%	-3.68	1.95%	14.45	6.47%
12/15/2016	9.00%	2.53%	4.47%	-3.68	1.95%	14.45	6.47%
12/20/2016	9.75%	2.54%	4.47%	-3.67	1.93%	14.40	7.21%
12/22/2016	9.50%	2.54%	4.47%	-3.67	1.93%	14.38	6.96%

Date of Electric Rate Case	Return on Equity (%)	30 Year Treasury (%)	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
1/24/2017	9.00%	2.59%	4.45%	-3.66	1.87%	14.15	6.41%
2/21/2017	10.55%	2.63%	4.45%	-3.64	1.82%	13.75	7.92%
3/1/2017	9.25%	2.64%	4.45%	-3.63	1.81%	13.70	6.61%
4/11/2017	9.50%	2.74%	4.48%	-3.60	1.74%	12.97	6.76%
4/20/2017	8.70%	2.76%	4.49%	-3.59	1.72%	13.06	5.94%
4/28/2017	9.50%	2.79%	4.50%	-3.58	1.71%	13.02	6.71%
5/23/2017	9.60%	2.85%	4.53%	-3.56	1.68%	12.92	6.75%
6/6/2017	9.70%	2.88%	4.54%	-3.55	1.66%	12.79	6.82%
6/22/2017	9.70%	2.91%	4.54%	-3.54	1.63%	12.50	6.79%
6/30/2017	9.60%	2.92%	4.54%	-3.53	1.62%	12.40	6.68%
7/20/2017	9.55%	2.95%	4.55%	-3.52	1.60%	12.12	6.60%
7/31/2017	10.10%	2.96%	4.55%	-3.52	1.58%	11.94	7.14%
9/13/2017	9.40%	2.94%	4.47%	-3.53	1.54%	11.50	6.46%
9/19/2017	9.70%	2.93%	4.46%	-3.53	1.53%	11.46	6.77%
9/22/2017	11.88%	2.93%	4.45%	-3.53	1.53%	11.43	8.95%
9/27/2017	10.20%	2.92%	4.44%	-3.53	1.52%	11.39	7.28%
10/20/2017	9.60%	2.91%	4.41%	-3.54	1.50%	11.20	6.69%
10/26/2017	10.20%	2.91%	4.40%	-3.54	1.50%	11.20	6.79%
10/30/2017	10.05%	2.90%	4.40%	-3.54	1.50%	11.18	7.15%
11/21/2017	9.50%	2.88%	4.37%	-3.55	1.48%	11.12	6.62%
12/5/2017	9.50%	2.87%	4.35%	-3.55	1.48%	11.06	6.63%
12/7/2017	9.80%	2.86%	4.34%	-3.55	1.47%	11.04	6.94%
12/13/2017	9.25%	2.86%	4.33%	-3.56	1.47%	11.01	6.39%
12/28/2017	9.50%	2.84%	4.30%	-3.56	1.46%	10.88	6.66%
1/31/2018	9.80%	2.84%	4.26%	-3.56	1.43%	10.69	6.96%
2/21/2018	9.80%	2.85%	4.26%	-3.56	1.41%	11.66	6.95%
2/21/2018	9.80%	2.85%	4.26%	-3.56	1.41%	11.66	6.95%
2/28/2018	9.50%	2.85%	4.26%	-3.56	1.40%	11.87	6.65%
3/15/2018	9.00%	2.87%	4.26%	-3.55	1.39%	12.29	6.13%
3/26/2018	10.19%	2.88%	4.27%	-3.55	1.39%	12.65	7.31%
4/26/2018	9.50%	2.91%	4.30%	-3.54	1.39%	13.66	6.59%
4/27/2018	9.30%	2.91%	4.30%	-3.54	1.39%	13.69	6.39%
5/2/2018	9.50%	2.91%	4.31%	-3.54	1.40%	13.78	6.59%
5/3/2018	9.70%	2.91%	4.31%	-3.54	1.40%	13.81	6.79%
5/29/2018	9.40%	2.94%	4.35%	-3.53	1.41%	13.92	6.46%
6/6/2018	9.80%	2.95%	4.37%	-3.52	1.41%	13.99	6.85%
6/14/2018	8.80%	2.97%	4.39%	-3.52	1.42%	14.04	5.83%
7/16/2018	9.60%	2.98%	4.43%	-3.51	1.45%	14.54	6.62%
7/20/2018	9.40%	2.99%	4.44%	-3.51	1.45%	14.59	6.41%
8/24/2018	9.28%	3.02%	4.50%	-3.50	1.49%	14.86	6.26%
8/28/2018	10.00%	3.02%	4.51%	-3.50	1.49%	14.88	6.98%
9/13/2018	10.00%	3.04%	4.54%	-3.49	1.50%	15.05	6.96%
9/14/2018	10.00%	3.04%	4.55%	-3.49	1.51%	15.07	6.96%
9/19/2018	9.85%	3.05%	4.55%	-3.49	1.51%	15.11	6.80%
9/20/2018	9.80%	3.05%	4.56%	-3.49	1.51%	15.12	6.75%
9/26/2018	9.40%	3.06%	4.57%	-3.49	1.51%	15.17	6.34%
9/26/2018	10.20%	3.06%	4.57%	-3.49	1.51%	15.17	7.14%
9/28/2018	9.50%	3.06%	4.58%	-3.49	1.52%	15.19	6.44%
9/28/2018	9.50%	3.06%	4.58%	-3.49	1.52%	15.19	6.44%

Average: 4.62%
of Rate Cases: 1,101