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DIRECT TESTIMONY

OF

ROBERT B. HEVERT

ON BEHALF OF

**UNION ELECTRIC COMPANY
d/b/a Ameren Missouri**

**Westborough, Massachusetts
July 3, 2019**

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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. ER-2019-0335

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., 1900
4 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, the
3 Federal Courts, 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 appropriate Return on Equity (“ROE” also referred to as its Cost of Equity) to be used in
10 establishing the Company’s electric rates in this proceeding.¹ My analyses and conclusions are
11 supported by the data presented in Schedules RBH-D1 through RBH-D8, which have been
12 prepared by me or under my direction.

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

15 A. My analyses indicate that an ROE in the range of 9.80 percent to 10.60 percent
16 represents the range of equity investors’ required return for investment in a vertically integrated
17 utility such as Ameren Missouri in today’s capital markets. Based on the quantitative and
18 qualitative analyses discussed throughout my Direct Testimony, and taking into consideration the
19 Commission’s decisions in prior proceedings, I propose an ROE of 9.95 percent.

20 I note that the Cost of Equity, which is the return required by equity investors to assume
21 the risks of ownership, is a market-based concept. As opposed to the earned Return on Common

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

1 Equity, which is a directly observable accounting measure, the Cost of Equity is unobservable and
2 must be estimated based on carefully discerned market data. As a consequence, there may be
3 differences of opinion among analysts as to the data, assumptions and models used in estimating
4 the Cost of Equity.

5 Further, I am aware that the Commission’s 2015 Report and Order in Case No. ER-2014-
6 0370 (“2015 KCP&L Order”) discussed the importance of recommendations that rely on verifiable
7 and independent market data, and accepted market-based rate of return models.² As discussed
8 throughout my Direct Testimony, the analyses that underlie my recommended range consider the
9 Commission’s findings, and reflect the types of analyses and data discussed in the 2015 KCP&L
10 Order. Based on those analyses and data, and in light of that order, it is my view that the
11 Company’s ROE is within the range of 9.80 percent to 10.60 percent, and represents a reasonable,
12 but conservative range of the Company’s Cost of Equity.

13 In my view, the factors that are commonly used to estimate the Cost of Equity likely
14 indicate that a higher range than 9.80 percent to 10.60 percent, and an ROE at the mid- to upper-
15 end of such a higher range is appropriate. However, the Company has asked that I give
16 considerable weight to recent Commission orders, including the types of data and analyses
17 discussed in those orders, in developing my proposed range and recommendation. Having done
18 so, my proposed recommendation and range are lower than otherwise would be the case.

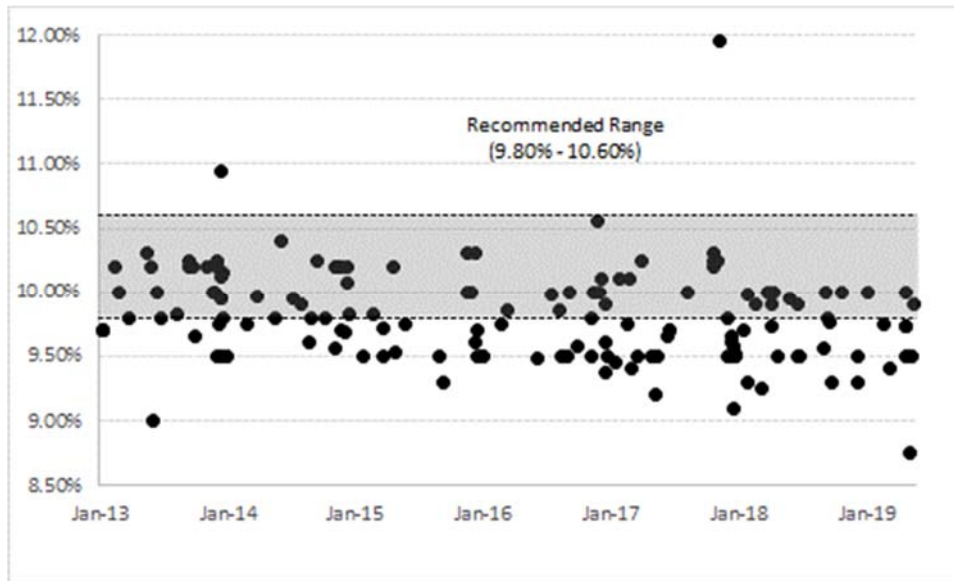
19 **Q. Have you considered your proposed ROE in the context of returns recently**
20 **authorized for vertically integrated electric utilities in other jurisdictions?**

21 A. Yes. As the Commission noted in prior Orders, it is appropriate to give some
22 consideration to authorized ROEs in other jurisdictions to evaluate the reasonableness of ROE

² *In the Matter of Kansas City Power & Light Company’s Request for Authority to Implement a General Rate Increase for Electric Service*, Case No. ER-2014-0370, Report and Order at 20 (Sept. 2, 2015).

1 proposals.³ As shown in Chart 1, below, my proposed range is consistent with returns recently
2 authorized since 2014 for vertically integrated utilities.

3 **Chart 1: Vertically Integrated Electric Authorized Returns⁴**



4
5 **Q. Please provide a brief overview of the analyses that led to your ROE**
6 **recommendation.**

7 A. Because all financial models are subject to various assumptions and constraints,
8 equity analysts and investors tend to use multiple methods to develop their return requirements. I
9 therefore relied on three widely-accepted approaches to develop my ROE recommendation: (1)
10 the Constant Growth Discounted Cash Flow (“DCF”) model; (2) the Capital Asset Pricing Model
11 (“CAPM”) and Empirical CAPM (“ECAPM”); and (3) the Bond Yield Plus Risk Premium
12 approach. I also have provided an Expected Earnings analysis, which I have applied as a
13 corroborating method. As discussed in Sections V and VII, I considered the results of those
14 methods in the context of general capital market factors. Based on those analyses and the other

³ See, for example, *In the Matter of Kansas City Power & Light Company’s Request for Authority to Implement a General Rate Increase for Electric Service*, Case No. ER-2014-0370, Report and Order (Sep. 15, 2015).

⁴ Source: S&P Global Market Intelligence.

1 considerations I discussed earlier, I concluded that a range of 9.80 percent to 10.60 percent
2 represents reasonable estimates of the Company's Cost of Equity.

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

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

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

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

10 Section V – Explains my analyses and the analytical bases for my ROE
11 recommendation;

12 Section VI – Provides a discussion of specific business risks and other
13 considerations that have a direct bearing on the Company's Cost of Equity;

14 Section VII – Highlights the current capital market conditions and their effect on
15 the Company's Cost of Equity;

16 Section VIII – Summarizes my conclusions and recommendations.

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

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

19 A. In very general terms, the Cost of Equity is the return that investors require to make
20 an equity investment in a firm. That is, investors will only provide funds to a firm if the return

1 that they *expect* is equal to, or greater than, the return that they *require* to accept the risk of
2 providing funds to the firm. From the firm’s perspective, that required return, whether it is
3 provided to debt or equity investors, has a cost. Individually, we speak of the “Cost of Debt” and
4 the “Cost of Equity;” together, they are referred to as the “Cost of Capital.”

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

11 Although both debt and equity have required costs, they differ in certain fundamental ways.
12 Most noticeably, the Cost of Debt is contractually defined and can be directly observed as the
13 interest rate or yield on debt securities.⁵ The Cost of Equity, on the other hand, is neither directly
14 observable nor a contractual obligation. Rather, equity investors have a claim on cash flows only
15 after debt holders are paid; the uncertainty (or risk) associated with those residual cash flows
16 determines the Cost of Equity. Because equity investors bear that additional “residual risk,” they
17 require higher returns than debt holders. In that basic sense, equity and debt investors differ: they
18 invest in different securities, face different risks, and require different returns.

19 Whereas the Cost of Debt can be directly observed, the Cost of Equity must be estimated
20 or inferred based on market data and various financial models. As discussed throughout my Direct
21 Testimony, each of those models is subject to its own set of assumptions, which may be more or
22 less applicable under differing market conditions. In addition, because the Cost of Equity is

⁵ The observed interest rate may be adjusted to reflect issuance or other directly observable costs.

1 premised on opportunity costs, the models typically are applied to a group of “comparable” or
2 “proxy” companies. The choice of models (including their inputs), the selection of proxy
3 companies, and the interpretation of the model results all require the application of reasoned
4 judgment. That judgment should consider data and information, both quantitative and qualitative,
5 that is not necessarily included in the models themselves.

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

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

15 A. The United States Supreme Court (the “Court”) established the guiding principles
16 for establishing a fair return for capital in two cases: (1) *Bluefield Water Works and Improvement*
17 *Co. v. Public Service Comm’n of West Virginia*, 262 U.S. 679 (1923) (“*Bluefield*”); and (2)
18 *Federal Power Comm’n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) (“*Hope*”). In those cases,
19 the Court recognized that the fair rate of return on equity should be: (1) comparable to returns
20 investors expect to earn on other investments of similar risk; (2) sufficient to assure confidence in
21 the company’s financial integrity; and (3) adequate to maintain and support the company’s credit
22 and to attract capital.

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

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

5 The standard for rates is “just and reasonable,” a standard founded on constitutional
6 provisions, as the United States Supreme Court has explained. But the Commission
7 must also consider the customers. Balancing the interests of investor and consumer
8 is not reducible to a single formula, and making pragmatic adjustments is part of
9 the Commission’s duty. Thus, the law requires a just and reasonable end, but does
10 not specify a means. The Commission is charged with approving rate schedules
11 that are as “just and reasonable” to consumers as they are to the utility.⁶

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

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

16 The cases also recognize that the fixing of rates is a matter largely of prophecy and
17 because of this commissions, in carrying out their functions, necessarily deal in
18 what are called ‘zones of reasonableness’, the result of which is that they have some
19 latitude in exercising this most difficult function.⁷

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

⁶ *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.

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

3 A. A return that is adequate to attract capital at reasonable terms enables the utility to
4 provide service while maintaining its financial integrity. As discussed above, and in keeping with
5 the *Hope* and *Bluefield* standards, that return should be commensurate with the returns expected
6 elsewhere in the market for investments of equivalent risk. The consequence of the Commission’s
7 order in this case, therefore, should be to provide Ameren Missouri with the opportunity to earn a
8 return on equity that is: (1) adequate to attract capital at reasonable terms; (2) sufficient to ensure
9 its financial integrity; and (3) commensurate with returns on investments in enterprises having
10 corresponding risks. To the extent Ameren Missouri is provided a reasonable opportunity to earn
11 its market-based Cost of Equity, neither customers nor shareholders should be disadvantaged. In
12 fact, a return that is adequate to attract capital at reasonable terms enables the Company to provide
13 safe, reliable electric utility service while maintaining its financial integrity, both of which don't
14 just benefit the Company, but also benefit its customers.

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

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

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Chart 2: Risk and Return Principle Illustration



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

IV. PROXY GROUP SELECTION

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

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

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

14 A. Ameren Missouri, which is a wholly owned subsidiary of Ameren Corporation,
 15 provides electric service to approximately 1.2 million retail customers and natural gas distribution
 16 service to 130,000 retail customers in Missouri.⁸ Ameren Corporation’s and Ameren Missouri’s
 17 current long-term issuer credit ratings are as follows:

Table 1: Current Credit Ratings⁹

	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)

⁸ Source: Bloomberg Professional.

⁹ Source: Bloomberg Professional.

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

2 A. Table 2 (below) identifies the 20 companies included in the proxy group.

3 **Table 2: Proxy Group Screening Results**

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
American Electric Power Company, Inc.	AEP
Avangrid, Inc.	AGR
CMS Energy Corporation	CMS
DTE Energy Company	DTE
Duke Energy Corporation	DUK
El Paso Electric Company ¹⁰	EE
Evergy, Inc.	EVRG
Hawaiian Electric Industries, Inc.	HE
NextEra Energy, Inc.	NEE
NorthWestern Corporation	NWE
OGE Energy Corp.	OGE
Otter Tail Corporation	OTTR
Pinnacle West Capital Corporation	PNW
PNM Resources, Inc.	PNM
Portland General Electric Company	POR
Southern Company	SO
WEC Energy Group, Inc.	WEC
Xcel Energy Inc.	XEL

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

6 A. No, it does not. Even with carefully selected proxy groups, it is common for
7 analytical results to reflect a seemingly wide range.¹¹ Despite the care taken to select comparable

¹⁰ El Paso Electric Company (“El Paso”) announced its proposed acquisition by J.P. Morgan Investment Management Inc. on June 3, 2019, subsequent to the period used in the various analyses discussed in more detail below (i.e., May 31, 2019). See El Paso Electric Merger Press Release, June 3, 2019. As such, I have retained El Paso in the proxy group, however I may exclude El Paso from any updated analyses that I may file in this proceeding, because it would no longer meet my screening criteria.

¹¹ In Appendix B, I provide more substantive descriptions of the models used to estimate the ROE.

1 proxy companies, market expectations regarding future risks and growth opportunities will vary
2 from company to company. Although selecting proxy companies and developing the range of
3 results are critical issues, an equally important concern is how to select the Cost of Equity *from*
4 that range. That selection necessarily considers a wide range of both quantitative and qualitative
5 information; as noted earlier, it is not an entirely mathematical analysis.

V. COST OF EQUITY ESTIMATION

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

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

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

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

18 As a practical matter, no individual model is more reliable than all others under all market
19 conditions. Therefore, it is important to use multiple methodologies to mitigate the effects of
20 assumptions and inputs associated with any single approach. The use of multiple methods, and

¹² 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.

1 the consideration given to them, recently was addressed by the FERC. In its November 15, 2018
2 *Order Directing Briefs*, FERC found that “in light of current investor behavior and capital market
3 conditions, relying on the DCF methodology alone will not produce a just and reasonable ROE.”¹³

4 In its October 16, 2018 *Order Directing Briefs*, FERC found that although it “previously
5 relied solely on the DCF model to produce the evidentiary zone of reasonableness...”, it is
6 “...concerned that relying on that methodology alone will not produce just and reasonable
7 results.”¹⁴ As FERC explained, because the Cost of Equity depends on what the market expects,
8 it is important to understand “how investors analyze and compare their investment
9 opportunities.”¹⁵ FERC also explained that, although certain investors may give some weight to
10 the DCF approach, other investors “place greater weight on one or more of the other methods...”¹⁶

11 Consistent with that approach, I have considered the results of the Constant Growth DCF
12 model, the CAPM and ECAPM, and the Bond Yield Plus Risk Premium approach. I also have
13 provided an Expected Earnings analysis, which I have applied as a corroborating method. FERC
14 issued similar guidance using the Expected Earnings analysis in its determination of the “zone of
15 reasonableness,” observing that “*investors use those models.*”¹⁷

16 **Q. Why did you select those models?**

17 A. I selected those models for two reasons. First, because the purpose of ROE analyses
18 is to estimate the return that investors require, it is important to use the models on which those
19 investors rely. As discussed in Appendix B, the models that I apply are commonly used in practice.
20 Second, the models focus on different aspects of return requirements, and provide different insights

¹³ Docket Nos. EL14-12-003 and EL15-45-000, *Order Directing Briefs*, 165 FERC ¶ 61,118 (November 15, 2018), at para. 34.

¹⁴ Docket No. EL11-66-001, *et al.*, *Order Directing Briefs*, at 30.

¹⁵ *Ibid.*, at 33.

¹⁶ *Ibid.*, at 35.

¹⁷ *Ibid.*, at 29 (italics in original).

1 to investors' views of risk and return. Using multiple models provides a broader, and therefore a
2 more reliable perspective on investors' return requirements.

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

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

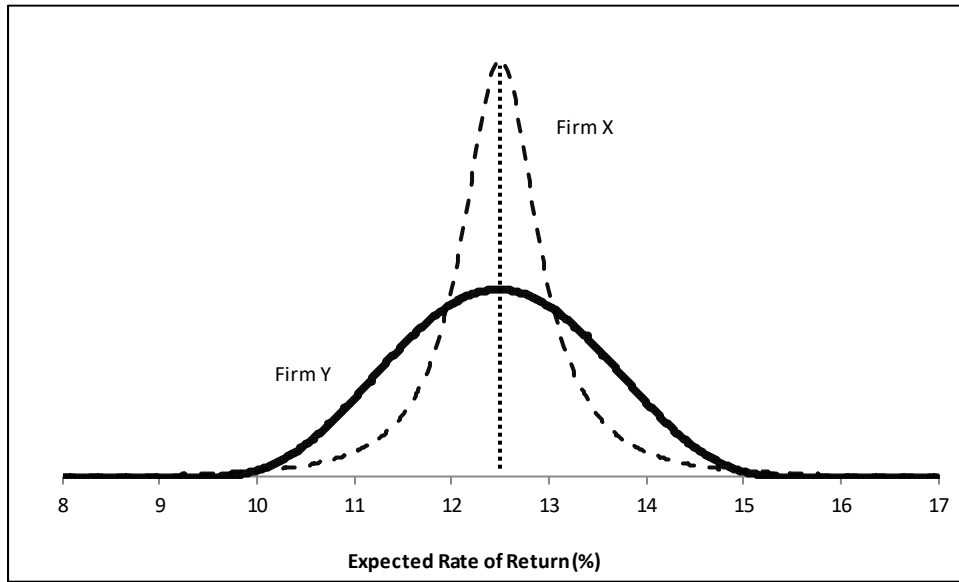
12 **Q. Please briefly describe the Capital Asset Pricing Model.**

13 A. Whereas DCF models focus on expected cash flows, Risk Premium-based models
14 such as the CAPM focus on the additional return that investors require for taking on additional
15 risk. In finance, "risk" generally refers to the variation in expected returns, rather than the expected
16 return itself. Consider two firms, X and Y, with expected returns, and the expected variation in
17 returns noted in Chart 3, below. Although the two have the same expected return (12.50 percent),
18 Firm Y's are far more variable. From that perspective, Firm Y would be considered the riskier
19 investment.

¹⁸ 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

Chart 3: Expected Return and Risk

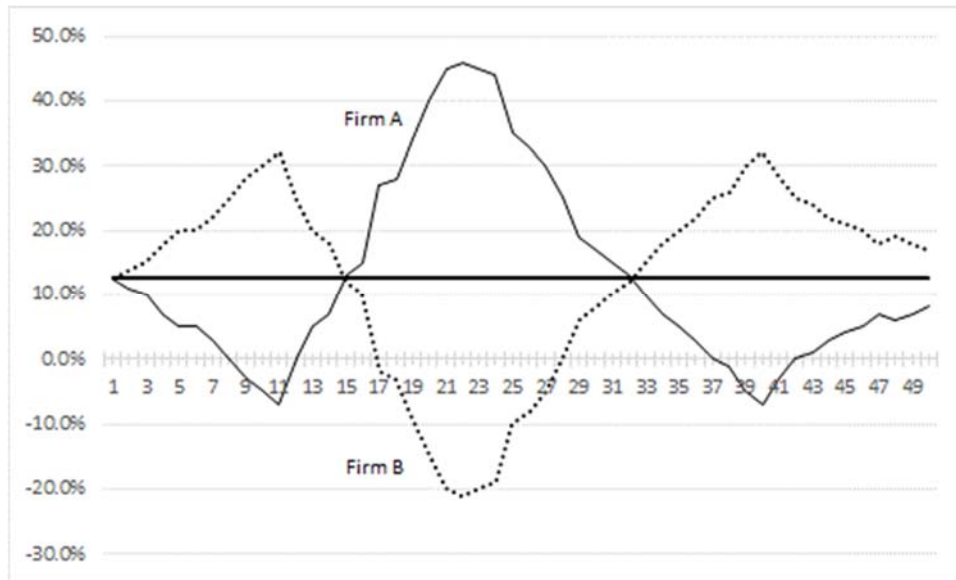


2

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

6

Chart 4: Relative Risk



7

8 If we were to combine Firms A and B into a portfolio, we would expect a 12.50 percent
9 return with no uncertainty because of the opposing symmetry of their risk profiles. That is, we

1 can diversify the risk away. As long as two stocks are not perfectly correlated, we can achieve
2 diversification benefits by combining them into a portfolio. That is the essence of the Capital
3 Asset Pricing Model; because we can combine firms into a portfolio, the only risk that matters is
4 the risk that remains after diversification, *i.e.*, the “non-diversifiable” risk.

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

$$11 \quad \text{Risk Free Rate} + \text{Risk Premium} = \text{Cost of Equity [1]}$$

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

$$18 \quad \text{Risk Free Rate} + (\text{Beta Coefficient} \times \text{Market Risk Premium}) = \text{Cost of Equity [2]}$$

19 As with the Constant Growth DCF model, it is important to understand the CAPM’s inputs,
20 assumptions, and results in the context of observable market data. Appendix A, part B explains
21 that Beta coefficients reflect two aspects of stock price movements: (1) the variability of the subject
22 company’s returns relative to the market; and (2) the correlation of the subject company’s returns
23 to the market’s returns. Both are important factors. When utility stock prices fall, but the overall

1 market increases, the correlation will fall. When that happens (all else remaining equal), Beta
 2 coefficients also will fall. That is especially the case when they are calculated over relatively short
 3 periods, as Bloomberg does. The question then becomes whether those Beta coefficients are likely
 4 to reflect investors' views of utility risk going forward. Here again, a certain amount of judgment
 5 must be applied.

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

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

14
$$\text{Bond Yield} + \text{Equity Risk Premium} = \text{Cost of Equity [3]}$$

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

16 A. The results of the model described above are provided in Table 3, below.¹⁹

Table 3: Summary of DCF Results

	Mean Low	Mean	Mean High
30-Day Average	8.13%	8.89%	9.74%
90-Day Average	8.20%	8.96%	9.81%
180-Day Average	8.32%	9.08%	9.93%

¹⁹ See, Appendix B for a more detailed description of the models, assumptions, and inputs described in Section V.

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

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

Table 4: Summary of Risk Premium Results

	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium
<i>CAPM - Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (2.85%)	8.18%	8.68%
Near Term Projected 30-Year Treasury (3.03%)	8.36%	8.86%
<i>CAPM - Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (2.85%)	9.35%	9.97%
Near Term Projected 30-Year Treasury (3.03%)	9.53%	10.14%
<i>ECAPM - Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (2.85%)	9.60%	10.24%
Near Term Projected 30-Year Treasury (3.03%)	9.78%	10.42%
<i>ECAPM - Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (2.85%)	10.47%	11.20%
Near Term Projected 30-Year Treasury (3.03%)	10.65%	11.38%
<i>Bond Yield Plus Risk Premium Approach</i>		
Current 30-Year Treasury (2.85%)	9.91%	
Near Term Projected 30-Year Treasury (3.03%)	9.92%	
Long-Term Projected 30-Year Treasury (3.70%)	10.06%	

4 **Q. Please briefly describe the Expected Earnings analysis.**

5 A. The Expected Earnings analysis is based on the principle of opportunity costs. By
6 taking historical returns on book equity and comparing those to authorized ROEs, investors are
7 able to directly compare returns from investments of similar risk. In addition to historical returns,
8 Value Line also provides projected returns on book equity. Because the Cost of Equity is forward-

1 looking, I relied solely on forward-looking projections in the Expected Earnings analysis.²⁰ The
2 Expected Earnings analysis results in an average ROE estimate of 10.29 percent and median ROE
3 estimate of 10.05 percent. As noted earlier, I used those results to assess the reasonableness of the
4 DCF, CAPM, ECAPM, and Bond-Yield Plus Risk Premium results.²¹

VI. BUSINESS RISKS AND OTHER CONSIDERATIONS

5 **Q. Do the mean analytical results for the proxy group provide an appropriate**
6 **estimate of the Cost of Equity for Ameren Missouri?**

7 A. No, the mean results do not necessarily provide an appropriate estimate of the
8 Company's Cost of Equity. In my view, there are additional factors that must be taken into
9 consideration when determining where the Company's Cost of Equity falls within the range of
10 results. Those factors include: (1) the regulatory environment; and (2) the Company's declining
11 customer usage, and operating income dilution. Those risk factors, which are discussed below,
12 should be considered with respect to their overall effect on Ameren Missouri's risk profile, and
13 therefore its Cost of Equity.

14 A. *Regulatory Environment*

15 **Q. How does the regulatory environment in which a utility operates affect its**
16 **access to and cost of capital?**

17 A. The regulatory environment can significantly affect both the access to and the cost
18 of capital in several ways. First, the proportion of and cost of debt capital available to utility
19 companies are influenced by rating agencies' assessment of the regulatory environment. In

²⁰ As described more fully in Appendix B, part D, an adjustment is necessary to accurately reflect the average invested capital over the period in question.

²¹ See, Docket Nos. EL14-12-003 and EL15-45-000, *Order Directing Briefs*, 165 FERC ¶ 61,118 (November 15, 2018).

1 addition, it is important to recognize that regulatory decisions regarding the authorized ROE and
2 capital structure have direct consequences for the subject utility’s internal cash flow generation
3 (sometimes referred to as “Funds from Operations” or “FFO”). Because credit ratings are intended
4 to reflect the ability to meet financial obligations as they come due, the ability to generate the cash
5 flows required to meet those obligations (and to provide an additional amount for unexpected
6 events) is of critical importance to debt investors. Two of the most important metrics used to
7 assess that ability are the ratios of FFO to debt, and FFO to interest expense, both of which are
8 directly affected by regulatory decisions regarding the appropriate rate of return and capital
9 structure.

10 Investors recognize that a reasonable allowed ROE that is subject to earnings attrition due
11 to unfavorable regulatory or economic factors does not provide any assurance that the utility
12 actually will recover its costs or earn a reasonable return. The authorized ROE affects not only
13 the cash flow-related metrics that measure financial strength, but also provides an indication of the
14 degree of regulatory support, as well as risk associated with a given utility and jurisdiction. It is,
15 therefore, an important measure of regulatory support and financial integrity from several
16 perspectives.

17 **Q. In 2018, Senate Bill 564 went into effect, which allows the Company to utilize**
18 **plant-in-service accounting (“PISA”).²² Does PISA reduce Ameren Missouri’s Cost of**
19 **Equity?**

20 A. No, it does not.

²² Senate Bill No. 564, General Assembly of the State of Missouri 2018.

1 **Q. Please explain.**

2 A. To help put the issue in context, I will generally describe Senate Bill 564 and PISA.

3 Among other things, Senate Bill 564 allows the Company to:

4 [D]efer to a regulatory asset eighty-five percent of all depreciation expense
5 and return associated with all qualifying electric plant recorded to plant-in-
6 service on the utility's books... In each general rate proceeding concluded
7 after the effective date of this section, the balance of the regulatory asset as
8 of the rate base cutoff date shall be included in the electrical corporation's
9 rate base without any offset, reduction, or adjustment based upon
10 consideration of any other factor...²³

11 Because the Cost of Equity is based on the principle of comparative risks and returns, the
12 relevant analytical issue is not whether the Company itself is exposed to less risk due to PISA.
13 Rather, the question is whether PISA reduces the Company's risk relative to its peer utilities to the
14 point that investors would specifically and measurably reduce their return requirement because of
15 it.²⁴ That is not likely the case with PISA. As noted in Schedule RBH-D8, there are a substantial
16 number of cost recovery mechanisms in place at the proxy companies, including, but not limited
17 to, decoupling, mechanisms related to new capital investments, energy efficiency, and renewables.
18 In addition, there are a number of regulatory constructs including, but not limited to formula-based
19 rate plans, which provide comprehensive adjustment mechanisms that automatically adjust rates
20 in the event the subject company earns a return above or below an authorized range, performance-
21 based ratemaking, construction work in progress allowed in rate base, forward test years, and
22 earnings sharing. As such, the use of PISA does not make Ameren Missouri less risky than its
23 peers; rather, PISA increases Ameren Missouri's comparability to the proxy group in terms of
24 regulatory treatment.

²³ *Ibid.*

²⁴ *See, generally, Bluefield and Hope.*

1 **Q. Does the Company have any other investment cost recovery mechanisms that**
2 **it did not have as of the time of its last rate case?**

3 A. Yes, the Company utilizes the Renewable Energy Standard rate adjustment
4 mechanism (“RESRAM”). The RESRAM is:

5 [A] cost recovery mechanism allowed under state law that enables Ameren
6 Missouri to recover costs relating to compliance with Missouri's renewable
7 energy standard, including recovery of investments in wind generation and
8 other renewables, and earn a return on those investments not already
9 provided for in customer rates or any other recovery mechanism by
10 adjusting customer rates on an annual basis without a traditional regulatory
11 rate review, subject to MoPSC prudence reviews. RESRAM regulatory
12 assets will earn carrying costs at short-term interest rates.²⁵

13 **Q. Is regulatory lag a consideration for equity investors?**

14 A. Yes. As noted in an April 2013 report by Regulatory Research Associates
15 (“RRA”), Missouri is one of only five states that legally prohibit utilities from including
16 Construction Work in Progress (“CWIP”) in the rate base.²⁶

17 In addition, rates for Missouri utilities are set based on an historical test year, with limited
18 “known and measurable” changes.²⁷ In contrast, other utilities, including utilities in the proxy
19 group, have the ability to recover rate base additions through forecast test years or alternative rate
20 plans. As RRA has noted, “[s]uch rate changes provide for improved cash flow and possibly
21 earnings through reduced regulatory lag.”²⁸ Because it is subject to the regulatory lag otherwise
22 mitigated by forecast test years or alternative rate plans, Ameren Missouri’s ability to generate
23 cash flow in a timely manner is somewhat disadvantaged relative to its peers.

²⁵ Ameren Corporation, SEC Form 10-K, for the year ending December 31, 2018, at 3.

²⁶ Regulatory Research Associates, *Construction Work in Progress; Getting acquainted with an old issue*, April 22, 2013, at 2; and Regulatory Research Associates, *Missouri Regulatory Review*, January 10, 2019, at 4.

²⁷ Regulatory Research Associates, *Missouri Regulatory Review*, January 10, 2019, at 4.

²⁸ Regulatory Research Associates, *Alternative Regulation/Incentive Plans, A State-by-State Review*, November 2013, at 1.

1 **Q. Do PISA and the RESRAM eliminate the effects of regulatory lag?**

2 A. Although Senate Bill 564 (including PISA) and the RESRAM address regulatory
3 lag, they do not eliminate it. As Moody’s notes:

4 Aside from the new bill, Missouri's regulatory environment has historically
5 been challenging because of regulatory lag. The MoPSC authorizes limited
6 interim base rate recovery mechanisms and requires the use of a historical
7 test year. In UE’s rate construct, there are no capital trackers nor does it
8 allow for the inclusion of Construction Work In Process (CWIP) in rate
9 base. The commission has 11 months from an initial rate filing to render a
10 decision. In addition, allowed ROEs are lower than average for integrated
11 electric utilities. To mitigate Missouri’s longer regulatory lag, Ameren
12 Missouri has filed frequent rate cases over the last several years.²⁹

13 In addition, although PISA may be applied to 85.00 percent of depreciation expense and
14 return associated with qualifying electric plant, there remains an additional 15.00 percent of
15 investment that is not included.

16 Further, although PISA addresses regulatory lag by streamlining the process of including
17 new projects in rate base, there remains a difference in the timing of cash flows between
18 jurisdictions that allow CWIP in rate base and PISA. That is, although the Company may put
19 projects in rate base in the context of a rate case, it cannot do so until the project is completed,
20 unlike companies that are allowed to put CWIP in rate base. Although PISA provides the ability
21 to accumulate and defer a return, it does not provide the near-term cash flow benefits generated by
22 placing CWIP in rate base. As such, there remains a difference in the timing of the Company’s
23 cash flow from new construction.

24 Lastly, there remain Company expenses that are not covered by any regulatory mechanism.

25 **Q. In accordance with 4 CSR 240-20.090(2)(A)14, please provide an explanation**
26 **of any changes in business risk to the Company resulting from the fuel adjustment clause**

²⁹ Moody’s Investors Service, Union Electric Company, Credit Opinion, March 29, 2019, at 3.

1 **(“FAC”) it proposes to continue in this proceeding, in addition to any other changes in**
2 **business risk experienced by the Company.**

3 A. FAC mechanisms are prevalent throughout the industry. As shown in Schedule
4 RBH-D8, all the vertically integrated companies in my proxy group have a fuel adjustment
5 mechanism. As a consequence, the continuation of an FAC for Ameren Missouri would leave its
6 business and regulatory risk profile comparable to the risk profiles of other electric utilities, as it
7 relates to fuel cost recovery. Therefore, no downward adjustment to Ameren Missouri’s rate of
8 return would be reasonable or appropriate as a result of continuation of an FAC. Of course,
9 discontinuing the FAC for Ameren Missouri likely would require an upward adjustment to the
10 Company’s return, to recognize the incremental risk of fuel cost recovery relative to other electric
11 utilities.

12 **Q. What are your conclusions regarding the regulatory risk faced by the**
13 **Company, and how that risk weighs in your ROE recommendation?**

14 A. As noted earlier, although the Company does have rate mechanisms in place, and
15 under PISA it may defer 85.00 percent of the depreciation and return on a majority of its capital
16 investments, it is not able to take advantage of other regulatory lag-reducing mechanisms, such as
17 the inclusion of CWIP in rate base, forecast test years, or formula rates that are available to other
18 proxy companies. On balance, it therefore appears the Company faces somewhat higher regulatory
19 risks than its peers. Although that risk would suggest a return toward the upper end of the range
20 of results, for the reasons discussed earlier, my recommended ROE is lower than it otherwise
21 would be. In my view, therefore, the regulatory risks discussed above further support the
22 conservative nature of my recommendation.

1 **B. *Declining Customer Usage and Operating Income Dilution***

2 **Q. Please summarize your conclusions regarding the operating income dilution**
3 **that Ameren Missouri faces and its effect on the Cost of Equity.**

4 A. As a preliminary observation, the Company has been vigilant in managing its
5 operating and maintenance (“O&M”) expenses. As discussed in more detail below, whereas many
6 utilities can rely on load growth and O&M expense reductions to bridge the gap between the
7 revenues produced by rates, and the revenues required to replace non-revenue producing plant,
8 Ameren Missouri faces greater challenges in doing so. That is, Ameren Missouri cannot rely on
9 load growth or increased profitability generated through reduced O&M costs to fund its
10 infrastructure replacements, or to sustain its financial integrity, as those investments are being
11 undertaken. This condition presents financial challenges especially for companies that, like
12 Ameren Missouri, have a continuing need to invest significant amounts of capital in non-revenue
13 producing infrastructure.

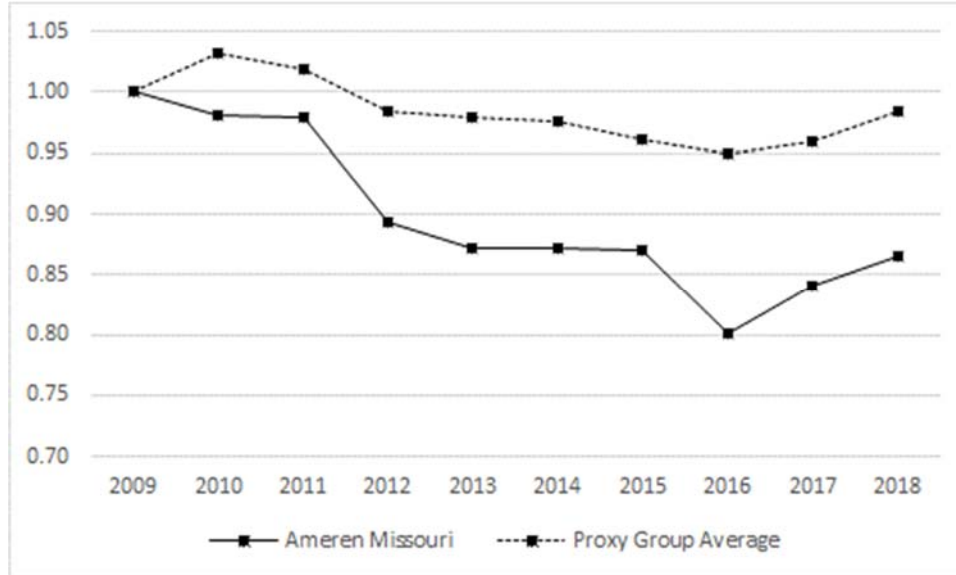
14 **Q. Has the Company experienced declining customer usage?**

15 A. Yes, it has. Ameren Missouri’s average use per residential customer declined by
16 approximately 13.00 percent since 2009, while the proxy group has only decreased by 2.00
17 percent.³⁰ That trend has been driven by energy efficiency and conservation programs, the
18 construction of more energy efficient housing stock, and increased customer awareness regarding
19 the importance of energy conservation.

³⁰ Source: S&P Global Market Intelligence.

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Chart 5: Use Per Customer Index³¹



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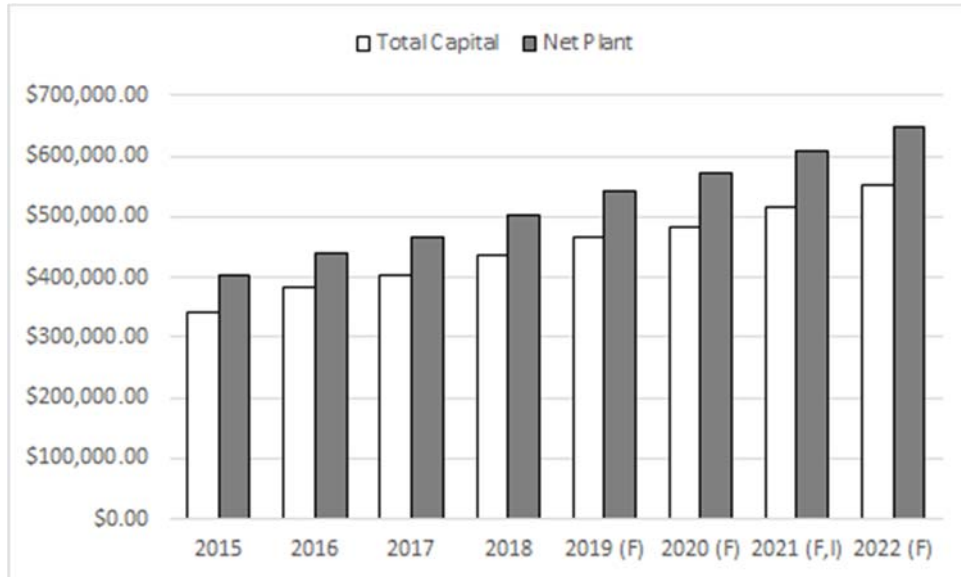
3 **Q. Is the need for increased capital investment a concern within the electric**
4 **utility industry?**

5 A. Yes, it is. Value Line, for example, has recognized that the electric utility industry
6 likely is in a period of increased capital investment and related funding requirements. In that
7 regard, Value Line expects significant increases in both Net Plant and Total Capital within the
8 Proxy Group (see Chart 6, below).

³¹ Source: S&P Global Market Intelligence.

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2

Chart 6: Proxy Group Capital Expenditures and Total Capital, 2015 – 2022
(in millions)³²



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Value Line’s perspective that Total Capital must increase to support additional investment is an important consideration. The ability to efficiently acquire the capital needed to fund the growing level of infrastructure investments is dependent on the ability to recover that investment in a timely manner. S&P noted that:

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For regulated utilities, infrastructure spending leads to rate-base growth. But for a company to preserve its financial strength, it must be able to quickly begin recovering this spending.

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With all these incremental investments, a perfect regulatory storm could arise if costs for fuel and purchased gas rise sharply at the same time that utilities need to raise rates to recover the costs related to infrastructure spending for mandated environmental upgrades, new generation construction, renewable requirements, or pipeline replacements. If this happens, regulators could decide to allow only partial recovery of incurred capital costs through rate increases to reduce rate spikes for customers and possibly defer the remaining balance. Because deferrals do not provide the cash flow needed for utilities to service their debt obligations, utility credit quality could be affected. To retain critical access to the debt markets, utilities will need to continue

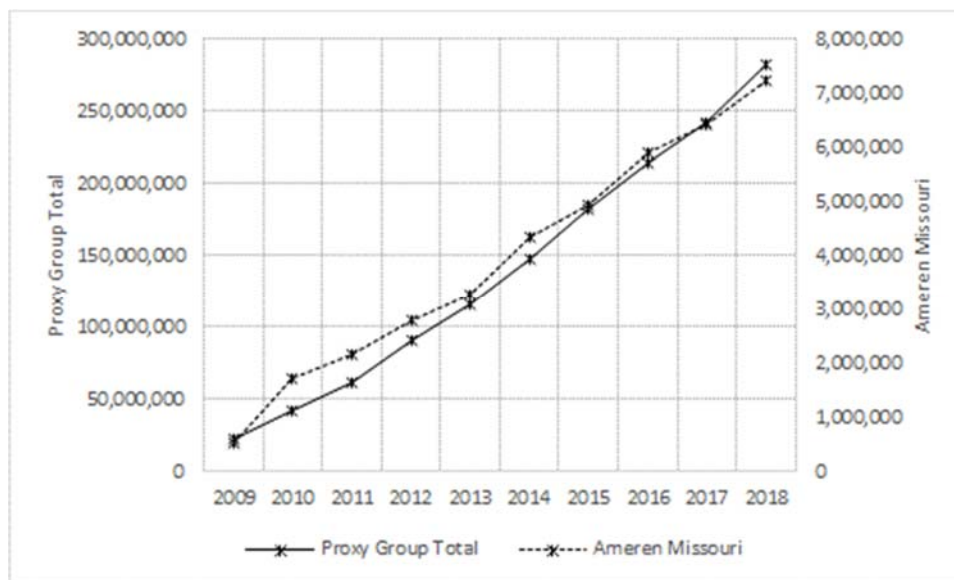
³² Source: Value Line. F: Forecast; I: Interpolated

1 to seek and receive supportive cost recovery from regulators.³³

2 **Q. Has Ameren Missouri's rate of capital investment been consistent with other**
3 **electric utilities?**

4 A. Yes, it has. Since 2009, Ameren Missouri has invested in its system at a pace that
5 is generally consistent with that of its peers (*see* Chart 7, below).

6 **Chart 7: Cumulative Capital Investments (2009 – 2018, \$000)³⁴**



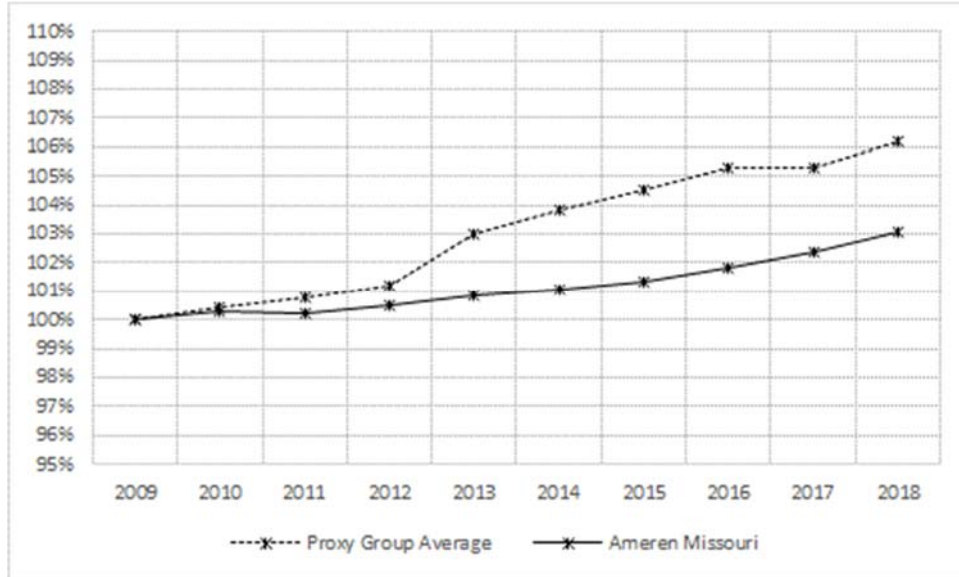
7
8 The Company's ability to fund its invested capital with internally generated cash, however,
9 is complicated by the nature of those investments. Ameren Missouri is making steadily increased
10 capital investments at the same time it is experiencing only slightly increasing customer growths
11 on its system. The proxy group, in contrast, has experienced a comparatively higher level of
12 positive customer growth (*see* Chart 8, below).

³³ Standard & Poor's, *U.S. Utilities' Capital Spending is Rising, and Cost-Recovery is Vital*, Ratings Direct, May 14, 2012, at 6.

³⁴ Source: S&P Global Market Intelligence.

1

Chart 8: Average Electric Customer Growth (2009 – 2018)³⁵



2

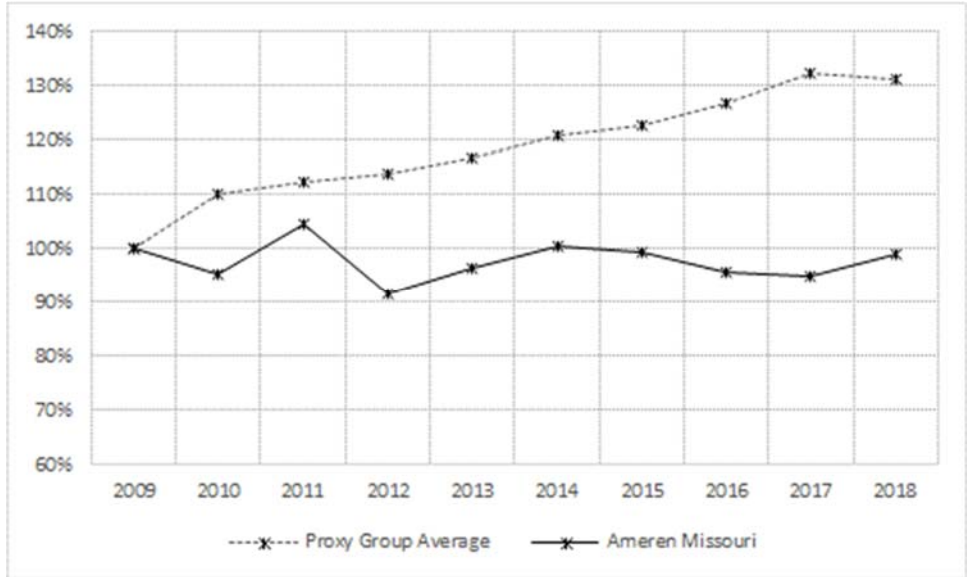
3 In essence, the increasing capital investment together with the relatively low increase in
4 customers has created a circumstance under which each dollar of invested assets has produced
5 fewer dollars of revenue.

6 **Q. Is it likely that the Company would be able to increase the cash flow**
7 **available to fund capital investments by materially reducing its operating expenses?**

8 A. It does not appear so. Relative to its peers, the Company's O&M expenses have
9 grown at a considerably slower pace (*see* Chart 9, below).

³⁵ Source: S&P Global Market Intelligence.

1 **Chart 9: Cumulative Change in Total Operating Expenses (2009 – 2018)³⁶**



2
3 **Q. What conclusions do you draw from the analyses discussed above?**

4 A. In essence, the need to invest increasing amounts of capital in non-revenue
5 producing assets, without the ability to fund those investments through additional, significant
6 reductions in operating costs, or increases in revenue from customer growth, puts greater pressure
7 on the Company’s ability to earn a reasonable rate of return. That has been the case despite Ameren
8 Missouri’s continuing focus on operating cost control. That is somewhat offset by the Company’s
9 ability to utilize PISA although, as discussed above, not entirely. Absent the authorization of a
10 reasonable ROE, the Company may be subject to relatively higher risk as a result of those factors.

11 **Q. How do the business risks discussed above affect your ROE recommendation?**

12 A. As discussed earlier, it is very difficult, and likely imprecise, to associate a given
13 area of risk with a specific increment to the required return. It is important, however, to reflect the
14 risks that investors recognize in selecting the ROE range and recommendation. I therefore

³⁶ Source: S&P Global Market Intelligence.

1 considered those risks in selecting my recommended range from the overall range of analytical
2 results.

VII. CAPITAL MARKET ENVIRONMENT

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

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

12 **Q. Has market volatility increased in recent months?**

13 A. Yes, it has. A visible and widely reported measure of expected volatility is the
14 Cboe Options Exchange ("Cboe") Volatility Index, often referred to as the ("VIX"). As Cboe
15 explains, the VIX "is a calculation designed to produce a measure of constant, 30-day expected
16 volatility of the U.S. stock market, derived from real-time, mid-quote prices of S&P 500® Index
17 call and put options."³⁷ Simply, the VIX is a market-based measure of expected volatility.
18 Because volatility is a measure of risk, increases in the VIX, or in its volatility, are a broad indicator
19 of expected increases in market risk.

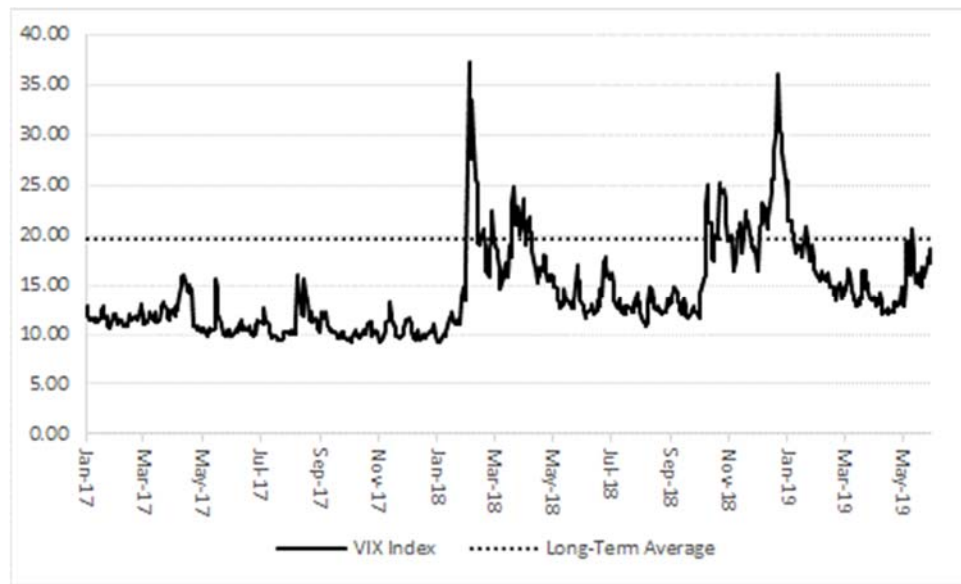
20 Although the VIX is not expressed as a percentage, it should be understood as such. That
21 is, if the VIX stood at 15.00, it would be interpreted as an expected standard deviation in annual

³⁷ Source: <http://www.cboe.com/vix>

1 market returns of 15.00 percent over the coming 30 days. Since 2000, the VIX has averaged about
2 19.63, which is highly consistent with the long-term standard deviation on annual market returns
3 (19.80 percent, as reported by Duff & Phelps).

4 As Chart 10 (below) demonstrates, in 2017 market volatility was well below its long-term
5 average, and moved within a somewhat narrow range; the VIX averaged about 11.09, with a
6 standard deviation of 1.36. Throughout 2018 and into 2019, the VIX average increased to 16.40
7 with a standard deviation of 4.53. That is, from 2017 to 2019 both the level and the volatility of
8 market volatility increased.

9 **Chart 10: VIX Since January 2017³⁸**



10
11 Table 5 (below) further demonstrates the increase in market uncertainty from 2017 to 2019.
12 As that table notes, the standard deviation (that is, the volatility of volatility) in 2018-2019 is about
13 3.30 times higher than its 2017 level (1.356).

³⁸ Source: Bloomberg Professional Services. Data as of May 31, 2019.

1

Table 5: VIX Levels and Volatility³⁹

Long-Term Average	19.621
2018-2019 Average	16.397
2018-2019 Maximum	37.320
2018-2019 Minimum	9.150
2018-2019 Standard Deviation	4.530
2017 Average	11.090
2017 Maximum	16.040
2017 Minimum	9.140
2017 Standard Deviation	1.356

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The increase in volatility is not surprising as market participants reassess investment alternatives in light of the Federal Reserve’s shift in monetary policy and, as discussed below, the recent passage of new tax legislation.

6

Q. Is there a relationship between equity market volatility and interest rates?

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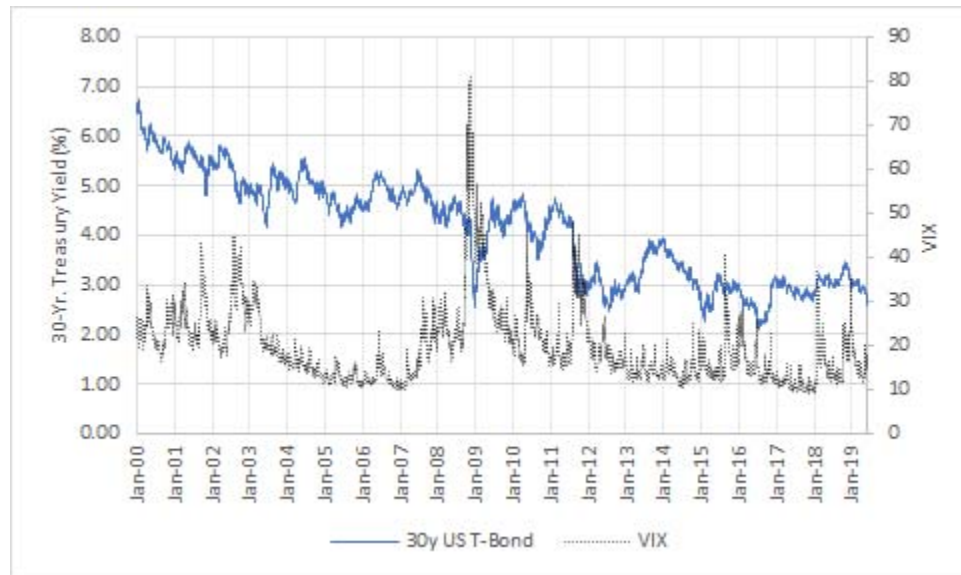
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A. Yes, there is. Significant and abrupt increases in volatility tend to be associated with declines in Treasury yields. That relationship makes intuitive sense; as investors see increasing risks, their objectives may shift principally to capital preservation (that is, avoiding a capital loss). A means of doing so is to allocate capital to the relative safety of Treasury securities, in a “flight to safety.” Because Treasury yields are inversely related to Treasury bond prices, as investors bid up the prices of bonds, they bid down the yields (see Chart 11, below, showing decreases in the 30-year Treasury yield coincident with significant increases in the VIX).

³⁹ Source: Bloomberg Professional Services. Data as of May 31, 2019.

1

Chart 11: 30-Year Treasury Yields vs. VIX⁴⁰



2

3 In those instances, the fall in yields does not reflect a reduction in required returns, it
4 reflects an increase in risk aversion and, therefore, an increase in required equity returns.

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

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

8 The implied volatility term structure observed in SPX options markets
9 is analogous to the term structure of interest rates observed in fixed
10 income markets. Similar to the calculation of forward rates of interest,
11 it is possible to observe the option market's expectation of future market
12 volatility through use of the SPX implied volatility term structure.⁴¹

13 The expected VIX value in June 2020 is about 19.24, suggesting investors see a reversion
14 to long-term average volatility over the coming months.⁴²

⁴⁰ Source: S&P Global Market Intelligence, Yahoo Finance.

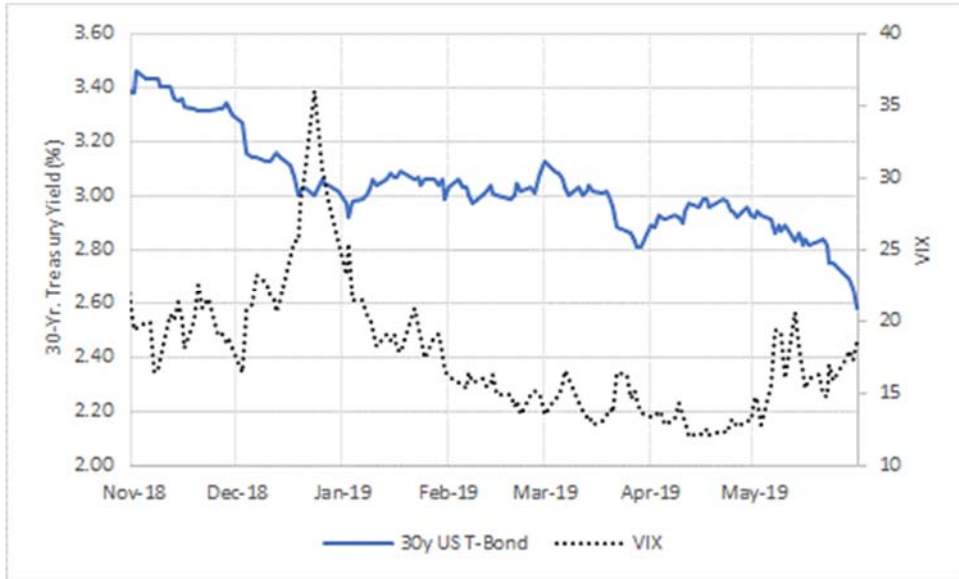
⁴¹ Source: <http://www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data>.

⁴² Source: <http://www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data>, as of May 31, 2019.

1 **Q. Have recent declines in the treasury yield been associated with increases in**
2 **market volatility?**

3 A. Yes, they have. Since November 2018, the periods during which Treasury yields
4 fell coincided with increases in the VIX (see Chart 12, below).

5 **Chart 12: 30-Year Treasury Yields vs. VIX (November 2018 – May 2019)⁴³**



6

7 **Q. What conclusions do you draw from those analyses?**

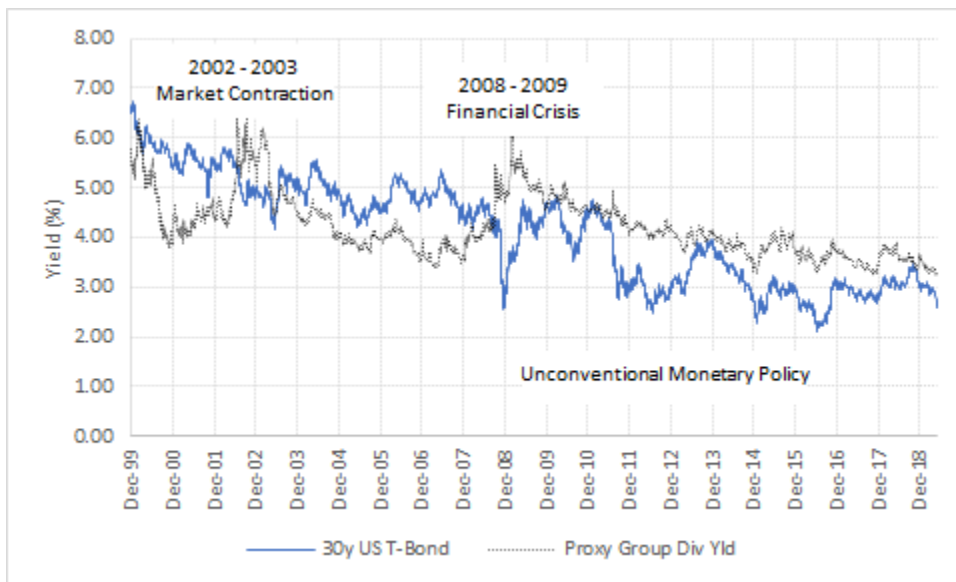
8 A. It is important to consider whether changes in long-term interest rates reflect
9 fundamental changes in investor sentiment, or whether they reflect potentially transitory factors.
10 The recent, sudden decline in interest rates appears to be related to the increase in equity market
11 volatility, which may be event-driven rather than a fundamental change. Because the methods
12 used to estimate the Cost of Equity are forward-looking it is important to consider those
13 distinctions in assessing model results.

⁴³ Source: S&P Global Market Intelligence, Yahoo Finance.

1 **Q. Have utility dividend yields closely followed long-term treasury yields?**

2 A. Although they have been directionally related over time, the fundamental
3 relationship between Treasury yields and utility dividend yields changed after the 2008/2009
4 financial crisis. From 2000 through 2008, Treasury yields generally exceeded dividend yields; the
5 exception was the 2002-2003 market contraction. Then, as in 2008-2009, investors sought the
6 safety of Treasury securities, accepting lower yields in exchange for a greater likelihood of capital
7 preservation. Once the contraction ended (in latter half of 2003), the relationship was restored,
8 and Treasury yields again exceeded dividend yields (see Chart 13, below).

9 **Chart 13: Utility Dividend Yields and 30-Year Treasury Yields⁴⁴**



10

11 In the 2008/2009 financial crisis, Treasury bond prices increased (yields decreased), and
12 utility stock prices decreased (yields increased) such that the prior relationship inverted. As the
13 Federal Reserve implemented and maintained “unconventional” monetary policies in reaction to
14 the financial crisis (i.e., Quantitative Easing) with the intended consequence of lowering long-term

⁴⁴ Source: S&P Global Market Intelligence

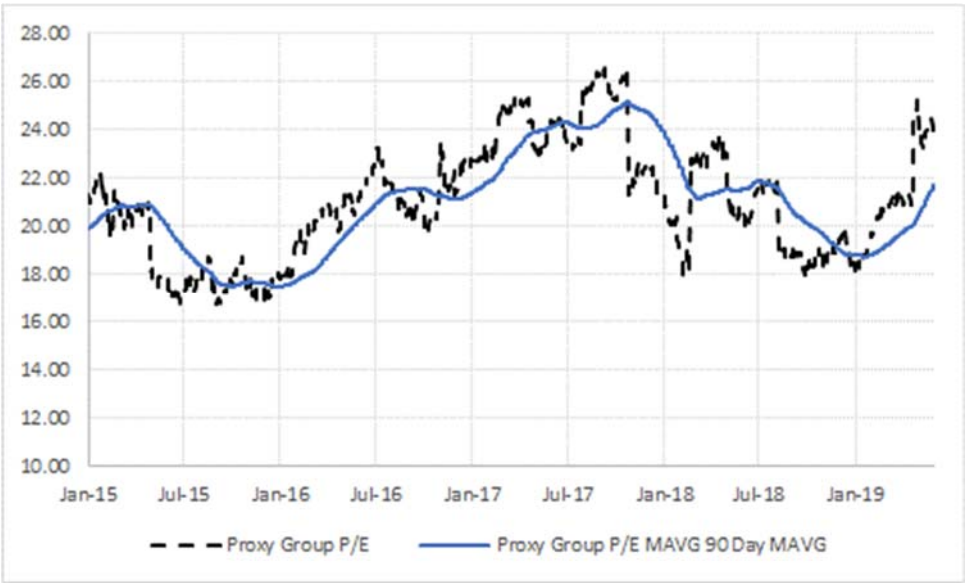
1 interest rates, the now-inverted relationship between Treasury yields and utility dividend yields
2 persisted.

3 Even though the “yield spread”⁴⁵ became inverted after the financial crisis, it has not been
4 static. That is, as Treasury yields fell in response to central bank policies, dividend yields did not
5 fall to the same degree; the yield spread widened (see Chart 14, above). That data suggests that,
6 although utility prices are sensitive to long-term Treasury yields, the relationship is not unbounded.

7 **Q. Is that relationship also seen in utility price/earnings (“P/E”) ratios?**

8 A. Yes, it is. Looking to the period following the Federal Reserve’s Quantitative
9 Easing policy, the proxy group P/E ratio has varied, often reverting once it has largely breached
10 its 90-day moving average.

11 **Chart 14: Proxy Group Average Price/Earnings Ratio⁴⁶**



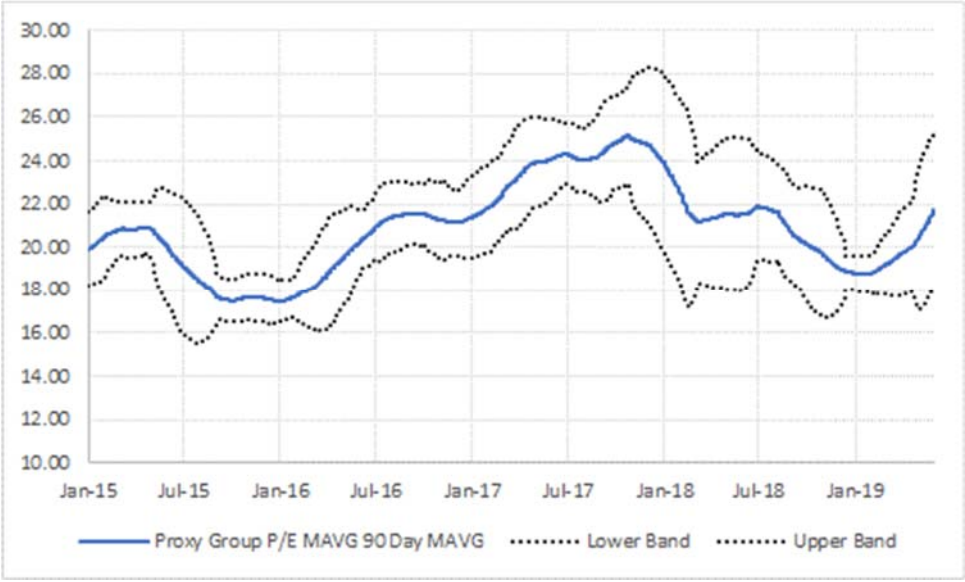
12
13

⁴⁵ Defined here as dividend yields less Treasury yields.

⁴⁶ Calculated as an index. Source: S&P Global Market Intelligence.

1 From a somewhat different perspective, the proxy group’s P/E ratio has traded within a
2 two-standard deviation range, although that range recently has widened, indicating increasing
3 variability in the group’s valuation.

4 **Chart 15: Proxy Group Average P/E Ratio Bands⁴⁷**



5
6 That data supports the conclusion discussed earlier, that utility stock prices are sensitive to
7 changes in interest rates, but only to a degree. The “reach for yield” that sometimes occurs when
8 interest rates fall has a limit; investors will not accept the incremental risk of capital losses when
9 utility valuation levels become “stretched.” That also may be the case when investors see interest
10 rates reacting to market volatility that is event-driven, rather than a fundamental change in the
11 capital market environment or investor risk tolerances. The increasing variability can be seen in
12 Chart 15 (above), when the bands around the 90-day moving average P/E ratios widen. During
13 those periods, the risk of capital loss increases, implying a further limit on valuation levels.

⁴⁷ Calculated as an index. Source: S&P Global Market Intelligence. Bands represent two standard deviations calculated over 90 days.

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

3 A. Because certain models used to estimate the Cost of Equity require long-term
4 assumptions, it is important to understand whether those assumptions hold. The current market
5 environment is one in which changes in interest rates likely are associated with events more than
6 they are a function of fundamental economic conditions. Further, utility valuations have a limit,
7 even when investors look to them for an alternate source of income as interest rates fall.

8 On balance, it remains important to consider changes in market conditions, the likely
9 causes of those changes, and how model results are affected by them. Those assessments
10 necessarily involve the application of reasoned and experienced judgment. As discussed
11 throughout my testimony, that judgment supports my recommended range of 9.80 percent to 10.60
12 percent.

VIII. CONCLUSIONS AND RECOMMENDATION

13 **Q. How did you determine your recommended range?**

14 A. As discussed above, estimating the market-required Cost of Equity (including the
15 range of reasonable estimates) is not an entirely mathematical exercise. Rather, it is reasonable
16 and necessary to consider quantitative and qualitative information beyond model
17 results. Consistent with Commission precedent and recent findings by FERC, that approach
18 informs the judgment required to establish a reasonable range of ROE estimates. As such, I have
19 applied several analytical models, and considered various business risks and capital market factors
20 that affect the return investors require. After undertaking those analyses and reviewing that

1 information, I believe a range of 9.80 percent to 10.60 percent, although somewhat conservative,
2 reasonably reflects investors' expectations, requirements, and assumptions.

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

4 A. As discussed in Section V (and as shown in Schedules RBH-D1 through RBH-D7),
5 I have performed several analyses to estimate Ameren Missouri's Cost of Equity. As I previously
6 stated, in light of those results, and taking into consideration other relevant and observable market
7 data, I believe that an ROE in the range of 9.80 percent to 10.60 percent represents an appropriate
8 range of required returns. Within that range, I conclude that an ROE of 9.95 percent represents a
9 reasonable, if not conservative, estimate of the Cost of Equity for Ameren Missouri. As discussed
10 earlier in my testimony, my recommendation reflects analytical results based on a proxy group of
11 vertically integrated electric utilities, and takes into consideration capital market conditions.

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

13 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 Electric
5 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 • I excluded companies that were not vertically integrated, i.e., utilities that own and
15 operate regulated generation, transmission, and distribution assets;
- 16 • To incorporate companies that are primarily regulated, I included companies with
17 at least 60.00 percent of operating income derived from regulated operations;
- 18 • To incorporate companies that are primarily regulated electric distribution utilities,
19 I included companies with at least 60.00 percent of operating income derived from
20 regulated electric operations; and
- 21 • I eliminated companies currently known to be party to a merger, or other significant
22 transaction.

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

24 A. No. To avoid the circular logic that would otherwise occur, it has been my
25 consistent practice to exclude the subject company (or its parent) from the proxy group. That is,
26 it would be inappropriate to include Ameren Corporation in the proxy group because Ameren
27 Missouri is a subsidiary of Ameren Corporation. Because Ameren Corporation's earnings are
28 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 20
- 3 companies:

4 **Table 6: Proxy Group Screening Results**

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
American Electric Power Company, Inc.	AEP
Avangrid, Inc.	AGR
CMS Energy Corporation	CMS
DTE Energy Company	DTE
Duke Energy Corporation	DUK
El Paso Electric Company ⁴⁸	EE
Evergy, Inc.	EVRG
Hawaiian Electric Industries, Inc.	HE
NextEra Energy, Inc.	NEE
NorthWestern Corporation	NWE
OGE Energy Corp.	OGE
Otter Tail Corporation	OTTR
Pinnacle West Capital Corporation	PNW
PNM Resources, Inc.	PNM
Portland General Electric Company	POR
Southern Company	SO
WEC Energy Group, Inc.	WEC
Xcel Energy Inc.	XEL

5

⁴⁸ El Paso Electric Company (“El Paso”) announced its proposed acquisition by J.P. Morgan Investment Management Inc. on June 3, 2019, subsequent to the period used in the various analyses discussed in more detail below (i.e., May 31, 2019). *See* El Paso Electric Merger Press Release, June 3, 2019. As such, I have retained El Paso in the proxy group, however I may exclude El Paso from any updated analyses that I file in this proceeding, because it would no longer meet my screening criteria.

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
$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_{20}}{(1+k)^{20}} \quad [4]$$

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
$$k = \frac{D_1 (1+g)}{P} + g \quad [5]$$

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 dividends,
4 and average closing stock prices over the 30-, 90-, and 180-trading day periods as of May 31, 2019.

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

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

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

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

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

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

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

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

11 A. The relationship between various growth rates and stock valuation metrics has been
12 the subject of much academic research.⁴⁹ As noted over 40 years ago by Charles Phillips in The
13 Economics of Regulation:

14 For many years, it was thought that investors bought utility stocks
15 largely on the basis of dividends. More recently, however, studies
16 indicate that the market is valuing utility stocks with reference to total
17 per share earnings, so that the earnings-price ratio has assumed
18 increased emphasis in rate cases.⁵⁰

19 Phillips' conclusion continues to hold true. Subsequent academic research has clearly and
20 consistently indicated that measures of earnings and cash flow are strongly related to returns, and
21 that analysts' forecasts of growth are superior to other measures of growth in predicting stock
22 prices.⁵¹ For example, Vander Weide and Carleton state that, "[our] results ... are consistent with

⁴⁹ See, Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return*, Financial Management (Spring 1986).

⁵⁰ Charles F. Phillips, Jr., The Economics of Regulation, at 285 (Rev. ed. 1969).

⁵¹ 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

1 the hypothesis that investors use analysts' forecasts, rather than historically oriented growth
2 calculations, in making stock buy-and-sell decisions."⁵² Other research specifically notes the
3 importance of analysts' growth estimates in determining the Cost of Equity, and in the valuation
4 of equity securities. Dr. Robert Harris noted that "a growing body of knowledge shows that
5 analysts' earnings forecast are indeed reflected in stock prices." Citing Cragg and Malkiel, Dr.
6 Harris notes that those authors "found that the evaluations of companies that analysts make are the
7 sorts of ones on which market valuation is based."⁵³ Similarly, Brigham, Shome and Vinson noted
8 that "evidence in the current literature indicates that (i) analysts' forecasts are superior to forecasts
9 based solely on time series data; and (ii) investors do rely on analysts' forecasts."⁵⁴

10 To that point, the research of Vander Weide and Carleton demonstrates that earnings
11 growth projections have a statistically significant relationship to stock valuation levels, while
12 dividend growth rates do not.⁵⁵ Those findings suggest that investors form their investment
13 decisions based on expectations of growth in earnings, not dividends. Consequently, earnings
14 growth, not dividend growth, is the appropriate estimate for the purpose of the Constant Growth
15 DCF model.

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

17 A. I applied the DCF model to the proxy group of vertically integrated electric utility
18 companies using the following inputs for the price and dividend terms:

Management, 21 (Summer 1992); and Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

⁵² James H. Vander Weide and Willard T. Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

⁵³ Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return*, Financial Management (Spring 1986).

⁵⁴ 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).

⁵⁵ See, Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

- 1 • The average daily closing prices for the 30-, 90-, and 180-trading days ended May
2 31, 2019, for the term P_0 ; and
- 3 • The annualized dividend per share as of May 31, 2019, for the term D_0 ;
- 4 • I then calculated my DCF results using each of the following growth terms:
- 5 ○ The Zacks consensus long-term earnings growth estimates;
- 6 ○ The First Call consensus long-term earnings growth estimates; and
- 7 ○ The Value Line long-term earnings growth estimates.⁵⁶

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

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

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

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

⁵⁶ See, Schedule RBH-D1.

Table 7: Constant Growth DCF Results⁵⁷

	Mean Low	Mean	Mean High
30-Trading Day Average	8.13%	8.89%	9.74%
90-Trading Day Average	8.20%	8.96%	9.81%
180-Trading Day Average	8.32%	9.08%	9.93%

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

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

B. Capital Asset Pricing Model

Q. Please describe the general form of the CAPM.

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

As shown in Equation [6], the CAPM is defined by four components, each of which theoretically must be a forward-looking estimate:

$$k = r_f + \beta(r_m - r_f) \quad [6]$$

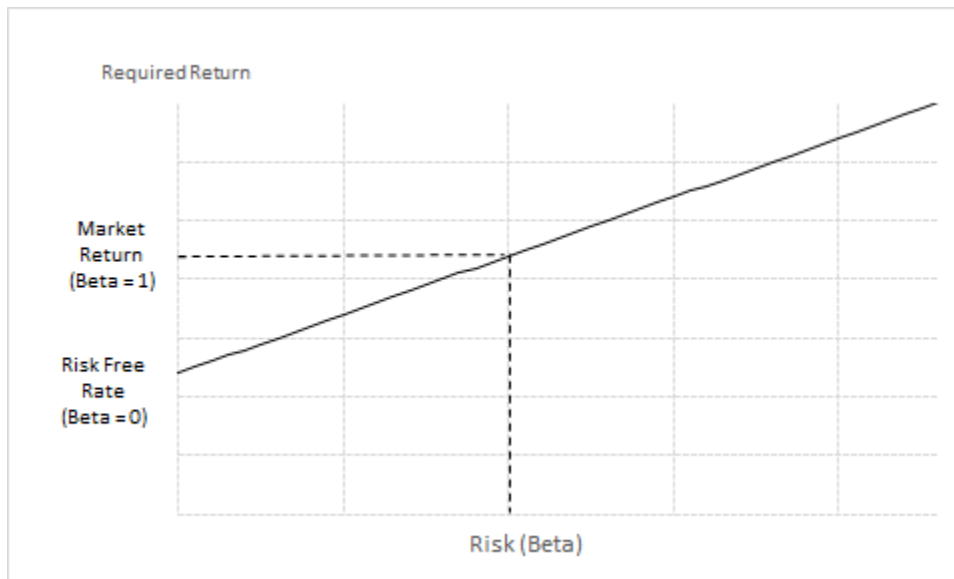
Where:

⁵⁷ See, Schedule RBH-D1.

- 1 k = the required market ROE for a security;
- 2 β = the Beta coefficient of that security;
- 3 r_f = the risk-free rate of return; and
- 4 r_m = the required return on the market as a whole.

5 Equation [6] describes the Security Market Line, or the CAPM risk-return relationship,
 6 which is graphically depicted in Chart 16 below. The intercept is the risk-free rate (r_f) which has
 7 a Beta coefficient of zero, the slope is the expected market risk premium ($r_m - r_f$). By definition,
 8 r_m , the return on the market has a Beta coefficient of 1.00. CAPM states that in well-behaving
 9 capital markets, the expected equity risk premium on a given security is proportional to its Beta
 10 coefficient.

11 **Chart 16: Security Market Line (“SML”)**



12
 13 Intuitively, higher Beta coefficients indicate that the subject company’s returns have been
 14 relatively volatile, and have moved in tandem with the overall market. Consequently, if a company
 15 has a Beta coefficient of 1.00, it is as risky as the market and does not provide any diversification
 16 benefit.

1 In Equation [6], the term $(r_m - r_f)$ represents the Market Risk Premium.⁵⁸ According to the
2 theory underlying the CAPM, since unsystematic risk can be diversified away by adding securities
3 to investment portfolios, the market will not compensate investors for bearing that risk. Therefore,
4 investors should be concerned only with systematic or non-diversifiable risk. Non-diversifiable
5 risk is measured by the Beta coefficient, which is defined as:

6
$$\beta_j = \frac{\sigma_j}{\sigma_m} \times \rho_{j,m} \quad [7]$$

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

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

13 A. It is important to select the term (or maturity) of the risk-free rate that best matches
14 the life of the underlying investment. Electric utilities typically are long-duration investments and,
15 as such, the 30-year Treasury yield is more suitable for the purpose of calculating the Cost of
16 Equity. As such, I used two different measures of the risk-free rate: (1) the current 30-day average
17 yield on 30-year Treasury bonds (*i.e.*, 2.85 percent);⁵⁹ and (2) the projected 30-year Treasury yield
18 (*i.e.*, 3.03 percent).⁶⁰

⁵⁸ The Market Risk Premium is defined as the incremental return of the market portfolio over the risk-free rate.

⁵⁹ Source: Bloomberg Professional Services

⁶⁰ Source: *Blue Chip Financial Forecast*, Vol. 38, No. 6, June 1, 2019, 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 Electric utilities typically are long-duration investments and, as such, the 30-year Treasury yield
6 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**
8 **Premium.**

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.⁶¹ 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-D2.

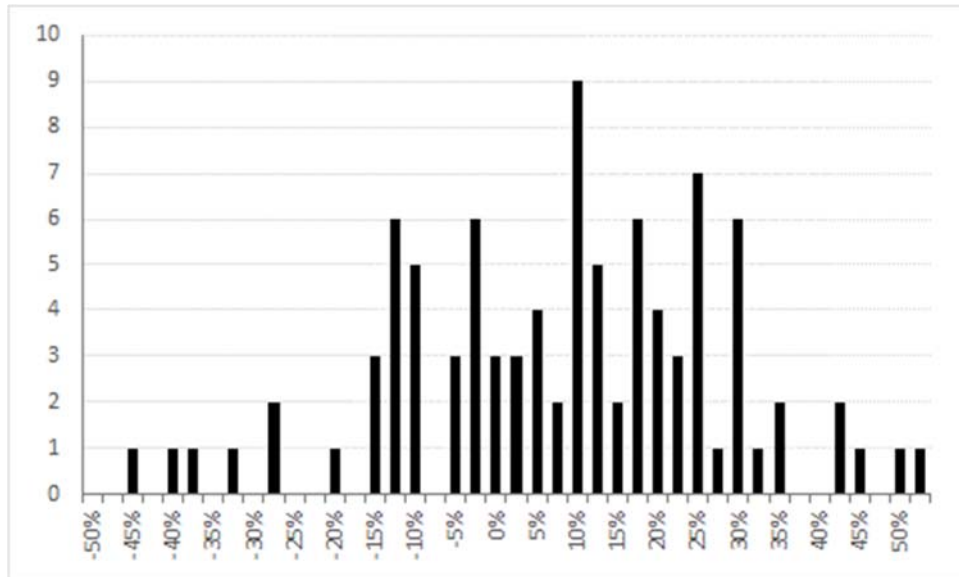
⁶¹ See, Schedule RBH-D2.

1 As discussed above each input to the CAPM should be forward-looking. Witnesses in prior
2 rate cases have relied on historical measures of the MRP.⁶² While it may be instructive to review
3 historical MRPs to inform the reasonableness of an *ex-ante* estimate (as I have done below), they
4 do not include investors' expectations, and therefore are not appropriate for use in the CAPM. As
5 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 2018 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 17, demonstrate that MRPs in the range of approximately
12 11.52 percent (the average of my MRP estimates) and higher occurred quite often.

13 **Chart 17: Frequency Distribution of MRP, 1926 -2018⁶³**



14

⁶² See, for example, Staff Report, Revenue Requirement and Cost of Service, Kansas City Power & Light Company, Case No. ER-2014-0370, at 55.

⁶³ Source: Duff & Phelps, 2019 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 analyses.

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

6 A. As shown in Schedule RBH-D3, 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 8 the CAPM analyses suggest an ROE range of 8.18 percent to
 13 10.14 percent (*see* also Schedule RBH-D4).

14 **Table 8: Summary of CAPM Results⁶⁴**

	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium
<i>Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (2.85%)	8.18%	8.68%
Near Term Projected 30-Year Treasury (3.03%)	8.36%	8.86%
<i>Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (2.85%)	9.35%	9.97%
Near Term Projected 30-Year Treasury (3.03%)	9.53%	10.14%

⁶⁴ See, Schedule RBH-D4.

1 **Q. Did you consider another form of the CAPM in your analysis?**

2 A. Yes. I also included the Empirical CAPM approach, which calculates the product
3 of the adjusted Beta coefficient and the Market Risk Premium, and applies a weight of 75.00
4 percent to that result. The model then applies a 25.00 percent weight to the Market Risk Premium,
5 without any effect from the Beta coefficient.⁶⁵ The results of the two calculations are summed,
6 along with the risk-free rate, to produce the ECAPM result, as noted in Equation [8] below:

7
$$k_e = r_f + 0.75\beta(r_m - r_f) + 0.25(r_m - r_f) \quad [8]$$

8 where:

9 k_e = the required market ROE.

10 β = Adjusted Beta coefficient of an individual security.

11 r_f = the risk-free rate of return.

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

13 **Q. What is the benefit of the ECAPM approach?**

14 A. The ECAPM addresses the tendency of the CAPM to under-estimate the Cost of
15 Equity for companies, such as regulated utilities, with low Beta coefficients. As discussed below,
16 the ECAPM recognizes the results of academic research indicating that the risk-return relationship
17 is different (in essence, flatter) than estimated by the CAPM, and that the CAPM under-estimates
18 the alpha, or the constant return term.⁶⁶

19 Numerous tests of the CAPM have measured the extent to which security returns and Beta
20 coefficients are related as predicted by the CAPM. The ECAPM method reflects the finding that
21 the actual Security Market Line (“SML”) described by the CAPM formula is not as steeply sloped

⁶⁵ See, e.g., Roger A. Morin, *New Regulatory Finance*, at 189-190 (2006).

⁶⁶ *Ibid.*, at 191 (“The ECAPM and the use of adjusted betas comprised two separate features of asset pricing. Even if a company’s beta is estimated accurately, the CAPM still understates the return for low-beta stocks.”).

1 as the predicted SML.⁶⁷ Fama and French state that “[t]he returns on the low beta portfolios are
2 too high, and the returns on the high beta portfolios are too low.”⁶⁸ Similarly, Morin states:

3 With few exceptions, the empirical studies agree that . . . low-beta
4 securities earn returns somewhat higher than the CAPM would predict,
5 and high-beta securities earn less than predicted. . . .

6 Therefore, the empirical evidence suggests that the expected return on a
7 security is related to its risk by the following approximation:

$$8 \quad K = R_F + x (R_M - R_F) + (1-x) \beta(R_M - R_F)$$

9 Where x is a fraction to be determined empirically. The value of x that
10 best explains the observed relationship $\text{Return} = 0.0829 + 0.0520 \beta$ is
11 between 0.25 and 0.30. If $x = 0.25$, the equation becomes:

$$12 \quad K = R_F + 0.25(R_M - R_F) + 0.75 \beta(R_M - R_F)^{69}$$

13 Some analysts claim that using adjusted Beta coefficients addresses the empirical issues
14 with the CAPM by increasing the expected returns for low Beta coefficient stocks and decreasing
15 the returns for high Beta coefficient stocks, concluding that there is no need for the ECAPM
16 approach. I disagree with that conclusion. Beta coefficients are adjusted because of their general
17 regression tendency to converge toward 1.00 over time, *i.e.*, over successive calculations. As also
18 noted earlier, numerous studies have determined that at any given point in time, the SML described
19 by the CAPM formula is not as steeply sloped as the predicted SML. To that point, Morin states:

20 Some have argued that the use of the ECAPM is inconsistent with the
21 use of adjusted betas, such as those supplied by Value Line and
22 Bloomberg. This is because the reason for using the ECAPM is to allow
23 for the tendency of betas to regress toward the mean value of 1.00 over
24 time, and, since Value Line betas are already adjusted for such trend, an
25 ECAPM analysis results in double-counting. This argument is
26 erroneous. Fundamentally, the ECAPM is not an adjustment, increase
27 or decrease, in beta. This is obvious from the fact that the expected
28 return on high beta securities is actually lower than that produced by the

⁶⁷ *Ibid.*, at 175. The Security Market Line plots the CAPM estimate on the Y-axis, and Beta coefficients on the X-axis.

⁶⁸ Eugene F. Fama & Kenneth R. French, *The Capital Asset Pricing Model: Theory and Evidence*, Journal of Economic Perspectives, Vol. 18, No. 3, Summer 2004, at 33.

⁶⁹ Roger A. Morin, *New Regulatory Finance*, at 175, 190 (2006).

1 CAPM estimate. The ECAPM is a formal recognition that the observed
 2 risk-return tradeoff is flatter than predicted by the CAPM based on
 3 myriad empirical evidence. The ECAPM and the use of adjusted betas
 4 comprised two separate features of asset pricing. Even if a company's
 5 beta is estimated accurately, the CAPM still understates the return for
 6 low-beta stocks. Even if the ECAPM is used, the return for low-beta
 7 securities is understated if the betas are understated. Referring back to
 8 Figure 6-1, the ECAPM is a return (vertical axis) adjustment and not a
 9 beta (horizontal axis) adjustment. Both adjustments are necessary.⁷⁰

10 Therefore, it is appropriate to rely on adjusted Beta coefficients in both the CAPM and
 11 ECAPM. As with the CAPM, my application of the ECAPM uses the Market DCF-derived *ex-*
 12 *ante* Market Risk Premium estimate, the current yield on 30-year Treasury securities as the risk-
 13 free rate, and two estimates of the Beta coefficient. The results of my ECAPM analyses are shown
 14 on Schedule RBH-D4 and summarized in Table 9 below.

15 **Table 9: Summary of ECAPM Results**

	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium
<i>Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (2.85%)	9.60%	10.24%
Near Term Projected 30-Year Treasury (3.03%)	9.78%	10.42%
<i>Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (2.85%)	10.47%	11.20%
Near Term Projected 30-Year Treasury (3.03%)	10.65%	11.38%

16
 17 **C. *Bond Yield Plus Risk Premium Approach***

⁷⁰ *Ibid.*, at 191.

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

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

12 **Q. Please explain how you performed your Bond Yield Plus Risk Premium**
13 **analysis.**

14 A. As indicated above, I first defined the Risk Premium as the difference between the
15 authorized ROE and the then-prevailing level of long-term (*i.e.*, 30-year) Treasury yield. I then
16 gathered data for 1,594 electric utility rate proceedings between January 1, 1980 and May 31,
17 2019. In addition to the authorized ROE, I also calculated the average period between the filing
18 of the case and the date of the final order (the “lag period”). To reflect the prevailing level of
19 interest rates during the pendency of the proceedings, I calculated the average 30-year Treasury
20 yield over the average lag period (approximately 200 days).

21 Because the data covers a number of economic cycles, the analysis also may be used to
22 assess the stability of the Equity Risk Premium. Prior research, for example, has shown that the

1 Equity Risk Premium is inversely related to the level of interest rates. That analysis is particularly
2 relevant given the relatively low, but increasing level of current Treasury yields.

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

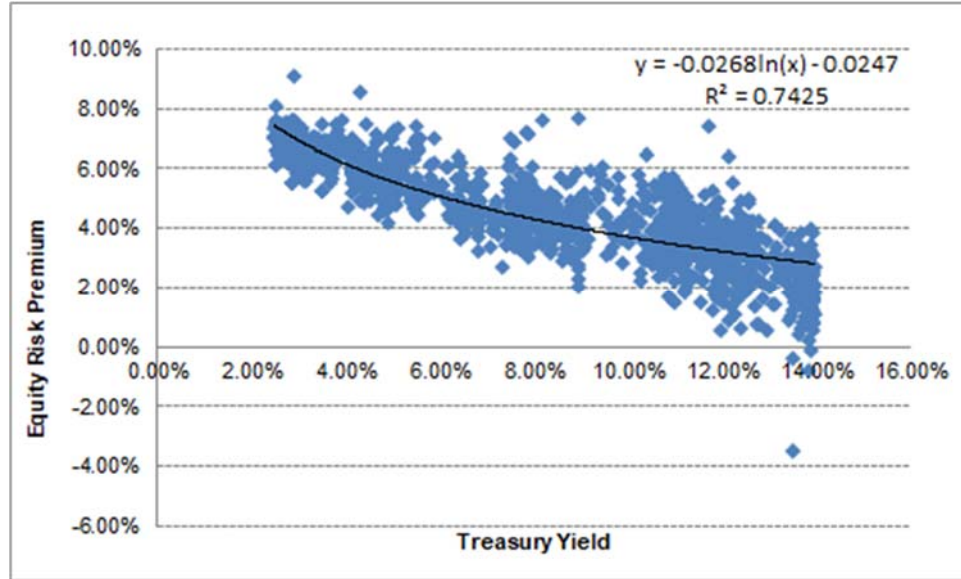
5 A. The basic method used was regression analysis, in which the observed Equity Risk
6 Premium is the dependent variable, and the average 30-year Treasury yield is the independent
7 variable. Relative to the long-term historical average, the analytical period includes interest rates
8 and authorized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

$$12 \quad \mathbf{RF = \alpha + \beta(LN(T_{30}))} \quad [9]$$

13 As shown on Chart 18 (below), the semi-log form is useful when measuring an absolute
14 change in the dependent variable (in this case, the Risk Premium) relative to a proportional change
15 in the independent variable (the 30-year Treasury yield).

1

Chart 18: Equity Risk Premium⁷¹



2

3 As Chart 18 illustrates, over time there has been a statistically significant, negative
4 relationship between the 30-year Treasury yield and the Equity Risk Premium. Consequently,
5 simply applying the long-term average Equity Risk Premium of 4.68 percent would significantly
6 understate the Cost of Equity and produce results well below any reasonable estimate. Based on
7 the regression coefficients in Chart 18, however, the implied ROE is between 9.92 percent and
8 10.06 percent (see Table 10 below and Schedule RBH-D5).

⁷¹ See, Schedule RBH-D5.

1 **Table 10: Summary of Bond Yield Plus Risk Premium Results⁷²**

	<i>Return on Equity</i>
Current 30-Year Treasury (2.85%)	9.91%
Near Term Projected 30-Year Treasury (3.03%)	9.92%
Long Term Projected 30-Year Treasury (3.70%)	10.06%

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

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

7 The Commission mentions the average allowed return on equity
8 because Spire Missouri must compete with other utilities all over the
9 country for the same capital. Therefore, the average allowed return on
10 equity provides a reasonableness test for the recommendations offered
11 by the return on equity experts.⁷³

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

⁷² See, Schedule RBH-D5.

⁷³ See, *In the Matter of the Laclede Gas Company d/b/a Missouri Gas Energy's Request to Increase Its Revenues for Gas Service*, Case No. GR-2017-0216, Report and Order (Feb. 21, 2018), at 30.

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

4 A. To address the prospect that the market conditions affect the relationship between
5 interest rates and the Equity Risk Premium, I first calculated the “credit spread”, or the difference
6 between the Moody’s Baa-Utility Bond yield and the 30-Year Treasury yield. To reflect the risk
7 of equity investments, I calculated the market volatility as measured by the VIX since 1990, the
8 first year for which data was available. I then performed a regression analysis in which the Equity
9 Risk Premium is the dependent variable, and Treasury yields, credit spreads, and the VIX were the
10 explanatory variables. There were three principal findings from those analyses (*see* Schedule
11 RBH-D7):

12 Credit spreads and the VIX do not negate the statistically significant inverse relationship
13 between Treasury yields and the Equity Risk Premium:

- 14 1. There is a high degree of correlation between credit spreads and the VIX, indicating
15 that the two move closely together. That is, the “relative risk” of the two is not a
16 meaningful factor.
- 17 2. Based on the current, and projected Treasury yields, the expected ROE falls in the
18 range of 9.71 percent to 9.85 percent. Those results overlap with my recommended
19 range, are consistent with the results of my updated Bond Yield Plus Risk Premium
20 analysis (*see* Schedule RBH-D7).
- 21 3. Lastly, please note that neither the VIX nor credit spreads added significantly to the
22 explanatory value of the regression equations.

1 **D. *Expected Earnings Analysis***

2 **Q. Please describe the Expected Earnings analysis.**

3 A. The Expected Earnings analysis is based on the principle of opportunity costs.
4 Because investors may invest in, and earn returns on alternative investments of similar risk, those
5 rates of return can provide a useful benchmark in determining the appropriate rate of return for a
6 firm. Further, because those results are based solely on the returns expected by investors, exclusive
7 of market-data or models, the Expected Earnings approach provides a direct comparison.

8 **Q. Please explain how the Expected Earnings analysis is conducted.**

9 A. The Expected Earnings analysis typically takes the actual earnings on book value
10 of investment for each of the members of the proxy group and compares those values to the rate
11 of return in question. Although the traditional approach uses data based on historical accounting
12 records, it is common to use forecasted data in conducting the analysis. Projected returns on book
13 investment are provided by various industry publications (*e.g.*, Value Line), which I have used in
14 my analysis.

15 I relied on Value Line's projected Return on Common Equity for the period 2022-2024,
16 and adjusted those projected returns to account for the fact that they reflect common shares
17 outstanding at the end of the period, rather than the average shares outstanding over the course of
18 the year.⁷⁴ The Expected Earnings analysis results in an average value of 10.29 percent and a
19 median value of 10.05 percent (*see* Schedule RBH-D6).

⁷⁴ The rationale for that adjustment is straightforward: Earnings are achieved over the course of a year, and should be related to the equity that was, on average, in place during that year. See, Leopold A. Bernstein, Financial Statement Analysis: Theory, Application, and Interpretation, Irwin, 4th Ed., 1988, at 630.



Resume of:
Robert B. Hevert, Partner
Rates, Regulation & Planning Practice Leader

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



Testimony Listing of:
Robert B. Hevert, Partner
Rates, Regulation and Planning Practice Leader

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	05/19	Southwest Gas Corporation	Docket No. G-01551A-19-0055	Return on Equity
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				
Southwestern Electric Power Company	02/19	Southwestern Electric Power Company	Docket No. 19-008-U	Return on Equity
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)



Testimony Listing of:
Robert B. Hevert, Partner
Rates, Regulation and Planning Practice Leader

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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)
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	05/19	Potomac Electric Power Company	Formal Case No. 1156	Return on Equity
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



Testimony Listing of:
Robert B. Hevert, Partner
Rates, Regulation and Planning Practice Leader

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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
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				
Hawai'i Electric Light Company, Inc.	12/18	Hawai'i Electric Light Company, Inc.	Docket No. 2018-0368	Return on Equity



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Robert B. Hevert, Partner
Rates, Regulation and Planning Practice Leader

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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
Maui Electric Company, Limited	12/14	Maui Electric Company, Limited	Docket No. 2014-0318	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	05/19	Indiana Michigan Power Company	Cause No. 45235	Return on Equity
Indiana Michigan Power Company	07/17	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				
Empire District Electric Company	02/19	Empire District Electric Company	Docket No. 19-EPDE-223-RTS	Return on Equity
Empire District Electric Company	12/18	Empire District Electric Company	Docket No. 19-EPDE-223-RTS	Alternative Ratemaking Mechanisms



Testimony Listing of:
Robert B. Hevert, Partner
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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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
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	04/19	Washington Gas Light Company	Case No. 9605	Return on Equity
Potomac Electric Power Company	01/19	Potomac Electric Power Company	Case No. 9602	Return on Equity
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



Testimony Listing of:
Robert B. Hevert, Partner
Rates, Regulation and Planning Practice Leader

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Massachusetts Department of Public Utilities				
NSTAR Electric Company d/b/a Eversource Energy; Massachusetts Electric Company & Nantucket Electric Company, d/b/a National Grid; and Fitchburg Gas and Electric Light Company, d/b/a Unitil	02/19	NSTAR Electric Company d/b/a Eversource Energy; Massachusetts Electric Company & Nantucket Electric Company, d/b/a National Grid; and Fitchburg Gas and Electric Light Company, d/b/a Unitil	DPU 18-64/DPU 18-65/DPU 18-66	Response to Direct Testimony by Attorney General Witness regarding Remuneration Rate Section 83D
National Grid	11/18	Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid	DPU 18-150	Return on Equity
NSTAR Electric Company d/b/a Eversource Energy	11/18	NSTAR Electric Company d/b/a Eversource Energy	DPU 18-76/DPU 18-77/DPU 18-78	Response to Direct Testimony by Attorney General Witness regarding Remuneration Rate Section 83C
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
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



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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				
SEMCO Energy Gas Company	05/19	SEMCO Energy Gas Company	Case No. U-20479	Return on Equity
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
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



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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				
Union Electric Company d/b/a Ameren Missouri	12/18	Union Electric Company d/b/a Ameren Missouri	Case No. GR-2019-0077	Return on Equity
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)
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)



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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
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



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
New Jersey Board of Public Utilities				
Elizabethtown Gas Company	04/19	Elizabethtown Gas Company	Docket No. GR19040486	Return on Equity
Atlantic City Electric Company	10/18	Atlantic City Electric Company	Docket No. EO18020196	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
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)



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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				
Piedmont Natural Gas Company, Inc.	04/19	Piedmont Natural Gas Company, Inc.	Docket No. G-9, Sub 743	Return on Equity
Virginia Electric and Power Company d/b/a Dominion North Carolina Power	03/19	Virginia Electric and Power Company d/b/a Dominion North Carolina Power	Docket No. E-22, Sub 562	Return on Equity
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



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Duke Energy Carolinas, LLC	02/13	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 1026	Return on Equity
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
Duke Energy Carolinas, LLC	07/11	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 989	Return on Equity
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				
Empire District Electric Company	03/19	Empire District Electric Company	Cause No. PUD201800133	Return on Equity
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	02/19	The Narragansett Electric Company d/b/a National Grid	Docket No. 4929	Support for financial remuneration under new power purchase agreement
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)



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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
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				
AEP Texas, Inc.	05/19	AEP Texas, Inc.	Docket No. 49494	Return on Equity
CenterPoint Energy Houston Electric LLC	04/19	CenterPoint Energy Houston Electric LLC	Docket No. 49421	Return on Equity
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)



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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)
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



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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
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	03/19	Virginia Electric and Power Company	Case No. PUR-2019-00050	Return on Equity
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



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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
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

Matter of Arbitration, City of White Hall, Arkansas				
Liberty Utilities Corporation, White Hall Water and White Hall Sewer	04/19	Liberty Utilities Corporation, White Hall Water and White Hall Sewer	AAA Case No. 01-18-0004-0072	Return on Equity
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]
		Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.35	\$81.31	2.89%	2.98%	7.20%	6.00%	5.00%	6.07%	7.96%	9.04%	10.19%
Alliant Energy Corporation	LNT	\$1.42	\$47.20	3.01%	3.10%	5.40%	5.85%	6.50%	5.92%	8.49%	9.01%	9.61%
American Electric Power Company, Inc.	AEP	\$2.68	\$85.25	3.14%	3.22%	5.60%	5.79%	4.00%	5.13%	7.21%	8.35%	9.02%
Avangrid, Inc.	AGR	\$1.76	\$50.54	3.48%	3.62%	7.90%	6.20%	10.00%	8.03%	9.79%	11.66%	13.66%
CMS Energy Corporation	CMS	\$1.53	\$55.46	2.76%	2.85%	6.40%	7.08%	7.00%	6.83%	9.25%	9.68%	9.94%
DTE Energy Company	DTE	\$3.78	\$125.38	3.01%	3.09%	6.00%	4.16%	5.00%	5.05%	7.24%	8.14%	9.11%
Duke Energy Corporation	DUK	\$3.71	\$88.29	4.20%	4.31%	4.80%	4.60%	6.00%	5.13%	8.90%	9.44%	10.33%
El Paso Electric Company	EE	\$1.54	\$59.50	2.59%	2.65%	5.00%	4.50%	4.50%	4.67%	7.15%	7.32%	7.65%
Evergy, Inc	EVRG	\$1.90	\$57.85	3.28%	3.39%	6.60%	6.15%	NMF	6.38%	9.54%	9.76%	9.99%
Hawaiian Electric Industries, Inc.	HE	\$1.28	\$41.56	3.08%	3.16%	5.60%	6.10%	4.50%	5.40%	7.65%	8.56%	9.27%
NextEra Energy, Inc.	NEE	\$5.00	\$194.64	2.57%	2.68%	7.90%	7.85%	10.00%	8.58%	10.52%	11.26%	12.70%
NorthWestern Corporation	NWE	\$2.30	\$70.39	3.27%	3.31%	2.80%	2.86%	3.00%	2.89%	6.11%	6.20%	6.32%
OGE Energy Corp.	OGE	\$1.46	\$41.87	3.49%	3.57%	4.60%	3.80%	6.50%	4.97%	7.35%	8.54%	10.10%
Otter Tail Corporation	OTTR	\$1.40	\$50.75	2.76%	2.85%	7.00%	9.00%	5.00%	7.00%	7.83%	9.85%	11.88%
Pinnacle West Capital Corporation	PNW	\$2.95	\$94.73	3.11%	3.19%	5.00%	5.01%	5.00%	5.00%	8.19%	8.20%	8.20%
PNM Resources, Inc.	PNM	\$1.16	\$46.65	2.49%	2.57%	5.20%	5.70%	8.50%	6.47%	7.75%	9.03%	11.09%
Portland General Electric Company	POR	\$1.54	\$52.39	2.94%	3.01%	4.90%	5.20%	4.50%	4.87%	7.51%	7.88%	8.22%
Southern Company	SO	\$2.48	\$53.13	4.67%	4.75%	4.50%	2.17%	3.50%	3.39%	6.89%	8.14%	9.27%
WEC Energy Group, Inc.	WEC	\$2.36	\$79.08	2.98%	3.07%	5.90%	5.82%	6.00%	5.91%	8.89%	8.98%	9.07%
Xcel Energy Inc.	XEL	\$1.62	\$56.86	2.85%	2.93%	5.70%	6.24%	5.50%	5.81%	8.43%	8.75%	9.18%
Proxy Group Mean				3.13%	3.22%	5.70%	5.50%	5.79%	5.67%	8.13%	8.89%	9.74%
Proxy Group Median				3.01%	3.09%	5.60%	5.81%	5.00%	5.61%	7.89%	8.86%	9.44%

Notes:

- [1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals indicated number of trading day average as of May 31, 2019
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.5 x [8])
[5] Source: Zacks
[6] Source: Yahoo! Finance
[7] Source: Value Line
[8] Equals Average([5], [6], [7])
[9] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7])) + Minimum([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7])) + Maximum([5], [6], [7])

Constant Growth Discounted Cash Flow Model
90 Day Average Stock Price

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.35	\$80.69	2.91%	3.00%	7.20%	6.00%	5.00%	6.07%	7.99%	9.07%	10.22%
Alliant Energy Corporation	LNT	\$1.42	\$46.26	3.07%	3.16%	5.40%	5.85%	6.50%	5.92%	8.55%	9.08%	9.67%
American Electric Power Company, Inc.	AEP	\$2.68	\$82.78	3.24%	3.32%	5.60%	5.79%	4.00%	5.13%	7.30%	8.45%	9.12%
Avangrid, Inc.	AGR	\$1.76	\$50.00	3.52%	3.66%	7.90%	6.20%	10.00%	8.03%	9.83%	11.69%	13.70%
CMS Energy Corporation	CMS	\$1.53	\$54.39	2.81%	2.91%	6.40%	7.08%	7.00%	6.83%	9.30%	9.74%	9.99%
DTE Energy Company	DTE	\$3.78	\$122.81	3.08%	3.16%	6.00%	4.16%	5.00%	5.05%	7.30%	8.21%	9.17%
Duke Energy Corporation	DUK	\$3.71	\$88.92	4.17%	4.28%	4.80%	4.60%	6.00%	5.13%	8.87%	9.41%	10.30%
El Paso Electric Company	EE	\$1.54	\$57.27	2.69%	2.75%	5.00%	4.50%	4.50%	4.67%	7.25%	7.42%	7.76%
Evergy, Inc	EVRG	\$1.90	\$57.38	3.31%	3.42%	6.60%	6.15%	NMF	6.38%	9.56%	9.79%	10.02%
Hawaiian Electric Industries, Inc.	HE	\$1.28	\$39.92	3.21%	3.29%	5.60%	6.10%	4.50%	5.40%	7.78%	8.69%	9.40%
NextEra Energy, Inc.	NEE	\$5.00	\$189.23	2.64%	2.76%	7.90%	7.85%	10.00%	8.58%	10.60%	11.34%	12.77%
NorthWestern Corporation	NWE	\$2.30	\$68.66	3.35%	3.40%	2.80%	2.86%	3.00%	2.89%	6.20%	6.28%	6.40%
OGE Energy Corp.	OGE	\$1.46	\$41.98	3.48%	3.56%	4.60%	3.80%	6.50%	4.97%	7.34%	8.53%	10.09%
Otter Tail Corporation	OTTR	\$1.40	\$49.96	2.80%	2.90%	7.00%	9.00%	5.00%	7.00%	7.87%	9.90%	11.93%
Pinnacle West Capital Corporation	PNW	\$2.95	\$93.23	3.16%	3.24%	5.00%	5.01%	5.00%	5.00%	8.24%	8.25%	8.25%
PNM Resources, Inc.	PNM	\$1.16	\$45.43	2.55%	2.64%	5.20%	5.70%	8.50%	6.47%	7.82%	9.10%	11.16%
Portland General Electric Company	POR	\$1.54	\$50.93	3.02%	3.10%	4.90%	5.20%	4.50%	4.87%	7.59%	7.96%	8.30%
Southern Company	SO	\$2.48	\$51.28	4.84%	4.92%	4.50%	2.17%	3.50%	3.39%	7.06%	8.31%	9.44%
WEC Energy Group, Inc.	WEC	\$2.36	\$77.07	3.06%	3.15%	5.90%	5.82%	6.00%	5.91%	8.97%	9.06%	9.15%
Xcel Energy Inc.	XEL	\$1.62	\$55.35	2.93%	3.01%	5.70%	6.24%	5.50%	5.81%	8.51%	8.83%	9.26%
Proxy Group Mean				3.19%	3.28%	5.70%	5.50%	5.79%	5.67%	8.20%	8.96%	9.81%
Proxy Group Median				3.07%	3.16%	5.60%	5.81%	5.00%	5.61%	7.93%	8.94%	9.56%

Notes:

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[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.5 x [8])
[5] Source: Zacks
[6] Source: Yahoo! Finance
[7] Source: Value Line
[8] Equals Average([5], [6], [7])
[9] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7])) + Minimum([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7])) + Maximum([5], [6], [7])

Constant Growth Discounted Cash Flow Model
180 Day Average Stock Price

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.35	\$78.66	2.99%	3.08%	7.20%	6.00%	5.00%	6.07%	8.06%	9.14%	10.29%
Alliant Energy Corporation	LNT	\$1.42	\$44.89	3.16%	3.26%	5.40%	5.85%	6.50%	5.92%	8.65%	9.17%	9.77%
American Electric Power Company, Inc.	AEP	\$2.68	\$78.59	3.41%	3.50%	5.60%	5.79%	4.00%	5.13%	7.48%	8.63%	9.30%
Avangrid, Inc.	AGR	\$1.76	\$49.53	3.55%	3.70%	7.90%	6.20%	10.00%	8.03%	9.86%	11.73%	13.73%
CMS Energy Corporation	CMS	\$1.53	\$52.30	2.93%	3.03%	6.40%	7.08%	7.00%	6.83%	9.42%	9.85%	10.11%
DTE Energy Company	DTE	\$3.78	\$118.13	3.20%	3.28%	6.00%	4.16%	5.00%	5.05%	7.43%	8.33%	9.30%
Duke Energy Corporation	DUK	\$3.71	\$86.67	4.28%	4.39%	4.80%	4.60%	6.00%	5.13%	8.98%	9.52%	10.41%
El Paso Electric Company	EE	\$1.54	\$56.48	2.73%	2.79%	5.00%	4.50%	4.50%	4.67%	7.29%	7.46%	7.79%
Evergy, Inc	EVRG	\$1.90	\$57.33	3.31%	3.42%	6.60%	6.15%	NMF	6.38%	9.57%	9.79%	10.02%
Hawaiian Electric Industries, Inc.	HE	\$1.28	\$38.28	3.34%	3.43%	5.60%	6.10%	4.50%	5.40%	7.92%	8.83%	9.55%
NextEra Energy, Inc.	NEE	\$5.00	\$181.62	2.75%	2.87%	7.90%	7.85%	10.00%	8.58%	10.71%	11.45%	12.89%
NorthWestern Corporation	NWE	\$2.30	\$64.75	3.55%	3.60%	2.80%	2.86%	3.00%	2.89%	6.40%	6.49%	6.61%
OGE Energy Corp.	OGE	\$1.46	\$40.15	3.64%	3.73%	4.60%	3.80%	6.50%	4.97%	7.51%	8.69%	10.25%
Otter Tail Corporation	OTTR	\$1.40	\$48.87	2.86%	2.97%	7.00%	9.00%	5.00%	7.00%	7.94%	9.97%	11.99%
Pinnacle West Capital Corporation	PNW	\$2.95	\$89.09	3.31%	3.39%	5.00%	5.01%	5.00%	5.00%	8.39%	8.40%	8.40%
PNM Resources, Inc.	PNM	\$1.16	\$43.10	2.69%	2.78%	5.20%	5.70%	8.50%	6.47%	7.96%	9.25%	11.31%
Portland General Electric Company	POR	\$1.54	\$48.69	3.16%	3.24%	4.90%	5.20%	4.50%	4.87%	7.73%	8.11%	8.45%
Southern Company	SO	\$2.48	\$48.28	5.14%	5.22%	4.50%	2.17%	3.50%	3.39%	7.36%	8.61%	9.75%
WEC Energy Group, Inc.	WEC	\$2.36	\$73.36	3.22%	3.31%	5.90%	5.82%	6.00%	5.91%	9.13%	9.22%	9.31%
Xcel Energy Inc.	XEL	\$1.62	\$52.49	3.09%	3.18%	5.70%	6.24%	5.50%	5.81%	8.67%	8.99%	9.42%
Proxy Group Mean				3.32%	3.41%	5.70%	5.50%	5.79%	5.67%	8.32%	9.08%	9.93%
Proxy Group Median				3.21%	3.30%	5.60%	5.81%	5.00%	5.61%	8.01%	9.07%	9.76%

Notes:

- [1] Source: Bloomberg Professional
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- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.5 x [8])
- [5] Source: Zacks
- [6] Source: Yahoo! Finance
- [7] Source: Value Line
- [8] Equals Average([5], [6], [7])
- [9] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7])) + Minimum([5], [6], [7])
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7])) + Maximum([5], [6], [7])

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
13.85%	2.85%	11.00%

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	21,187.35	0.09%	0.98%	11.00%	12.04%	0.0106%
American Airlines Group Inc	AAL	12,112.86	0.05%	1.77%	14.51%	16.41%	0.0082%
Advance Auto Parts Inc	AAP	11,119.21	0.05%	0.15%	15.68%	15.85%	0.0073%
Apple Inc	AAPL	805,510.20	3.34%	1.70%	9.35%	11.13%	0.3712%
AbbVie Inc	ABBV	113,402.86	0.47%	5.54%	5.12%	10.80%	0.0507%
AmerisourceBergen Corp	ABC	16,364.38	0.07%	2.06%	4.99%	7.11%	0.0048%
ABIOMED Inc	ABMD	11,819.07	0.05%	0.00%	29.00%	29.00%	0.0142%
Abbott Laboratories	ABT	134,307.12	0.56%	1.61%	9.70%	11.39%	0.0633%
Accenture PLC	ACN	113,749.73	0.47%	1.65%	10.33%	12.07%	0.0569%
Adobe Inc	ADBE	132,185.91	0.55%	0.00%	17.12%	17.12%	0.0937%
Analog Devices Inc	ADI	35,726.33	0.15%	2.15%	12.10%	14.38%	0.0213%
Archer-Daniels-Midland Co	ADM	21,465.53	0.09%	3.70%	0.60%	4.31%	0.0038%
Automatic Data Processing Inc	ADP	69,688.75	0.29%	1.79%	13.50%	15.42%	0.0445%
Alliance Data Systems Corp	ADS	7,202.73	0.03%	1.80%	12.47%	14.37%	0.0043%
Autodesk Inc	ADSK	35,427.14	0.15%	0.00%	59.90%	59.90%	0.0879%
Ameren Corp	AEE	17,999.02	0.07%	2.66%	5.81%	8.55%	0.0064%
American Electric Power Co Inc	AEP	42,494.67	0.18%	3.14%	6.19%	9.43%	0.0166%
AES Corp/VA	AES	10,486.89	0.04%	3.52%	8.17%	11.84%	0.0051%
Aflac Inc	AFL	38,242.57	0.16%	2.12%	3.43%	5.59%	0.0088%
Allergan PLC	AGN	39,962.33	0.17%	2.42%	5.84%	8.33%	0.0138%
American International Group Inc	AIG	44,418.32	0.18%	2.55%	11.00%	13.69%	0.0252%
Apartment Investment & Management Co	AIV	7,433.98	0.03%	4.05%	8.75%	12.98%	0.0040%
Assurant Inc	AIZ	6,145.01	N/A	2.48%	N/A	N/A	N/A
Arthur J Gallagher & Co	AJG	15,598.22	0.06%	2.03%	9.83%	11.96%	0.0077%
Akamai Technologies Inc	AKAM	12,366.34	0.05%	0.00%	13.70%	13.70%	0.0070%
Albermarle Corp	ALB	6,707.06	0.03%	2.24%	13.41%	15.81%	0.0044%
Align Technology Inc	ALGN	22,749.39	0.09%	0.00%	22.22%	22.22%	0.0209%
Alaska Air Group Inc	ALK	7,183.51	0.03%	2.40%	13.20%	15.76%	0.0047%
Allstate Corp/The	ALL	31,815.03	0.13%	2.05%	9.00%	11.14%	0.0147%
Allegion PLC	ALLE	9,117.43	0.04%	1.10%	10.15%	11.30%	0.0043%
Alexion Pharmaceuticals Inc	ALXN	25,491.29	0.11%	0.00%	16.37%	16.37%	0.0173%
Applied Materials Inc	AMAT	36,217.90	0.15%	2.15%	9.69%	11.94%	0.0179%
Advanced Micro Devices Inc	AMD	29,646.68	0.12%	0.00%	18.30%	18.30%	0.0225%
AMETEK Inc	AME	18,657.89	0.08%	0.70%	9.06%	9.79%	0.0076%
Affiliated Managers Group Inc	AMG	4,291.53	0.02%	1.53%	9.10%	10.70%	0.0019%
Amgen Inc	AMGN	101,676.28	0.42%	3.44%	5.20%	8.73%	0.0368%
Ameriprise Financial Inc	AMP	18,509.59	0.08%	2.75%	3.20%	6.00%	0.0046%
American Tower Corp	AMT	92,281.23	0.38%	1.79%	20.09%	22.07%	0.0843%
Amazon.com Inc	AMZN	873,923.37	3.62%	0.00%	44.95%	44.95%	1.6265%
Arista Networks Inc	ANET	18,741.11	0.08%	0.00%	21.32%	21.32%	0.0165%
ANSYS Inc	ANSS	15,065.15	0.06%	0.00%	12.95%	12.95%	0.0081%
Anthem Inc	ANTM	71,495.26	0.30%	1.15%	14.18%	15.42%	0.0456%
Aon PLC	AON	43,310.74	0.18%	0.95%	9.95%	10.95%	0.0196%
AO Smith Corp	AOS	6,771.46	0.03%	2.13%	8.00%	10.22%	0.0029%
Apache Corp	APA	9,800.25	0.04%	3.83%	1.05%	4.90%	0.0020%
Anadarko Petroleum Corp	APC	35,334.10	0.15%	1.53%	16.91%	18.57%	0.0272%
Air Products & Chemicals Inc	APD	44,816.79	0.19%	2.24%	12.30%	14.68%	0.0272%
Amphenol Corp	APH	25,989.71	0.11%	1.03%	8.78%	9.86%	0.0106%
Aptiv PLC	APTIV	16,511.78	0.07%	1.41%	8.89%	10.37%	0.0071%
Alexandria Real Estate Equities Inc	ARE	16,534.92	0.07%	2.69%	4.76%	7.51%	0.0051%
Arconic Inc	ARNC	9,824.98	0.04%	0.47%	9.90%	10.39%	0.0042%
Atmos Energy Corp	ATO	11,909.40	0.05%	2.06%	7.00%	9.14%	0.0045%
Activision Blizzard Inc	ATVI	33,221.71	0.14%	0.85%	6.99%	7.87%	0.0108%
AvalonBay Communities Inc	AVB	28,300.26	0.12%	2.98%	5.65%	8.71%	0.0102%
Broadcom Inc	AVGO	99,610.60	0.41%	4.21%	13.03%	17.52%	0.0723%
Avery Dennison Corp	AVY	8,784.31	0.04%	2.02%	5.55%	7.62%	0.0028%
American Water Works Co Inc	AWK	20,402.24	0.08%	1.74%	8.58%	10.40%	0.0088%
American Express Co	AXP	95,792.09	0.40%	1.41%	12.95%	14.45%	0.0573%
AutoZone Inc	AZO	25,562.27	0.11%	0.00%	12.58%	12.58%	0.0133%
Boeing Co/The	BA	192,200.18	0.80%	2.37%	12.26%	14.77%	0.1175%
Bank of America Corp	BAC	252,918.21	1.05%	2.58%	10.10%	12.81%	0.1341%
Baxter International Inc	BAX	37,536.45	0.16%	1.09%	11.90%	13.05%	0.0203%
BB&T Corp	BBT	35,806.76	0.15%	3.62%	8.48%	12.25%	0.0182%
Best Buy Co Inc	BBY	16,790.32	0.07%	3.18%	6.81%	10.10%	0.0070%
Becton Dickinson and Co	BDX	62,966.22	0.26%	1.38%	11.35%	12.81%	0.0334%
Franklin Resources Inc	BEN	16,150.55	0.07%	3.26%	10.00%	13.42%	0.0090%
Brown-Forman Corp	BF/B	23,712.73	0.10%	1.31%	9.91%	11.29%	0.0111%
Baker Hughes a GE Co	BHGE	22,204.35	0.09%	3.10%	43.55%	47.32%	0.0435%
Biogen Inc	BIIB	42,518.88	0.18%	0.00%	5.18%	5.18%	0.0091%
Bank of New York Mellon Corp/The	BK	40,876.41	0.17%	2.82%	7.33%	10.25%	0.0174%
Booking Holdings Inc	BKNG	71,699.99	0.30%	0.00%	16.48%	16.48%	0.0489%
BlackRock Inc	BLK	64,614.76	0.27%	3.21%	9.00%	12.35%	0.0330%
Ball Corp	BLL	20,550.02	0.09%	0.81%	6.77%	7.61%	0.0065%
Bristol-Myers Squibb Co	BMJ	74,212.83	0.31%	3.63%	8.63%	12.41%	0.0381%
Broadridge Financial Solutions Inc	BR	14,502.26	N/A	1.55%	N/A	N/A	N/A
Berkshire Hathaway Inc	BRK/B	484,926.88	2.01%	0.00%	-1.60%	-1.60%	-0.0321%

Company	Ticker	[4]	[5]	[6]	[7]	[8]	[9]
		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Boston Scientific Corp	BSX	53,414.96	0.22%	0.00%	9.08%	9.08%	0.0201%
BorgWarner Inc	BWA	7,353.81	0.03%	1.91%	4.37%	6.33%	0.0019%
Boston Properties Inc	BXP	20,215.83	0.08%	2.97%	4.91%	7.94%	0.0066%
Citigroup Inc	C	143,719.87	0.60%	3.18%	12.72%	16.10%	0.0958%
Conagra Brands Inc	CAG	13,007.94	0.05%	3.15%	6.25%	9.50%	0.0051%
Cardinal Health Inc	CAH	12,539.38	0.05%	4.66%	14.02%	19.00%	0.0099%
Caterpillar Inc	CAT	68,516.41	0.28%	3.19%	13.23%	16.63%	0.0472%
Chubb Ltd	CB	66,881.18	0.28%	2.07%	10.60%	12.78%	0.0354%
Cboe Global Markets Inc	CBOE	12,116.65	0.05%	1.21%	5.35%	6.58%	0.0033%
CBRE Group Inc	CBRE	15,367.89	0.06%	0.00%	7.30%	7.30%	0.0046%
CBS Corp	CBS	18,100.29	0.07%	1.58%	15.35%	17.05%	0.0128%
Crown Castle International Corp	CCI	54,050.52	0.22%	3.53%	16.33%	20.15%	0.0451%
Carnival Corp	CCL	35,061.25	0.15%	4.02%	10.23%	14.45%	0.0210%
Cadence Design Systems Inc	CDNS	17,865.08	0.07%	0.00%	9.35%	9.35%	0.0069%
Celanese Corp	CE	12,019.32	0.05%	2.53%	7.95%	10.58%	0.0053%
Celgene Corp	CELG	66,146.29	0.27%	0.00%	19.24%	19.24%	0.0527%
Cerner Corp	CERN	22,769.68	0.09%	0.29%	13.79%	14.09%	0.0133%
CF Industries Holdings Inc	CF	8,896.17	0.04%	2.99%	20.27%	23.56%	0.0087%
Citizens Financial Group Inc	CFG	14,933.22	0.06%	4.09%	8.04%	12.30%	0.0076%
Church & Dwight Co Inc	CHD	18,321.16	0.08%	1.24%	7.96%	9.24%	0.0070%
CH Robinson Worldwide Inc	CHRW	10,874.47	0.05%	2.54%	8.93%	11.59%	0.0052%
Charter Communications Inc	CHTR	93,905.28	0.39%	0.00%	44.24%	44.24%	0.1720%
Cigna Corp	CI	56,199.10	0.23%	0.07%	11.09%	11.16%	0.0260%
Cincinnati Financial Corp	CINF	16,035.70	N/A	2.43%	N/A	N/A	N/A
Colgate-Palmolive Co	CL	59,769.81	0.25%	2.47%	4.15%	6.67%	0.0165%
Clorox Co/The	CLX	18,953.60	0.08%	2.59%	4.43%	7.07%	0.0056%
Comerica Inc	CMA	10,609.35	0.04%	3.99%	12.60%	16.84%	0.0074%
Comcast Corp	CMCSA	186,090.43	0.77%	2.04%	11.47%	13.63%	0.1050%
CME Group Inc	CME	68,774.17	0.28%	2.77%	6.91%	9.77%	0.0278%
Chipotle Mexican Grill Inc	CMG	18,290.12	0.08%	0.00%	19.37%	19.37%	0.0147%
Cummins Inc	CMI	23,743.53	0.10%	3.09%	7.15%	10.35%	0.0102%
CMS Energy Corp	CMS	15,921.43	0.07%	2.73%	6.07%	8.88%	0.0059%
Centene Corp	CNC	23,871.94	0.10%	0.00%	13.90%	13.90%	0.0137%
CenterPoint Energy Inc	CNP	14,260.96	0.06%	4.11%	6.09%	10.33%	0.0061%
Capital One Financial Corp	COF	40,324.25	0.17%	1.91%	5.20%	7.16%	0.0120%
Cabot Oil & Gas Corp	COG	10,590.62	0.04%	1.35%	35.02%	36.61%	0.0161%
Cooper Cos Inc/The	COO	14,703.12	0.06%	0.02%	6.18%	6.20%	0.0038%
ConocoPhillips	COP	66,635.17	0.28%	2.11%	5.00%	7.16%	0.0198%
Costco Wholesale Corp	COST	105,369.92	0.44%	1.00%	10.51%	11.57%	0.0505%
Coty Inc	COTY	9,272.25	0.04%	4.00%	8.20%	12.36%	0.0047%
Campbell Soup Co	CPB	10,933.59	0.05%	3.88%	1.42%	5.33%	0.0024%
Capri Holdings Ltd	CPRI	4,902.51	0.02%	0.00%	7.32%	7.32%	0.0015%
Copart Inc	CPRT	16,376.99	0.07%	0.00%	20.00%	20.00%	0.0136%
salesforce.com Inc	CRM	117,308.42	0.49%	0.00%	23.01%	23.01%	0.1118%
Cisco Systems Inc	CSCO	222,726.54	0.92%	2.62%	6.96%	9.67%	0.0892%
CSX Corp	CSX	60,258.42	0.25%	1.25%	11.71%	13.04%	0.0325%
Cintas Corp	CTAS	23,196.96	0.10%	0.92%	12.02%	13.00%	0.0125%
CenturyLink Inc	CTL	11,393.78	0.05%	9.57%	1.78%	11.43%	0.0054%
Cognizant Technology Solutions Corp	CTSH	35,255.69	0.15%	1.30%	11.05%	12.43%	0.0181%
Citrix Systems Inc	CTXS	12,391.07	0.05%	1.49%	37.42%	39.19%	0.0201%
CVS Health Corp	CVS	68,033.45	0.28%	3.80%	7.67%	11.61%	0.0327%
Chevron Corp	CVX	216,854.38	0.90%	4.16%	3.93%	8.18%	0.0734%
Concho Resources Inc	CXO	19,660.22	0.08%	0.43%	11.85%	12.30%	0.0100%
Dominion Energy Inc	D	60,321.75	0.25%	4.87%	5.18%	10.17%	0.0254%
Delta Air Lines Inc	DAL	33,714.28	0.14%	2.87%	12.72%	15.76%	0.0220%
Deere & Co	DE	44,433.26	0.18%	2.16%	9.45%	11.71%	0.0216%
Discover Financial Services	DFS	24,133.99	0.10%	2.21%	9.00%	11.31%	0.0113%
Dollar General Corp	DG	32,879.33	0.14%	1.01%	10.60%	11.66%	0.0159%
Quest Diagnostics Inc	DGX	12,887.91	0.05%	2.19%	7.13%	9.40%	0.0050%
DR Horton Inc	DHI	15,957.05	0.07%	1.40%	12.92%	14.41%	0.0095%
Danaher Corp	DHR	94,510.40	0.39%	0.50%	10.24%	10.77%	0.0421%
Walt Disney Co/The	DIS	237,632.25	0.98%	1.34%	7.08%	8.46%	0.0833%
Discovery Inc	DISCA	18,984.81	0.08%	0.00%	13.35%	13.35%	0.0105%
DISH Network Corp	DISH	16,941.63	0.07%	0.00%	-16.48%	-16.48%	-0.0116%
Digital Realty Trust Inc	DLR	25,634.28	0.11%	3.67%	17.36%	21.35%	0.0227%
Dollar Tree Inc	DLTR	24,231.45	0.10%	0.00%	9.77%	9.77%	0.0098%
Dover Corp	DOV	12,993.90	0.05%	2.22%	10.30%	12.63%	0.0068%
Dow Inc	DOW	34,906.34	N/A	5.99%	N/A	N/A	N/A
Duke Realty Corp	DRE	10,815.19	0.04%	2.90%	4.12%	7.08%	0.0032%
Darden Restaurants Inc	DRI	14,304.55	0.06%	2.58%	10.70%	13.41%	0.0079%
DTE Energy Co	DTE	22,987.66	0.10%	3.03%	8.50%	11.66%	0.0111%
Duke Energy Corp	DUK	62,324.08	0.26%	4.43%	4.98%	9.52%	0.0246%
DaVita Inc	DVA	7,225.09	0.03%	0.00%	18.90%	18.90%	0.0057%
Devon Energy Corp	DVN	10,446.43	0.04%	1.38%	13.15%	14.62%	0.0063%
DowDuPont Inc	DWDP	68,559.76	0.28%	3.74%	15.27%	19.29%	0.0548%
DXC Technology Co	DXC	12,753.61	0.05%	1.72%	5.28%	7.04%	0.0037%
Electronic Arts Inc	EA	27,669.07	0.11%	0.00%	11.87%	11.87%	0.0136%
eBay Inc	EBAY	31,313.98	0.13%	1.56%	10.49%	12.13%	0.0157%
Ecolab Inc	ECL	53,062.50	0.22%	1.01%	13.13%	14.21%	0.0312%
Consolidated Edison Inc	ED	28,729.43	0.12%	3.43%	4.27%	7.77%	0.0092%
Equifax Inc	EFX	14,607.62	0.06%	1.30%	11.63%	13.00%	0.0079%
Edison International	EIX	19,343.41	0.08%	4.14%	5.52%	9.77%	0.0078%
Estee Lauder Cos Inc/The	EL	58,272.34	0.24%	1.03%	11.84%	12.93%	0.0312%
Eastman Chemical Co	EMN	9,009.98	0.04%	3.78%	6.50%	10.40%	0.0039%
Emerson Electric Co	EMR	37,049.20	0.15%	3.26%	8.84%	12.24%	0.0188%
EOG Resources Inc	EOG	47,516.98	0.20%	1.16%	9.81%	11.03%	0.0217%
Equinix Inc	EQIX	40,840.38	0.17%	2.02%	18.37%	20.58%	0.0348%
Equity Residential	EQR	28,371.91	0.12%	2.95%	6.72%	9.77%	0.0115%

Company	Ticker	[4]	[5]	[6]	[7]	[8]	[9]
		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Eversource Energy	ES	23,710.11	0.10%	2.90%	6.50%	9.49%	0.0093%
Essex Property Trust Inc	ESS	19,172.15	0.08%	2.68%	6.57%	9.34%	0.0074%
E*TRADE Financial Corp	ETFC	10,961.25	0.05%	1.10%	12.73%	13.90%	0.0063%
Eaton Corp PLC	ETN	31,516.72	0.13%	3.82%	8.95%	12.94%	0.0169%
Entergy Corp	ETR	18,436.16	0.08%	3.78%	-1.18%	2.58%	0.0020%
Every Inc	EVRG	14,691.57	0.06%	3.31%	8.18%	11.62%	0.0071%
Edwards Lifesciences Corp	EW	35,591.22	0.15%	0.00%	14.00%	14.00%	0.0206%
Exelon Corp	EXC	46,635.30	0.19%	3.01%	3.46%	6.52%	0.0126%
Expeditors International of Washington I	EXPD	11,969.19	0.05%	1.39%	9.80%	11.26%	0.0056%
Expedia Group Inc	EXPE	17,112.88	0.07%	1.10%	21.84%	23.06%	0.0163%
Extra Space Storage Inc	EXR	13,657.93	0.06%	3.31%	5.42%	8.82%	0.0050%
Ford Motor Co	F	37,980.48	0.16%	6.30%	-4.77%	1.39%	0.0022%
Diamondback Energy Inc	FANG	16,147.76	0.07%	0.71%	20.66%	21.44%	0.0143%
Fastenal Co	FAST	17,516.74	0.07%	2.82%	7.55%	10.48%	0.0076%
Facebook Inc	FB	506,623.61	2.10%	0.00%	19.22%	19.22%	0.4031%
Fortune Brands Home & Security Inc	FBHS	6,722.67	0.03%	1.82%	9.47%	11.37%	0.0032%
Freepoint-McMoRan Inc	FCX	14,085.66	0.06%	2.06%	-8.10%	-6.12%	-0.0036%
FedEx Corp	FDX	40,201.45	0.17%	1.69%	14.00%	15.81%	0.0263%
FirstEnergy Corp	FE	21,916.68	0.09%	3.69%	0.35%	4.04%	0.0037%
F5 Networks Inc	FFIV	7,884.55	0.03%	0.00%	9.95%	9.95%	0.0032%
Fidelity National Information Services I	FIS	38,932.74	0.16%	1.16%	10.92%	12.14%	0.0196%
Fiserv Inc	FISV	33,694.88	0.14%	0.00%	10.55%	10.55%	0.0147%
Fifth Third Bancorp	FITB	19,461.23	0.08%	3.64%	3.95%	7.66%	0.0062%
Foot Locker Inc	FL	4,419.42	0.02%	3.84%	6.55%	10.52%	0.0019%
FLIR Systems Inc	FLIR	6,544.90	N/A	1.41%	N/A	N/A	N/A
Fluor Corp	FLR	3,878.79	0.02%	3.03%	16.54%	19.82%	0.0032%
Flowserve Corp	FLS	6,091.38	0.03%	1.68%	19.15%	20.99%	0.0053%
FleetCor Technologies Inc	FLT	22,256.00	0.09%	0.00%	19.67%	19.67%	0.0181%
FMC Corp	FMC	9,670.26	0.04%	2.05%	9.33%	11.48%	0.0046%
Fox Corp	FOXA	21,722.69	0.09%	0.26%	3.37%	3.63%	0.0033%
First Republic Bank/CA	FRC	16,168.50	0.07%	0.77%	12.14%	12.96%	0.0087%
Federal Realty Investment Trust	FRT	9,792.46	0.04%	3.18%	5.40%	8.67%	0.0035%
TechnipFMC PLC	FTI	9,319.71	0.04%	2.49%	17.52%	20.23%	0.0078%
Fortinet Inc	FTNT	12,376.73	0.05%	0.00%	24.04%	24.04%	0.0123%
Fortive Corp	FTV	25,517.82	0.11%	0.41%	11.68%	12.11%	0.0128%
General Dynamics Corp	GD	46,456.39	0.19%	2.48%	8.76%	11.35%	0.0218%
General Electric Co	GE	82,324.43	0.34%	0.42%	8.87%	9.31%	0.0317%
Gilead Sciences Inc	GILD	79,154.28	0.33%	4.03%	7.57%	11.75%	0.0385%
General Mills Inc	GIS	29,604.21	0.12%	3.98%	5.93%	10.04%	0.0123%
Corning Inc	GLW	22,632.31	0.09%	2.79%	9.84%	12.77%	0.0120%
General Motors Co	GM	47,289.22	0.20%	4.60%	5.98%	10.72%	0.0210%
Alphabet Inc	GOOGL	767,114.47	3.18%	0.00%	12.45%	12.45%	0.3955%
Genuine Parts Co	GPC	14,445.72	0.06%	3.09%	5.84%	9.02%	0.0054%
Global Payments Inc	GPN	24,212.37	0.10%	0.02%	16.73%	16.76%	0.0168%
Gap Inc/The	GPS	7,079.98	0.03%	5.23%	5.84%	11.22%	0.0033%
Garmin Ltd	GRMN	14,519.51	0.06%	3.04%	7.28%	10.43%	0.0063%
Goldman Sachs Group Inc/The	GS	69,426.53	0.29%	1.87%	1.14%	3.02%	0.0087%
WW Grainger Inc	GWW	14,509.03	0.06%	2.13%	12.47%	14.73%	0.0089%
Halliburton Co	HAL	18,607.00	0.08%	3.41%	13.40%	17.04%	0.0131%
Hasbro Inc	HAS	11,973.76	0.05%	2.85%	10.85%	13.86%	0.0069%
Huntington Bancshares Inc/OH	HBAN	13,237.47	0.05%	4.62%	8.24%	13.05%	0.0072%
Hanesbrands Inc	HBI	5,367.84	0.02%	4.20%	3.25%	7.52%	0.0017%
HCA Healthcare Inc	HCA	41,405.50	0.17%	1.02%	11.62%	12.70%	0.0218%
HCP Inc	HCP	15,156.84	0.06%	4.67%	2.68%	7.41%	0.0047%
Home Depot Inc/The	HD	208,889.32	0.86%	2.85%	9.49%	12.47%	0.1079%
Hess Corp	HES	16,950.08	0.07%	1.89%	-9.23%	-7.42%	-0.0052%
HollyFrontier Corp	HFC	6,485.67	0.03%	3.53%	1.26%	4.81%	0.0013%
Hartford Financial Services Group Inc/Th	HIG	19,036.54	0.08%	2.35%	9.50%	11.97%	0.0094%
Huntington Ingalls Industries Inc	HI	8,523.20	0.04%	1.68%	40.00%	42.02%	0.0148%
Hilton Worldwide Holdings Inc	HLT	26,032.64	0.11%	0.68%	13.10%	13.82%	0.0149%
Harley-Davidson Inc	HOG	5,204.86	0.02%	4.77%	8.60%	13.58%	0.0029%
Hologic Inc	HOLX	11,796.89	0.05%	0.00%	8.39%	8.39%	0.0041%
Honeywell International Inc	HON	119,575.29	0.50%	2.02%	8.18%	10.28%	0.0509%
Helmerich & Payne Inc	HP	5,351.47	0.02%	5.82%	51.02%	58.32%	0.0129%
Hewlett Packard Enterprise Co	HPE	18,373.12	0.08%	3.35%	5.79%	9.23%	0.0070%
HP Inc	HPQ	28,137.53	0.12%	3.39%	3.11%	6.56%	0.0076%
H&R Block Inc	HRB	5,336.44	0.02%	3.82%	10.00%	14.01%	0.0031%
Hormel Foods Corp	HRL	21,153.84	0.09%	2.13%	5.70%	7.89%	0.0069%
Harris Corp	HRS	22,111.93	N/A	1.47%	N/A	N/A	N/A
Henry Schein Inc	HSIC	9,609.34	0.04%	0.00%	1.50%	1.50%	0.0006%
Host Hotels & Resorts Inc	HST	13,417.58	0.06%	4.63%	15.05%	20.02%	0.0111%
Hershey Co/The	HSY	27,553.18	0.11%	2.27%	7.07%	9.41%	0.0107%
Humana Inc	HUM	33,064.67	0.14%	0.86%	13.35%	14.26%	0.0195%
International Business Machines Corp	IBM	112,594.78	0.47%	5.10%	1.92%	7.07%	0.0330%
Intercontinental Exchange Inc	ICE	46,355.34	0.19%	1.33%	9.35%	10.74%	0.0206%
IDEXX Laboratories Inc	IDXX	21,481.80	0.09%	0.00%	18.30%	18.30%	0.0163%
International Flavors & Fragrances Inc	IFF	14,448.11	0.06%	2.12%	7.80%	10.00%	0.0060%
Illumina Inc	ILMN	45,115.77	0.19%	0.00%	27.09%	27.09%	0.0506%
Incyte Corp	INCY	16,861.30	0.07%	0.00%	39.47%	39.47%	0.0276%
IHS Markit Ltd	INFO	22,789.57	0.09%	0.00%	11.15%	11.15%	0.0105%
Intel Corp	INTC	197,167.08	0.82%	2.83%	8.88%	11.83%	0.0966%
Intuit Inc	INTU	63,475.74	0.26%	0.76%	16.16%	16.98%	0.0446%
International Paper Co	IP	16,477.44	0.07%	4.86%	4.77%	9.74%	0.0066%
Interpublic Group of Cos Inc/The	IPG	8,212.97	0.03%	4.43%	11.75%	16.43%	0.0056%
IPG Photonics Corp	IPGP	6,652.01	0.03%	0.00%	10.49%	10.49%	0.0029%
IQVIA Holdings Inc	IQV	26,795.15	0.11%	0.00%	17.28%	17.28%	0.0192%
Ingersoll-Rand PLC	IR	28,538.66	0.12%	1.83%	9.16%	11.07%	0.0131%
Iron Mountain Inc	IRM	8,792.89	0.04%	8.01%	7.62%	15.93%	0.0058%

Company	Ticker	[4]	[5]	[6]	[7]	[8]	[9]
		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Intuitive Surgical Inc	ISRG	53,666.31	0.22%	0.00%	12.05%	12.05%	0.0268%
Gartner Inc	IT	13,630.68	0.06%	0.00%	14.00%	14.00%	0.0079%
Illinois Tool Works Inc	ITW	45,491.24	0.19%	2.87%	7.27%	10.24%	0.0193%
Invesco Ltd	IVZ	9,312.26	0.04%	6.35%	7.12%	13.70%	0.0053%
JB Hunt Transport Services Inc	JBHT	9,258.03	0.04%	1.21%	13.13%	14.41%	0.0055%
Johnson Controls International plc	JCI	34,593.61	0.14%	2.79%	7.80%	10.70%	0.0153%
Jacobs Engineering Group Inc	JEC	10,285.28	0.04%	0.77%	13.10%	13.93%	0.0059%
Jefferies Financial Group Inc	JEF	5,136.44	N/A	2.83%	N/A	N/A	N/A
Jack Henry & Associates Inc	JKHY	10,130.66	0.04%	1.16%	9.03%	10.24%	0.0043%
Johnson & Johnson	JNJ	348,210.59	1.44%	2.87%	5.98%	8.94%	0.1289%
Juniper Networks Inc	JNPR	8,473.85	0.04%	3.07%	7.92%	11.11%	0.0039%
JPMorgan Chase & Co	JPM	343,731.38	1.42%	3.21%	6.80%	10.12%	0.1441%
Nordstrom Inc	JWN	4,838.98	0.02%	4.86%	7.45%	12.49%	0.0025%
Kellogg Co	K	17,896.52	0.07%	4.33%	2.52%	6.91%	0.0051%
KeyCorp	KEY	16,102.37	0.07%	4.46%	7.17%	11.79%	0.0079%
Keysight Technologies Inc	KEYS	14,137.28	N/A	0.00%	N/A	N/A	N/A
Kraft Heinz Co/The	KHC	33,717.37	0.14%	5.79%	0.52%	6.32%	0.0088%
Kimco Realty Corp	KIM	7,343.50	0.03%	6.48%	3.77%	10.37%	0.0032%
KLA-Tencor Corp	KLAC	16,658.20	0.07%	2.89%	9.25%	12.27%	0.0085%
Kimberly-Clark Corp	KMB	43,967.98	0.18%	3.21%	4.33%	7.62%	0.0139%
Kinder Morgan Inc/DE	KMI	45,161.66	0.19%	4.98%	13.90%	19.23%	0.0360%
CarMax Inc	KMX	13,009.47	0.05%	0.00%	10.39%	10.39%	0.0056%
Coca-Cola Co/The	KO	209,594.24	0.87%	3.23%	6.49%	9.82%	0.0852%
Kroger Co/The	KR	18,400.42	0.08%	2.54%	6.39%	9.01%	0.0069%
Kohl's Corp	KSS	8,047.35	0.03%	5.44%	5.83%	11.42%	0.0038%
Kansas City Southern	KSU	11,394.50	0.05%	1.33%	12.67%	14.08%	0.0066%
Loews Corp	L	15,659.05	N/A	0.49%	N/A	N/A	N/A
L Brands Inc	LB	6,181.29	0.03%	5.41%	9.38%	15.04%	0.0038%
Leggett & Platt Inc	LEG	4,661.35	0.02%	4.39%	10.00%	14.61%	0.0028%
Lennar Corp	LEN	15,665.74	0.06%	0.32%	10.99%	11.33%	0.0073%
Laboratory Corp of America Holdings	LH	16,046.06	0.07%	0.00%	7.28%	7.28%	0.0048%
Linde PLC	LIN	97,996.44	0.41%	1.99%	15.05%	17.19%	0.0697%
LKQ Corp	LKQ	8,053.95	0.03%	0.00%	13.30%	13.30%	0.0044%
L3 Technologies Inc	LLL	19,231.95	0.08%	1.41%	5.00%	6.45%	0.0051%
Eli Lilly & Co	LLY	112,558.13	0.47%	2.14%	9.32%	11.56%	0.0539%
Lockheed Martin Corp	LMT	95,650.69	0.40%	2.65%	7.82%	10.57%	0.0419%
Lincoll National Corp	LNC	12,029.31	0.05%	2.54%	9.00%	11.65%	0.0058%
Alliant Energy Corp	LNT	11,266.74	0.05%	3.00%	5.37%	8.45%	0.0039%
Lowe's Cos Inc	LOW	74,243.67	0.31%	2.25%	14.39%	16.81%	0.0517%
Lam Research Corp	LRCX	26,178.67	0.11%	2.39%	9.10%	11.60%	0.0126%
Southwest Airlines Co	LUV	25,849.89	0.11%	1.44%	5.01%	6.49%	0.0069%
Lamb Weston Holdings Inc	LW	8,666.73	0.04%	1.32%	11.83%	13.23%	0.0047%
LyondellBasell Industries NV	LYB	27,496.80	0.11%	5.61%	6.20%	11.98%	0.0136%
Macy's Inc	M	6,354.07	0.03%	7.33%	1.83%	9.22%	0.0024%
Mastercard Inc	MA	256,876.87	1.06%	0.49%	17.28%	17.81%	0.1894%
Mid-America Apartment Communities Inc	MAA	13,016.02	0.05%	3.39%	7.00%	10.51%	0.0057%
Macerich Co/The	MAC	5,131.20	0.02%	8.33%	0.10%	8.43%	0.0018%
Marriott International Inc/MD	MAR	41,570.33	0.17%	1.43%	8.26%	9.75%	0.0168%
Masco Corp	MAS	10,250.73	0.04%	1.36%	12.33%	13.77%	0.0058%
Mattel Inc	MAT	3,402.44	0.01%	0.00%	9.00%	9.00%	0.0013%
McDonald's Corp	MCD	151,390.32	0.63%	2.37%	8.72%	11.20%	0.0702%
Microchip Technology Inc	MCHP	19,041.26	0.08%	1.83%	10.34%	12.27%	0.0097%
McKesson Corp	MCK	23,201.90	0.10%	1.32%	4.01%	5.35%	0.0051%
Moody's Corp	MCO	34,674.05	0.14%	1.04%	7.05%	8.13%	0.0117%
Mondelez International Inc	MDLZ	73,246.16	0.30%	2.10%	6.89%	9.05%	0.0275%
Medtronic PLC	MDT	124,121.78	0.51%	2.29%	7.34%	9.71%	0.0499%
MetLife Inc	MET	43,916.57	0.18%	3.75%	9.27%	13.20%	0.0240%
MGM Resorts International	MGM	13,333.34	0.06%	2.09%	14.17%	16.41%	0.0091%
Mohawk Industries Inc	MHK	9,816.70	0.04%	0.00%	6.82%	6.82%	0.0028%
McCormick & Co Inc/MD	MKC	20,597.95	0.09%	1.43%	6.20%	7.67%	0.0065%
Martin Marietta Materials Inc	MLM	13,151.93	0.05%	0.94%	13.90%	14.90%	0.0081%
Marsh & McLennan Cos Inc	MMC	48,884.51	0.20%	1.83%	11.73%	13.66%	0.0277%
3M Co	MMM	92,084.17	0.38%	3.55%	7.10%	10.78%	0.0411%
Monster Beverage Corp	MNST	33,625.62	0.14%	0.00%	14.45%	14.45%	0.0201%
Altria Group Inc	MO	91,787.33	0.38%	6.72%	6.53%	13.46%	0.0512%
Mosaic Co/The	MOS	8,282.87	0.03%	0.89%	13.60%	14.55%	0.0050%
Marathon Petroleum Corp	MPC	30,473.80	0.13%	4.65%	9.50%	14.37%	0.0181%
Merck & Co Inc	MRK	203,937.58	0.84%	2.78%	9.01%	11.91%	0.1006%
Marathon Oil Corp	MRO	10,755.60	0.04%	1.52%	0.45%	1.97%	0.0009%
Morgan Stanley	MS	68,450.12	0.28%	3.18%	9.49%	12.82%	0.0363%
MSCI Inc	MSCI	18,630.15	0.08%	1.05%	10.00%	11.10%	0.0086%
Microsoft Corp	MSFT	947,737.32	3.92%	1.47%	12.82%	14.38%	0.5643%
Motorola Solutions Inc	MSI	24,709.70	0.10%	1.53%	5.50%	7.07%	0.0072%
M&T Bank Corp	MTB	21,804.90	0.09%	2.70%	7.28%	10.08%	0.0091%
Mettler-Toledo International Inc	MTD	17,935.01	0.07%	0.00%	12.97%	12.97%	0.0096%
Micron Technology Inc	MU	36,089.06	0.15%	0.00%	-1.90%	-1.90%	-0.0028%
Maxim Integrated Products Inc	MXIM	14,326.83	0.06%	3.48%	8.97%	12.61%	0.0075%
Mylan NV	MYL	8,659.76	0.04%	0.00%	4.71%	4.71%	0.0017%
Noble Energy Inc	NBL	10,234.15	0.04%	2.11%	11.00%	13.23%	0.0056%
Norwegian Cruise Line Holdings Ltd	NCLH	11,784.28	0.05%	0.25%	10.86%	11.12%	0.0054%
Nasdaq Inc	NDAQ	15,019.46	0.06%	2.04%	7.09%	9.20%	0.0057%
NextEra Energy Inc	NEE	94,929.77	0.39%	2.52%	5.02%	7.60%	0.0299%
Newmont Goldcorp Corp	NEM	27,121.67	0.11%	1.70%	5.10%	6.84%	0.0077%
Netflix Inc	NFLX	150,088.87	0.62%	0.00%	43.23%	43.23%	0.2687%
NiSource Inc	NI	10,390.92	0.04%	2.88%	5.24%	8.20%	0.0035%
NIKE Inc	NKE	121,244.76	0.50%	1.10%	17.51%	18.70%	0.0939%
Nektar Therapeutics	NKTR	5,459.30	0.02%	0.00%	-2.40%	-2.40%	-0.0005%
Nielsen Holdings PLC	NLSN	8,080.38	0.03%	6.20%	12.00%	18.58%	0.0062%

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		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Northrop Grumman Corp	NOC	51,491.75	0.21%	1.72%	7.08%	8.86%	0.0189%
National Oilwell Varco Inc	NOV	8,046.44	0.03%	0.96%	83.89%	85.25%	0.0284%
NRG Energy Inc	NRG	9,093.90	0.04%	0.35%	33.17%	33.58%	0.0126%
Norfolk Southern Corp	NSC	51,900.81	0.21%	1.77%	13.88%	15.76%	0.0339%
NetApp Inc	NTAP	14,620.91	0.06%	3.24%	9.73%	13.13%	0.0079%
Northern Trust Corp	NTRS	18,615.70	0.08%	2.88%	9.68%	12.70%	0.0098%
Nucor Corp	NUE	14,629.71	0.06%	3.34%	0.75%	4.10%	0.0025%
NVIDIA Corp	NVDA	82,495.14	0.34%	0.48%	9.76%	10.26%	0.0351%
Newell Brands Inc	NWL	5,678.00	0.02%	6.85%	-11.58%	-5.13%	-0.0012%
News Corp	NWSA	6,716.90	0.03%	1.80%	-10.26%	-8.55%	-0.0024%
Realty Income Corp	O	22,177.99	0.09%	3.89%	4.69%	8.67%	0.0080%
ONEOK Inc	OKE	26,259.55	0.11%	5.59%	11.96%	17.89%	0.0194%
Omnicom Group Inc	OMC	17,032.17	0.07%	3.36%	4.06%	7.49%	0.0053%
Oracle Corp	ORCL	172,933.29	0.72%	1.64%	7.71%	9.41%	0.0674%
O'Reilly Automotive Inc	ORLY	29,069.63	0.12%	0.00%	15.22%	15.22%	0.0183%
Occidental Petroleum Corp	OXY	37,228.97	0.15%	6.29%	12.23%	18.91%	0.0292%
Paychex Inc	PAYX	30,832.30	0.13%	2.64%	8.77%	11.53%	0.0147%
People's United Financial Inc	PBCT	6,122.80	0.03%	4.61%	2.00%	6.65%	0.0017%
PACCAR Inc	PCAR	22,802.90	0.09%	5.09%	5.00%	10.21%	0.0096%
Public Service Enterprise Group Inc	PEG	29,699.09	0.12%	3.20%	5.87%	9.17%	0.0113%
PepsiCo Inc	PEP	179,433.17	0.74%	2.96%	5.45%	8.50%	0.0631%
Pfizer Inc	PFE	230,848.26	0.96%	3.45%	5.09%	8.63%	0.0825%
Principal Financial Group Inc	PFG	14,364.73	0.06%	4.28%	4.60%	8.98%	0.0053%
Procter & Gamble Co/The	PG	258,132.22	1.07%	2.83%	7.15%	10.07%	0.1077%
Progressive Corp/The	PGR	46,299.52	0.19%	3.48%	6.23%	9.82%	0.0188%
Parker-Hannifin Corp	PH	19,540.43	0.08%	2.03%	9.02%	11.13%	0.0090%
PulteGroup Inc	PHM	8,591.25	0.04%	1.41%	8.80%	10.27%	0.0037%
Packaging Corp of America	PKG	8,417.52	0.03%	3.59%	8.25%	11.99%	0.0042%
PerkinElmer Inc	PKI	9,576.70	0.04%	0.32%	16.09%	16.44%	0.0065%
Prologis Inc	PLD	46,463.68	0.19%	2.87%	7.04%	10.01%	0.0193%
Philip Morris International Inc	PM	119,999.07	0.50%	6.11%	7.28%	13.61%	0.0676%
PNC Financial Services Group Inc/The	PNC	57,449.99	0.24%	3.23%	7.48%	10.83%	0.0258%
Pentair PLC	PNR	5,985.28	0.02%	2.07%	7.20%	9.35%	0.0023%
Pinnacle West Capital Corp	PNW	10,543.97	0.04%	3.21%	5.29%	8.59%	0.0038%
PPG Industries Inc	PPG	24,703.68	0.10%	1.87%	8.70%	10.66%	0.0109%
PPL Corp	PPL	21,468.00	0.09%	5.59%	5.00%	10.73%	0.0095%
Perrigo Co PLC	PRGO	5,714.36	0.02%	1.80%	-0.80%	0.99%	0.0002%
Prudential Financial Inc	PRU	37,506.28	0.16%	4.32%	11.43%	16.00%	0.0249%
Public Storage	PSA	41,515.27	0.17%	3.38%	5.23%	8.70%	0.0149%
Phillips 66	PSX	36,646.93	0.15%	4.24%	2.51%	6.80%	0.0103%
PVH Corp	PVH	6,393.15	0.03%	0.18%	8.45%	8.64%	0.0023%
Quanta Services Inc	PWR	4,955.65	0.02%	0.46%	22.00%	22.51%	0.0046%
Pioneer Natural Resources Co	PXD	23,909.43	0.10%	0.51%	24.83%	25.41%	0.0252%
PayPal Holdings Inc	PYPL	128,948.90	0.53%	0.00%	19.57%	19.57%	0.1045%
QUALCOMM Inc	QCOM	81,233.00	0.34%	3.78%	15.42%	19.49%	0.0655%
Qorvo Inc	QRVO	7,289.57	0.03%	0.27%	12.19%	12.48%	0.0038%
Royal Caribbean Cruises Ltd	RCL	25,526.73	0.11%	2.35%	12.11%	14.60%	0.0154%
Everest Re Group Ltd	RE	10,088.09	0.04%	2.27%	10.00%	12.39%	0.0052%
Regency Centers Corp	REG	11,060.47	0.05%	3.52%	4.32%	7.91%	0.0036%
Regeneron Pharmaceuticals Inc	REGN	33,080.21	0.14%	0.00%	11.81%	11.81%	0.0162%
Regions Financial Corp	RF	14,012.90	0.06%	4.37%	9.22%	13.80%	0.0080%
Robert Half International Inc	RHI	6,361.80	0.03%	2.34%	9.05%	11.49%	0.0030%
Red Hat Inc	RHT	32,760.39	0.14%	0.00%	20.30%	20.30%	0.0275%
Raymond James Financial Inc	RJF	11,627.70	0.05%	1.58%	17.00%	18.71%	0.0090%
Ralph Lauren Corp	RL	8,207.88	0.03%	2.61%	7.84%	10.55%	0.0036%
ResMed Inc	RMD	16,363.97	0.07%	1.30%	12.30%	13.68%	0.0093%
Rockwell Automation Inc	ROK	17,618.19	0.07%	2.58%	11.59%	14.31%	0.0104%
Rollins Inc	ROL	12,305.29	0.05%	1.48%	10.00%	11.56%	0.0059%
Roper Technologies Inc	ROP	35,713.00	0.15%	0.56%	12.93%	13.53%	0.0200%
Ross Stores Inc	ROST	34,168.36	0.14%	1.10%	9.40%	10.55%	0.0149%
Republic Services Inc	RSRG	27,202.97	0.11%	1.80%	13.26%	15.18%	0.0171%
Raytheon Co	RTN	48,837.49	0.20%	2.12%	9.31%	11.53%	0.0233%
SBA Communications Corp	SBAC	24,508.68	0.10%	0.00%	42.50%	42.50%	0.0431%
Starbucks Corp	SBUX	92,123.87	0.38%	1.96%	12.72%	14.80%	0.0565%
Charles Schwab Corp/The	SCHW	55,549.74	0.23%	1.63%	11.14%	12.87%	0.0296%
Sealed Air Corp	SEE	6,523.98	0.03%	1.58%	5.73%	7.35%	0.0020%
Sherwin-Williams Co/The	SHW	38,722.03	0.16%	1.02%	9.46%	10.53%	0.0169%
SVB Financial Group	SIVB	10,478.28	0.04%	0.01%	11.00%	11.01%	0.0048%
JM Smucker Co/The	SJM	13,827.03	0.06%	2.73%	3.20%	5.98%	0.0034%
Schlumberger Ltd	SLB	48,049.89	0.20%	5.76%	32.45%	39.15%	0.0779%
SL Green Realty Corp	SLG	7,340.09	0.03%	3.97%	-0.84%	3.11%	0.0009%
Snap-on Inc	SNA	8,638.66	0.04%	2.44%	7.35%	9.88%	0.0035%
Synopsys Inc	SNPS	17,454.25	0.07%	0.00%	13.25%	13.25%	0.0096%
Southern Co/The	SO	55,684.57	0.23%	4.61%	4.20%	8.91%	0.0205%
Simon Property Group Inc	SPG	50,084.77	0.21%	5.12%	4.87%	10.12%	0.0210%
S&P Global Inc	SPGI	52,657.26	0.22%	1.06%	9.20%	10.31%	0.0225%
Sempra Energy	SRE	36,068.33	0.15%	2.95%	8.67%	11.76%	0.0176%
SunTrust Banks Inc	STI	26,633.97	0.11%	3.51%	6.22%	9.84%	0.0109%
State Street Corp	STT	20,617.31	0.09%	3.63%	7.27%	11.03%	0.0094%
Seagate Technology PLC	STX	11,585.87	0.05%	6.02%	4.60%	10.76%	0.0052%
Constellation Brands Inc	STZ	33,786.05	0.14%	1.69%	8.35%	10.11%	0.0141%
Stanley Black & Decker Inc	SWK	19,277.95	0.08%	2.11%	10.00%	12.21%	0.0098%
Skyworks Solutions Inc	SWKS	11,506.57	0.05%	2.31%	11.22%	13.67%	0.0065%
Synchrony Financial	SYF	23,181.71	0.10%	2.69%	4.03%	6.78%	0.0065%
Stryker Corp	SYK	68,496.96	0.28%	1.25%	8.23%	9.53%	0.0270%
Symantec Corp	SYMC	11,578.77	0.05%	1.68%	7.32%	9.06%	0.0043%
Sysco Corp	SYT	35,371.78	0.15%	2.18%	12.73%	15.05%	0.0220%
AT&T Inc	T	223,172.84	0.92%	6.69%	4.79%	11.64%	0.1076%

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Molson Coors Brewing Co	TAP	11,944.73	0.05%	3.78%	-0.23%	3.55%	0.0018%
TransDigm Group Inc	TDG	23,449.68	0.10%	0.00%	11.09%	11.09%	0.0108%
TE Connectivity Ltd	TEL	28,374.23	0.12%	2.12%	9.93%	12.15%	0.0143%
Teleflex Inc	TFX	13,306.22	0.06%	0.47%	12.45%	12.95%	0.0071%
Target Corp	TGT	41,215.54	0.17%	3.27%	6.75%	10.13%	0.0173%
Tiffany & Co	TIF	10,819.63	0.04%	2.60%	9.25%	11.98%	0.0054%
TJX Cos Inc/The	TJX	61,089.73	0.25%	1.81%	10.05%	11.95%	0.0302%
Torchmark Corp	TMK	9,401.01	0.04%	0.79%	7.91%	8.73%	0.0034%
Thermo Fisher Scientific Inc	TMO	106,786.96	0.44%	0.27%	10.83%	11.12%	0.0492%
Tapestry Inc	TPR	8,286.28	0.03%	4.73%	9.48%	14.43%	0.0050%
TripAdvisor Inc	TRIP	5,876.76	0.02%	0.00%	9.34%	9.34%	0.0023%
T Rowe Price Group Inc	TROW	23,917.12	0.10%	2.95%	7.10%	10.16%	0.0101%
Travelers Cos Inc/The	TRV	38,125.98	0.16%	2.22%	13.06%	15.43%	0.0244%
Tractor Supply Co	TSCO	12,158.28	0.05%	1.32%	11.20%	12.60%	0.0063%
Tyson Foods Inc	TSN	27,685.77	0.11%	1.97%	3.10%	5.10%	0.0059%
Total System Services Inc	TSS	21,857.78	0.09%	0.43%	12.14%	12.60%	0.0114%
Take-Two Interactive Software Inc	TTWO	12,171.36	0.05%	0.00%	8.80%	8.80%	0.0044%
Twitter Inc	TWTR	28,008.92	0.12%	0.00%	31.76%	31.76%	0.0368%
Texas Instruments Inc	TXN	97,864.29	0.41%	3.00%	9.87%	13.02%	0.0528%
Textron Inc	TXT	10,544.13	0.04%	0.17%	12.06%	12.24%	0.0053%
Under Armour Inc	UA	9,651.44	0.04%	0.00%	31.19%	31.19%	0.0125%
United Continental Holdings Inc	UAL	20,520.65	0.08%	0.00%	13.81%	13.81%	0.0117%
UDR Inc	UDR	12,618.77	0.05%	3.04%	5.43%	8.56%	0.0045%
Universal Health Services Inc	UHS	10,776.24	0.04%	0.34%	9.38%	9.74%	0.0043%
Ulta Beauty Inc	ULTA	19,488.64	0.08%	0.00%	21.00%	21.00%	0.0169%
UnitedHealth Group Inc	UNH	229,792.96	0.95%	1.58%	13.38%	15.07%	0.1433%
Unum Group	UNM	6,672.12	0.03%	3.39%	9.00%	12.54%	0.0035%
Union Pacific Corp	UNP	118,053.25	0.49%	2.15%	13.06%	15.35%	0.0751%
United Parcel Service Inc	UPS	79,981.41	0.33%	4.11%	8.79%	13.08%	0.0433%
United Rentals Inc	URI	8,656.51	0.04%	0.00%	17.76%	17.76%	0.0064%
US Bancorp	USB	79,921.53	0.33%	3.14%	6.70%	9.95%	0.0329%
United Technologies Corp	UTX	108,907.41	0.45%	2.35%	8.87%	11.32%	0.0511%
Visa Inc	V	322,025.40	1.33%	0.62%	15.54%	16.21%	0.2162%
Varian Medical Systems Inc	VAR	11,482.81	0.05%	0.00%	8.50%	8.50%	0.0040%
VF Corp	VFC	32,518.28	0.13%	2.40%	-17.49%	-15.30%	-0.0206%
Viacom Inc	VIAB	11,957.81	0.05%	2.77%	3.51%	6.33%	0.0031%
Valero Energy Corp	VLO	29,373.80	0.12%	5.11%	13.09%	18.54%	0.0225%
Vulcan Materials Co	VMC	16,499.63	0.07%	0.97%	16.30%	17.35%	0.0119%
Vornado Realty Trust	VNO	12,634.13	0.05%	4.11%	4.23%	8.42%	0.0044%
Verisk Analytics Inc	VRSK	22,913.19	0.09%	0.53%	9.46%	10.01%	0.0095%
VeriSign Inc	VRSN	23,238.37	0.10%	0.00%	8.80%	8.80%	0.0085%
Vertex Pharmaceuticals Inc	VRTX	42,562.25	0.18%	0.00%	51.38%	51.38%	0.0906%
Ventas Inc	VTR	23,044.41	0.10%	4.94%	3.95%	8.98%	0.0086%
Verizon Communications Inc	VZ	224,775.66	0.93%	4.47%	2.42%	6.94%	0.0646%
Wabtec Corp	WAB	11,734.78	0.05%	0.00%	15.00%	15.00%	0.0073%
Waters Corp	WAT	13,944.38	0.06%	0.00%	9.90%	9.90%	0.0057%
Walgreens Boots Alliance Inc	WBA	45,111.51	0.19%	3.65%	5.66%	9.41%	0.0176%
WellCare Health Plans Inc	WCG	13,895.63	0.06%	0.00%	17.22%	17.22%	0.0099%
Western Digital Corp	WDC	10,905.37	0.05%	5.37%	-5.24%	0.00%	0.0000%
WEC Energy Group Inc	WEC	25,408.56	0.11%	2.93%	5.88%	8.89%	0.0094%
Welltower Inc	WELL	32,889.28	0.14%	4.29%	6.11%	10.53%	0.0143%
Wells Fargo & Co	WFC	199,413.99	0.83%	4.16%	10.36%	14.74%	0.1217%
Whirlpool Corp	WHR	7,276.41	0.03%	4.12%	4.97%	9.20%	0.0028%
Willis Towers Watson PLC	WLTW	22,680.95	0.09%	1.44%	13.97%	15.51%	0.0146%
Waste Management Inc	WM	46,447.44	0.19%	1.86%	7.51%	9.44%	0.0181%
Williams Cos Inc/The	WMB	31,966.50	0.13%	5.78%	3.90%	9.79%	0.0130%
Walmart Inc	WMT	290,841.12	1.20%	2.10%	3.96%	6.10%	0.0735%
Westrock Co	WRK	8,379.59	0.03%	5.56%	3.17%	8.81%	0.0031%
Western Union Co/The	WU	8,355.75	0.03%	4.01%	3.72%	7.80%	0.0027%
Weyerhaeuser Co	WY	16,981.12	0.07%	5.97%	7.10%	13.29%	0.0093%
Wynn Resorts Ltd	WYNN	11,555.33	0.05%	3.52%	23.23%	27.17%	0.0130%
Cimarex Energy Co	XEC	5,800.97	0.02%	1.28%	31.54%	33.02%	0.0079%
Xcel Energy Inc	XEL	29,511.36	0.12%	2.83%	5.57%	8.47%	0.0104%
Xilinx Inc	XLNX	25,978.56	0.11%	1.45%	9.60%	11.12%	0.0120%
Exxon Mobil Corp	XOM	299,434.52	1.24%	4.82%	17.13%	22.36%	0.2772%
DENTSPLY SIRONA Inc	XRAY	12,604.37	0.05%	0.64%	12.57%	13.25%	0.0069%
Xerox Corp	XRX	6,875.82	0.03%	3.31%	6.50%	9.92%	0.0028%
Xylem Inc/NY	XYL	13,354.63	0.06%	1.29%	13.97%	15.35%	0.0085%
Yum! Brands Inc	YUM	31,316.55	0.13%	1.64%	12.20%	13.94%	0.0181%
Zimmer Biomet Holdings Inc	ZBH	23,332.67	0.10%	0.87%	5.66%	6.55%	0.0063%
Zions Bancorp NA	ZION	7,863.09	0.03%	3.01%	7.60%	10.73%	0.0035%
Zoetis Inc	ZTS	48,368.21	0.20%	0.62%	10.81%	11.46%	0.0230%
Total Market Capitalization: 24,150,545.73							13.85%

Notes:

[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
14.90%	2.85%	12.04%

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	21,528.60	0.09%	0.98%	9.50%	10.53%	0.0099%
American Airlines Group Inc	AAL	13,104.37	0.06%	1.36%	6.50%	7.90%	0.0045%
Advance Auto Parts Inc	AAP	11,463.57	0.05%	0.15%	14.00%	14.16%	0.0071%
Apple Inc	AAPL	827,744.70	3.61%	1.71%	12.50%	14.32%	0.5165%
AbbVie Inc	ABBV	128,074.00	0.56%	5.27%	12.50%	18.10%	0.1010%
AmerisourceBergen Corp	ABC	16,905.83	0.07%	2.04%	8.00%	10.12%	0.0075%
ABIOMED Inc	ABMD	11,834.03	0.05%	0.00%	24.50%	24.50%	0.0126%
Abbott Laboratories	ABT	133,425.00	0.58%	1.69%	10.00%	11.77%	0.0685%
Accenture PLC	ACN	113,836.80	0.50%	1.72%	9.00%	10.80%	0.0536%
Adobe Inc	ADBE	133,972.20	0.58%	0.00%	19.50%	19.50%	0.1139%
Analog Devices Inc	ADI	36,506.50	0.16%	2.19%	10.00%	12.30%	0.0196%
Archer-Daniels-Midland Co	ADM	21,957.60	0.10%	3.57%	9.50%	13.24%	0.0127%
Automatic Data Processing Inc	ADP	70,172.12	0.31%	2.15%	13.50%	15.80%	0.0483%
Alliance Data Systems Corp	ADS	7,422.94	0.03%	1.78%	12.00%	13.89%	0.0045%
Autodesk Inc	ADSK	37,197.08	N/A	0.00%	N/A	N/A	N/A
Ameren Corp	AEE	18,594.38	0.08%	2.59%	6.50%	9.17%	0.0074%
American Electric Power Co Inc	AEP	43,510.48	0.19%	3.13%	4.00%	7.19%	0.0136%
AES Corp/VA	AES	11,143.44	N/A	3.28%	N/A	N/A	N/A
Aflac Inc	AFL	38,912.33	0.17%	2.12%	7.50%	9.70%	0.0165%
Allergan PLC	AGN	45,249.52	0.20%	2.14%	4.00%	6.18%	0.0122%
American International Group Inc	AIG	45,236.99	N/A	2.45%	N/A	N/A	N/A
Apartment Investment & Management Co	AIV	7,781.02	0.03%	3.06%	-3.00%	0.01%	0.0000%
Assurant Inc	AIZ	6,203.90	0.03%	2.40%	6.50%	8.98%	0.0024%
Arthur J Gallagher & Co	AJG	15,592.99	0.07%	2.04%	15.50%	17.70%	0.0120%
Akamai Technologies Inc	AKAM	12,713.99	0.06%	0.00%	18.00%	18.00%	0.0100%
Albemarle Corp	ALB	7,028.72	0.03%	2.22%	5.50%	7.78%	0.0024%
Align Technology Inc	ALGN	24,628.00	0.11%	0.00%	27.00%	27.00%	0.0290%
Alaska Air Group Inc	ALK	7,578.21	0.03%	2.28%	5.50%	7.84%	0.0026%
Allstate Corp/The	ALL	31,865.36	0.14%	2.08%	11.50%	13.70%	0.0190%
Allegion PLC	ALLE	9,324.52	0.04%	1.09%	8.50%	9.64%	0.0039%
Alexion Pharmaceuticals Inc	ALXN	28,098.99	0.12%	0.00%	21.00%	21.00%	0.0257%
Applied Materials Inc	AMAT	37,383.84	0.16%	2.10%	8.50%	10.69%	0.0174%
Advanced Micro Devices Inc	AMD	28,521.52	0.12%	0.00%	30.50%	30.50%	0.0379%
AMETEK Inc	AME	19,336.87	0.08%	0.66%	10.50%	11.19%	0.0094%
Affiliated Managers Group Inc	AMG	5,161.46	0.02%	1.49%	10.00%	11.56%	0.0026%
Amgen Inc	AMGN	105,744.40	0.46%	3.40%	7.00%	10.52%	0.0485%
Ameriprise Financial Inc	AMP	19,370.80	0.08%	2.69%	13.00%	15.86%	0.0134%
American Tower Corp	AMT	89,684.15	0.39%	2.01%	9.50%	11.61%	0.0454%
Amazon.com Inc	AMZN	893,216.10	3.89%	0.00%	39.00%	39.00%	1.5183%
Arista Networks Inc	ANET	19,448.12	0.08%	0.00%	11.00%	11.00%	0.0093%
ANSYS Inc	ANSS	15,107.26	0.07%	0.00%	11.00%	11.00%	0.0072%
Anthem Inc	ANTM	71,472.34	0.31%	1.15%	18.00%	19.25%	0.0600%
Aon PLC	AON	42,940.43	0.19%	0.99%	10.00%	11.04%	0.0207%
AO Smith Corp	AOS	7,304.79	0.03%	2.01%	9.50%	11.61%	0.0037%
Apache Corp	APA	10,397.67	0.05%	3.62%	50.00%	54.53%	0.0247%
Anadarko Petroleum Corp	APC	35,443.79	N/A	1.66%	N/A	N/A	N/A
Air Products & Chemicals Inc	APD	44,953.36	0.20%	2.27%	9.00%	11.37%	0.0223%
Amphenol Corp	APH	26,668.02	0.12%	1.03%	10.50%	11.58%	0.0135%
Aptiv PLC	APTIV	17,460.93	0.08%	1.30%	11.00%	12.37%	0.0094%
Alexandria Real Estate Equities Inc	ARE	15,991.28	N/A	2.69%	N/A	N/A	N/A
Arconic Inc	ARNC	9,964.05	N/A	0.36%	N/A	N/A	N/A
Atmos Energy Corp	ATO	12,091.36	0.05%	2.14%	7.50%	9.72%	0.0051%
Activision Blizzard Inc	ATVI	32,314.34	0.14%	0.88%	9.50%	10.42%	0.0147%
AvalonBay Communities Inc	AVB	28,135.27	0.12%	3.03%	4.00%	7.09%	0.0087%
Broadcom Inc	AVGO	102,995.60	0.45%	4.08%	33.50%	38.26%	0.1718%
Avery Dennison Corp	AVY	8,413.74	0.04%	2.39%	11.50%	14.03%	0.0051%
American Water Works Co Inc	AWK	20,455.73	0.09%	1.77%	9.50%	11.35%	0.0101%
American Express Co	AXP	99,125.91	0.43%	1.44%	10.00%	11.51%	0.0497%
AutoZone Inc	AZO	25,827.04	0.11%	0.00%	13.50%	13.50%	0.0152%
Boeing Co/The	BA	197,503.70	0.86%	2.35%	17.50%	20.06%	0.1726%
Bank of America Corp	BAC	268,419.30	1.17%	2.38%	10.50%	13.00%	0.1522%
Baxter International Inc	BAX	38,268.90	0.17%	1.17%	10.50%	11.73%	0.0196%
BB&T Corp	BBT	36,848.41	0.16%	3.66%	8.00%	11.81%	0.0190%
Best Buy Co Inc	BBY	17,903.04	0.08%	3.04%	10.50%	13.70%	0.0107%
Becton Dickinson and Co	BDX	62,960.74	0.27%	1.33%	10.00%	11.40%	0.0313%
Franklin Resources Inc	BEN	16,835.80	0.07%	3.32%	7.50%	10.94%	0.0080%
Brown-Forman Corp	BF/B	25,137.11	0.11%	1.28%	13.50%	14.87%	0.0163%
Baker Hughes a GE Co	BHGE	11,829.78	N/A	3.12%	N/A	N/A	N/A
Biogen Inc	BIIB	44,422.82	0.19%	0.00%	5.50%	5.50%	0.0106%
Bank of New York Mellon Corp/The	BK	43,318.07	0.19%	2.48%	8.50%	11.09%	0.0209%
Booking Holdings Inc	BKNG	75,864.27	0.33%	0.00%	11.50%	11.50%	0.0380%
BlackRock Inc	BLK	67,036.01	0.29%	3.04%	9.50%	12.68%	0.0371%
Ball Corp	BLL	20,419.33	0.09%	0.98%	21.00%	22.08%	0.0197%
Bristol-Myers Squibb Co	BMJ	77,368.90	0.34%	3.47%	11.50%	15.17%	0.0512%
Broadridge Financial Solutions Inc	BR	14,236.45	0.06%	1.75%	11.00%	12.85%	0.0080%
Berkshire Hathaway Inc	BRK/B	-	N/A	0.00%	N/A	N/A	N/A

Company	Ticker	[4]	[5]	[6]	[7]	[8]	[9]
		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Boston Scientific Corp	BSX	52,323.36	0.23%	0.00%	16.00%	16.00%	0.0365%
BorgWarner Inc	BWA	7,351.73	0.03%	1.92%	8.00%	10.00%	0.0032%
Boston Properties Inc	BXP	20,306.08	0.09%	2.93%	4.50%	7.50%	0.0066%
Citigroup Inc	C	147,766.70	0.64%	3.10%	10.00%	13.26%	0.0854%
Conagra Brands Inc	CAG	14,038.08	0.06%	3.05%	5.50%	8.63%	0.0053%
Cardinal Health Inc	CAH	13,681.18	0.06%	4.18%	17.00%	21.54%	0.0128%
Caterpillar Inc	CAT	69,896.28	0.30%	3.37%	13.00%	16.59%	0.0505%
Chubb Ltd	CB	67,534.99	0.29%	2.04%	8.50%	10.63%	0.0313%
Cboe Global Markets Inc	CBOE	11,856.33	0.05%	1.17%	14.50%	15.75%	0.0081%
CBRE Group Inc	CBRE	15,922.20	0.07%	0.00%	10.50%	10.50%	0.0073%
CBS Corp	CBS	17,918.34	0.08%	1.50%	9.50%	11.07%	0.0086%
Crown Castle International Corp	CCI	53,119.04	0.23%	3.76%	10.50%	14.46%	0.0335%
Carnival Corp	CCL	27,203.74	0.12%	3.87%	10.00%	14.06%	0.0167%
Cadence Design Systems Inc	CDNS	17,907.23	0.08%	0.00%	12.50%	12.50%	0.0098%
Celanese Corp	CE	12,486.47	0.05%	2.52%	11.00%	13.66%	0.0074%
Celgene Corp	CELG	67,400.02	0.29%	0.00%	13.50%	13.50%	0.0397%
Cerner Corp	CERN	22,731.48	0.10%	0.00%	7.50%	7.50%	0.0074%
CF Industries Holdings Inc	CF	8,971.72	N/A	3.01%	N/A	N/A	N/A
Citizens Financial Group Inc	CFG	15,687.20	0.07%	3.82%	12.00%	16.05%	0.0110%
Church & Dwight Co Inc	CHD	18,499.24	0.08%	1.21%	8.50%	9.76%	0.0079%
CH Robinson Worldwide Inc	CHRW	11,052.42	0.05%	2.48%	9.00%	11.59%	0.0056%
Charter Communications Inc	CHTR	83,891.94	0.37%	0.00%	16.00%	16.00%	0.0585%
Cigna Corp	CI	36,532.54	0.16%	0.03%	15.50%	15.53%	0.0247%
Cincinnati Financial Corp	CINF	16,153.02	0.07%	2.26%	7.00%	9.34%	0.0066%
Colgate-Palmolive Co	CL	61,598.45	0.27%	2.40%	6.00%	8.47%	0.0227%
Clorox Co/The	CLX	19,295.74	0.08%	2.81%	6.50%	9.40%	0.0079%
Comerica Inc	CMA	11,135.70	0.05%	3.74%	15.50%	19.53%	0.0095%
Comcast Corp	CMCSA	193,930.80	0.85%	1.97%	12.00%	14.09%	0.1191%
CME Group Inc	CME	66,690.59	0.29%	1.61%	3.00%	4.63%	0.0135%
Chipotle Mexican Grill Inc	CMG	18,493.90	0.08%	0.00%	26.00%	26.00%	0.0210%
Cummins Inc	CMI	25,081.88	0.11%	2.86%	8.00%	10.97%	0.0120%
CMS Energy Corp	CMS	16,270.20	0.07%	2.72%	7.00%	9.82%	0.0070%
Centene Corp	CNC	22,905.36	0.10%	0.00%	15.50%	15.50%	0.0155%
CenterPoint Energy Inc	CNP	14,745.21	0.06%	3.94%	12.50%	16.69%	0.0107%
Capital One Financial Corp	COF	41,911.53	0.18%	1.79%	6.00%	7.84%	0.0143%
Cabot Oil & Gas Corp	COG	10,842.43	0.05%	1.41%	50.00%	51.76%	0.0245%
Cooper Cos Inc/The	COO	14,392.15	0.06%	0.02%	14.50%	14.52%	0.0091%
ConocoPhillips	COP	67,245.47	0.29%	2.05%	37.00%	39.43%	0.1156%
Costco Wholesale Corp	COST	109,350.50	0.48%	1.05%	8.50%	9.59%	0.0457%
Coty Inc	COTY	9,850.85	0.04%	3.81%	9.00%	12.98%	0.0056%
Campbell Soup Co	CPB	11,471.11	0.05%	3.67%	1.00%	4.69%	0.0023%
Capri Holdings Ltd	CPRI	5,855.40	0.03%	0.00%	7.50%	7.50%	0.0019%
Capart Inc	CPRT	15,855.47	0.07%	0.00%	12.50%	12.50%	0.0086%
salesforce.com Inc	CRM	117,588.10	0.51%	0.00%	57.00%	57.00%	0.2921%
Cisco Systems Inc	CSCO	233,721.50	1.02%	2.58%	8.00%	10.68%	0.1088%
CSX Corp	CSX	65,984.19	0.29%	1.27%	14.50%	15.86%	0.0456%
Cintas Corp	CTAS	23,525.76	0.10%	1.00%	16.00%	17.08%	0.0175%
CenturyLink Inc	CTL	10,434.41	0.05%	10.35%	0.50%	10.88%	0.0049%
Cognizant Technology Solutions Corp	CTSH	34,754.52	0.15%	1.31%	5.00%	6.34%	0.0096%
Citrix Systems Inc	CTXS	12,555.56	0.05%	1.47%	7.00%	8.52%	0.0047%
CVS Health Corp	CVS	68,521.42	0.30%	3.79%	8.00%	11.94%	0.0357%
Chevron Corp	CVX	224,287.50	0.98%	4.04%	16.50%	20.87%	0.2041%
Concho Resources Inc	CXO	20,635.72	0.09%	0.49%	21.00%	21.54%	0.0194%
Dominion Energy Inc	D	62,596.10	0.27%	4.77%	6.50%	11.43%	0.0312%
Delta Air Lines Inc	DAL	35,369.79	0.15%	2.85%	9.50%	12.49%	0.0192%
Deere & Co	DE	43,464.74	0.19%	2.23%	14.00%	16.39%	0.0310%
Discover Financial Services	DFS	24,908.30	0.11%	2.09%	7.50%	9.67%	0.0105%
Dollar General Corp	DG	31,714.33	0.14%	1.06%	12.50%	13.63%	0.0188%
Quest Diagnostics Inc	DGX	13,083.76	0.06%	2.17%	8.50%	10.76%	0.0061%
DR Horton Inc	DHI	16,276.06	0.07%	1.42%	5.00%	6.46%	0.0046%
Danaher Corp	DHR	94,220.76	0.41%	0.52%	12.50%	13.05%	0.0536%
Walt Disney Co/The	DIS	236,126.70	1.03%	1.33%	6.50%	7.87%	0.0810%
Discovery Inc	DISCA	14,298.68	0.06%	0.00%	15.00%	15.00%	0.0093%
DISH Network Corp	DISH	16,036.32	0.07%	0.00%	-2.00%	-2.00%	-0.0014%
Digital Realty Trust Inc	DLR	24,514.63	0.11%	3.62%	5.00%	8.71%	0.0093%
Dollar Tree Inc	DLTR	23,192.56	0.10%	0.00%	15.50%	15.50%	0.0157%
Dover Corp	DOV	13,235.11	0.06%	2.11%	11.00%	13.23%	0.0076%
Dow Inc	DOW	-	N/A	5.85%	N/A	N/A	N/A
Duke Realty Corp	DRE	10,950.97	0.05%	2.90%	7.00%	10.00%	0.0048%
Darden Restaurants Inc	DRI	14,850.58	0.06%	2.57%	12.00%	14.72%	0.0095%
DTE Energy Co	DTE	23,694.80	0.10%	3.02%	5.00%	8.10%	0.0084%
Duke Energy Corp	DUK	64,719.20	0.28%	4.26%	6.00%	10.39%	0.0293%
DaVita Inc	DVA	8,011.97	0.03%	0.00%	9.50%	9.50%	0.0033%
Devon Energy Corp	DVN	11,289.13	0.05%	1.33%	26.50%	28.01%	0.0138%
DowDuPont Inc	DWDP	69,500.95	N/A	0.00%	N/A	N/A	N/A
DXC Technology Co	DXC	14,028.21	0.06%	1.46%	14.50%	16.07%	0.0098%
Electronic Arts Inc	EA	27,725.11	0.12%	0.00%	10.00%	10.00%	0.0121%
eBay Inc	EBAY	31,492.20	0.14%	1.59%	10.00%	11.67%	0.0160%
Ecolab Inc	ECL	52,590.74	0.23%	1.01%	10.00%	11.06%	0.0254%
Consolidated Edison Inc	ED	28,900.26	0.13%	3.41%	3.00%	6.46%	0.0081%
Equifax Inc	EFX	14,624.05	0.06%	1.29%	8.00%	9.34%	0.0060%
Edison International	EIX	20,102.54	0.09%	3.97%	15.00%	19.27%	0.0169%
Estee Lauder Cos Inc/The	EL	59,884.29	0.26%	1.05%	12.50%	13.62%	0.0355%
Eastman Chemical Co	EMN	9,479.47	0.04%	3.62%	8.00%	11.76%	0.0049%
Emerson Electric Co	EMR	39,438.26	0.17%	3.14%	12.00%	15.33%	0.0263%
EOG Resources Inc	EOG	51,560.99	0.22%	1.29%	34.50%	36.01%	0.0809%
Equinix Inc	EQIX	41,720.58	0.18%	2.02%	25.00%	27.27%	0.0496%
Equity Residential	EQR	28,377.87	0.12%	2.97%	-12.00%	-9.21%	-0.0114%

Company	Ticker	[4]	[5]	[6]	[7]	[8]	[9]
		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Eversource Energy	ES	23,750.25	0.10%	2.90%	5.50%	8.48%	0.0088%
Essex Property Trust Inc	ESS	19,116.69	0.08%	2.73%	2.00%	4.76%	0.0040%
E*TRADE Financial Corp	ETFC	11,447.23	0.05%	1.21%	17.50%	18.82%	0.0094%
Eaton Corp PLC	ETN	32,591.39	0.14%	3.69%	9.00%	12.86%	0.0183%
Entergy Corp	ETR	18,868.16	N/A	3.70%	N/A	N/A	N/A
Everygy Inc	EVRG	14,553.23	N/A	3.26%	N/A	N/A	N/A
Edwards Lifesciences Corp	EW	35,421.75	0.15%	0.00%	15.00%	15.00%	0.0232%
Exelon Corp	EXC	48,219.86	0.21%	2.96%	10.50%	13.62%	0.0286%
Expeditors International of Washington I	EXPD	12,303.73	0.05%	1.40%	7.50%	8.95%	0.0048%
Expedia Group Inc	EXPE	17,319.05	0.08%	1.10%	24.00%	25.23%	0.0190%
Extra Space Storage Inc	EXR	13,443.69	0.06%	3.42%	6.00%	9.52%	0.0056%
Ford Motor Co	F	38,599.14	0.17%	6.09%	3.50%	9.70%	0.0163%
Diamondback Energy Inc	FANG	17,089.32	0.07%	0.72%	17.00%	17.78%	0.0132%
Fastenal Co	FAST	17,943.15	0.08%	2.74%	9.50%	12.37%	0.0097%
Facebook Inc	FB	516,291.20	2.25%	0.00%	16.50%	16.50%	0.3713%
Fortune Brands Home & Security Inc	FBHS	9,502.13	0.04%	1.68%	11.50%	13.28%	0.0055%
Freepoint-McMoRan Inc	FCX	14,437.45	0.06%	2.01%	22.50%	24.74%	0.0156%
FedEx Corp	FDX	41,845.74	0.18%	1.78%	7.50%	9.35%	0.0170%
FirstEnergy Corp	FE	22,931.72	0.10%	3.62%	8.00%	11.76%	0.0118%
F5 Networks Inc	FFIV	8,202.09	0.04%	0.00%	12.00%	12.00%	0.0043%
Fidelity National Information Services I	FIS	38,892.43	0.17%	1.16%	18.00%	19.26%	0.0327%
Fiserv Inc	FISV	34,208.56	0.15%	0.00%	10.50%	10.50%	0.0157%
Fifth Third Bancorp	FITB	19,978.75	0.09%	3.48%	7.00%	10.60%	0.0092%
Foot Locker Inc	FL	5,966.25	0.03%	2.88%	12.00%	15.05%	0.0039%
FLIR Systems Inc	FLIR	6,656.63	0.03%	1.40%	12.00%	13.48%	0.0039%
Fluor Corp	FLR	4,042.14	0.02%	2.91%	17.00%	20.16%	0.0036%
Flowerserve Corp	FLS	6,369.82	0.03%	1.56%	13.50%	15.17%	0.0042%
FleetCor Technologies Inc	FLT	22,984.02	0.10%	0.00%	12.50%	12.50%	0.0125%
FMC Corp	FMC	9,439.57	0.04%	2.31%	15.00%	17.48%	0.0072%
Fox Corp	FOXA	N/A	N/A	0.00%	N/A	N/A	N/A
First Republic Bank/CA	FRC	16,338.49	0.07%	0.77%	10.50%	11.31%	0.0081%
Federal Realty Investment Trust	FRT	9,664.09	0.04%	3.12%	4.00%	7.18%	0.0030%
TechnipFMC PLC	FTI	N/A	N/A	0.00%	N/A	N/A	N/A
Fortinet Inc	FTNT	13,227.54	0.06%	0.00%	25.00%	25.00%	0.0144%
Fortive Corp	FTV	26,297.50	N/A	0.36%	N/A	N/A	N/A
General Dynamics Corp	GD	47,253.68	0.21%	2.49%	6.00%	8.56%	0.0176%
General Electric Co	GE	83,193.28	0.36%	0.42%	3.50%	3.93%	0.0142%
Gilead Sciences Inc	GILD	85,574.58	0.37%	3.75%	-5.50%	-1.85%	-0.0069%
General Mills Inc	GIS	31,983.20	0.14%	3.71%	4.00%	7.78%	0.0109%
Corning Inc	GLW	23,170.66	0.10%	2.70%	16.00%	18.92%	0.0191%
General Motors Co	GM	49,828.14	0.22%	4.44%	2.50%	7.00%	0.0152%
Alphabet Inc	GOOGL	N/A	N/A	0.00%	N/A	N/A	N/A
Genuine Parts Co	GPC	14,349.33	0.06%	3.11%	8.50%	11.74%	0.0073%
Global Payments Inc	GPN	23,248.95	0.10%	0.03%	17.50%	17.53%	0.0178%
Gap Inc/The	GPS	8,036.28	0.04%	4.56%	6.00%	10.70%	0.0037%
Garmin Ltd	GRMN	14,675.17	0.06%	2.95%	10.00%	13.10%	0.0084%
Goldman Sachs Group Inc/The	GS	70,697.18	0.31%	1.77%	8.50%	10.35%	0.0319%
WW Grainger Inc	GWW	14,466.45	0.06%	2.21%	8.50%	10.80%	0.0068%
Halliburton Co	HAL	20,500.72	0.09%	3.06%	24.50%	27.93%	0.0250%
Hasbro Inc	HAS	12,325.86	0.05%	2.78%	7.50%	10.38%	0.0056%
Huntington Bancshares Inc/OH	HBAN	13,666.51	0.06%	4.44%	12.50%	17.22%	0.0103%
Hanesbrands Inc	HBI	5,743.77	0.03%	3.78%	4.00%	7.86%	0.0020%
HCA Healthcare Inc	HCA	43,382.46	0.19%	1.26%	12.00%	13.34%	0.0252%
HCP Inc	HCP	14,923.37	0.07%	4.66%	32.50%	37.92%	0.0247%
Home Depot Inc/The	HD	212,160.00	0.92%	2.83%	11.00%	13.99%	0.1293%
Hess Corp	HES	17,955.62	N/A	1.70%	N/A	N/A	N/A
HollyFrontier Corp	HFC	6,994.53	0.03%	3.35%	18.50%	22.16%	0.0068%
Hartford Financial Services Group Inc/Th	HIG	19,124.60	0.08%	2.25%	11.00%	13.37%	0.0111%
Huntington Ingalls Industries Inc	HLI	8,499.71	0.04%	1.68%	7.00%	8.74%	0.0032%
Hilton Worldwide Holdings Inc	HLT	26,447.34	0.12%	0.66%	17.00%	17.72%	0.0204%
Harley-Davidson Inc	HOG	5,449.84	0.02%	4.38%	8.50%	13.07%	0.0031%
Hologic Inc	HOLX	11,975.89	0.05%	0.00%	18.50%	18.50%	0.0097%
Honeywell International Inc	HON	121,125.40	0.53%	1.97%	8.00%	10.05%	0.0531%
Helmerich & Payne Inc	HP	5,605.18	N/A	5.54%	N/A	N/A	N/A
Hewlett Packard Enterprise Co	HPE	19,732.96	0.09%	3.28%	5.50%	8.87%	0.0076%
HP Inc	HPQ	29,540.55	0.13%	3.39%	8.00%	11.53%	0.0148%
H&R Block Inc	HRB	5,581.22	0.02%	3.82%	7.00%	10.95%	0.0027%
Hormel Foods Corp	HRL	20,902.07	0.09%	2.20%	9.00%	11.30%	0.0103%
Harris Corp	HRS	22,261.30	0.10%	1.47%	11.50%	13.05%	0.0127%
Henry Schein Inc	HSIC	10,082.56	0.04%	0.00%	7.00%	7.00%	0.0031%
Host Hotels & Resorts Inc	HST	14,146.37	0.06%	4.18%	4.00%	8.26%	0.0051%
Hershey Co/The	HSY	27,167.28	0.12%	2.22%	6.00%	8.29%	0.0098%
Humana Inc	HUM	35,179.64	0.15%	0.85%	13.50%	14.41%	0.0221%
International Business Machines Corp	IBM	118,155.30	0.51%	4.90%	2.00%	6.95%	0.0358%
Intercontinental Exchange Inc	ICE	45,906.25	0.20%	1.35%	10.50%	11.92%	0.0239%
IDEXX Laboratories Inc	IDXX	21,820.97	0.10%	0.00%	13.00%	13.00%	0.0124%
International Flavors & Fragrances Inc	IFF	14,454.93	0.06%	2.27%	8.50%	10.87%	0.0068%
Illumina Inc	ILMN	45,418.59	0.20%	0.00%	14.00%	14.00%	0.0277%
Incyte Corp	INCY	17,252.84	N/A	0.00%	N/A	N/A	N/A
IHS Markit Ltd	INFO	23,086.67	0.10%	0.00%	17.00%	17.00%	0.0171%
Intel Corp	INTC	199,360.80	0.87%	2.83%	12.50%	15.51%	0.1347%
Intuit Inc	INTU	62,579.89	0.27%	0.78%	13.00%	13.83%	0.0377%
International Paper Co	IP	17,304.63	0.08%	4.61%	12.00%	16.89%	0.0127%
Interpublic Group of Cos Inc/The	IPG	8,611.62	0.04%	4.36%	11.00%	15.60%	0.0059%
IPG Photonics Corp	IPGP	6,930.06	0.03%	0.00%	11.00%	11.00%	0.0033%
IQVIA Holdings Inc	IQV	26,511.57	0.12%	0.00%	12.50%	12.50%	0.0144%
Ingersoll-Rand PLC	IR	29,122.24	0.13%	1.76%	12.00%	13.87%	0.0176%
Iron Mountain Inc	IRM	9,101.12	0.04%	7.69%	8.50%	16.52%	0.0066%

		[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
Intuitive Surgical Inc	ISRG	54,674.21	0.24%	0.00%	14.00%	14.00%	0.0334%
Gartner Inc	IT	13,757.48	0.06%	0.00%	14.00%	14.00%	0.0084%
Illinois Tool Works Inc	ITW	47,661.29	0.21%	2.73%	10.00%	12.87%	0.0267%
Invesco Ltd	IVZ	8,105.35	0.04%	6.13%	7.00%	13.34%	0.0047%
JB Hunt Transport Services Inc	JBHT	9,898.51	0.04%	1.16%	10.00%	11.22%	0.0048%
Johnson Controls International plc	JCI	34,809.16	0.15%	2.68%	2.00%	4.71%	0.0071%
Jacobs Engineering Group Inc	JEC	10,259.69	0.04%	0.90%	12.50%	13.46%	0.0060%
Jefferies Financial Group Inc	JEF	5,456.15	0.02%	2.73%	18.50%	21.48%	0.0051%
Jack Henry & Associates Inc	JKHY	10,188.34	0.04%	1.21%	10.50%	11.77%	0.0052%
Johnson & Johnson	JNJ	371,231.40	1.62%	2.75%	12.00%	14.92%	0.2413%
Juniper Networks Inc	JNPR	8,852.80	0.04%	3.02%	5.00%	8.10%	0.0031%
JPMorgan Chase & Co	JPM	355,879.20	1.55%	3.00%	8.50%	11.63%	0.1804%
Nordstrom Inc	JWN	5,328.46	0.02%	4.38%	6.50%	11.02%	0.0026%
Kellogg Co	K	19,410.60	0.08%	3.99%	4.50%	8.58%	0.0073%
KeyCorp	KEY	16,737.83	0.07%	4.42%	10.50%	15.15%	0.0111%
Keysight Technologies Inc	KEYS	13,821.92	0.06%	0.00%	16.00%	16.00%	0.0096%
Kraft Heinz Co/The	KHC	38,337.55	0.17%	5.15%	3.50%	8.74%	0.0146%
Kimco Realty Corp	KIM	7,589.22	0.03%	6.33%	5.00%	11.49%	0.0038%
KLA-Tencor Corp	KLAC	16,894.14	0.07%	2.87%	11.50%	14.54%	0.0107%
Kimberly-Clark Corp	KMB	45,006.20	0.20%	3.15%	7.00%	10.26%	0.0201%
Kinder Morgan Inc/DE	KMI	45,157.98	0.20%	5.01%	35.50%	41.40%	0.0815%
CarMax Inc	KMX	13,189.65	0.06%	0.00%	11.50%	11.50%	0.0066%
Coca-Cola Co/The	KO	212,759.80	0.93%	3.21%	6.50%	9.81%	0.0910%
Kroger Co/The	KR	18,776.94	0.08%	2.64%	4.50%	7.20%	0.0059%
Kohl's Corp	KSS	8,439.75	0.04%	5.24%	11.00%	16.53%	0.0061%
Kansas City Southern	KSU	12,159.24	0.05%	1.19%	12.00%	13.26%	0.0070%
Loews Corp	L	16,192.21	0.07%	0.48%	12.00%	12.51%	0.0088%
L Brands Inc	LB	6,671.50	0.03%	4.95%	-4.00%	0.85%	0.0002%
Leggett & Platt Inc	LEG	4,839.89	0.02%	4.34%	9.00%	13.54%	0.0029%
Lennar Corp	LEN	16,507.73	0.07%	0.31%	9.00%	9.32%	0.0067%
Laboratory Corp of America Holdings	LH	16,407.89	0.07%	0.00%	8.50%	8.50%	0.0061%
Linde PLC	LIN	100,625.40	N/A	2.03%	N/A	N/A	N/A
LKQ Corp	LKQ	8,314.03	0.04%	0.00%	10.50%	10.50%	0.0038%
L3 Technologies Inc	LLL	19,355.40	0.08%	1.40%	7.00%	8.45%	0.0071%
Eli Lilly & Co	LLY	113,402.80	0.49%	2.21%	11.50%	13.84%	0.0684%
Lockheed Martin Corp	LMT	96,083.04	0.42%	2.65%	14.00%	16.84%	0.0705%
Lincoln National Corp	LNC	12,829.32	0.06%	2.44%	9.00%	11.55%	0.0065%
Alliant Energy Corp	LNT	11,577.71	0.05%	2.91%	6.50%	9.50%	0.0048%
Lowe's Cos Inc	LOW	75,934.80	0.33%	2.22%	12.00%	14.35%	0.0475%
Lam Research Corp	LRCX	27,796.36	0.12%	2.37%	10.50%	12.99%	0.0157%
Southwest Airlines Co	LUV	27,674.59	0.12%	1.41%	11.00%	12.49%	0.0151%
Lamb Weston Holdings Inc	LW	9,233.84	N/A	1.27%	N/A	N/A	N/A
LyondellBasell Industries NV	LYB	29,548.57	0.13%	5.09%	5.50%	10.73%	0.0138%
Macy's Inc	M	6,540.95	0.03%	7.10%	3.50%	10.72%	0.0031%
Mastercard Inc	MA	255,723.50	1.11%	0.53%	16.00%	16.57%	0.1847%
Mid-America Apartment Communities Inc	MAA	13,088.64	0.06%	3.34%	-3.00%	0.29%	0.0002%
Macerich Co/The	MAC	5,687.01	0.02%	7.55%	3.00%	10.66%	0.0026%
Marriott International Inc/MD	MAR	41,260.67	0.18%	1.55%	12.50%	14.15%	0.0254%
Masco Corp	MAS	10,831.96	0.05%	1.36%	10.50%	11.93%	0.0056%
Mattel Inc	MAT	3,786.84	0.02%	0.00%	18.50%	18.50%	0.0031%
McDonald's Corp	MCD	151,924.70	0.66%	2.41%	8.50%	11.01%	0.0729%
Microchip Technology Inc	MCHP	19,333.81	0.08%	1.85%	13.00%	14.97%	0.0126%
McKesson Corp	MCK	24,785.28	0.11%	1.21%	9.00%	10.26%	0.0111%
Moody's Corp	MCO	36,292.91	0.16%	1.08%	11.00%	12.14%	0.0192%
Mondelez International Inc	MDLZ	75,138.84	0.33%	2.11%	8.50%	10.70%	0.0350%
Medtronic PLC	MDT	122,851.90	0.54%	2.28%	7.50%	9.87%	0.0528%
MetLife Inc	MET	45,294.46	0.20%	3.73%	7.50%	11.37%	0.0224%
MGM Resorts International	MGM	13,627.65	0.06%	2.05%	22.50%	24.78%	0.0147%
Mohawk Industries Inc	MHK	10,262.92	0.04%	0.00%	4.00%	4.00%	0.0018%
McCormick & Co Inc/MD	MKC	20,628.89	0.09%	1.48%	8.50%	10.04%	0.0090%
Martin Marietta Materials Inc	MLM	13,315.62	0.06%	0.93%	10.00%	10.98%	0.0064%
Marsh & McLennan Cos Inc	MMC	48,770.06	0.21%	1.89%	9.50%	11.48%	0.0244%
3M Co	MMM	95,611.95	0.42%	3.47%	8.50%	12.12%	0.0505%
Monster Beverage Corp	MNST	34,368.48	0.15%	0.00%	13.50%	13.50%	0.0202%
Altria Group Inc	MO	98,847.32	0.43%	6.06%	8.50%	14.82%	0.0638%
Mosaic Co/The	MOS	8,340.74	0.04%	0.97%	22.00%	23.08%	0.0084%
Marathon Petroleum Corp	MPC	33,443.38	0.15%	4.23%	11.50%	15.97%	0.0233%
Merck & Co Inc	MRK	209,280.40	0.91%	2.72%	8.50%	11.34%	0.1034%
Marathon Oil Corp	MRO	11,939.20	N/A	1.79%	N/A	N/A	N/A
Morgan Stanley	MS	72,982.29	0.32%	2.81%	10.00%	12.95%	0.0412%
MSCI Inc	MSCI	18,431.21	0.08%	1.16%	18.50%	19.77%	0.0159%
Microsoft Corp	MSFT	967,295.80	4.22%	1.46%	13.50%	15.06%	0.6349%
Motorola Solutions Inc	MSI	24,799.11	0.11%	1.52%	12.50%	14.12%	0.0153%
M&T Bank Corp	MTB	22,542.50	0.10%	2.46%	9.50%	12.08%	0.0119%
Mettler-Toledo International Inc	MTD	17,836.58	0.08%	0.00%	10.00%	10.00%	0.0078%
Micron Technology Inc	MU	39,839.96	0.17%	0.00%	11.50%	11.50%	0.0200%
Maxim Integrated Products Inc	MXIM	14,672.81	0.06%	3.42%	8.00%	11.56%	0.0074%
Mylan NV	MYL	9,900.38	0.04%	0.00%	6.50%	6.50%	0.0028%
Noble Energy Inc	NBL	10,514.91	N/A	2.21%	N/A	N/A	N/A
Norwegian Cruise Line Holdings Ltd	NCLH	11,964.69	0.05%	0.00%	16.00%	16.00%	0.0083%
Nasdaq Inc	NDAQ	14,916.41	0.07%	2.09%	8.00%	10.17%	0.0066%
NextEra Energy Inc	NEE	97,490.87	0.42%	2.54%	10.00%	12.67%	0.0538%
Newmont Goldcorp Corp	NEM	16,990.68	0.07%	1.77%	2.50%	4.29%	0.0032%
Netflix Inc	NFLX	153,983.40	0.67%	0.00%	32.00%	32.00%	0.2148%
NiSource Inc	NI	10,615.67	0.05%	2.81%	12.50%	15.49%	0.0072%
NIKE Inc	NKE	129,992.70	0.57%	1.07%	14.50%	15.65%	0.0887%
Nektar Therapeutics	NKTR	5,761.72	N/A	0.00%	N/A	N/A	N/A
Nielsen Holdings PLC	NLSN	8,322.11	0.04%	5.98%	45.50%	52.84%	0.0192%

		[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
Northrop Grumman Corp	NOC	52,846.11	0.23%	1.70%	9.50%	11.28%	0.0260%
National Oilwell Varco Inc	NOV	8,477.55	N/A	0.91%	N/A	N/A	N/A
NRG Energy Inc	NRG	9,505.63	N/A	0.34%	N/A	N/A	N/A
Norfolk Southern Corp	NSC	53,180.11	0.23%	1.72%	15.00%	16.85%	0.0391%
NetApp Inc	NTAP	15,230.02	0.07%	2.60%	18.50%	21.34%	0.0142%
Northern Trust Corp	NTRS	19,619.23	0.09%	2.66%	10.00%	12.79%	0.0109%
Nucor Corp	NUE	15,662.95	0.07%	3.11%	21.50%	24.94%	0.0170%
NVIDIA Corp	NVDA	89,717.88	0.39%	0.43%	18.00%	18.47%	0.0722%
Newell Brands Inc	NWL	6,409.97	0.03%	6.07%	5.50%	11.74%	0.0033%
News Corp	NWSA	6,898.04	N/A	1.70%	N/A	N/A	N/A
Realty Income Corp	O	20,059.82	0.09%	3.90%	4.50%	8.49%	0.0074%
ONEOK Inc	OKE	26,965.15	0.12%	5.62%	16.00%	22.07%	0.0259%
Omnicom Group Inc	OMC	17,435.10	0.08%	3.35%	6.50%	9.96%	0.0076%
Oracle Corp	ORCL	182,754.50	0.80%	1.81%	10.00%	11.90%	0.0948%
O'Reilly Automotive Inc	ORLY	28,654.85	0.12%	0.00%	12.00%	12.00%	0.0150%
Occidental Petroleum Corp	OXY	39,570.23	0.17%	5.95%	27.50%	34.27%	0.0591%
Paychex Inc	PAYX	30,929.96	0.13%	2.88%	10.50%	13.53%	0.0182%
People's United Financial Inc	PBCT	6,329.94	0.03%	4.47%	9.00%	13.67%	0.0038%
PACCAR Inc	PCAR	23,236.29	0.10%	4.92%	7.50%	12.60%	0.0128%
Public Service Enterprise Group Inc	PEG	30,935.52	0.13%	3.10%	6.00%	9.19%	0.0124%
PepsiCo Inc	PEP	182,194.70	0.79%	2.94%	6.50%	9.54%	0.0757%
Pfizer Inc	PFE	239,656.60	1.04%	3.44%	11.00%	14.63%	0.1528%
Principal Financial Group Inc	PFG	14,978.40	0.07%	4.03%	5.50%	9.64%	0.0063%
Procter & Gamble Co/The	PG	267,789.30	1.17%	2.79%	8.50%	11.41%	0.1332%
Progressive Corp/The	PGR	46,486.88	0.20%	0.50%	20.00%	20.55%	0.0416%
Parker-Hannifin Corp	PH	20,348.57	0.09%	2.22%	11.50%	13.85%	0.0123%
PulteGroup Inc	PHM	8,758.52	0.04%	1.43%	7.50%	8.98%	0.0034%
Packaging Corp of America	PKG	8,517.29	0.04%	3.55%	6.00%	9.66%	0.0036%
PerkinElmer Inc	PKI	9,551.04	0.04%	0.33%	11.00%	11.35%	0.0047%
Prologis Inc	PLD	48,121.54	0.21%	2.83%	6.50%	9.42%	0.0198%
Philip Morris International Inc	PM	134,258.10	0.59%	5.29%	7.00%	12.48%	0.0730%
PNC Financial Services Group Inc/The	PNC	58,746.44	0.26%	2.92%	8.00%	11.04%	0.0283%
Pentair PLC	PNR	6,119.36	0.03%	2.02%	6.50%	8.59%	0.0023%
Pinnacle West Capital Corp	PNW	10,926.80	0.05%	3.12%	5.00%	8.20%	0.0039%
PPG Industries Inc	PPG	25,215.93	0.11%	1.80%	7.50%	9.37%	0.0103%
PPL Corp	PPL	21,900.82	0.10%	5.44%	1.50%	6.98%	0.0067%
Perrigo Co PLC	PRGO	6,496.72	0.03%	1.76%	2.50%	4.28%	0.0012%
Prudential Financial Inc	PRU	39,884.24	0.17%	4.12%	7.00%	11.26%	0.0196%
Public Storage	PSA	40,756.36	0.18%	3.58%	5.50%	9.18%	0.0163%
Phillips 66	PSX	37,313.64	0.16%	4.50%	10.00%	14.73%	0.0239%
PVH Corp	PVH	8,089.99	0.04%	0.14%	9.50%	9.65%	0.0034%
Quanta Services Inc	PWR	4,951.52	0.02%	0.46%	18.50%	19.00%	0.0041%
Pioneer Natural Resources Co	PXD	24,518.87	0.11%	0.44%	37.50%	38.02%	0.0406%
PayPal Holdings Inc	PYPL	128,802.80	0.56%	0.00%	19.00%	19.00%	0.1067%
QUALCOMM Inc	QCOM	82,855.50	0.36%	3.96%	10.50%	14.67%	0.0530%
Qorvo Inc	QRVO	7,461.24	N/A	0.00%	N/A	N/A	N/A
Royal Caribbean Cruises Ltd	RCL	26,072.21	0.11%	2.25%	12.50%	14.89%	0.0169%
Everest Re Group Ltd	RE	10,226.79	0.04%	2.31%	9.00%	11.41%	0.0051%
Regency Centers Corp	REG	11,204.30	0.05%	3.51%	16.00%	19.79%	0.0097%
Regeneron Pharmaceuticals Inc	REGN	33,944.68	0.15%	0.00%	12.00%	12.00%	0.0178%
Regions Financial Corp	RF	14,251.98	0.06%	4.12%	10.50%	14.84%	0.0092%
Robert Half International Inc	RHI	6,649.64	0.03%	2.24%	9.50%	11.85%	0.0034%
Red Hat Inc	RHT	32,886.76	0.14%	0.00%	15.50%	15.50%	0.0222%
Raymond James Financial Inc	RJF	11,899.40	0.05%	1.65%	10.00%	11.73%	0.0061%
Ralph Lauren Corp	RL	8,586.26	0.04%	2.52%	7.50%	10.11%	0.0038%
ResMed Inc	RMD	16,160.83	0.07%	1.31%	14.50%	15.90%	0.0112%
Rockwell Automation Inc	ROK	18,362.68	0.08%	2.54%	9.50%	12.16%	0.0097%
Rollins Inc	ROL	12,072.76	0.05%	1.14%	13.00%	14.21%	0.0075%
Roper Technologies Inc	ROP	36,638.22	0.16%	0.52%	11.50%	12.05%	0.0192%
Ross Stores Inc	ROST	35,068.69	0.15%	1.11%	11.00%	12.17%	0.0186%
Republic Services Inc	RS	29,920.97	0.13%	1.86%	11.50%	13.47%	0.0176%
Raytheon Co	RTN	50,318.80	0.22%	2.10%	10.00%	12.21%	0.0268%
SBA Communications Corp	SBAC	23,776.45	0.10%	0.00%	28.50%	28.50%	0.0295%
Starbucks Corp	SBUX	92,456.10	0.40%	2.09%	13.50%	15.73%	0.0634%
Charles Schwab Corp/The	SCHW	56,765.42	0.25%	1.60%	12.00%	13.70%	0.0339%
Sealed Air Corp	SEE	6,446.62	0.03%	1.55%	22.50%	24.22%	0.0068%
Sherwin-Williams Co/The	SHW	39,748.50	0.17%	1.05%	12.00%	13.11%	0.0227%
SVB Financial Group	SIVB	11,563.16	0.05%	0.00%	19.50%	19.50%	0.0098%
JM Smucker Co/The	SJM	14,468.53	0.06%	2.72%	5.50%	8.29%	0.0052%
Schlumberger Ltd	SLB	51,928.22	0.23%	5.34%	24.00%	29.98%	0.0679%
SL Green Realty Corp	SLG	8,203.19	0.04%	3.98%	4.00%	8.06%	0.0029%
Snap-on Inc	SNA	8,716.00	0.04%	2.50%	7.00%	9.59%	0.0036%
Synopsys Inc	SNPS	17,466.78	0.08%	0.00%	10.00%	10.00%	0.0076%
Southern Co/The	SO	56,529.68	0.25%	4.60%	3.50%	8.18%	0.0202%
Simon Property Group Inc	SPG	53,357.55	0.23%	5.07%	5.50%	10.71%	0.0249%
S&P Global Inc	SPGI	52,662.94	0.23%	1.07%	13.00%	14.14%	0.0325%
Sempra Energy	SRE	37,231.12	0.16%	2.91%	11.00%	14.07%	0.0228%
SunTrust Banks Inc	STI	27,523.52	0.12%	3.22%	10.00%	13.38%	0.0161%
State Street Corp	STT	22,090.92	0.10%	3.31%	6.00%	9.41%	0.0091%
Seagate Technology PLC	STX	12,115.98	0.06%	5.76%	6.00%	11.93%	0.0063%
Constellation Brands Inc	STZ	39,151.03	0.17%	1.48%	9.50%	11.05%	0.0189%
Stanley Black & Decker Inc	SWK	19,982.52	0.09%	2.05%	9.50%	11.65%	0.0101%
Skyworks Solutions Inc	SWKS	11,823.04	0.05%	2.22%	9.00%	11.32%	0.0058%
Synchrony Financial	SYF	23,937.12	0.10%	2.53%	10.00%	12.66%	0.0132%
Stryker Corp	SYK	68,967.95	0.30%	1.13%	15.00%	16.21%	0.0487%
Symantec Corp	SYMC	12,760.83	0.06%	1.50%	9.00%	10.57%	0.0059%
Sysco Corp	SY	38,075.22	0.17%	2.09%	12.00%	14.22%	0.0236%
AT&T Inc	T	234,532.80	1.02%	6.38%	5.50%	12.06%	0.1232%

Company	Ticker	[4]	[5]	[6]	[7]	[8]	[9]
		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Molson Coors Brewing Co	TAP	12,858.49	0.06%	2.95%	5.50%	8.53%	0.0048%
TransDigm Group Inc	TDG	23,788.40	0.10%	0.00%	6.50%	6.50%	0.0067%
TE Connectivity Ltd	TEL	29,254.72	0.13%	2.12%	8.00%	10.20%	0.0130%
Teleflex Inc	TFX	13,815.00	0.06%	0.47%	15.00%	15.51%	0.0093%
Target Corp	TGT	41,110.22	0.18%	3.22%	8.00%	11.35%	0.0203%
Tiffany & Co	TIF	11,588.67	0.05%	2.52%	10.50%	13.15%	0.0066%
TJX Cos Inc/The	TJX	64,320.85	0.28%	1.76%	13.50%	15.38%	0.0431%
Torchmark Corp	TMK	9,592.66	0.04%	0.80%	10.00%	10.84%	0.0045%
Thermo Fisher Scientific Inc	TMO	108,402.90	0.47%	0.28%	10.00%	10.29%	0.0486%
Tapestry Inc	TPR	8,769.72	0.04%	4.47%	12.00%	16.74%	0.0064%
TripAdvisor Inc	TRIP	6,331.45	0.03%	0.00%	18.00%	18.00%	0.0050%
T Rowe Price Group Inc	TROW	24,302.84	0.11%	3.00%	10.00%	13.15%	0.0139%
Travelers Cos Inc/The	TRV	38,748.08	0.17%	2.23%	6.50%	8.80%	0.0149%
Tractor Supply Co	TSCO	12,312.37	0.05%	1.37%	10.50%	11.94%	0.0064%
Tyson Foods Inc	TSN	29,905.86	0.13%	1.90%	6.50%	8.46%	0.0110%
Total System Services Inc	TSS	17,627.06	0.08%	0.52%	10.00%	10.55%	0.0081%
Take-Two Interactive Software Inc	TTWO	11,804.75	0.05%	0.00%	28.00%	28.00%	0.0144%
Twitter Inc	TWTR	28,558.69	N/A	0.00%	N/A	N/A	N/A
Texas Instruments Inc	TXN	99,353.10	0.43%	2.91%	6.00%	9.00%	0.0390%
Textron Inc	TXT	11,039.90	0.05%	0.17%	13.00%	13.18%	0.0063%
Under Armour Inc	UA	10,578.56	0.05%	0.00%	12.00%	12.00%	0.0055%
United Continental Holdings Inc	UAL	21,382.17	0.09%	0.00%	8.50%	8.50%	0.0079%
UDR Inc	UDR	12,435.39	0.05%	3.04%	1.50%	4.56%	0.0025%
Universal Health Services Inc	UHS	11,083.62	0.05%	0.33%	10.50%	10.85%	0.0052%
Ulta Beauty Inc	ULTA	20,087.71	0.09%	0.00%	19.00%	19.00%	0.0166%
UnitedHealth Group Inc	UNH	234,914.50	1.02%	1.46%	13.50%	15.06%	0.1542%
Unum Group	UNM	7,140.32	0.03%	3.43%	9.00%	12.58%	0.0039%
Union Pacific Corp	UNP	122,314.90	0.53%	2.04%	14.50%	16.69%	0.0890%
United Parcel Service Inc	UPS	82,802.37	0.36%	3.99%	8.50%	12.66%	0.0457%
United Rentals Inc	URI	9,338.55	0.04%	0.00%	14.50%	14.50%	0.0059%
US Bancorp	USB	81,822.72	0.36%	3.01%	7.00%	10.12%	0.0361%
United Technologies Corp	UTX	112,485.90	0.49%	2.25%	9.00%	11.35%	0.0557%
Visa Inc	V	324,796.60	1.42%	0.67%	15.00%	15.72%	0.2225%
Varian Medical Systems Inc	VAR	11,600.64	0.05%	0.00%	10.00%	10.00%	0.0051%
VF Corp	VFC	33,255.24	0.14%	2.43%	10.00%	12.55%	0.0182%
Viacom Inc	VIAB	11,421.46	0.05%	2.83%	6.00%	8.91%	0.0044%
Valero Energy Corp	VLO	31,463.16	0.14%	4.77%	11.50%	16.54%	0.0227%
Vulcan Materials Co	VMC	16,512.59	0.07%	0.99%	14.00%	15.06%	0.0108%
Vornado Realty Trust	VNO	12,817.23	0.06%	3.93%	-3.50%	0.36%	0.0002%
Verisk Analytics Inc	VRSK	23,264.91	0.10%	0.70%	9.50%	10.23%	0.0104%
VersiSign Inc	VRSN	23,237.07	0.10%	0.00%	10.50%	10.50%	0.0106%
Vertex Pharmaceuticals Inc	VRTX	44,351.29	N/A	0.00%	N/A	N/A	N/A
Ventas Inc	VTR	23,296.71	0.10%	4.93%	3.00%	8.00%	0.0081%
Verizon Communications Inc	VZ	243,469.10	1.06%	4.11%	4.50%	8.70%	0.0923%
Wabtec Corp	WAB	10,316.15	0.04%	0.76%	13.50%	14.31%	0.0064%
Waters Corp	WAT	14,381.39	0.06%	0.00%	10.50%	10.50%	0.0066%
Walgreens Boots Alliance Inc	WBA	51,179.88	0.22%	3.41%	10.00%	13.58%	0.0303%
WellCare Health Plans Inc	WCG	13,807.39	0.06%	0.00%	23.00%	23.00%	0.0138%
Western Digital Corp	WDC	12,156.57	0.05%	4.82%	1.50%	6.36%	0.0034%
WEC Energy Group Inc	WEC	25,938.46	0.11%	2.92%	6.00%	9.01%	0.0102%
Welltower Inc	WELL	30,240.24	0.13%	4.32%	8.00%	12.49%	0.0165%
Wells Fargo & Co	WFC	205,564.30	0.90%	4.04%	5.00%	9.14%	0.0819%
Whirlpool Corp	WHR	7,941.15	0.03%	3.81%	6.50%	10.43%	0.0036%
Willis Towers Watson PLC	WLTW	22,926.20	0.10%	1.46%	16.50%	18.08%	0.0181%
Waste Management Inc	WM	46,545.83	0.20%	1.87%	8.00%	9.94%	0.0202%
Williams Cos Inc/The	WMB	33,654.46	0.15%	5.63%	20.00%	26.19%	0.0384%
Walmart Inc	WMT	295,929.80	1.29%	2.10%	7.00%	9.17%	0.1183%
Westrock Co	WRK	8,909.29	0.04%	5.25%	9.50%	15.00%	0.0058%
Western Union Co/The	WU	8,428.56	0.04%	4.11%	6.00%	10.23%	0.0038%
Weyerhaeuser Co	WY	17,062.61	0.07%	5.94%	17.50%	23.96%	0.0178%
Wynn Resorts Ltd	WYNN	12,258.17	0.05%	3.51%	18.00%	21.83%	0.0117%
Cimarex Energy Co	XEC	6,135.98	0.03%	1.25%	18.00%	19.36%	0.0052%
Xcel Energy Inc	XEL	30,411.73	0.13%	2.79%	5.50%	8.37%	0.0111%
Xilinx Inc	XLNX	25,898.68	0.11%	1.45%	11.00%	12.53%	0.0141%
Exxon Mobil Corp	XOM	312,212.40	1.36%	4.72%	14.50%	19.56%	0.2662%
DENTSPLY SIRONA Inc	XRAY	12,027.01	0.05%	0.65%	3.00%	3.66%	0.0019%
Xerox Corp	XRX	7,217.98	0.03%	3.14%	9.00%	12.28%	0.0039%
Xylem Inc/NY	XYL	13,325.19	0.06%	1.30%	14.00%	15.39%	0.0089%
Yum! Brands Inc	YUM	31,025.34	0.14%	1.72%	12.00%	13.82%	0.0187%
Zimmer Biomet Holdings Inc	ZBH	23,339.01	0.10%	0.86%	4.50%	5.38%	0.0055%
Zions Bancorp NA	ZION	8,200.31	0.04%	2.80%	10.00%	12.94%	0.0046%
Zoetis Inc	ZTS	49,286.98	0.21%	0.64%	13.00%	13.68%	0.0294%
Total Market Capitalization:		22,942,982.01					14.90%

Notes:

- [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]	[2]
		Bloomberg	Value Line
ALLETE, Inc.	ALE	0.445	0.65
Alliant Energy Corporation	LNT	0.523	0.65
American Electric Power Company, Inc.	AEP	0.487	0.55
Avangrid, Inc.	AGR	0.477	0.40
CMS Energy Corporation	CMS	0.462	0.55
DTE Energy Company	DTE	0.489	0.55
Duke Energy Corporation	DUK	0.440	0.50
El Paso Electric Company	EE	0.519	0.70
Evergy, Inc	EVRG	0.519	0.56
Hawaiian Electric Industries, Inc.	HE	0.473	0.60
NextEra Energy, Inc.	NEE	0.541	0.60
NorthWestern Corporation	NWE	0.474	0.60
OGE Energy Corp.	OGE	0.540	0.85
Otter Tail Corporation	OTTR	0.523	0.70
Pinnacle West Capital Corporation	PNW	0.419	0.55
PNM Resources, Inc.	PNM	0.489	0.65
Portland General Electric Company	POR	0.464	0.60
Southern Company	SO	0.468	0.50
WEC Energy Group, Inc.	WEC	0.464	0.55
Xcel Energy Inc.	XEL	0.468	0.50
Mean		0.484	0.591

Notes:

[1] Source: Bloomberg Professional

[2] Source: Value Line. Value Line does not report a beta coefficient for Evergy, Inc. Therefore, the beta coefficient for Evergy has been manually calculated according to Value Line's methodology.

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

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
	Ex-Ante Market Risk Premium				CAPM Result		ECAPM Result	
	Risk-Free Rate	Average Beta Coefficient	Bloomberg Market DCF Derived	Value Line Market DCF Derived	Bloomberg MRP	Value Line MRP	Bloomberg Market DCF Derived	Value Line Market DCF Derived
PROXY GROUP AVERAGE BLOOMBERG BETA COEFFICIENT								
Current 30-Year Treasury [9]	2.85%	0.484	11.00%	12.04%	8.18%	8.68%	9.60%	10.24%
Near-Term Projected 30-Year Treasury [10]	3.03%	0.484	11.00%	12.04%	8.36%	8.86%	9.78%	10.42%
Mean					8.27%	8.77%	9.69%	10.33%
	Ex-Ante Market Risk Premium				CAPM Result		ECAPM Result	
	Risk-Free Rate	Average Beta Coefficient	Bloomberg Market DCF Derived	Value Line Market DCF Derived	Bloomberg MRP	Value Line MRP	Bloomberg Market DCF Derived	Value Line Market DCF Derived
PROXY GROUP AVERAGE VALUE LINE AVERAGE BETA COEFFICIENT								
Current 30-Year Treasury [9]	2.85%	0.591	11.00%	12.04%	9.35%	9.97%	10.47%	11.20%
Near-Term Projected 30-Year Treasury [10]	3.03%	0.591	11.00%	12.04%	9.53%	10.14%	10.65%	11.38%
Mean					9.44%	10.06%	10.56%	11.29%

Notes:

[1] See Note [7]

[2] Source: Schedule RBH-D3

[3] Source: Schedule RBH-D2

[4] Source: Schedule RBH-D2

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

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

[7] Equals Col. [1] + 0.25 x Col. [3] + 0.75 x Col. [2] x Col. [3]

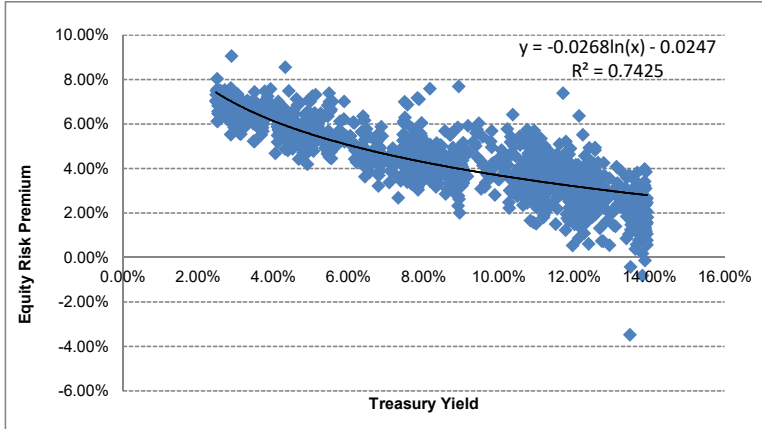
[8] Equals Col. [1] + 0.25 x Col. [4] + 0.75 x Col. [2] x Col. [4]

[9] Source: Bloomberg Professional

[10] Source: Blue Chip Financial Forecasts, Vol. 38, No. 6, June 1, 2019, at 2.

Bond Yield Plus Risk Premium

[1]	[2]	[3]	[4]	[5]
Constant	Slope	30-Year Treasury Yield	Risk Premium	Return on Equity
-2.47%	-2.68%			
Current 30-Year Treasury		2.85%	7.05%	9.91%
Near-Term Projected 30-Year Treasury		3.03%	6.89%	9.92%
Long-Term Projected 30-Year Treasury		3.70%	6.36%	10.06%



Notes:

- [1] Constant of regression equation
- [2] Slope of regression equation
- [3] Source: Current = Bloomberg Professional;
Near Term Projected = Blue Chip Financial Forecasts, Vol. 38, No. 6, June 1, 2019, at 2;
Long Term Projected = Blue Chip Financial Forecasts, Vol. 38, No. 6, June 1, 2019, at 14.
- [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 200-trading day average (i.e. lag period)
- [9] Equals [7] - [8]

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
01/01/1980	14.50%	9.36%	5.14%
01/07/1980	14.39%	9.38%	5.01%
01/09/1980	15.00%	9.40%	5.60%
01/14/1980	15.17%	9.42%	5.75%
01/17/1980	13.93%	9.44%	4.49%
01/23/1980	15.50%	9.47%	6.03%
01/30/1980	13.86%	9.52%	4.34%
01/31/1980	12.61%	9.53%	3.08%
02/06/1980	13.71%	9.58%	4.13%
02/13/1980	12.80%	9.63%	3.17%
02/14/1980	13.00%	9.65%	3.35%
02/19/1980	13.50%	9.68%	3.82%
02/27/1980	13.75%	9.78%	3.97%
02/29/1980	13.75%	9.81%	3.94%
02/29/1980	14.00%	9.81%	4.19%
02/29/1980	14.77%	9.81%	4.96%
03/07/1980	12.70%	9.89%	2.81%
03/14/1980	13.50%	9.97%	3.53%
03/26/1980	14.16%	10.10%	4.06%
03/27/1980	14.24%	10.12%	4.12%
03/28/1980	14.50%	10.13%	4.37%
04/11/1980	12.75%	10.27%	2.48%
04/14/1980	13.85%	10.29%	3.56%
04/16/1980	15.50%	10.31%	5.19%
04/22/1980	13.25%	10.35%	2.90%
04/22/1980	13.90%	10.35%	3.55%
04/24/1980	16.80%	10.38%	6.43%
04/29/1980	15.50%	10.41%	5.09%
05/06/1980	13.70%	10.45%	3.25%
05/07/1980	15.00%	10.45%	4.55%
05/08/1980	13.75%	10.46%	3.29%
05/09/1980	14.35%	10.47%	3.88%
05/13/1980	13.60%	10.48%	3.12%
05/15/1980	13.25%	10.49%	2.76%
05/19/1980	13.75%	10.51%	3.24%
05/27/1980	13.62%	10.54%	3.08%
05/27/1980	14.60%	10.54%	4.06%
05/29/1980	16.00%	10.56%	5.44%
05/30/1980	13.80%	10.56%	3.24%
06/02/1980	15.63%	10.57%	5.06%
06/09/1980	15.90%	10.60%	5.30%
06/10/1980	13.78%	10.60%	3.18%
06/12/1980	14.25%	10.61%	3.64%
06/19/1980	13.40%	10.62%	2.78%
06/30/1980	13.00%	10.65%	2.35%
06/30/1980	13.40%	10.65%	2.75%
07/09/1980	14.75%	10.67%	4.08%
07/10/1980	15.00%	10.68%	4.32%
07/15/1980	15.80%	10.70%	5.10%
07/18/1980	13.80%	10.71%	3.09%
07/22/1980	14.10%	10.72%	3.38%
07/24/1980	15.00%	10.73%	4.27%
07/25/1980	13.48%	10.73%	2.75%
07/31/1980	14.58%	10.75%	3.83%
08/08/1980	13.50%	10.78%	2.72%
08/08/1980	14.00%	10.78%	3.22%
08/08/1980	15.45%	10.78%	4.67%
08/11/1980	14.85%	10.78%	4.07%
08/14/1980	14.00%	10.79%	3.21%
08/14/1980	16.25%	10.79%	5.46%
08/25/1980	13.75%	10.82%	2.93%
08/27/1980	13.80%	10.83%	2.97%
08/29/1980	12.50%	10.84%	1.66%
09/15/1980	13.50%	10.88%	2.62%
09/15/1980	13.93%	10.88%	3.05%
09/15/1980	15.80%	10.88%	4.92%
09/24/1980	12.50%	10.93%	1.57%
09/24/1980	15.00%	10.93%	4.07%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
09/26/1980	13.75%	10.94%	2.81%
09/30/1980	14.10%	10.96%	3.14%
09/30/1980	14.20%	10.96%	3.24%
10/01/1980	13.90%	10.97%	2.93%
10/03/1980	15.50%	10.98%	4.52%
10/07/1980	12.50%	10.99%	1.51%
10/09/1980	13.25%	11.00%	2.25%
10/09/1980	14.50%	11.00%	3.50%
10/09/1980	14.50%	11.00%	3.50%
10/16/1980	16.10%	11.02%	5.08%
10/17/1980	14.50%	11.03%	3.47%
10/31/1980	13.75%	11.11%	2.64%
10/31/1980	14.25%	11.11%	3.14%
11/04/1980	15.00%	11.12%	3.88%
11/05/1980	13.75%	11.12%	2.63%
11/05/1980	14.00%	11.12%	2.88%
11/08/1980	13.75%	11.14%	2.61%
11/10/1980	14.85%	11.15%	3.70%
11/17/1980	14.00%	11.18%	2.82%
11/18/1980	14.00%	11.19%	2.81%
11/19/1980	13.00%	11.19%	1.81%
11/24/1980	14.00%	11.21%	2.79%
11/26/1980	14.00%	11.21%	2.79%
12/08/1980	14.15%	11.22%	2.93%
12/08/1980	15.10%	11.22%	3.88%
12/09/1980	15.35%	11.22%	4.13%
12/12/1980	15.45%	11.23%	4.22%
12/17/1980	13.25%	11.23%	2.02%
12/18/1980	15.80%	11.23%	4.57%
12/19/1980	14.50%	11.23%	3.27%
12/19/1980	14.64%	11.23%	3.41%
12/22/1980	13.45%	11.23%	2.22%
12/22/1980	15.00%	11.23%	3.77%
12/30/1980	14.50%	11.22%	3.28%
12/30/1980	14.95%	11.22%	3.73%
12/31/1980	13.39%	11.22%	2.17%
01/02/1981	15.25%	11.22%	4.03%
01/07/1981	14.30%	11.21%	3.09%
01/19/1981	15.25%	11.20%	4.05%
01/23/1981	13.10%	11.20%	1.90%
01/23/1981	14.40%	11.20%	3.20%
01/26/1981	15.25%	11.20%	4.05%
01/27/1981	15.00%	11.21%	3.79%
01/31/1981	13.47%	11.22%	2.25%
02/03/1981	15.25%	11.23%	4.02%
02/05/1981	15.75%	11.25%	4.50%
02/11/1981	15.60%	11.28%	4.32%
02/20/1981	15.25%	11.33%	3.92%
03/11/1981	15.40%	11.49%	3.91%
03/12/1981	14.51%	11.50%	3.01%
03/12/1981	16.00%	11.50%	4.50%
03/13/1981	13.02%	11.52%	1.50%
03/18/1981	16.19%	11.55%	4.64%
03/19/1981	13.75%	11.56%	2.19%
03/23/1981	14.30%	11.58%	2.72%
03/25/1981	15.30%	11.60%	3.70%
04/01/1981	14.53%	11.68%	2.85%
04/03/1981	19.10%	11.71%	7.39%
04/09/1981	15.00%	11.78%	3.22%
04/09/1981	15.30%	11.78%	3.52%
04/09/1981	16.50%	11.78%	4.72%
04/09/1981	17.00%	11.78%	5.22%
04/10/1981	13.75%	11.80%	1.95%
04/13/1981	13.57%	11.82%	1.75%
04/15/1981	15.30%	11.85%	3.45%
04/16/1981	13.50%	11.87%	1.63%
04/17/1981	14.10%	11.87%	2.23%
04/21/1981	14.00%	11.90%	2.10%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
04/21/1981	16.80%	11.90%	4.90%
04/24/1981	16.00%	11.95%	4.05%
04/27/1981	12.50%	11.97%	0.53%
04/27/1981	13.61%	11.97%	1.64%
04/29/1981	13.65%	12.00%	1.65%
04/30/1981	13.50%	12.02%	1.48%
05/04/1981	16.22%	12.05%	4.17%
05/05/1981	14.40%	12.07%	2.33%
05/07/1981	16.25%	12.11%	4.14%
05/07/1981	16.27%	12.11%	4.16%
05/08/1981	13.00%	12.13%	0.87%
05/08/1981	16.00%	12.13%	3.87%
05/12/1981	13.50%	12.16%	1.34%
05/15/1981	15.75%	12.22%	3.53%
05/18/1981	14.88%	12.23%	2.65%
05/20/1981	16.00%	12.26%	3.74%
05/21/1981	14.00%	12.27%	1.73%
05/26/1981	14.90%	12.30%	2.60%
05/27/1981	15.00%	12.31%	2.69%
05/29/1981	15.50%	12.34%	3.16%
06/01/1981	16.50%	12.35%	4.15%
06/03/1981	14.67%	12.37%	2.30%
06/05/1981	13.00%	12.39%	0.61%
06/10/1981	16.75%	12.42%	4.33%
06/17/1981	14.40%	12.46%	1.94%
06/18/1981	16.33%	12.47%	3.86%
06/25/1981	14.75%	12.51%	2.24%
06/26/1981	16.00%	12.52%	3.48%
06/30/1981	15.25%	12.54%	2.71%
07/01/1981	15.50%	12.56%	2.94%
07/01/1981	17.50%	12.56%	4.94%
07/10/1981	16.00%	12.62%	3.38%
07/14/1981	16.90%	12.64%	4.26%
07/15/1981	16.00%	12.65%	3.35%
07/17/1981	15.00%	12.67%	2.33%
07/20/1981	15.00%	12.68%	2.32%
07/21/1981	14.00%	12.69%	1.31%
07/28/1981	13.48%	12.74%	0.74%
07/31/1981	13.50%	12.78%	0.72%
07/31/1981	15.00%	12.78%	2.22%
07/31/1981	16.00%	12.78%	3.22%
08/05/1981	15.71%	12.83%	2.88%
08/10/1981	14.50%	12.87%	1.63%
08/11/1981	15.00%	12.88%	2.12%
08/20/1981	13.50%	12.95%	0.55%
08/20/1981	16.50%	12.95%	3.55%
08/24/1981	15.00%	12.97%	2.03%
08/28/1981	15.00%	13.01%	1.99%
09/03/1981	14.50%	13.05%	1.45%
09/10/1981	14.50%	13.11%	1.39%
09/11/1981	16.00%	13.12%	2.88%
09/16/1981	16.00%	13.15%	2.85%
09/17/1981	16.50%	13.16%	3.34%
09/23/1981	15.85%	13.20%	2.65%
09/28/1981	15.50%	13.23%	2.27%
10/09/1981	15.75%	13.33%	2.42%
10/15/1981	16.25%	13.37%	2.88%
10/16/1981	15.50%	13.38%	2.12%
10/16/1981	16.50%	13.38%	3.12%
10/19/1981	14.25%	13.39%	0.86%
10/20/1981	15.25%	13.41%	1.84%
10/20/1981	17.00%	13.41%	3.59%
10/23/1981	16.00%	13.45%	2.55%
10/27/1981	10.00%	13.48%	-3.48%
10/29/1981	14.75%	13.51%	1.24%
10/29/1981	16.50%	13.51%	2.99%
11/03/1981	15.17%	13.53%	1.64%
11/05/1981	16.60%	13.55%	3.05%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
11/06/1981	15.17%	13.56%	1.61%
11/24/1981	15.50%	13.61%	1.89%
11/25/1981	15.25%	13.61%	1.64%
11/25/1981	15.35%	13.61%	1.74%
11/25/1981	16.10%	13.61%	2.49%
11/25/1981	16.10%	13.61%	2.49%
12/01/1981	15.70%	13.61%	2.09%
12/01/1981	16.00%	13.61%	2.39%
12/01/1981	16.49%	13.61%	2.88%
12/01/1981	16.50%	13.61%	2.89%
12/04/1981	16.00%	13.61%	2.39%
12/11/1981	16.25%	13.63%	2.62%
12/14/1981	14.00%	13.63%	0.37%
12/15/1981	15.81%	13.63%	2.18%
12/15/1981	16.00%	13.63%	2.37%
12/16/1981	15.25%	13.63%	1.62%
12/17/1981	16.50%	13.63%	2.87%
12/18/1981	15.45%	13.63%	1.82%
12/30/1981	14.25%	13.67%	0.58%
12/30/1981	16.00%	13.67%	2.33%
12/30/1981	16.25%	13.67%	2.58%
12/31/1981	16.15%	13.67%	2.48%
01/04/1982	15.50%	13.67%	1.83%
01/11/1982	14.50%	13.72%	0.78%
01/11/1982	17.00%	13.72%	3.28%
01/13/1982	14.75%	13.74%	1.01%
01/14/1982	15.75%	13.75%	2.00%
01/15/1982	15.00%	13.76%	1.24%
01/15/1982	16.50%	13.76%	2.74%
01/22/1982	16.25%	13.79%	2.46%
01/27/1982	16.84%	13.81%	3.03%
01/28/1982	13.00%	13.81%	-0.81%
01/29/1982	15.50%	13.82%	1.68%
02/01/1982	15.85%	13.82%	2.03%
02/03/1982	16.44%	13.84%	2.60%
02/08/1982	15.50%	13.86%	1.64%
02/11/1982	16.00%	13.88%	2.12%
02/11/1982	16.20%	13.88%	2.32%
02/17/1982	15.00%	13.89%	1.11%
02/19/1982	15.17%	13.89%	1.28%
02/26/1982	15.25%	13.89%	1.36%
03/01/1982	15.03%	13.89%	1.14%
03/01/1982	16.00%	13.89%	2.11%
03/03/1982	15.00%	13.88%	1.12%
03/08/1982	17.10%	13.88%	3.22%
03/12/1982	16.25%	13.88%	2.37%
03/17/1982	17.30%	13.88%	3.42%
03/22/1982	15.10%	13.89%	1.21%
03/27/1982	15.40%	13.89%	1.51%
03/30/1982	15.50%	13.90%	1.60%
03/31/1982	17.00%	13.91%	3.09%
04/01/1982	14.70%	13.91%	0.79%
04/01/1982	16.50%	13.91%	2.59%
04/02/1982	15.50%	13.91%	1.59%
04/05/1982	15.50%	13.92%	1.58%
04/08/1982	16.40%	13.93%	2.47%
04/13/1982	14.50%	13.94%	0.56%
04/23/1982	15.75%	13.94%	1.81%
04/27/1982	15.00%	13.94%	1.06%
04/28/1982	15.75%	13.94%	1.81%
04/30/1982	14.70%	13.94%	0.76%
04/30/1982	15.50%	13.94%	1.56%
05/03/1982	16.60%	13.94%	2.66%
05/04/1982	16.00%	13.94%	2.06%
05/14/1982	15.50%	13.92%	1.58%
05/18/1982	15.42%	13.92%	1.50%
05/19/1982	14.69%	13.92%	0.77%
05/20/1982	15.00%	13.91%	1.09%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
05/20/1982	15.10%	13.91%	1.19%
05/20/1982	15.50%	13.91%	1.59%
05/20/1982	16.30%	13.91%	2.39%
05/21/1982	17.75%	13.91%	3.84%
05/27/1982	15.00%	13.89%	1.11%
05/28/1982	15.50%	13.89%	1.61%
05/28/1982	17.00%	13.89%	3.11%
06/01/1982	13.75%	13.89%	-0.14%
06/01/1982	16.60%	13.89%	2.71%
06/09/1982	17.86%	13.88%	3.98%
06/14/1982	15.75%	13.88%	1.87%
06/15/1982	14.85%	13.88%	0.97%
06/18/1982	15.50%	13.87%	1.63%
06/21/1982	14.90%	13.87%	1.03%
06/23/1982	16.00%	13.86%	2.14%
06/23/1982	16.17%	13.86%	2.31%
06/24/1982	14.85%	13.86%	0.99%
06/25/1982	14.70%	13.86%	0.84%
07/01/1982	16.00%	13.84%	2.16%
07/02/1982	15.62%	13.84%	1.78%
07/02/1982	17.00%	13.84%	3.16%
07/13/1982	14.00%	13.82%	0.18%
07/13/1982	16.80%	13.82%	2.98%
07/14/1982	15.76%	13.82%	1.94%
07/14/1982	16.02%	13.82%	2.20%
07/19/1982	16.50%	13.80%	2.70%
07/22/1982	14.50%	13.77%	0.73%
07/22/1982	17.00%	13.77%	3.23%
07/27/1982	16.75%	13.75%	3.00%
07/29/1982	16.50%	13.74%	2.76%
08/11/1982	17.50%	13.68%	3.82%
08/18/1982	17.07%	13.63%	3.44%
08/20/1982	15.73%	13.60%	2.13%
08/25/1982	16.00%	13.57%	2.43%
08/26/1982	15.50%	13.56%	1.94%
08/30/1982	15.00%	13.55%	1.45%
09/03/1982	16.20%	13.53%	2.67%
09/08/1982	15.00%	13.52%	1.48%
09/15/1982	13.08%	13.50%	-0.42%
09/15/1982	16.25%	13.50%	2.75%
09/16/1982	16.00%	13.50%	2.50%
09/17/1982	15.25%	13.50%	1.75%
09/23/1982	17.17%	13.47%	3.70%
09/24/1982	14.50%	13.46%	1.04%
09/27/1982	15.25%	13.46%	1.79%
10/01/1982	15.50%	13.42%	2.08%
10/15/1982	15.90%	13.32%	2.58%
10/22/1982	15.75%	13.24%	2.51%
10/22/1982	17.15%	13.24%	3.91%
10/29/1982	15.54%	13.16%	2.38%
11/01/1982	15.50%	13.15%	2.35%
11/03/1982	17.20%	13.13%	4.07%
11/04/1982	16.25%	13.11%	3.14%
11/05/1982	16.20%	13.09%	3.11%
11/09/1982	16.00%	13.05%	2.95%
11/23/1982	15.50%	12.89%	2.61%
11/23/1982	15.85%	12.89%	2.96%
11/30/1982	16.50%	12.81%	3.69%
12/01/1982	17.04%	12.79%	4.25%
12/06/1982	15.00%	12.73%	2.27%
12/06/1982	16.35%	12.73%	3.62%
12/10/1982	15.50%	12.66%	2.84%
12/13/1982	16.00%	12.65%	3.35%
12/14/1982	15.30%	12.63%	2.67%
12/14/1982	16.40%	12.63%	3.77%
12/20/1982	16.00%	12.57%	3.43%
12/21/1982	14.75%	12.56%	2.19%
12/21/1982	15.85%	12.56%	3.29%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
12/22/1982	16.25%	12.54%	3.71%
12/22/1982	16.58%	12.54%	4.04%
12/22/1982	16.75%	12.54%	4.21%
12/29/1982	14.90%	12.48%	2.42%
12/29/1982	16.25%	12.48%	3.77%
12/30/1982	16.00%	12.47%	3.53%
12/30/1982	16.35%	12.47%	3.88%
12/30/1982	16.77%	12.47%	4.30%
01/05/1983	17.33%	12.40%	4.93%
01/11/1983	15.90%	12.34%	3.56%
01/12/1983	14.63%	12.33%	2.30%
01/12/1983	15.50%	12.33%	3.17%
01/20/1983	17.75%	12.24%	5.51%
01/21/1983	15.00%	12.22%	2.78%
01/24/1983	14.50%	12.21%	2.29%
01/24/1983	15.50%	12.21%	3.29%
01/25/1983	15.85%	12.19%	3.66%
01/27/1983	16.14%	12.17%	3.97%
02/01/1983	18.50%	12.13%	6.37%
02/04/1983	14.00%	12.10%	1.90%
02/10/1983	15.00%	12.06%	2.94%
02/21/1983	15.50%	11.98%	3.52%
02/22/1983	15.50%	11.97%	3.53%
02/23/1983	15.10%	11.96%	3.14%
02/23/1983	16.00%	11.96%	4.04%
03/02/1983	15.25%	11.89%	3.36%
03/09/1983	15.20%	11.82%	3.38%
03/15/1983	13.00%	11.77%	1.23%
03/18/1983	15.25%	11.73%	3.52%
03/23/1983	15.40%	11.69%	3.71%
03/24/1983	15.00%	11.67%	3.33%
03/29/1983	15.50%	11.63%	3.87%
03/30/1983	16.71%	11.61%	5.10%
03/31/1983	15.00%	11.59%	3.41%
04/04/1983	15.20%	11.58%	3.62%
04/08/1983	15.50%	11.51%	3.99%
04/11/1983	14.81%	11.49%	3.32%
04/19/1983	14.50%	11.38%	3.12%
04/20/1983	16.00%	11.36%	4.64%
04/29/1983	16.00%	11.24%	4.76%
05/01/1983	14.50%	11.24%	3.26%
05/09/1983	15.50%	11.15%	4.35%
05/11/1983	16.46%	11.12%	5.34%
05/12/1983	14.14%	11.11%	3.03%
05/18/1983	15.00%	11.05%	3.95%
05/23/1983	14.90%	11.01%	3.89%
05/23/1983	15.50%	11.01%	4.49%
05/25/1983	15.50%	10.98%	4.52%
05/27/1983	15.00%	10.96%	4.04%
05/31/1983	14.00%	10.95%	3.05%
05/31/1983	15.50%	10.95%	4.55%
06/02/1983	14.50%	10.93%	3.57%
06/17/1983	15.03%	10.84%	4.19%
07/01/1983	14.80%	10.78%	4.02%
07/01/1983	14.90%	10.78%	4.12%
07/08/1983	16.25%	10.76%	5.49%
07/13/1983	13.20%	10.75%	2.45%
07/19/1983	15.00%	10.74%	4.26%
07/19/1983	15.10%	10.74%	4.36%
07/25/1983	16.25%	10.73%	5.52%
07/28/1983	15.90%	10.74%	5.16%
08/03/1983	16.34%	10.75%	5.59%
08/03/1983	16.50%	10.75%	5.75%
08/19/1983	15.00%	10.80%	4.20%
08/22/1983	15.50%	10.80%	4.70%
08/22/1983	16.40%	10.80%	5.60%
08/31/1983	14.75%	10.84%	3.91%
09/07/1983	15.00%	10.86%	4.14%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
09/14/1983	15.78%	10.89%	4.89%
09/16/1983	15.00%	10.90%	4.10%
09/19/1983	14.50%	10.91%	3.59%
09/20/1983	16.50%	10.91%	5.59%
09/28/1983	14.50%	10.94%	3.56%
09/29/1983	15.50%	10.95%	4.55%
09/30/1983	15.25%	10.95%	4.30%
09/30/1983	16.15%	10.95%	5.20%
10/04/1983	14.80%	10.96%	3.84%
10/07/1983	16.00%	10.97%	5.03%
10/13/1983	15.52%	10.99%	4.53%
10/17/1983	15.50%	11.00%	4.50%
10/18/1983	14.50%	11.00%	3.50%
10/19/1983	16.25%	11.01%	5.24%
10/19/1983	16.50%	11.01%	5.49%
10/26/1983	15.00%	11.04%	3.96%
10/27/1983	15.20%	11.04%	4.16%
11/01/1983	16.00%	11.06%	4.94%
11/09/1983	14.90%	11.09%	3.81%
11/10/1983	14.35%	11.10%	3.25%
11/23/1983	16.00%	11.13%	4.87%
11/23/1983	16.15%	11.13%	5.02%
11/30/1983	15.00%	11.14%	3.86%
12/05/1983	15.25%	11.15%	4.10%
12/06/1983	15.07%	11.15%	3.92%
12/08/1983	15.90%	11.16%	4.74%
12/09/1983	14.75%	11.17%	3.58%
12/12/1983	14.50%	11.17%	3.33%
12/15/1983	15.56%	11.19%	4.37%
12/19/1983	14.80%	11.21%	3.59%
12/20/1983	14.69%	11.22%	3.47%
12/20/1983	16.00%	11.22%	4.78%
12/20/1983	16.25%	11.22%	5.03%
12/22/1983	14.75%	11.23%	3.52%
12/22/1983	15.75%	11.23%	4.52%
01/03/1984	14.75%	11.27%	3.48%
01/10/1984	15.90%	11.30%	4.60%
01/12/1984	15.60%	11.31%	4.29%
01/18/1984	13.75%	11.33%	2.42%
01/19/1984	15.90%	11.33%	4.57%
01/30/1984	16.10%	11.37%	4.73%
01/31/1984	15.25%	11.37%	3.88%
02/01/1984	14.80%	11.38%	3.42%
02/06/1984	13.75%	11.40%	2.35%
02/06/1984	14.75%	11.40%	3.35%
02/09/1984	15.25%	11.42%	3.83%
02/15/1984	15.70%	11.44%	4.26%
02/20/1984	15.00%	11.46%	3.54%
02/20/1984	15.00%	11.46%	3.54%
02/22/1984	14.75%	11.47%	3.28%
02/28/1984	14.50%	11.51%	2.99%
03/02/1984	14.25%	11.54%	2.71%
03/20/1984	16.00%	11.64%	4.36%
03/23/1984	15.50%	11.67%	3.83%
03/26/1984	14.71%	11.68%	3.03%
04/02/1984	15.50%	11.71%	3.79%
04/06/1984	14.74%	11.75%	2.99%
04/11/1984	15.72%	11.78%	3.94%
04/17/1984	15.00%	11.81%	3.19%
04/18/1984	16.20%	11.82%	4.38%
04/25/1984	14.64%	11.85%	2.79%
04/30/1984	14.40%	11.87%	2.53%
05/16/1984	14.69%	11.98%	2.71%
05/16/1984	15.00%	11.98%	3.02%
05/22/1984	14.40%	12.02%	2.38%
05/29/1984	15.10%	12.06%	3.04%
06/13/1984	15.25%	12.15%	3.10%
06/15/1984	15.60%	12.17%	3.43%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
06/22/1984	16.25%	12.21%	4.04%
06/29/1984	15.25%	12.26%	2.99%
07/02/1984	13.35%	12.27%	1.08%
07/10/1984	16.00%	12.31%	3.69%
07/12/1984	16.50%	12.32%	4.18%
07/13/1984	16.25%	12.33%	3.92%
07/17/1984	14.14%	12.35%	1.79%
07/18/1984	15.30%	12.36%	2.94%
07/18/1984	15.50%	12.36%	3.14%
07/19/1984	14.30%	12.37%	1.93%
07/24/1984	16.79%	12.39%	4.40%
07/31/1984	16.00%	12.43%	3.57%
08/03/1984	14.25%	12.44%	1.81%
08/17/1984	14.30%	12.49%	1.81%
08/20/1984	15.00%	12.49%	2.51%
08/27/1984	16.30%	12.51%	3.79%
08/31/1984	15.55%	12.52%	3.03%
09/06/1984	16.00%	12.53%	3.47%
09/10/1984	14.75%	12.54%	2.21%
09/13/1984	15.00%	12.55%	2.45%
09/17/1984	17.38%	12.56%	4.82%
09/26/1984	14.50%	12.57%	1.93%
09/28/1984	15.00%	12.57%	2.43%
09/28/1984	16.25%	12.57%	3.68%
10/09/1984	14.75%	12.58%	2.17%
10/12/1984	15.60%	12.59%	3.01%
10/22/1984	15.00%	12.59%	2.41%
10/26/1984	16.40%	12.58%	3.82%
10/31/1984	16.25%	12.58%	3.67%
11/07/1984	15.60%	12.58%	3.02%
11/09/1984	16.00%	12.58%	3.42%
11/14/1984	15.75%	12.58%	3.17%
11/20/1984	15.25%	12.58%	2.67%
11/20/1984	15.92%	12.58%	3.34%
11/23/1984	15.00%	12.58%	2.42%
11/28/1984	16.15%	12.57%	3.58%
12/03/1984	15.80%	12.56%	3.24%
12/04/1984	16.50%	12.56%	3.94%
12/18/1984	16.40%	12.53%	3.87%
12/19/1984	14.75%	12.53%	2.22%
12/19/1984	15.00%	12.53%	2.47%
12/20/1984	16.00%	12.53%	3.47%
12/28/1984	16.00%	12.50%	3.50%
01/03/1985	14.75%	12.49%	2.26%
01/10/1985	15.75%	12.47%	3.28%
01/11/1985	16.30%	12.46%	3.84%
01/23/1985	15.80%	12.43%	3.37%
01/24/1985	15.82%	12.43%	3.39%
01/25/1985	16.75%	12.42%	4.33%
01/30/1985	14.90%	12.40%	2.50%
01/31/1985	14.75%	12.39%	2.36%
02/08/1985	14.47%	12.35%	2.12%
03/01/1985	13.84%	12.31%	1.53%
03/08/1985	16.85%	12.28%	4.57%
03/14/1985	15.50%	12.25%	3.25%
03/15/1985	15.62%	12.25%	3.37%
03/29/1985	15.62%	12.17%	3.45%
04/03/1985	14.60%	12.14%	2.46%
04/09/1985	15.50%	12.11%	3.39%
04/16/1985	15.70%	12.06%	3.64%
04/22/1985	14.00%	12.02%	1.98%
04/26/1985	15.50%	11.98%	3.52%
04/29/1985	15.00%	11.97%	3.03%
05/02/1985	14.68%	11.94%	2.74%
05/08/1985	15.62%	11.89%	3.73%
05/10/1985	16.50%	11.87%	4.63%
05/29/1985	14.61%	11.73%	2.88%
05/31/1985	16.00%	11.71%	4.29%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
06/14/1985	15.50%	11.61%	3.89%
07/09/1985	15.00%	11.45%	3.55%
07/16/1985	14.50%	11.39%	3.11%
07/26/1985	14.50%	11.33%	3.17%
08/02/1985	14.80%	11.29%	3.51%
08/07/1985	15.00%	11.27%	3.73%
08/28/1985	14.25%	11.15%	3.10%
08/28/1985	15.50%	11.15%	4.35%
08/29/1985	14.50%	11.15%	3.35%
09/09/1985	14.60%	11.11%	3.49%
09/09/1985	14.90%	11.11%	3.79%
09/17/1985	14.90%	11.08%	3.82%
09/23/1985	15.00%	11.06%	3.94%
09/27/1985	15.50%	11.05%	4.45%
09/27/1985	15.80%	11.05%	4.75%
10/02/1985	14.00%	11.03%	2.97%
10/02/1985	14.75%	11.03%	3.72%
10/03/1985	15.25%	11.03%	4.22%
10/24/1985	15.40%	10.96%	4.44%
10/24/1985	15.82%	10.96%	4.86%
10/24/1985	15.85%	10.96%	4.89%
10/28/1985	16.00%	10.95%	5.05%
10/29/1985	16.65%	10.94%	5.71%
10/31/1985	15.06%	10.93%	4.13%
11/04/1985	14.50%	10.92%	3.58%
11/07/1985	15.50%	10.90%	4.60%
11/08/1985	14.30%	10.89%	3.41%
12/12/1985	14.75%	10.73%	4.02%
12/18/1985	15.00%	10.69%	4.31%
12/20/1985	14.50%	10.67%	3.83%
12/20/1985	14.50%	10.67%	3.83%
12/20/1985	15.00%	10.67%	4.33%
01/24/1986	15.40%	10.41%	4.99%
01/31/1986	15.00%	10.35%	4.65%
02/05/1986	15.00%	10.32%	4.68%
02/05/1986	15.75%	10.32%	5.43%
02/10/1986	13.30%	10.29%	3.01%
02/11/1986	12.50%	10.28%	2.22%
02/14/1986	14.40%	10.24%	4.16%
02/18/1986	16.00%	10.23%	5.77%
02/24/1986	14.50%	10.18%	4.32%
02/26/1986	14.00%	10.15%	3.85%
03/05/1986	14.90%	10.08%	4.82%
03/11/1986	14.50%	10.02%	4.48%
03/12/1986	13.50%	10.00%	3.50%
03/27/1986	14.10%	9.86%	4.24%
03/31/1986	13.50%	9.84%	3.66%
04/01/1986	14.00%	9.83%	4.17%
04/02/1986	15.50%	9.81%	5.69%
04/04/1986	15.00%	9.78%	5.22%
04/14/1986	13.40%	9.69%	3.71%
04/23/1986	15.00%	9.57%	5.43%
05/16/1986	14.50%	9.32%	5.18%
05/16/1986	14.50%	9.32%	5.18%
05/29/1986	13.90%	9.19%	4.71%
05/30/1986	15.10%	9.18%	5.92%
06/02/1986	12.81%	9.17%	3.64%
06/11/1986	14.00%	9.07%	4.93%
06/24/1986	16.63%	8.94%	7.69%
06/26/1986	12.00%	8.91%	3.09%
06/26/1986	14.75%	8.91%	5.84%
06/30/1986	13.00%	8.87%	4.13%
07/10/1986	14.34%	8.75%	5.59%
07/11/1986	12.75%	8.73%	4.02%
07/14/1986	12.60%	8.71%	3.89%
07/17/1986	12.40%	8.66%	3.74%
07/25/1986	14.25%	8.57%	5.68%
08/06/1986	13.50%	8.44%	5.06%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
08/14/1986	13.50%	8.35%	5.15%
09/16/1986	12.75%	8.06%	4.69%
09/19/1986	13.25%	8.03%	5.22%
10/01/1986	14.00%	7.95%	6.05%
10/03/1986	13.40%	7.93%	5.47%
10/31/1986	13.50%	7.77%	5.73%
11/05/1986	13.00%	7.75%	5.25%
12/03/1986	12.90%	7.58%	5.32%
12/04/1986	14.44%	7.58%	6.86%
12/16/1986	13.60%	7.52%	6.08%
12/22/1986	13.80%	7.51%	6.29%
12/30/1986	13.00%	7.49%	5.51%
01/02/1987	13.00%	7.49%	5.51%
01/12/1987	12.40%	7.47%	4.93%
01/27/1987	12.71%	7.46%	5.25%
03/02/1987	12.47%	7.47%	5.00%
03/03/1987	13.60%	7.47%	6.13%
03/04/1987	12.38%	7.47%	4.91%
03/10/1987	13.50%	7.47%	6.03%
03/13/1987	13.00%	7.47%	5.53%
03/31/1987	13.00%	7.46%	5.54%
04/06/1987	13.00%	7.47%	5.53%
04/14/1987	12.50%	7.49%	5.01%
04/16/1987	14.50%	7.50%	7.00%
04/27/1987	12.00%	7.54%	4.46%
05/05/1987	12.85%	7.58%	5.27%
05/12/1987	12.65%	7.62%	5.03%
05/28/1987	13.50%	7.70%	5.80%
06/15/1987	13.20%	7.78%	5.42%
06/29/1987	15.00%	7.83%	7.17%
06/30/1987	12.50%	7.84%	4.66%
07/08/1987	12.00%	7.86%	4.14%
07/10/1987	12.90%	7.86%	5.04%
07/15/1987	13.50%	7.88%	5.62%
07/16/1987	13.50%	7.88%	5.62%
07/16/1987	15.00%	7.88%	7.12%
07/27/1987	13.00%	7.92%	5.08%
07/27/1987	13.40%	7.92%	5.48%
07/27/1987	13.50%	7.92%	5.58%
07/31/1987	12.98%	7.95%	5.03%
08/26/1987	12.63%	8.06%	4.57%
08/26/1987	12.75%	8.06%	4.69%
08/27/1987	13.25%	8.06%	5.19%
09/09/1987	13.00%	8.14%	4.86%
09/30/1987	12.75%	8.31%	4.44%
09/30/1987	13.00%	8.31%	4.69%
10/02/1987	11.50%	8.33%	3.17%
10/15/1987	13.00%	8.43%	4.57%
11/02/1987	13.00%	8.55%	4.45%
11/19/1987	13.00%	8.64%	4.36%
11/30/1987	12.00%	8.68%	3.32%
12/03/1987	14.20%	8.70%	5.50%
12/15/1987	13.25%	8.77%	4.48%
12/16/1987	13.50%	8.78%	4.72%
12/16/1987	13.72%	8.78%	4.94%
12/17/1987	11.75%	8.79%	2.96%
12/18/1987	13.50%	8.80%	4.70%
12/21/1987	12.01%	8.81%	3.20%
12/22/1987	12.00%	8.81%	3.19%
12/22/1987	12.00%	8.81%	3.19%
12/22/1987	12.75%	8.81%	3.94%
12/22/1987	13.00%	8.81%	4.19%
01/20/1988	13.80%	8.94%	4.86%
01/26/1988	13.90%	8.95%	4.95%
01/29/1988	13.20%	8.96%	4.24%
02/04/1988	12.60%	8.96%	3.64%
03/01/1988	11.56%	8.94%	2.62%
03/23/1988	12.87%	8.92%	3.95%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
03/24/1988	11.24%	8.92%	2.32%
03/30/1988	12.72%	8.92%	3.80%
04/01/1988	12.50%	8.92%	3.58%
04/07/1988	13.25%	8.93%	4.32%
04/25/1988	10.96%	8.96%	2.00%
05/03/1988	12.91%	8.97%	3.94%
05/11/1988	13.50%	8.99%	4.51%
05/16/1988	13.00%	8.99%	4.01%
06/30/1988	12.75%	9.00%	3.75%
07/01/1988	12.75%	8.99%	3.76%
07/20/1988	13.40%	8.96%	4.44%
08/05/1988	12.75%	8.92%	3.83%
08/23/1988	11.70%	8.93%	2.77%
08/29/1988	12.75%	8.94%	3.81%
08/30/1988	13.50%	8.94%	4.56%
09/08/1988	12.60%	8.95%	3.65%
10/13/1988	13.10%	8.93%	4.17%
12/19/1988	13.00%	9.02%	3.98%
12/20/1988	12.25%	9.02%	3.23%
12/20/1988	13.00%	9.02%	3.98%
12/21/1988	12.90%	9.02%	3.88%
12/27/1988	13.00%	9.03%	3.97%
12/28/1988	13.10%	9.03%	4.07%
12/30/1988	13.40%	9.04%	4.36%
01/27/1989	13.00%	9.05%	3.95%
01/31/1989	13.00%	9.05%	3.95%
02/17/1989	13.00%	9.05%	3.95%
02/20/1989	12.40%	9.05%	3.35%
03/01/1989	12.76%	9.05%	3.71%
03/08/1989	13.00%	9.05%	3.95%
03/30/1989	14.00%	9.05%	4.95%
04/05/1989	14.20%	9.05%	5.15%
04/18/1989	13.00%	9.05%	3.95%
05/05/1989	12.40%	9.05%	3.35%
06/02/1989	13.20%	9.00%	4.20%
06/08/1989	13.50%	8.98%	4.52%
06/27/1989	13.25%	8.91%	4.34%
06/30/1989	13.00%	8.90%	4.10%
08/14/1989	12.50%	8.77%	3.73%
09/28/1989	12.25%	8.63%	3.62%
10/24/1989	12.50%	8.54%	3.96%
11/09/1989	13.00%	8.49%	4.51%
12/15/1989	13.00%	8.34%	4.66%
12/20/1989	12.90%	8.32%	4.58%
12/21/1989	12.90%	8.31%	4.59%
12/27/1989	12.50%	8.29%	4.21%
12/27/1989	13.00%	8.29%	4.71%
01/10/1990	12.80%	8.24%	4.56%
01/11/1990	12.90%	8.24%	4.66%
01/17/1990	12.80%	8.22%	4.58%
01/26/1990	12.00%	8.20%	3.80%
02/09/1990	12.10%	8.17%	3.93%
02/24/1990	12.86%	8.15%	4.71%
03/30/1990	12.90%	8.16%	4.74%
04/04/1990	15.76%	8.17%	7.59%
04/12/1990	12.52%	8.18%	4.34%
04/19/1990	12.75%	8.20%	4.55%
05/21/1990	12.10%	8.28%	3.82%
05/29/1990	12.40%	8.30%	4.10%
05/31/1990	12.00%	8.30%	3.70%
06/04/1990	12.90%	8.30%	4.60%
06/06/1990	12.25%	8.31%	3.94%
06/15/1990	13.20%	8.32%	4.88%
06/20/1990	12.92%	8.32%	4.60%
06/27/1990	12.90%	8.33%	4.57%
06/29/1990	12.50%	8.33%	4.17%
07/06/1990	12.10%	8.34%	3.76%
07/06/1990	12.35%	8.34%	4.01%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
08/10/1990	12.55%	8.41%	4.14%
08/16/1990	13.21%	8.43%	4.78%
08/22/1990	13.10%	8.45%	4.65%
08/24/1990	13.00%	8.46%	4.54%
09/26/1990	11.45%	8.59%	2.86%
10/02/1990	13.00%	8.61%	4.39%
10/05/1990	12.84%	8.62%	4.22%
10/19/1990	13.00%	8.67%	4.33%
10/25/1990	12.30%	8.68%	3.62%
11/21/1990	12.70%	8.69%	4.01%
12/13/1990	12.30%	8.67%	3.63%
12/17/1990	12.87%	8.67%	4.20%
12/18/1990	13.10%	8.67%	4.43%
12/19/1990	12.00%	8.66%	3.34%
12/20/1990	12.75%	8.66%	4.09%
12/21/1990	12.50%	8.66%	3.84%
12/27/1990	12.79%	8.66%	4.13%
01/02/1991	13.10%	8.65%	4.45%
01/04/1991	12.50%	8.65%	3.85%
01/15/1991	12.75%	8.64%	4.11%
01/25/1991	11.70%	8.63%	3.07%
02/04/1991	12.50%	8.60%	3.90%
02/07/1991	12.50%	8.59%	3.91%
02/12/1991	13.00%	8.58%	4.43%
02/14/1991	12.72%	8.57%	4.15%
02/22/1991	12.80%	8.55%	4.25%
03/06/1991	13.10%	8.53%	4.57%
03/08/1991	12.30%	8.52%	3.78%
03/08/1991	13.00%	8.52%	4.48%
04/22/1991	13.00%	8.49%	4.51%
05/07/1991	13.50%	8.47%	5.03%
05/13/1991	13.25%	8.47%	4.78%
05/30/1991	12.75%	8.44%	4.31%
06/12/1991	12.00%	8.41%	3.59%
06/25/1991	11.70%	8.39%	3.31%
06/28/1991	12.50%	8.38%	4.12%
07/01/1991	12.00%	8.38%	3.62%
07/03/1991	12.50%	8.37%	4.13%
07/19/1991	12.10%	8.34%	3.76%
08/01/1991	12.90%	8.32%	4.58%
08/16/1991	13.20%	8.29%	4.91%
09/27/1991	12.50%	8.23%	4.27%
09/30/1991	12.25%	8.23%	4.02%
10/17/1991	13.00%	8.20%	4.80%
10/23/1991	12.50%	8.20%	4.30%
10/23/1991	12.55%	8.20%	4.35%
10/31/1991	11.80%	8.19%	3.61%
11/01/1991	12.00%	8.19%	3.81%
11/05/1991	12.25%	8.19%	4.06%
11/12/1991	12.50%	8.18%	4.32%
11/12/1991	13.25%	8.18%	5.07%
11/25/1991	12.40%	8.18%	4.22%
11/26/1991	11.60%	8.18%	3.42%
11/26/1991	12.50%	8.18%	4.32%
11/27/1991	12.10%	8.18%	3.92%
12/18/1991	12.25%	8.15%	4.10%
12/19/1991	12.60%	8.15%	4.45%
12/19/1991	12.80%	8.15%	4.65%
12/20/1991	12.65%	8.14%	4.51%
01/09/1992	12.80%	8.09%	4.71%
01/16/1992	12.75%	8.07%	4.68%
01/21/1992	12.00%	8.06%	3.94%
01/22/1992	13.00%	8.06%	4.94%
01/27/1992	12.65%	8.05%	4.60%
01/31/1992	12.00%	8.04%	3.96%
02/11/1992	12.40%	8.03%	4.37%
02/25/1992	12.50%	8.01%	4.49%
03/16/1992	11.43%	7.98%	3.45%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
03/18/1992	12.28%	7.98%	4.30%
04/02/1992	12.10%	7.95%	4.15%
04/09/1992	11.45%	7.94%	3.51%
04/10/1992	11.50%	7.93%	3.57%
04/14/1992	11.50%	7.93%	3.57%
05/05/1992	11.50%	7.89%	3.61%
05/12/1992	11.87%	7.88%	3.99%
05/12/1992	12.46%	7.88%	4.58%
06/01/1992	12.30%	7.87%	4.43%
06/12/1992	10.90%	7.86%	3.04%
06/26/1992	12.35%	7.85%	4.50%
06/29/1992	11.00%	7.85%	3.15%
06/30/1992	13.00%	7.85%	5.15%
07/13/1992	11.90%	7.84%	4.06%
07/13/1992	13.50%	7.84%	5.66%
07/22/1992	11.20%	7.83%	3.37%
08/03/1992	12.00%	7.81%	4.19%
08/06/1992	12.50%	7.80%	4.70%
09/22/1992	12.00%	7.71%	4.29%
09/28/1992	11.40%	7.71%	3.69%
09/30/1992	11.75%	7.70%	4.05%
10/02/1992	13.00%	7.70%	5.30%
10/12/1992	12.20%	7.70%	4.50%
10/16/1992	13.16%	7.70%	5.46%
10/30/1992	11.75%	7.71%	4.04%
11/03/1992	12.00%	7.71%	4.29%
12/03/1992	11.85%	7.68%	4.17%
12/15/1992	11.00%	7.66%	3.34%
12/16/1992	11.90%	7.66%	4.24%
12/16/1992	12.40%	7.66%	4.74%
12/17/1992	12.00%	7.66%	4.34%
12/22/1992	12.30%	7.65%	4.65%
12/22/1992	12.40%	7.65%	4.75%
12/29/1992	12.25%	7.63%	4.62%
12/30/1992	12.00%	7.63%	4.37%
12/31/1992	11.90%	7.63%	4.27%
01/12/1993	12.00%	7.61%	4.39%
01/21/1993	11.25%	7.59%	3.66%
02/02/1993	11.40%	7.56%	3.84%
02/15/1993	12.30%	7.52%	4.78%
02/24/1993	11.90%	7.49%	4.41%
02/26/1993	11.80%	7.48%	4.32%
02/26/1993	12.20%	7.48%	4.72%
04/23/1993	11.75%	7.29%	4.46%
05/11/1993	11.75%	7.25%	4.50%
05/14/1993	11.50%	7.24%	4.26%
05/25/1993	11.50%	7.23%	4.27%
05/28/1993	11.00%	7.22%	3.78%
06/03/1993	12.00%	7.21%	4.79%
06/16/1993	11.50%	7.19%	4.31%
06/18/1993	12.10%	7.18%	4.92%
06/25/1993	11.67%	7.17%	4.50%
07/21/1993	11.38%	7.10%	4.28%
07/23/1993	10.46%	7.09%	3.37%
08/24/1993	11.50%	6.96%	4.54%
09/21/1993	10.50%	6.81%	3.69%
09/29/1993	11.47%	6.77%	4.70%
09/30/1993	11.60%	6.76%	4.84%
11/02/1993	10.80%	6.60%	4.20%
11/12/1993	12.00%	6.57%	5.43%
11/26/1993	11.00%	6.52%	4.48%
12/14/1993	10.55%	6.48%	4.07%
12/16/1993	10.60%	6.48%	4.12%
12/21/1993	11.30%	6.47%	4.83%
01/04/1994	10.07%	6.44%	3.63%
01/13/1994	11.00%	6.42%	4.58%
01/21/1994	11.00%	6.40%	4.60%
01/28/1994	11.35%	6.39%	4.96%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
02/03/1994	11.40%	6.38%	5.02%
02/17/1994	10.60%	6.36%	4.24%
02/25/1994	11.25%	6.35%	4.90%
02/25/1994	12.00%	6.35%	5.65%
03/01/1994	11.00%	6.35%	4.65%
03/04/1994	11.00%	6.35%	4.65%
04/25/1994	11.00%	6.41%	4.59%
05/10/1994	11.75%	6.45%	5.30%
05/13/1994	10.50%	6.46%	4.04%
06/03/1994	11.00%	6.54%	4.46%
06/27/1994	11.40%	6.65%	4.75%
08/05/1994	12.75%	6.88%	5.87%
10/31/1994	10.00%	7.33%	2.67%
11/09/1994	10.85%	7.39%	3.46%
11/09/1994	10.85%	7.39%	3.46%
11/18/1994	11.20%	7.45%	3.75%
11/22/1994	11.60%	7.47%	4.13%
11/28/1994	11.06%	7.49%	3.57%
12/08/1994	11.50%	7.54%	3.96%
12/08/1994	11.70%	7.54%	4.16%
12/14/1994	10.95%	7.56%	3.39%
12/15/1994	11.50%	7.57%	3.93%
12/19/1994	11.50%	7.58%	3.92%
12/28/1994	12.15%	7.61%	4.54%
01/09/1995	12.28%	7.64%	4.64%
01/31/1995	11.00%	7.69%	3.31%
02/10/1995	12.60%	7.70%	4.90%
02/17/1995	11.90%	7.70%	4.20%
03/09/1995	11.50%	7.71%	3.79%
03/20/1995	12.00%	7.72%	4.28%
03/23/1995	12.81%	7.72%	5.09%
03/29/1995	11.60%	7.72%	3.88%
04/06/1995	11.10%	7.71%	3.39%
04/07/1995	11.00%	7.71%	3.29%
04/19/1995	11.00%	7.70%	3.30%
05/12/1995	11.63%	7.68%	3.95%
05/25/1995	11.20%	7.65%	3.55%
06/09/1995	11.25%	7.60%	3.65%
06/21/1995	12.25%	7.56%	4.69%
06/30/1995	11.10%	7.52%	3.58%
09/11/1995	11.30%	7.20%	4.10%
09/27/1995	11.30%	7.12%	4.18%
09/27/1995	11.50%	7.12%	4.38%
09/27/1995	11.75%	7.12%	4.63%
09/29/1995	11.00%	7.11%	3.89%
11/09/1995	11.38%	6.90%	4.48%
11/09/1995	12.36%	6.90%	5.46%
11/17/1995	11.00%	6.86%	4.14%
12/04/1995	11.35%	6.78%	4.57%
12/11/1995	11.40%	6.74%	4.66%
12/20/1995	11.60%	6.70%	4.90%
12/27/1995	12.00%	6.66%	5.34%
02/05/1996	12.25%	6.48%	5.77%
03/29/1996	10.67%	6.42%	4.25%
04/08/1996	11.00%	6.42%	4.58%
04/11/1996	12.59%	6.43%	6.16%
04/11/1996	12.59%	6.43%	6.16%
04/24/1996	11.25%	6.43%	4.82%
04/30/1996	11.00%	6.43%	4.57%
05/13/1996	11.00%	6.44%	4.56%
05/23/1996	11.25%	6.43%	4.82%
06/25/1996	11.25%	6.48%	4.77%
06/27/1996	11.20%	6.48%	4.72%
08/12/1996	10.40%	6.57%	3.83%
09/27/1996	11.00%	6.71%	4.29%
10/16/1996	12.25%	6.76%	5.49%
11/05/1996	11.00%	6.81%	4.19%
11/26/1996	11.30%	6.83%	4.47%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
12/18/1996	11.75%	6.83%	4.92%
12/31/1996	11.50%	6.83%	4.67%
01/03/1997	10.70%	6.83%	3.87%
02/13/1997	11.80%	6.82%	4.98%
02/20/1997	11.80%	6.82%	4.98%
03/31/1997	10.02%	6.80%	3.22%
04/02/1997	11.65%	6.80%	4.85%
04/28/1997	11.50%	6.81%	4.69%
04/29/1997	11.70%	6.81%	4.89%
07/17/1997	12.00%	6.77%	5.23%
12/12/1997	11.00%	6.60%	4.40%
12/23/1997	11.12%	6.57%	4.55%
02/02/1998	12.75%	6.39%	6.36%
03/02/1998	11.25%	6.29%	4.96%
03/06/1998	10.75%	6.27%	4.48%
03/20/1998	10.50%	6.22%	4.28%
04/30/1998	12.20%	6.12%	6.08%
07/10/1998	11.40%	5.94%	5.46%
09/15/1998	11.90%	5.78%	6.12%
11/30/1998	12.60%	5.58%	7.02%
12/10/1998	12.20%	5.54%	6.66%
12/17/1998	12.10%	5.52%	6.58%
02/05/1999	10.30%	5.38%	4.92%
03/04/1999	10.50%	5.34%	5.16%
04/06/1999	10.94%	5.32%	5.62%
07/29/1999	10.75%	5.52%	5.23%
09/23/1999	10.75%	5.70%	5.05%
11/17/1999	11.10%	5.90%	5.20%
01/07/2000	11.50%	6.05%	5.45%
01/07/2000	11.50%	6.05%	5.45%
02/17/2000	10.60%	6.17%	4.43%
03/28/2000	11.25%	6.20%	5.05%
05/24/2000	11.00%	6.18%	4.82%
07/18/2000	12.20%	6.16%	6.04%
09/29/2000	11.16%	6.03%	5.13%
11/28/2000	12.90%	5.89%	7.01%
11/30/2000	12.10%	5.88%	6.22%
01/23/2001	11.25%	5.79%	5.46%
02/08/2001	11.50%	5.77%	5.73%
05/08/2001	10.75%	5.62%	5.13%
06/26/2001	11.00%	5.62%	5.38%
07/25/2001	11.02%	5.60%	5.42%
07/25/2001	11.02%	5.60%	5.42%
07/31/2001	11.00%	5.59%	5.41%
08/31/2001	10.50%	5.56%	4.94%
09/07/2001	10.75%	5.55%	5.20%
09/10/2001	11.00%	5.55%	5.45%
09/20/2001	10.00%	5.55%	4.45%
10/24/2001	10.30%	5.54%	4.76%
11/28/2001	10.60%	5.49%	5.11%
12/03/2001	12.88%	5.49%	7.39%
12/20/2001	12.50%	5.50%	7.00%
01/22/2002	10.00%	5.50%	4.50%
03/27/2002	10.10%	5.45%	4.65%
04/22/2002	11.80%	5.45%	6.35%
05/28/2002	10.17%	5.46%	4.71%
06/10/2002	12.00%	5.47%	6.53%
06/18/2002	11.16%	5.48%	5.68%
06/20/2002	11.00%	5.48%	5.52%
06/20/2002	12.30%	5.48%	6.82%
07/15/2002	11.00%	5.48%	5.52%
09/12/2002	12.30%	5.45%	6.85%
09/26/2002	10.45%	5.41%	5.04%
12/04/2002	11.55%	5.29%	6.26%
12/13/2002	11.75%	5.27%	6.48%
12/20/2002	11.40%	5.25%	6.15%
01/08/2003	11.10%	5.19%	5.91%
01/31/2003	12.45%	5.13%	7.32%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
02/28/2003	12.30%	5.05%	7.25%
03/06/2003	10.75%	5.03%	5.72%
03/07/2003	9.96%	5.02%	4.94%
03/20/2003	12.00%	4.98%	7.02%
04/03/2003	12.00%	4.96%	7.04%
04/15/2003	11.15%	4.94%	6.21%
06/25/2003	10.75%	4.79%	5.96%
06/26/2003	10.75%	4.79%	5.96%
07/09/2003	9.75%	4.79%	4.96%
07/16/2003	9.75%	4.79%	4.96%
07/25/2003	9.50%	4.80%	4.70%
08/26/2003	10.50%	4.83%	5.67%
12/17/2003	9.85%	4.94%	4.91%
12/17/2003	10.70%	4.94%	5.76%
12/18/2003	11.50%	4.94%	6.56%
12/19/2003	12.00%	4.94%	7.06%
12/19/2003	12.00%	4.94%	7.06%
12/23/2003	10.50%	4.94%	5.56%
01/13/2004	12.00%	4.95%	7.05%
03/02/2004	10.75%	4.99%	5.76%
03/26/2004	10.25%	5.02%	5.23%
04/05/2004	11.25%	5.03%	6.22%
05/18/2004	10.50%	5.07%	5.43%
05/25/2004	10.25%	5.08%	5.17%
05/27/2004	10.25%	5.08%	5.17%
06/02/2004	11.22%	5.08%	6.14%
06/30/2004	10.50%	5.10%	5.40%
06/30/2004	10.50%	5.10%	5.40%
07/16/2004	11.60%	5.11%	6.49%
08/25/2004	10.25%	5.10%	5.15%
09/09/2004	10.40%	5.10%	5.30%
11/09/2004	10.50%	5.07%	5.43%
11/23/2004	11.00%	5.06%	5.94%
12/14/2004	10.97%	5.07%	5.90%
12/21/2004	11.25%	5.07%	6.18%
12/21/2004	11.50%	5.07%	6.43%
12/22/2004	10.70%	5.07%	5.63%
12/22/2004	11.50%	5.07%	6.43%
12/29/2004	9.85%	5.07%	4.78%
01/06/2005	10.70%	5.08%	5.62%
02/18/2005	10.30%	4.98%	5.32%
02/25/2005	10.50%	4.96%	5.54%
03/10/2005	11.00%	4.93%	6.07%
03/24/2005	10.30%	4.90%	5.40%
04/04/2005	10.00%	4.88%	5.12%
04/07/2005	10.25%	4.87%	5.38%
05/18/2005	10.25%	4.78%	5.47%
05/25/2005	10.75%	4.76%	5.99%
05/26/2005	9.75%	4.76%	4.99%
06/01/2005	9.75%	4.75%	5.00%
07/19/2005	11.50%	4.64%	6.86%
08/05/2005	11.75%	4.62%	7.13%
08/15/2005	10.13%	4.61%	5.52%
09/28/2005	10.00%	4.54%	5.46%
10/04/2005	10.75%	4.54%	6.21%
12/12/2005	11.00%	4.55%	6.45%
12/13/2005	10.75%	4.55%	6.20%
12/21/2005	10.29%	4.54%	5.75%
12/21/2005	10.40%	4.54%	5.86%
12/22/2005	11.00%	4.54%	6.46%
12/22/2005	11.15%	4.54%	6.61%
12/28/2005	10.00%	4.54%	5.46%
12/28/2005	10.00%	4.54%	5.46%
01/05/2006	11.00%	4.53%	6.47%
01/27/2006	9.75%	4.52%	5.23%
03/03/2006	10.39%	4.53%	5.86%
04/17/2006	10.20%	4.61%	5.59%
04/26/2006	10.60%	4.64%	5.96%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
05/17/2006	11.60%	4.69%	6.91%
06/06/2006	10.00%	4.74%	5.26%
06/27/2006	10.75%	4.80%	5.95%
07/06/2006	10.20%	4.83%	5.37%
07/24/2006	9.60%	4.86%	4.74%
07/26/2006	10.50%	4.86%	5.64%
07/28/2006	10.05%	4.86%	5.19%
08/23/2006	9.55%	4.89%	4.66%
09/01/2006	10.54%	4.90%	5.64%
09/14/2006	10.00%	4.91%	5.09%
10/06/2006	9.67%	4.92%	4.75%
11/21/2006	10.08%	4.95%	5.13%
11/21/2006	10.08%	4.95%	5.13%
11/21/2006	10.12%	4.95%	5.17%
12/01/2006	10.25%	4.95%	5.30%
12/01/2006	10.50%	4.95%	5.55%
12/07/2006	10.75%	4.95%	5.80%
12/21/2006	10.90%	4.95%	5.95%
12/21/2006	11.25%	4.95%	6.30%
12/22/2006	10.25%	4.95%	5.30%
01/05/2007	10.00%	4.95%	5.05%
01/11/2007	10.10%	4.95%	5.15%
01/11/2007	10.10%	4.95%	5.15%
01/11/2007	10.90%	4.95%	5.95%
01/12/2007	10.10%	4.95%	5.15%
01/13/2007	10.40%	4.95%	5.45%
01/19/2007	10.80%	4.94%	5.86%
03/21/2007	11.35%	4.87%	6.48%
03/22/2007	9.75%	4.86%	4.89%
05/15/2007	10.00%	4.81%	5.19%
05/17/2007	10.25%	4.81%	5.44%
05/17/2007	10.25%	4.81%	5.44%
05/22/2007	10.20%	4.80%	5.40%
05/22/2007	10.50%	4.80%	5.70%
05/23/2007	10.70%	4.80%	5.90%
05/25/2007	9.67%	4.80%	4.87%
06/15/2007	9.90%	4.82%	5.08%
06/21/2007	10.20%	4.83%	5.37%
06/22/2007	10.50%	4.83%	5.67%
06/28/2007	10.75%	4.84%	5.91%
07/12/2007	9.67%	4.86%	4.81%
07/19/2007	10.00%	4.87%	5.13%
07/19/2007	10.00%	4.87%	5.13%
08/15/2007	10.40%	4.88%	5.52%
10/09/2007	10.00%	4.91%	5.09%
10/17/2007	9.10%	4.91%	4.19%
10/31/2007	9.96%	4.90%	5.06%
11/29/2007	10.90%	4.87%	6.03%
12/06/2007	10.75%	4.86%	5.89%
12/13/2007	9.96%	4.86%	5.10%
12/14/2007	10.70%	4.86%	5.84%
12/14/2007	10.80%	4.86%	5.94%
12/19/2007	10.20%	4.86%	5.34%
12/20/2007	10.20%	4.85%	5.35%
12/20/2007	11.00%	4.85%	6.15%
12/28/2007	10.25%	4.85%	5.40%
12/31/2007	11.25%	4.85%	6.40%
01/08/2008	10.75%	4.83%	5.92%
01/17/2008	10.75%	4.81%	5.94%
01/28/2008	9.40%	4.80%	4.60%
01/30/2008	10.00%	4.79%	5.21%
01/31/2008	10.71%	4.79%	5.92%
02/29/2008	10.25%	4.75%	5.50%
03/12/2008	10.25%	4.73%	5.52%
03/25/2008	9.10%	4.68%	4.42%
04/22/2008	10.25%	4.60%	5.65%
04/24/2008	10.10%	4.60%	5.50%
05/01/2008	10.70%	4.59%	6.11%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
05/19/2008	11.00%	4.56%	6.44%
05/27/2008	10.00%	4.55%	5.45%
06/10/2008	10.70%	4.54%	6.16%
06/27/2008	10.50%	4.54%	5.96%
06/27/2008	11.04%	4.54%	6.50%
07/10/2008	10.43%	4.52%	5.91%
07/16/2008	9.40%	4.52%	4.88%
07/30/2008	10.80%	4.51%	6.29%
07/31/2008	10.70%	4.51%	6.19%
08/11/2008	10.25%	4.51%	5.74%
08/26/2008	10.18%	4.50%	5.68%
09/10/2008	10.30%	4.50%	5.80%
09/24/2008	10.65%	4.48%	6.17%
09/24/2008	10.65%	4.48%	6.17%
09/24/2008	10.65%	4.48%	6.17%
09/30/2008	10.20%	4.48%	5.72%
10/08/2008	10.15%	4.46%	5.69%
11/13/2008	10.55%	4.45%	6.10%
11/17/2008	10.20%	4.44%	5.76%
12/01/2008	10.25%	4.40%	5.85%
12/23/2008	11.00%	4.27%	6.73%
12/29/2008	10.00%	4.24%	5.76%
12/29/2008	10.20%	4.24%	5.96%
12/31/2008	10.75%	4.22%	6.53%
01/14/2009	10.50%	4.15%	6.35%
01/21/2009	10.50%	4.12%	6.38%
01/21/2009	10.50%	4.12%	6.38%
01/21/2009	10.50%	4.12%	6.38%
01/27/2009	10.76%	4.09%	6.67%
01/30/2009	10.50%	4.08%	6.42%
02/04/2009	8.75%	4.06%	4.69%
03/04/2009	10.50%	3.96%	6.54%
03/12/2009	11.50%	3.93%	7.57%
04/02/2009	11.10%	3.85%	7.25%
04/21/2009	10.61%	3.80%	6.81%
04/24/2009	10.00%	3.79%	6.21%
04/30/2009	11.25%	3.78%	7.47%
05/04/2009	10.74%	3.77%	6.97%
05/20/2009	10.25%	3.74%	6.51%
05/28/2009	10.50%	3.74%	6.76%
06/22/2009	10.00%	3.76%	6.24%
06/24/2009	10.80%	3.77%	7.03%
07/08/2009	10.63%	3.77%	6.86%
07/17/2009	10.50%	3.78%	6.72%
08/31/2009	10.25%	3.82%	6.43%
10/14/2009	10.70%	4.01%	6.69%
10/23/2009	10.88%	4.06%	6.82%
11/02/2009	10.70%	4.09%	6.61%
11/03/2009	10.70%	4.10%	6.60%
11/24/2009	10.25%	4.15%	6.10%
11/25/2009	10.75%	4.16%	6.59%
11/30/2009	10.35%	4.17%	6.18%
12/03/2009	10.50%	4.18%	6.32%
12/07/2009	10.70%	4.18%	6.52%
12/16/2009	10.90%	4.21%	6.69%
12/16/2009	11.00%	4.21%	6.79%
12/18/2009	10.40%	4.22%	6.18%
12/18/2009	10.40%	4.22%	6.18%
12/22/2009	10.20%	4.23%	5.97%
12/22/2009	10.40%	4.23%	6.17%
12/22/2009	10.40%	4.23%	6.17%
12/30/2009	10.00%	4.26%	5.74%
01/04/2010	10.80%	4.28%	6.52%
01/11/2010	11.00%	4.30%	6.70%
01/26/2010	10.13%	4.35%	5.78%
01/27/2010	10.40%	4.35%	6.05%
01/27/2010	10.40%	4.35%	6.05%
01/27/2010	10.70%	4.35%	6.35%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
02/09/2010	9.80%	4.38%	5.42%
02/18/2010	10.60%	4.40%	6.20%
02/24/2010	10.18%	4.41%	5.77%
03/02/2010	9.63%	4.41%	5.22%
03/04/2010	10.50%	4.41%	6.09%
03/05/2010	10.50%	4.41%	6.09%
03/11/2010	11.90%	4.42%	7.48%
03/17/2010	10.00%	4.41%	5.59%
03/25/2010	10.15%	4.42%	5.73%
04/02/2010	10.10%	4.43%	5.67%
04/27/2010	10.00%	4.46%	5.54%
04/29/2010	9.90%	4.46%	5.44%
04/29/2010	10.06%	4.46%	5.60%
04/29/2010	10.26%	4.46%	5.80%
05/12/2010	10.30%	4.45%	5.85%
05/12/2010	10.30%	4.45%	5.85%
05/28/2010	10.10%	4.44%	5.66%
05/28/2010	10.20%	4.44%	5.76%
06/07/2010	10.30%	4.44%	5.86%
06/16/2010	10.00%	4.44%	5.56%
06/28/2010	9.67%	4.43%	5.24%
06/28/2010	10.50%	4.43%	6.07%
06/30/2010	9.40%	4.43%	4.97%
07/01/2010	10.25%	4.43%	5.82%
07/15/2010	10.53%	4.43%	6.10%
07/15/2010	10.70%	4.43%	6.27%
07/30/2010	10.70%	4.41%	6.29%
08/04/2010	10.50%	4.41%	6.09%
08/06/2010	9.83%	4.41%	5.42%
08/25/2010	9.90%	4.37%	5.53%
09/03/2010	10.60%	4.35%	6.25%
09/14/2010	10.70%	4.33%	6.37%
09/16/2010	10.00%	4.33%	5.67%
09/16/2010	10.00%	4.33%	5.67%
09/30/2010	9.75%	4.29%	5.46%
10/14/2010	10.35%	4.24%	6.11%
10/28/2010	10.70%	4.21%	6.49%
11/02/2010	10.38%	4.20%	6.18%
11/04/2010	10.70%	4.20%	6.50%
11/19/2010	10.20%	4.18%	6.02%
11/22/2010	10.00%	4.18%	5.82%
12/01/2010	10.13%	4.16%	5.97%
12/06/2010	9.86%	4.15%	5.71%
12/09/2010	10.25%	4.15%	6.10%
12/13/2010	10.70%	4.15%	6.55%
12/14/2010	10.13%	4.15%	5.98%
12/15/2010	10.44%	4.15%	6.29%
12/17/2010	10.00%	4.15%	5.85%
12/20/2010	10.60%	4.15%	6.45%
12/21/2010	10.30%	4.14%	6.16%
12/27/2010	9.90%	4.14%	5.76%
12/29/2010	11.15%	4.14%	7.01%
01/05/2011	10.15%	4.13%	6.02%
01/12/2011	10.30%	4.12%	6.18%
01/13/2011	10.30%	4.12%	6.18%
01/18/2011	10.00%	4.12%	5.88%
01/20/2011	9.30%	4.12%	5.18%
01/20/2011	10.13%	4.12%	6.01%
01/31/2011	9.60%	4.12%	5.48%
02/03/2011	10.00%	4.12%	5.88%
02/25/2011	10.00%	4.14%	5.86%
03/25/2011	9.80%	4.18%	5.62%
03/30/2011	10.00%	4.18%	5.82%
04/12/2011	10.00%	4.21%	5.79%
04/25/2011	10.74%	4.23%	6.51%
04/26/2011	9.67%	4.23%	5.44%
04/27/2011	10.40%	4.24%	6.16%
05/04/2011	10.00%	4.24%	5.76%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
05/04/2011	10.00%	4.24%	5.76%
05/24/2011	10.50%	4.27%	6.23%
06/08/2011	10.75%	4.30%	6.45%
06/16/2011	9.20%	4.32%	4.88%
06/17/2011	9.95%	4.32%	5.63%
07/13/2011	10.20%	4.36%	5.84%
08/01/2011	9.20%	4.39%	4.81%
08/08/2011	10.00%	4.38%	5.62%
08/11/2011	10.00%	4.38%	5.62%
08/12/2011	10.35%	4.37%	5.98%
08/19/2011	10.25%	4.36%	5.89%
09/02/2011	12.88%	4.32%	8.56%
09/22/2011	10.00%	4.24%	5.76%
10/12/2011	10.30%	4.14%	6.16%
10/20/2011	10.50%	4.10%	6.40%
11/30/2011	10.90%	3.87%	7.03%
11/30/2011	10.90%	3.87%	7.03%
12/14/2011	10.00%	3.80%	6.20%
12/14/2011	10.30%	3.80%	6.50%
12/20/2011	10.20%	3.76%	6.44%
12/21/2011	10.20%	3.76%	6.44%
12/22/2011	9.90%	3.75%	6.15%
12/22/2011	10.40%	3.75%	6.65%
12/23/2011	10.19%	3.74%	6.45%
01/25/2012	10.50%	3.57%	6.93%
01/27/2012	10.50%	3.56%	6.94%
02/15/2012	10.20%	3.47%	6.73%
02/23/2012	9.90%	3.44%	6.46%
02/27/2012	10.25%	3.43%	6.82%
02/29/2012	10.40%	3.41%	6.99%
03/29/2012	10.37%	3.32%	7.05%
04/04/2012	10.00%	3.30%	6.70%
04/26/2012	10.00%	3.21%	6.79%
05/02/2012	10.00%	3.18%	6.82%
05/07/2012	9.80%	3.17%	6.63%
05/15/2012	10.00%	3.14%	6.86%
05/29/2012	10.05%	3.11%	6.94%
06/07/2012	10.30%	3.08%	7.22%
06/14/2012	9.40%	3.06%	6.34%
06/15/2012	10.40%	3.06%	7.34%
06/18/2012	9.60%	3.06%	6.54%
06/19/2012	9.25%	3.05%	6.20%
06/26/2012	10.10%	3.04%	7.06%
06/29/2012	10.00%	3.04%	6.96%
07/09/2012	10.20%	3.03%	7.17%
07/16/2012	9.80%	3.02%	6.78%
07/20/2012	9.31%	3.01%	6.30%
07/20/2012	9.81%	3.01%	6.80%
09/13/2012	9.80%	2.94%	6.86%
09/19/2012	9.80%	2.94%	6.86%
09/19/2012	10.05%	2.94%	7.11%
09/26/2012	9.50%	2.94%	6.56%
10/12/2012	9.60%	2.93%	6.67%
10/23/2012	9.75%	2.93%	6.82%
10/24/2012	10.30%	2.93%	7.37%
11/09/2012	10.30%	2.92%	7.38%
11/28/2012	10.40%	2.90%	7.50%
11/29/2012	9.75%	2.89%	6.86%
11/29/2012	9.88%	2.89%	6.99%
12/05/2012	9.71%	2.89%	6.82%
12/05/2012	10.40%	2.89%	7.51%
12/12/2012	9.80%	2.88%	6.92%
12/13/2012	9.50%	2.88%	6.62%
12/13/2012	10.50%	2.88%	7.62%
12/14/2012	10.40%	2.88%	7.52%
12/19/2012	9.71%	2.87%	6.84%
12/19/2012	10.25%	2.87%	7.38%
12/20/2012	9.50%	2.87%	6.63%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
12/20/2012	9.80%	2.87%	6.93%
12/20/2012	10.25%	2.87%	7.38%
12/20/2012	10.25%	2.87%	7.38%
12/20/2012	10.30%	2.87%	7.43%
12/20/2012	10.40%	2.87%	7.53%
12/20/2012	10.45%	2.87%	7.58%
12/21/2012	10.20%	2.87%	7.33%
12/26/2012	9.80%	2.86%	6.94%
01/09/2013	9.70%	2.85%	6.85%
01/09/2013	9.70%	2.85%	6.85%
01/09/2013	9.70%	2.85%	6.85%
01/16/2013	9.60%	2.84%	6.76%
01/16/2013	9.60%	2.84%	6.76%
02/13/2013	10.20%	2.84%	7.36%
02/22/2013	9.75%	2.85%	6.90%
02/27/2013	10.00%	2.86%	7.14%
03/14/2013	9.30%	2.88%	6.42%
03/27/2013	9.80%	2.90%	6.90%
05/01/2013	9.84%	2.94%	6.90%
05/15/2013	10.30%	2.96%	7.34%
05/30/2013	10.20%	2.98%	7.22%
05/31/2013	9.00%	2.98%	6.02%
06/11/2013	10.00%	3.00%	7.00%
06/21/2013	9.75%	3.02%	6.73%
06/25/2013	9.80%	3.03%	6.77%
07/12/2013	9.36%	3.07%	6.29%
08/08/2013	9.83%	3.14%	6.69%
08/14/2013	9.15%	3.16%	5.99%
09/11/2013	10.20%	3.26%	6.94%
09/11/2013	10.25%	3.26%	6.99%
09/24/2013	10.20%	3.31%	6.89%
10/03/2013	9.65%	3.33%	6.32%
11/06/2013	10.20%	3.41%	6.79%
11/21/2013	10.00%	3.44%	6.56%
11/26/2013	10.00%	3.45%	6.55%
12/03/2013	10.25%	3.47%	6.78%
12/04/2013	9.50%	3.47%	6.03%
12/05/2013	10.20%	3.48%	6.72%
12/09/2013	8.72%	3.48%	5.24%
12/09/2013	9.75%	3.48%	6.27%
12/13/2013	9.75%	3.50%	6.25%
12/16/2013	9.95%	3.50%	6.45%
12/16/2013	9.95%	3.50%	6.45%
12/16/2013	10.12%	3.50%	6.62%
12/17/2013	9.50%	3.51%	5.99%
12/17/2013	10.95%	3.51%	7.44%
12/18/2013	8.72%	3.51%	5.21%
12/18/2013	9.80%	3.51%	6.29%
12/19/2013	10.15%	3.51%	6.64%
12/30/2013	9.50%	3.54%	5.96%
02/20/2014	9.20%	3.68%	5.52%
02/26/2014	9.75%	3.69%	6.06%
03/17/2014	9.55%	3.72%	5.83%
03/26/2014	9.40%	3.73%	5.67%
03/26/2014	9.96%	3.73%	6.23%
04/02/2014	9.70%	3.73%	5.97%
05/16/2014	9.80%	3.70%	6.10%
05/30/2014	9.70%	3.68%	6.02%
06/06/2014	10.40%	3.67%	6.73%
06/30/2014	9.55%	3.64%	5.91%
07/02/2014	9.62%	3.64%	5.98%
07/10/2014	9.95%	3.63%	6.32%
07/23/2014	9.75%	3.61%	6.14%
07/29/2014	9.45%	3.60%	5.85%
07/31/2014	9.90%	3.60%	6.30%
08/20/2014	9.75%	3.57%	6.18%
08/25/2014	9.60%	3.56%	6.04%
08/29/2014	9.80%	3.54%	6.26%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
09/11/2014	9.60%	3.51%	6.09%
09/15/2014	10.25%	3.51%	6.74%
10/09/2014	9.80%	3.45%	6.35%
11/06/2014	9.56%	3.37%	6.19%
11/06/2014	10.20%	3.37%	6.83%
11/14/2014	10.20%	3.35%	6.85%
11/26/2014	9.70%	3.33%	6.37%
11/26/2014	10.20%	3.33%	6.87%
12/04/2014	9.68%	3.31%	6.37%
12/10/2014	9.25%	3.29%	5.96%
12/10/2014	9.25%	3.29%	5.96%
12/11/2014	10.07%	3.29%	6.78%
12/12/2014	10.20%	3.28%	6.92%
12/17/2014	9.17%	3.27%	5.90%
12/18/2014	9.83%	3.26%	6.57%
01/23/2015	9.50%	3.14%	6.36%
02/24/2015	9.83%	3.04%	6.79%
03/18/2015	9.75%	2.98%	6.77%
03/25/2015	9.50%	2.96%	6.54%
03/26/2015	9.72%	2.95%	6.77%
04/23/2015	10.20%	2.87%	7.33%
04/29/2015	9.53%	2.86%	6.67%
05/01/2015	9.60%	2.85%	6.75%
05/26/2015	9.75%	2.83%	6.92%
06/17/2015	9.00%	2.82%	6.18%
06/17/2015	9.00%	2.82%	6.18%
09/02/2015	9.50%	2.79%	6.71%
09/10/2015	9.30%	2.79%	6.51%
10/15/2015	9.00%	2.81%	6.19%
11/19/2015	10.00%	2.88%	7.12%
11/19/2015	10.30%	2.88%	7.42%
12/03/2015	10.00%	2.90%	7.10%
12/09/2015	9.14%	2.90%	6.24%
12/09/2015	9.14%	2.90%	6.24%
12/11/2015	10.30%	2.90%	7.40%
12/15/2015	9.60%	2.91%	6.69%
12/17/2015	9.70%	2.91%	6.79%
12/18/2015	9.50%	2.91%	6.59%
12/30/2015	9.50%	2.93%	6.57%
01/06/2016	9.50%	2.94%	6.56%
02/23/2016	9.75%	2.94%	6.81%
03/16/2016	9.85%	2.91%	6.94%
04/29/2016	9.80%	2.83%	6.97%
06/03/2016	9.75%	2.80%	6.95%
06/08/2016	9.48%	2.80%	6.68%
06/15/2016	9.00%	2.78%	6.22%
06/15/2016	9.00%	2.78%	6.22%
07/18/2016	9.98%	2.71%	7.27%
08/09/2016	9.85%	2.66%	7.19%
08/18/2016	9.50%	2.63%	6.87%
08/24/2016	9.75%	2.62%	7.13%
09/01/2016	9.50%	2.59%	6.91%
09/08/2016	10.00%	2.58%	7.42%
09/28/2016	9.58%	2.54%	7.04%
09/30/2016	9.90%	2.53%	7.37%
11/09/2016	9.80%	2.48%	7.32%
11/10/2016	9.50%	2.48%	7.02%
11/15/2016	9.55%	2.49%	7.06%
11/18/2016	10.00%	2.50%	7.50%
11/29/2016	10.55%	2.51%	8.04%
12/01/2016	10.00%	2.51%	7.49%
12/06/2016	8.64%	2.52%	6.12%
12/06/2016	8.64%	2.52%	6.12%
12/07/2016	10.10%	2.52%	7.58%
12/12/2016	9.60%	2.53%	7.07%
12/14/2016	9.10%	2.53%	6.57%
12/19/2016	9.00%	2.54%	6.46%
12/19/2016	9.37%	2.54%	6.83%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
12/22/2016	9.60%	2.55%	7.05%
12/22/2016	9.90%	2.55%	7.35%
12/28/2016	9.50%	2.55%	6.95%
01/12/2017	9.60%	2.58%	7.02%
01/18/2017	9.45%	2.58%	6.87%
01/24/2017	9.00%	2.59%	6.41%
01/31/2017	10.10%	2.60%	7.50%
02/15/2017	9.60%	2.62%	6.98%
02/22/2017	9.60%	2.64%	6.96%
02/24/2017	9.75%	2.64%	7.11%
02/28/2017	10.10%	2.64%	7.46%
03/02/2017	9.41%	2.65%	6.76%
03/20/2017	9.50%	2.68%	6.82%
04/04/2017	10.25%	2.71%	7.54%
04/12/2017	9.40%	2.74%	6.66%
04/20/2017	9.50%	2.76%	6.74%
05/03/2017	9.50%	2.79%	6.71%
05/11/2017	9.20%	2.81%	6.39%
05/18/2017	9.50%	2.83%	6.67%
05/23/2017	9.70%	2.84%	6.86%
06/16/2017	9.65%	2.89%	6.76%
06/22/2017	9.70%	2.90%	6.80%
06/22/2017	9.70%	2.90%	6.80%
07/24/2017	9.50%	2.95%	6.55%
08/15/2017	10.00%	2.97%	7.03%
09/22/2017	9.60%	2.93%	6.67%
09/28/2017	9.80%	2.92%	6.88%
10/20/2017	9.50%	2.91%	6.59%
10/26/2017	10.20%	2.91%	7.29%
10/26/2017	10.25%	2.91%	7.34%
10/26/2017	10.30%	2.91%	7.39%
11/06/2017	10.25%	2.90%	7.35%
11/15/2017	11.95%	2.89%	9.06%
11/30/2017	10.00%	2.88%	7.12%
11/30/2017	10.00%	2.88%	7.12%
12/05/2017	9.50%	2.88%	6.62%
12/06/2017	8.40%	2.87%	5.53%
12/06/2017	8.40%	2.87%	5.53%
12/07/2017	9.80%	2.87%	6.93%
12/14/2017	9.60%	2.86%	6.74%
12/14/2017	9.65%	2.86%	6.79%
12/18/2017	9.50%	2.86%	6.64%
12/20/2017	9.58%	2.86%	6.72%
12/21/2017	9.10%	2.85%	6.25%
12/28/2017	9.50%	2.85%	6.65%
12/29/2017	9.51%	2.85%	6.66%
01/18/2018	9.70%	2.84%	6.86%
01/31/2018	9.30%	2.84%	6.46%
02/02/2018	9.98%	2.84%	7.14%
02/23/2018	9.90%	2.85%	7.05%
03/12/2018	9.25%	2.86%	6.39%
03/15/2018	9.00%	2.87%	6.13%
03/29/2018	10.00%	2.88%	7.12%
04/12/2018	9.90%	2.89%	7.01%
04/13/2018	9.73%	2.89%	6.84%
04/18/2018	9.25%	2.89%	6.36%
04/18/2018	10.00%	2.89%	7.11%
04/26/2018	9.50%	2.90%	6.60%
05/30/2018	9.95%	2.94%	7.01%
05/31/2018	9.50%	2.94%	6.56%
06/14/2018	8.80%	2.96%	5.84%
06/22/2018	9.50%	2.97%	6.53%
06/22/2018	9.90%	2.97%	6.93%
06/28/2018	9.35%	2.97%	6.38%
06/29/2018	9.50%	2.97%	6.53%
08/08/2018	9.53%	2.99%	6.54%
08/21/2018	9.70%	3.00%	6.70%
08/24/2018	9.28%	3.01%	6.27%

Bond Yield Plus Risk Premium

[6] Date of Electric Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
09/05/2018	9.56%	3.02%	6.54%
09/14/2018	10.00%	3.03%	6.97%
09/20/2018	9.80%	3.04%	6.76%
09/26/2018	9.77%	3.05%	6.72%
09/26/2018	10.00%	3.05%	6.95%
09/27/2018	9.30%	3.05%	6.25%
10/04/2018	9.85%	3.06%	6.79%
10/29/2018	9.60%	3.10%	6.50%
10/31/2018	9.99%	3.11%	6.88%
11/01/2018	8.69%	3.11%	5.58%
12/04/2018	8.69%	3.14%	5.55%
12/13/2018	9.30%	3.14%	6.16%
12/14/2018	9.50%	3.14%	6.36%
12/19/2018	9.84%	3.14%	6.70%
12/20/2018	9.65%	3.14%	6.51%
12/21/2018	9.30%	3.14%	6.16%
01/09/2019	10.00%	3.14%	6.86%
02/27/2019	9.75%	3.12%	6.63%
03/13/2019	9.60%	3.12%	6.48%
03/14/2019	9.00%	3.12%	5.88%
03/14/2019	9.40%	3.12%	6.28%
03/22/2019	9.65%	3.12%	6.53%
04/30/2019	9.73%	3.11%	6.62%
04/30/2019	9.73%	3.11%	6.62%
05/01/2019	9.50%	3.11%	6.39%
05/02/2019	10.00%	3.11%	6.89%
05/08/2019	9.50%	3.10%	6.40%
05/14/2019	8.75%	3.10%	5.65%
05/16/2019	9.50%	3.09%	6.41%
05/23/2019	9.90%	3.09%	6.81%
		# of Cases:	1,594
		Average:	4.68%

Expected Earnings Analysis

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]
		Expected ROE	Shares Outstanding			Adjustment	Adjusted
		2022-24	2019	2021-23/ 2022-24	% Increase	Factor	ROE
ALLETE, Inc.	ALE	9.0%	51.50	51.50	0.00%	1.000	9.00%
Alliant Energy Corporation	LNT	10.0%	240.00	250.00	1.03%	1.005	10.05%
American Electric Power Company, Inc.	AEP	11.0%	495.00	520.00	1.24%	1.006	11.07%
Avangrid, Inc.	AGR	6.0%	309.00	309.00	0.00%	1.000	6.00%
Black Hills Corporation	BKH	10.0%	60.50	61.00	0.21%	1.001	10.01%
CMS Energy Corporation	CMS	14.0%	285.00	297.00	1.04%	1.005	14.07%
DTE Energy Company	DTE	10.5%	192.00	200.00	1.03%	1.005	10.55%
Duke Energy Corporation	DUK	8.5%	733.00	755.00	0.59%	1.003	8.53%
El Paso Electric Company	EE	8.5%	43.00	43.50	0.29%	1.001	8.51%
Evergy, Inc.	EVRG	8.5%	225.00	212.00	-1.48%	0.993	8.44%
Hawaiian Electric Industries, Inc.	HE	10.0%	109.00	113.00	0.91%	1.005	10.05%
NextEra Energy, Inc.	NEE	13.5%	535.00	535.00	0.00%	1.000	13.50%
NorthWestern Corporation	NWE	9.0%	50.50	51.10	0.30%	1.001	9.01%
OGE Energy Corp.	OGE	11.5%	199.70	199.70	0.00%	1.000	11.50%
Otter Tail Corporation	OTTR	10.5%	39.75	41.75	1.23%	1.006	10.56%
Pinnacle West Capital Corporation	PNW	10.5%	112.50	114.50	0.44%	1.002	10.52%
PNM Resources, Inc.	PNM	9.5%	79.65	84.00	1.34%	1.007	9.56%
Portland General Electric Company	POR	9.0%	89.40	90.00	0.17%	1.001	9.01%
Southern Company	SO	12.5%	1045.00	1085.00	0.75%	1.004	12.55%
Wisconsin Energy Corporation	WEC	12.5%	315.50	315.50	0.00%	1.000	12.50%
Xcel Energy Inc.	XEL	11.0%	515.50	521.50	0.29%	1.001	11.02%
						Median	10.05%
						Average	10.29%

Notes:

[1] Source: Value Line
[2] Source: Value Line

[3] Source: Value Line
[4] Equals $=(\frac{[3]}{[2]})^{(1/4)}-1$; $(\frac{[3]}{[2]})^{(1/5)}-1$

[5] Equals $(2 \times (1 + [4])) / (2 + [4])$
[6] Equals [1] x [5]

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	2.85%	4.49%	1.63%	15.67
Near-Term Projected	3.03%	4.49%	1.45%	15.67
Long-Term Projected	3.70%	4.49%	0.79%	15.67

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.8388
R Square	0.7036
Adjusted R Square	0.7024
Standard Error	0.0053
Observations	745

ANOVA					
	df	SS	MS	F	Significance F
Regression	3	0.049191008	0.016397	586.3910752	3.81E-195
Residual	741	0.020720266	2.7963E-05		
Total	744	0.069911274			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.0260	0.0022	-11.8064	0.0000	-0.0303	-0.0217	-0.0303	-0.0217
LN (30-Year Treasury)	-0.0252	0.0007	-35.5337	0.0000	-0.0266	-0.0238	-0.0266	-0.0238
Moody's Utility Baa Credit Spread	0.0565	0.0762	0.7419	0.4584	-0.0930	0.2060	-0.0930	0.2060
VIX	0.0003	0.0001	3.9761	0.0001	0.0001	0.0004	0.0001	0.0004

	Risk Premium	Return on Equity
Regression Result - Credit Spread, VIX	6.85%	9.71%
Regression Result - Credit Spread, VIX	6.69%	9.72%
Regression Result - Credit Spread, VIX	6.15%	9.85%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional; 30-day average as of May 31, 2019
- [3] Equals [2] - [1]
- [4] Source: Bloomberg Professional; 30-day average as of May 31, 2019
- [5] Source: S&P Global Market Intelligence
- [6] Source: S&P Global Market Intelligence
- [7] Source: Bloomberg Professional, equals 200-trading day average (i.e. lag period) as of May 31, 2019
- [8] Source: Bloomberg Professional, equals 200-trading day average (i.e. lag period) as of May 31, 2019
- [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, 2019
- [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
01/01/1980	14.50%	9.36%		-2.37			5.14%
01/07/1980	14.39%	9.38%		-2.37			5.01%
01/09/1980	15.00%	9.40%		-2.36			5.60%
01/14/1980	15.17%	9.42%		-2.36			5.75%
01/17/1980	13.93%	9.44%		-2.36			4.49%
01/23/1980	15.50%	9.47%		-2.36			6.03%
01/30/1980	13.86%	9.52%		-2.35			4.34%
01/31/1980	12.61%	9.53%		-2.35			3.08%
02/06/1980	13.71%	9.58%		-2.35			4.13%
02/13/1980	12.80%	9.63%		-2.34			3.17%
02/14/1980	13.00%	9.65%		-2.34			3.35%
02/19/1980	13.50%	9.68%		-2.34			3.82%
02/27/1980	13.75%	9.78%		-2.32			3.97%
02/29/1980	13.75%	9.81%		-2.32			3.94%
02/29/1980	14.00%	9.81%		-2.32			4.19%
02/29/1980	14.77%	9.81%		-2.32			4.96%
03/07/1980	12.70%	9.89%		-2.31			2.81%
03/14/1980	13.50%	9.97%		-2.31			3.53%
03/26/1980	14.16%	10.10%		-2.29			4.06%
03/27/1980	14.24%	10.12%		-2.29			4.12%
03/28/1980	14.50%	10.13%		-2.29			4.37%
04/11/1980	12.75%	10.27%		-2.28			2.48%
04/14/1980	13.85%	10.29%		-2.27			3.56%
04/16/1980	15.50%	10.31%		-2.27			5.19%
04/22/1980	13.25%	10.35%		-2.27			2.90%
04/22/1980	13.90%	10.35%		-2.27			3.55%
04/24/1980	16.80%	10.38%		-2.27			6.43%
04/29/1980	15.50%	10.41%		-2.26			5.09%
05/06/1980	13.70%	10.45%		-2.26			3.25%
05/07/1980	15.00%	10.45%		-2.26			4.55%
05/08/1980	13.75%	10.46%		-2.26			3.29%
05/09/1980	14.35%	10.47%		-2.26			3.88%
05/13/1980	13.60%	10.48%		-2.26			3.12%
05/15/1980	13.25%	10.49%		-2.25			2.76%
05/19/1980	13.75%	10.51%		-2.25			3.24%
05/27/1980	13.62%	10.54%		-2.25			3.08%
05/27/1980	14.60%	10.54%		-2.25			4.06%
05/29/1980	16.00%	10.56%		-2.25			5.44%
05/30/1980	13.80%	10.56%		-2.25			3.24%
06/02/1980	15.63%	10.57%		-2.25			5.06%
06/09/1980	15.90%	10.60%		-2.24			5.30%
06/10/1980	13.78%	10.60%		-2.24			3.18%
06/12/1980	14.25%	10.61%		-2.24			3.64%
06/19/1980	13.40%	10.62%		-2.24			2.78%
06/30/1980	13.00%	10.65%		-2.24			2.35%
06/30/1980	13.40%	10.65%		-2.24			2.75%
07/09/1980	14.75%	10.67%		-2.24			4.08%
07/10/1980	15.00%	10.68%		-2.24			4.32%
07/15/1980	15.80%	10.70%		-2.24			5.10%
07/18/1980	13.80%	10.71%		-2.23			3.09%
07/22/1980	14.10%	10.72%		-2.23			3.38%
07/24/1980	15.00%	10.73%		-2.23			4.27%
07/25/1980	13.48%	10.73%		-2.23			2.75%
07/31/1980	14.58%	10.75%		-2.23			3.83%
08/08/1980	13.50%	10.78%		-2.23			2.72%
08/08/1980	14.00%	10.78%		-2.23			3.22%
08/08/1980	15.45%	10.78%		-2.23			4.67%
08/11/1980	14.85%	10.78%		-2.23			4.07%
08/14/1980	14.00%	10.79%		-2.23			3.21%
08/14/1980	16.25%	10.79%		-2.23			5.46%
08/25/1980	13.75%	10.82%		-2.22			2.93%
08/27/1980	13.80%	10.83%		-2.22			2.97%
08/29/1980	12.50%	10.84%		-2.22			1.66%
09/15/1980	13.50%	10.88%		-2.22			2.62%
09/15/1980	13.93%	10.88%		-2.22			3.05%
09/15/1980	15.80%	10.88%		-2.22			4.92%
09/24/1980	12.50%	10.93%		-2.21			1.57%
09/24/1980	15.00%	10.93%		-2.21			4.07%
09/26/1980	13.75%	10.94%		-2.21			2.81%
09/30/1980	14.10%	10.96%		-2.21			3.14%
09/30/1980	14.20%	10.96%		-2.21			3.24%
10/01/1980	13.90%	10.97%		-2.21			2.93%
10/03/1980	15.50%	10.98%		-2.21			4.52%
10/07/1980	12.50%	10.99%		-2.21			1.51%
10/09/1980	13.25%	11.00%		-2.21			2.25%
10/09/1980	14.50%	11.00%		-2.21			3.50%
10/09/1980	14.50%	11.00%		-2.21			3.50%
10/16/1980	16.10%	11.02%		-2.21			5.08%
10/17/1980	14.50%	11.03%		-2.20			3.47%
10/31/1980	13.75%	11.11%		-2.20			2.64%
10/31/1980	14.25%	11.11%		-2.20			3.14%
11/04/1980	15.00%	11.12%		-2.20			3.88%

[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
11/05/1980	13.75%	11.12%		-2.20			2.63%
11/05/1980	14.00%	11.12%		-2.20			2.88%
11/08/1980	13.75%	11.14%		-2.19			2.61%
11/10/1980	14.85%	11.15%		-2.19			3.70%
11/17/1980	14.00%	11.18%		-2.19			2.82%
11/18/1980	14.00%	11.19%		-2.19			2.81%
11/19/1980	13.00%	11.19%		-2.19			1.81%
11/24/1980	14.00%	11.21%		-2.19			2.79%
11/26/1980	14.00%	11.21%		-2.19			2.79%
12/08/1980	14.15%	11.22%		-2.19			2.93%
12/08/1980	15.10%	11.22%		-2.19			3.88%
12/09/1980	15.35%	11.22%		-2.19			4.13%
12/12/1980	15.45%	11.23%		-2.19			4.22%
12/17/1980	13.25%	11.23%		-2.19			2.02%
12/18/1980	15.80%	11.23%		-2.19			4.57%
12/19/1980	14.50%	11.23%		-2.19			3.27%
12/19/1980	14.64%	11.23%		-2.19			3.41%
12/22/1980	13.45%	11.23%		-2.19			2.22%
12/22/1980	15.00%	11.23%		-2.19			3.77%
12/30/1980	14.50%	11.22%		-2.19			3.28%
12/30/1980	14.95%	11.22%		-2.19			3.73%
12/31/1980	13.39%	11.22%		-2.19			2.17%
01/02/1981	15.25%	11.22%		-2.19			4.03%
01/07/1981	14.30%	11.21%		-2.19			3.09%
01/19/1981	15.25%	11.20%		-2.19			4.05%
01/23/1981	13.10%	11.20%		-2.19			1.90%
01/23/1981	14.40%	11.20%		-2.19			3.20%
01/26/1981	15.25%	11.20%		-2.19			4.05%
01/27/1981	15.00%	11.21%		-2.19			3.79%
01/31/1981	13.47%	11.22%		-2.19			2.25%
02/03/1981	15.25%	11.23%		-2.19			4.02%
02/05/1981	15.75%	11.25%		-2.19			4.50%
02/11/1981	15.60%	11.28%		-2.18			4.32%
02/20/1981	15.25%	11.33%		-2.18			3.92%
03/11/1981	15.40%	11.49%		-2.16			3.91%
03/12/1981	14.51%	11.50%		-2.16			3.01%
03/12/1981	16.00%	11.50%		-2.16			4.50%
03/13/1981	13.02%	11.52%		-2.16			1.50%
03/18/1981	16.19%	11.55%		-2.16			4.64%
03/19/1981	13.75%	11.56%		-2.16			2.19%
03/23/1981	14.30%	11.58%		-2.16			2.72%
03/25/1981	15.30%	11.60%		-2.15			3.70%
04/01/1981	14.53%	11.68%		-2.15			2.85%
04/03/1981	19.10%	11.71%		-2.14			7.39%
04/09/1981	15.00%	11.78%		-2.14			3.22%
04/09/1981	15.30%	11.78%		-2.14			3.52%
04/09/1981	16.50%	11.78%		-2.14			4.72%
04/09/1981	17.00%	11.78%		-2.14			5.22%
04/10/1981	13.75%	11.80%		-2.14			1.95%
04/13/1981	13.57%	11.82%		-2.14			1.75%
04/15/1981	15.30%	11.85%		-2.13			3.45%
04/16/1981	13.50%	11.87%		-2.13			1.63%
04/17/1981	14.10%	11.87%		-2.13			2.23%
04/21/1981	14.00%	11.90%		-2.13			2.10%
04/21/1981	16.80%	11.90%		-2.13			4.90%
04/24/1981	16.00%	11.95%		-2.12			4.05%
04/27/1981	12.50%	11.97%		-2.12			0.53%
04/27/1981	13.61%	11.97%		-2.12			1.64%
04/29/1981	13.65%	12.00%		-2.12			1.65%
04/30/1981	13.50%	12.02%		-2.12			1.48%
05/04/1981	16.22%	12.05%		-2.12			4.17%
05/05/1981	14.40%	12.07%		-2.11			2.33%
05/07/1981	16.25%	12.11%		-2.11			4.14%
05/07/1981	16.27%	12.11%		-2.11			4.16%
05/08/1981	13.00%	12.13%		-2.11			0.87%
05/08/1981	16.00%	12.13%		-2.11			3.87%
05/12/1981	13.50%	12.16%		-2.11			1.34%
05/15/1981	15.75%	12.22%		-2.10			3.53%
05/18/1981	14.88%	12.23%		-2.10			2.65%
05/20/1981	16.00%	12.26%		-2.10			3.74%
05/21/1981	14.00%	12.27%		-2.10			1.73%
05/26/1981	14.90%	12.30%		-2.10			2.60%
05/27/1981	15.00%	12.31%		-2.09			2.69%
05/29/1981	15.50%	12.34%		-2.09			3.16%
06/01/1981	16.50%	12.35%		-2.09			4.15%
06/03/1981	14.67%	12.37%		-2.09			2.30%
06/05/1981	13.00%	12.39%		-2.09			0.61%
06/10/1981	16.75%	12.42%		-2.09			4.33%
06/17/1981	14.40%	12.46%		-2.08			1.94%
06/18/1981	16.33%	12.47%		-2.08			3.86%
06/25/1981	14.75%	12.51%		-2.08			2.24%
06/26/1981	16.00%	12.52%		-2.08			3.48%

[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
06/30/1981	15.25%	12.54%		-2.08			2.71%
07/01/1981	15.50%	12.56%		-2.07			2.94%
07/01/1981	17.50%	12.56%		-2.07			4.94%
07/10/1981	16.00%	12.62%		-2.07			3.38%
07/14/1981	16.90%	12.64%		-2.07			4.26%
07/15/1981	16.00%	12.65%		-2.07			3.35%
07/17/1981	15.00%	12.67%		-2.07			2.33%
07/20/1981	15.00%	12.68%		-2.07			2.32%
07/21/1981	14.00%	12.69%		-2.06			1.31%
07/28/1981	13.48%	12.74%		-2.06			0.74%
07/31/1981	13.50%	12.78%		-2.06			0.72%
07/31/1981	15.00%	12.78%		-2.06			2.22%
07/31/1981	16.00%	12.78%		-2.06			3.22%
08/05/1981	15.71%	12.83%		-2.05			2.88%
08/10/1981	14.50%	12.87%		-2.05			1.63%
08/11/1981	15.00%	12.88%		-2.05			2.12%
08/20/1981	13.50%	12.95%		-2.04			0.55%
08/20/1981	16.50%	12.95%		-2.04			3.55%
08/24/1981	15.00%	12.97%		-2.04			2.03%
08/28/1981	15.00%	13.01%		-2.04			1.99%
09/03/1981	14.50%	13.05%		-2.04			1.45%
09/10/1981	14.50%	13.11%		-2.03			1.39%
09/11/1981	16.00%	13.12%		-2.03			2.88%
09/16/1981	16.00%	13.15%		-2.03			2.85%
09/17/1981	16.50%	13.16%		-2.03			3.34%
09/23/1981	15.85%	13.20%		-2.03			2.65%
09/28/1981	15.50%	13.23%		-2.02			2.27%
10/09/1981	15.75%	13.33%		-2.02			2.42%
10/15/1981	16.25%	13.37%		-2.01			2.88%
10/16/1981	15.50%	13.38%		-2.01			2.12%
10/16/1981	16.50%	13.38%		-2.01			3.12%
10/19/1981	14.25%	13.39%		-2.01			0.86%
10/20/1981	15.25%	13.41%		-2.01			1.84%
10/20/1981	17.00%	13.41%		-2.01			3.59%
10/23/1981	16.00%	13.45%		-2.01			2.55%
10/27/1981	10.00%	13.48%		-2.00			-3.48%
10/29/1981	14.75%	13.51%		-2.00			1.24%
10/29/1981	16.50%	13.51%		-2.00			2.99%
11/03/1981	15.17%	13.53%		-2.00			1.64%
11/05/1981	16.60%	13.55%		-2.00			3.05%
11/06/1981	15.17%	13.56%		-2.00			1.61%
11/24/1981	15.50%	13.61%		-1.99			1.89%
11/25/1981	15.25%	13.61%		-1.99			1.64%
11/25/1981	15.35%	13.61%		-1.99			1.74%
11/25/1981	16.10%	13.61%		-1.99			2.49%
11/25/1981	16.10%	13.61%		-1.99			2.49%
12/01/1981	15.70%	13.61%		-1.99			2.09%
12/01/1981	16.00%	13.61%		-1.99			2.39%
12/01/1981	16.49%	13.61%		-1.99			2.88%
12/01/1981	16.50%	13.61%		-1.99			2.89%
12/04/1981	16.00%	13.61%		-1.99			2.39%
12/11/1981	16.25%	13.63%		-1.99			2.62%
12/14/1981	14.00%	13.63%		-1.99			0.37%
12/15/1981	15.81%	13.63%		-1.99			2.18%
12/15/1981	16.00%	13.63%		-1.99			2.37%
12/16/1981	15.25%	13.63%		-1.99			1.62%
12/17/1981	16.50%	13.63%		-1.99			2.87%
12/18/1981	15.45%	13.63%		-1.99			1.82%
12/30/1981	14.25%	13.67%		-1.99			0.58%
12/30/1981	16.00%	13.67%		-1.99			2.33%
12/30/1981	16.25%	13.67%		-1.99			2.58%
12/31/1981	16.15%	13.67%		-1.99			2.48%
01/04/1982	15.50%	13.67%		-1.99			1.83%
01/11/1982	14.50%	13.72%		-1.99			0.78%
01/11/1982	17.00%	13.72%		-1.99			3.28%
01/13/1982	14.75%	13.74%		-1.98			1.01%
01/14/1982	15.75%	13.75%		-1.98			2.00%
01/15/1982	15.00%	13.76%		-1.98			1.24%
01/15/1982	16.50%	13.76%		-1.98			2.74%
01/22/1982	16.25%	13.79%		-1.98			2.46%
01/27/1982	16.84%	13.81%		-1.98			3.03%
01/28/1982	13.00%	13.81%		-1.98			-0.81%
01/29/1982	15.50%	13.82%		-1.98			1.68%
02/01/1982	15.85%	13.82%		-1.98			2.03%
02/03/1982	16.44%	13.84%		-1.98			2.60%
02/08/1982	15.50%	13.86%		-1.98			1.64%
02/11/1982	16.00%	13.88%		-1.97			2.12%
02/11/1982	16.20%	13.88%		-1.97			2.32%
02/17/1982	15.00%	13.89%		-1.97			1.11%
02/19/1982	15.17%	13.89%		-1.97			1.28%
02/26/1982	15.25%	13.89%		-1.97			1.36%
03/01/1982	15.03%	13.89%		-1.97			1.14%

[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
03/01/1982	16.00%	13.89%		-1.97			2.11%
03/03/1982	15.00%	13.88%		-1.97			1.12%
03/08/1982	17.10%	13.88%		-1.97			3.22%
03/12/1982	16.25%	13.88%		-1.97			2.37%
03/17/1982	17.30%	13.88%		-1.97			3.42%
03/22/1982	15.10%	13.89%		-1.97			1.21%
03/27/1982	15.40%	13.89%		-1.97			1.51%
03/30/1982	15.50%	13.90%		-1.97			1.60%
03/31/1982	17.00%	13.91%		-1.97			3.09%
04/01/1982	14.70%	13.91%		-1.97			0.79%
04/01/1982	16.50%	13.91%		-1.97			2.59%
04/02/1982	15.50%	13.91%		-1.97			1.59%
04/05/1982	15.50%	13.92%		-1.97			1.58%
04/08/1982	16.40%	13.93%		-1.97			2.47%
04/13/1982	14.50%	13.94%		-1.97			0.56%
04/23/1982	15.75%	13.94%		-1.97			1.81%
04/27/1982	15.00%	13.94%		-1.97			1.06%
04/28/1982	15.75%	13.94%		-1.97			1.81%
04/30/1982	14.70%	13.94%		-1.97			0.76%
04/30/1982	15.50%	13.94%		-1.97			1.56%
05/03/1982	16.60%	13.94%		-1.97			2.66%
05/04/1982	16.00%	13.94%		-1.97			2.06%
05/14/1982	15.50%	13.92%		-1.97			1.58%
05/18/1982	15.42%	13.92%		-1.97			1.50%
05/19/1982	14.69%	13.92%		-1.97			0.77%
05/20/1982	15.00%	13.91%		-1.97			1.09%
05/20/1982	15.10%	13.91%		-1.97			1.19%
05/20/1982	15.50%	13.91%		-1.97			1.59%
05/20/1982	16.30%	13.91%		-1.97			2.39%
05/21/1982	17.75%	13.91%		-1.97			3.84%
05/27/1982	15.00%	13.89%		-1.97			1.11%
05/28/1982	15.50%	13.89%		-1.97			1.61%
05/28/1982	17.00%	13.89%		-1.97			3.11%
06/01/1982	13.75%	13.89%		-1.97			-0.14%
06/01/1982	16.60%	13.89%		-1.97			2.71%
06/09/1982	17.86%	13.88%		-1.97			3.98%
06/14/1982	15.75%	13.88%		-1.97			1.87%
06/15/1982	14.85%	13.88%		-1.97			0.97%
06/18/1982	15.50%	13.87%		-1.98			1.63%
06/21/1982	14.90%	13.87%		-1.98			1.03%
06/23/1982	16.00%	13.86%		-1.98			2.14%
06/23/1982	16.17%	13.86%		-1.98			2.31%
06/24/1982	14.85%	13.86%		-1.98			0.99%
06/25/1982	14.70%	13.86%		-1.98			0.84%
07/01/1982	16.00%	13.84%		-1.98			2.16%
07/02/1982	15.62%	13.84%		-1.98			1.78%
07/02/1982	17.00%	13.84%		-1.98			3.16%
07/13/1982	14.00%	13.82%		-1.98			0.18%
07/13/1982	16.80%	13.82%		-1.98			2.98%
07/14/1982	15.76%	13.82%		-1.98			1.94%
07/14/1982	16.02%	13.82%		-1.98			2.20%
07/19/1982	16.50%	13.80%		-1.98			2.70%
07/22/1982	14.50%	13.77%		-1.98			0.73%
07/22/1982	17.00%	13.77%		-1.98			3.23%
07/27/1982	16.75%	13.75%		-1.98			3.00%
07/29/1982	16.50%	13.74%		-1.99			2.76%
08/11/1982	17.50%	13.68%		-1.99			3.82%
08/18/1982	17.07%	13.63%		-1.99			3.44%
08/20/1982	15.73%	13.60%		-1.99			2.13%
08/25/1982	16.00%	13.57%		-2.00			2.43%
08/26/1982	15.50%	13.56%		-2.00			1.94%
08/30/1982	15.00%	13.55%		-2.00			1.45%
09/03/1982	16.20%	13.53%		-2.00			2.67%
09/08/1982	15.00%	13.52%		-2.00			1.48%
09/15/1982	13.08%	13.50%		-2.00			-0.42%
09/15/1982	16.25%	13.50%		-2.00			2.75%
09/16/1982	16.00%	13.50%		-2.00			2.50%
09/17/1982	15.25%	13.50%		-2.00			1.75%
09/23/1982	17.17%	13.47%		-2.00			3.70%
09/24/1982	14.50%	13.46%		-2.01			1.04%
09/27/1982	15.25%	13.46%		-2.01			1.79%
10/01/1982	15.50%	13.42%		-2.01			2.08%
10/15/1982	15.90%	13.32%		-2.02			2.58%
10/22/1982	15.75%	13.24%		-2.02			2.51%
10/22/1982	17.15%	13.24%		-2.02			3.91%
10/29/1982	15.54%	13.16%		-2.03			2.38%
11/01/1982	15.50%	13.15%		-2.03			2.35%
11/03/1982	17.20%	13.13%		-2.03			4.07%
11/04/1982	16.25%	13.11%		-2.03			3.14%
11/05/1982	16.20%	13.09%		-2.03			3.11%
11/09/1982	16.00%	13.05%		-2.04			2.95%
11/23/1982	15.50%	12.89%		-2.05			2.61%

[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
11/23/1982	15.85%	12.89%		-2.05			2.96%
11/30/1982	16.50%	12.81%		-2.06			3.69%
12/01/1982	17.04%	12.79%		-2.06			4.25%
12/06/1982	15.00%	12.73%		-2.06			2.27%
12/06/1982	16.35%	12.73%		-2.06			3.62%
12/10/1982	15.50%	12.66%		-2.07			2.84%
12/13/1982	16.00%	12.65%		-2.07			3.35%
12/14/1982	15.30%	12.63%		-2.07			2.67%
12/14/1982	16.40%	12.63%		-2.07			3.77%
12/20/1982	16.00%	12.57%		-2.07			3.43%
12/21/1982	14.75%	12.56%		-2.07			2.19%
12/21/1982	15.85%	12.56%		-2.07			3.29%
12/22/1982	16.25%	12.54%		-2.08			3.71%
12/22/1982	16.58%	12.54%		-2.08			4.04%
12/22/1982	16.75%	12.54%		-2.08			4.21%
12/29/1982	14.90%	12.48%		-2.08			2.42%
12/29/1982	16.25%	12.48%		-2.08			3.77%
12/30/1982	16.00%	12.47%		-2.08			3.53%
12/30/1982	16.35%	12.47%		-2.08			3.88%
12/30/1982	16.77%	12.47%		-2.08			4.30%
01/05/1983	17.33%	12.40%		-2.09			4.93%
01/11/1983	15.90%	12.34%		-2.09			3.56%
01/12/1983	14.63%	12.33%		-2.09			2.30%
01/12/1983	15.50%	12.33%		-2.09			3.17%
01/20/1983	17.75%	12.24%		-2.10			5.51%
01/21/1983	15.00%	12.22%		-2.10			2.78%
01/24/1983	14.50%	12.21%		-2.10			2.29%
01/24/1983	15.50%	12.21%		-2.10			3.29%
01/25/1983	15.85%	12.19%		-2.10			3.66%
01/27/1983	16.14%	12.17%		-2.11			3.97%
02/01/1983	18.50%	12.13%		-2.11			6.37%
02/04/1983	14.00%	12.10%		-2.11			1.90%
02/10/1983	15.00%	12.06%		-2.12			2.94%
02/21/1983	15.50%	11.98%		-2.12			3.52%
02/22/1983	15.50%	11.97%		-2.12			3.53%
02/23/1983	15.10%	11.96%		-2.12			3.14%
02/23/1983	16.00%	11.96%		-2.12			4.04%
03/02/1983	15.25%	11.89%		-2.13			3.36%
03/09/1983	15.20%	11.82%		-2.13			3.38%
03/15/1983	13.00%	11.77%		-2.14			1.23%
03/18/1983	15.25%	11.73%		-2.14			3.52%
03/23/1983	15.40%	11.69%		-2.15			3.71%
03/24/1983	15.00%	11.67%		-2.15			3.33%
03/29/1983	15.50%	11.63%		-2.15			3.87%
03/30/1983	16.71%	11.61%		-2.15			5.10%
03/31/1983	15.00%	11.59%		-2.15			3.41%
04/04/1983	15.20%	11.58%		-2.16			3.62%
04/08/1983	15.50%	11.51%		-2.16			3.99%
04/11/1983	14.81%	11.49%		-2.16			3.32%
04/19/1983	14.50%	11.38%		-2.17			3.12%
04/20/1983	16.00%	11.36%		-2.18			4.64%
04/29/1983	16.00%	11.24%		-2.19			4.76%
05/01/1983	14.50%	11.24%		-2.19			3.26%
05/09/1983	15.50%	11.15%		-2.19			4.35%
05/11/1983	16.46%	11.12%		-2.20			5.34%
05/12/1983	14.14%	11.11%		-2.20			3.03%
05/18/1983	15.00%	11.05%		-2.20			3.95%
05/23/1983	14.90%	11.01%		-2.21			3.89%
05/23/1983	15.50%	11.01%		-2.21			4.49%
05/25/1983	15.50%	10.98%		-2.21			4.52%
05/27/1983	15.00%	10.96%		-2.21			4.04%
05/31/1983	14.00%	10.95%		-2.21			3.05%
05/31/1983	15.50%	10.95%		-2.21			4.55%
06/02/1983	14.50%	10.93%		-2.21			3.57%
06/17/1983	15.03%	10.84%		-2.22			4.19%
07/01/1983	14.80%	10.78%		-2.23			4.02%
07/01/1983	14.90%	10.78%		-2.23			4.12%
07/08/1983	16.25%	10.76%		-2.23			5.49%
07/13/1983	13.20%	10.75%		-2.23			2.45%
07/19/1983	15.00%	10.74%		-2.23			4.26%
07/19/1983	15.10%	10.74%		-2.23			4.36%
07/25/1983	16.25%	10.73%		-2.23			5.52%
07/28/1983	15.90%	10.74%		-2.23			5.16%
08/03/1983	16.34%	10.75%		-2.23			5.59%
08/03/1983	16.50%	10.75%		-2.23			5.75%
08/19/1983	15.00%	10.80%		-2.23			4.20%
08/22/1983	15.50%	10.80%		-2.23			4.70%
08/22/1983	16.40%	10.80%		-2.23			5.60%
08/31/1983	14.75%	10.84%		-2.22			3.91%
09/07/1983	15.00%	10.86%		-2.22			4.14%
09/14/1983	15.78%	10.89%		-2.22			4.89%
09/16/1983	15.00%	10.90%		-2.22			4.10%

[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
09/19/1983	14.50%	10.91%		-2.22			3.59%
09/20/1983	16.50%	10.91%		-2.22			5.59%
09/28/1983	14.50%	10.94%		-2.21			3.56%
09/29/1983	15.50%	10.95%		-2.21			4.55%
09/30/1983	15.25%	10.95%		-2.21			4.30%
09/30/1983	16.15%	10.95%		-2.21			5.20%
10/04/1983	14.80%	10.96%		-2.21			3.84%
10/07/1983	16.00%	10.97%		-2.21			5.03%
10/13/1983	15.52%	10.99%		-2.21			4.53%
10/17/1983	15.50%	11.00%		-2.21			4.50%
10/18/1983	14.50%	11.00%		-2.21			3.50%
10/19/1983	16.25%	11.01%		-2.21			5.24%
10/19/1983	16.50%	11.01%		-2.21			5.49%
10/26/1983	15.00%	11.04%		-2.20			3.96%
10/27/1983	15.20%	11.04%		-2.20			4.16%
11/01/1983	16.00%	11.06%		-2.20			4.94%
11/09/1983	14.90%	11.09%		-2.20			3.81%
11/10/1983	14.35%	11.10%		-2.20			3.25%
11/23/1983	16.00%	11.13%		-2.20			4.87%
11/23/1983	16.15%	11.13%		-2.20			5.02%
11/30/1983	15.00%	11.14%		-2.19			3.86%
12/05/1983	15.25%	11.15%		-2.19			4.10%
12/06/1983	15.07%	11.15%		-2.19			3.92%
12/08/1983	15.90%	11.16%		-2.19			4.74%
12/09/1983	14.75%	11.17%		-2.19			3.58%
12/12/1983	14.50%	11.17%		-2.19			3.33%
12/15/1983	15.56%	11.19%		-2.19			4.37%
12/19/1983	14.80%	11.21%		-2.19			3.59%
12/20/1983	14.69%	11.22%		-2.19			3.47%
12/20/1983	16.00%	11.22%		-2.19			4.78%
12/20/1983	16.25%	11.22%		-2.19			5.03%
12/22/1983	14.75%	11.23%		-2.19			3.52%
12/22/1983	15.75%	11.23%		-2.19			4.52%
01/03/1984	14.75%	11.27%		-2.18			3.48%
01/10/1984	15.90%	11.30%		-2.18			4.60%
01/12/1984	15.60%	11.31%		-2.18			4.29%
01/18/1984	13.75%	11.33%		-2.18			2.42%
01/19/1984	15.90%	11.33%		-2.18			4.57%
01/30/1984	16.10%	11.37%		-2.17			4.73%
01/31/1984	15.25%	11.37%		-2.17			3.88%
02/01/1984	14.80%	11.38%		-2.17			3.42%
02/06/1984	13.75%	11.40%		-2.17			2.35%
02/06/1984	14.75%	11.40%		-2.17			3.35%
02/09/1984	15.25%	11.42%		-2.17			3.83%
02/15/1984	15.70%	11.44%		-2.17			4.26%
02/20/1984	15.00%	11.46%		-2.17			3.54%
02/20/1984	15.00%	11.46%		-2.17			3.54%
02/22/1984	14.75%	11.47%		-2.17			3.28%
02/28/1984	14.50%	11.51%		-2.16			2.99%
03/02/1984	14.25%	11.54%		-2.16			2.71%
03/20/1984	16.00%	11.64%		-2.15			4.36%
03/23/1984	15.50%	11.67%		-2.15			3.83%
03/26/1984	14.71%	11.68%		-2.15			3.03%
04/02/1984	15.50%	11.71%		-2.14			3.79%
04/06/1984	14.74%	11.75%		-2.14			2.99%
04/11/1984	15.72%	11.78%		-2.14			3.94%
04/17/1984	15.00%	11.81%		-2.14			3.19%
04/18/1984	16.20%	11.82%		-2.14			4.38%
04/25/1984	14.64%	11.85%		-2.13			2.79%
04/30/1984	14.40%	11.87%		-2.13			2.53%
05/16/1984	14.69%	11.98%		-2.12			2.71%
05/16/1984	15.00%	11.98%		-2.12			3.02%
05/22/1984	14.40%	12.02%		-2.12			2.38%
05/29/1984	15.10%	12.06%		-2.12			3.04%
06/13/1984	15.25%	12.15%		-2.11			3.10%
06/15/1984	15.60%	12.17%		-2.11			3.43%
06/22/1984	16.25%	12.21%		-2.10			4.04%
06/29/1984	15.25%	12.26%		-2.10			2.99%
07/02/1984	13.35%	12.27%		-2.10			1.08%
07/10/1984	16.00%	12.31%		-2.09			3.69%
07/12/1984	16.50%	12.32%		-2.09			4.18%
07/13/1984	16.25%	12.33%		-2.09			3.92%
07/17/1984	14.14%	12.35%		-2.09			1.79%
07/18/1984	15.30%	12.36%		-2.09			2.94%
07/18/1984	15.50%	12.36%		-2.09			3.14%
07/19/1984	14.30%	12.37%		-2.09			1.93%
07/24/1984	16.79%	12.39%		-2.09			4.40%
07/31/1984	16.00%	12.43%		-2.09			3.57%
08/03/1984	14.25%	12.44%		-2.08			1.81%
08/17/1984	14.30%	12.49%		-2.08			1.81%
08/20/1984	15.00%	12.49%		-2.08			2.51%
08/27/1984	16.30%	12.51%		-2.08			3.79%

[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
08/31/1984	15.55%	12.52%		-2.08			3.03%
09/06/1984	16.00%	12.53%		-2.08			3.47%
09/10/1984	14.75%	12.54%		-2.08			2.21%
09/13/1984	15.00%	12.55%		-2.08			2.45%
09/17/1984	17.38%	12.56%		-2.08			4.82%
09/26/1984	14.50%	12.57%		-2.07			1.93%
09/28/1984	15.00%	12.57%		-2.07			2.43%
09/28/1984	16.25%	12.57%		-2.07			3.68%
10/09/1984	14.75%	12.58%		-2.07			2.17%
10/12/1984	15.60%	12.59%		-2.07			3.01%
10/22/1984	15.00%	12.59%		-2.07			2.41%
10/26/1984	16.40%	12.58%		-2.07			3.82%
10/31/1984	16.25%	12.58%		-2.07			3.67%
11/07/1984	15.60%	12.58%		-2.07			3.02%
11/09/1984	16.00%	12.58%		-2.07			3.42%
11/14/1984	15.75%	12.58%		-2.07			3.17%
11/20/1984	15.25%	12.58%		-2.07			2.67%
11/20/1984	15.92%	12.58%		-2.07			3.34%
11/23/1984	15.00%	12.58%		-2.07			2.42%
11/28/1984	16.15%	12.57%		-2.07			3.58%
12/03/1984	15.80%	12.56%		-2.07			3.24%
12/04/1984	16.50%	12.56%		-2.07			3.94%
12/18/1984	16.40%	12.53%		-2.08			3.87%
12/19/1984	14.75%	12.53%		-2.08			2.22%
12/19/1984	15.00%	12.53%		-2.08			2.47%
12/20/1984	16.00%	12.53%		-2.08			3.47%
12/28/1984	16.00%	12.50%		-2.08			3.50%
01/03/1985	14.75%	12.49%		-2.08			2.26%
01/10/1985	15.75%	12.47%		-2.08			3.28%
01/11/1985	16.30%	12.46%		-2.08			3.84%
01/23/1985	15.80%	12.43%		-2.08			3.37%
01/24/1985	15.82%	12.43%		-2.09			3.39%
01/25/1985	16.75%	12.42%		-2.09			4.33%
01/30/1985	14.90%	12.40%		-2.09			2.50%
01/31/1985	14.75%	12.39%		-2.09			2.36%
02/08/1985	14.47%	12.35%		-2.09			2.12%
03/01/1985	13.84%	12.31%		-2.10			1.53%
03/08/1985	16.85%	12.28%		-2.10			4.57%
03/14/1985	15.50%	12.25%		-2.10			3.25%
03/15/1985	15.62%	12.25%		-2.10			3.37%
03/29/1985	15.62%	12.17%		-2.11			3.45%
04/03/1985	14.60%	12.14%		-2.11			2.46%
04/09/1985	15.50%	12.11%		-2.11			3.39%
04/16/1985	15.70%	12.06%		-2.12			3.64%
04/22/1985	14.00%	12.02%		-2.12			1.98%
04/26/1985	15.50%	11.98%		-2.12			3.52%
04/29/1985	15.00%	11.97%		-2.12			3.03%
05/02/1985	14.68%	11.94%		-2.13			2.74%
05/08/1985	15.62%	11.89%		-2.13			3.73%
05/10/1985	16.50%	11.87%		-2.13			4.63%
05/29/1985	14.61%	11.73%		-2.14			2.88%
05/31/1985	16.00%	11.71%		-2.14			4.29%
06/14/1985	15.50%	11.61%		-2.15			3.89%
07/09/1985	15.00%	11.45%		-2.17			3.55%
07/16/1985	14.50%	11.39%		-2.17			3.11%
07/26/1985	14.50%	11.33%		-2.18			3.17%
08/02/1985	14.80%	11.29%		-2.18			3.51%
08/07/1985	15.00%	11.27%		-2.18			3.73%
08/28/1985	14.25%	11.15%		-2.19			3.10%
08/28/1985	15.50%	11.15%		-2.19			4.35%
08/29/1985	14.50%	11.15%		-2.19			3.35%
09/09/1985	14.60%	11.11%		-2.20			3.49%
09/09/1985	14.90%	11.11%		-2.20			3.79%
09/17/1985	14.90%	11.08%		-2.20			3.82%
09/23/1985	15.00%	11.06%		-2.20			3.94%
09/27/1985	15.50%	11.05%		-2.20			4.45%
09/27/1985	15.80%	11.05%		-2.20			4.75%
10/02/1985	14.00%	11.03%		-2.20			2.97%
10/02/1985	14.75%	11.03%		-2.20			3.72%
10/03/1985	15.25%	11.03%		-2.20			4.22%
10/24/1985	15.40%	10.96%		-2.21			4.44%
10/24/1985	15.82%	10.96%		-2.21			4.86%
10/24/1985	15.85%	10.96%		-2.21			4.89%
10/28/1985	16.00%	10.95%		-2.21			5.05%
10/29/1985	16.65%	10.94%		-2.21			5.71%
10/31/1985	15.06%	10.93%		-2.21			4.13%
11/04/1985	14.50%	10.92%		-2.21			3.58%
11/07/1985	15.50%	10.90%		-2.22			4.60%
11/08/1985	14.30%	10.89%		-2.22			3.41%
12/12/1985	14.75%	10.73%		-2.23			4.02%
12/18/1985	15.00%	10.69%		-2.24			4.31%
12/20/1985	14.50%	10.67%		-2.24			3.83%

[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
12/20/1985	14.50%	10.67%		-2.24			3.83%
12/20/1985	15.00%	10.67%		-2.24			4.33%
01/24/1986	15.40%	10.41%		-2.26			4.99%
01/31/1986	15.00%	10.35%		-2.27			4.65%
02/05/1986	15.00%	10.32%		-2.27			4.68%
02/05/1986	15.75%	10.32%		-2.27			5.43%
02/10/1986	13.30%	10.29%		-2.27			3.01%
02/11/1986	12.50%	10.28%		-2.27			2.22%
02/14/1986	14.40%	10.24%		-2.28			4.16%
02/18/1986	16.00%	10.23%		-2.28			5.77%
02/24/1986	14.50%	10.18%		-2.28			4.32%
02/26/1986	14.00%	10.15%		-2.29			3.85%
03/05/1986	14.90%	10.08%		-2.29			4.82%
03/11/1986	14.50%	10.02%		-2.30			4.48%
03/12/1986	13.50%	10.00%		-2.30			3.50%
03/27/1986	14.10%	9.86%		-2.32			4.24%
03/31/1986	13.50%	9.84%		-2.32			3.66%
04/01/1986	14.00%	9.83%		-2.32			4.17%
04/02/1986	15.50%	9.81%		-2.32			5.69%
04/04/1986	15.00%	9.78%		-2.32			5.22%
04/14/1986	13.40%	9.69%		-2.33			3.71%
04/23/1986	15.00%	9.57%		-2.35			5.43%
05/16/1986	14.50%	9.32%		-2.37			5.18%
05/16/1986	14.50%	9.32%		-2.37			5.18%
05/29/1986	13.90%	9.19%		-2.39			4.71%
05/30/1986	15.10%	9.18%		-2.39			5.92%
06/02/1986	12.81%	9.17%		-2.39			3.64%
06/11/1986	14.00%	9.07%		-2.40			4.93%
06/24/1986	16.63%	8.94%		-2.41			7.69%
06/26/1986	12.00%	8.91%		-2.42			3.09%
06/26/1986	14.75%	8.91%		-2.42			5.84%
06/30/1986	13.00%	8.87%		-2.42			4.13%
07/10/1986	14.34%	8.75%		-2.44			5.59%
07/11/1986	12.75%	8.73%		-2.44			4.02%
07/14/1986	12.60%	8.71%		-2.44			3.89%
07/17/1986	12.40%	8.66%		-2.45			3.74%
07/25/1986	14.25%	8.57%		-2.46			5.68%
08/06/1986	13.50%	8.44%		-2.47			5.06%
08/14/1986	13.50%	8.35%		-2.48			5.15%
09/16/1986	12.75%	8.06%		-2.52			4.69%
09/19/1986	13.25%	8.03%		-2.52			5.22%
10/01/1986	14.00%	7.95%		-2.53			6.05%
10/03/1986	13.40%	7.93%		-2.53			5.47%
10/31/1986	13.50%	7.77%		-2.55			5.73%
11/05/1986	13.00%	7.75%		-2.56			5.25%
12/03/1986	12.90%	7.58%		-2.58			5.32%
12/04/1986	14.44%	7.58%		-2.58			6.86%
12/16/1986	13.60%	7.52%		-2.59			6.08%
12/22/1986	13.80%	7.51%		-2.59			6.29%
12/30/1986	13.00%	7.49%		-2.59			5.51%
01/02/1987	13.00%	7.49%		-2.59			5.51%
01/12/1987	12.40%	7.47%		-2.59			4.93%
01/27/1987	12.71%	7.46%		-2.60			5.25%
03/02/1987	12.47%	7.47%		-2.59			5.00%
03/03/1987	13.60%	7.47%		-2.59			6.13%
03/04/1987	12.38%	7.47%		-2.59			4.91%
03/10/1987	13.50%	7.47%		-2.59			6.03%
03/13/1987	13.00%	7.47%		-2.59			5.53%
03/31/1987	13.00%	7.46%		-2.59			5.54%
04/06/1987	13.00%	7.47%		-2.59			5.53%
04/14/1987	12.50%	7.49%		-2.59			5.01%
04/16/1987	14.50%	7.50%		-2.59			7.00%
04/27/1987	12.00%	7.54%		-2.59			4.46%
05/05/1987	12.85%	7.58%		-2.58			5.27%
05/12/1987	12.65%	7.62%		-2.57			5.03%
05/28/1987	13.50%	7.70%		-2.56			5.80%
06/15/1987	13.20%	7.78%		-2.55			5.42%
06/29/1987	15.00%	7.83%		-2.55			7.17%
06/30/1987	12.50%	7.84%		-2.55			4.66%
07/08/1987	12.00%	7.86%		-2.54			4.14%
07/10/1987	12.90%	7.86%		-2.54			5.04%
07/15/1987	13.50%	7.88%		-2.54			5.62%
07/16/1987	13.50%	7.88%		-2.54			5.62%
07/16/1987	15.00%	7.88%		-2.54			7.12%
07/27/1987	13.00%	7.92%		-2.54			5.08%
07/27/1987	13.40%	7.92%		-2.54			5.48%
07/27/1987	13.50%	7.92%		-2.54			5.58%
07/31/1987	12.98%	7.95%		-2.53			5.03%
08/26/1987	12.63%	8.06%		-2.52			4.57%
08/26/1987	12.75%	8.06%		-2.52			4.69%
08/27/1987	13.25%	8.06%		-2.52			5.19%
09/09/1987	13.00%	8.14%		-2.51			4.86%

[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
09/30/1987	12.75%	8.31%		-2.49			4.44%
09/30/1987	13.00%	8.31%		-2.49			4.69%
10/02/1987	11.50%	8.33%		-2.49			3.17%
10/15/1987	13.00%	8.43%		-2.47			4.57%
11/02/1987	13.00%	8.55%		-2.46			4.45%
11/19/1987	13.00%	8.64%		-2.45			4.36%
11/30/1987	12.00%	8.68%		-2.44			3.32%
12/03/1987	14.20%	8.70%		-2.44			5.50%
12/15/1987	13.25%	8.77%		-2.43			4.48%
12/16/1987	13.50%	8.78%		-2.43			4.72%
12/16/1987	13.72%	8.78%		-2.43			4.94%
12/17/1987	11.75%	8.79%		-2.43			2.96%
12/18/1987	13.50%	8.80%		-2.43			4.70%
12/21/1987	12.01%	8.81%		-2.43			3.20%
12/22/1987	12.00%	8.81%		-2.43			3.19%
12/22/1987	12.00%	8.81%		-2.43			3.19%
12/22/1987	12.75%	8.81%		-2.43			3.94%
12/22/1987	13.00%	8.81%		-2.43			4.19%
01/20/1988	13.80%	8.94%		-2.42			4.86%
01/26/1988	13.90%	8.95%		-2.41			4.95%
01/29/1988	13.20%	8.96%		-2.41			4.24%
02/04/1988	12.60%	8.96%		-2.41			3.64%
03/01/1988	11.56%	8.94%		-2.41			2.62%
03/23/1988	12.87%	8.92%		-2.42			3.95%
03/24/1988	11.24%	8.92%		-2.42			2.32%
03/30/1988	12.72%	8.92%		-2.42			3.80%
04/01/1988	12.50%	8.92%		-2.42			3.58%
04/07/1988	13.25%	8.93%		-2.42			4.32%
04/25/1988	10.96%	8.96%		-2.41			2.00%
05/03/1988	12.91%	8.97%		-2.41			3.94%
05/11/1988	13.50%	8.99%		-2.41			4.51%
05/16/1988	13.00%	8.99%		-2.41			4.01%
06/30/1988	12.75%	9.00%		-2.41			3.75%
07/01/1988	12.75%	8.99%		-2.41			3.76%
07/20/1988	13.40%	8.96%		-2.41			4.44%
08/05/1988	12.75%	8.92%		-2.42			3.83%
08/23/1988	11.70%	8.93%		-2.42			2.77%
08/29/1988	12.75%	8.94%		-2.41			3.81%
08/30/1988	13.50%	8.94%		-2.41			4.56%
09/08/1988	12.60%	8.95%		-2.41			3.65%
10/13/1988	13.10%	8.93%		-2.42			4.17%
12/19/1988	13.00%	9.02%		-2.41			3.98%
12/20/1988	12.25%	9.02%		-2.41			3.23%
12/20/1988	13.00%	9.02%		-2.41			3.98%
12/21/1988	12.90%	9.02%		-2.41			3.88%
12/27/1988	13.00%	9.03%		-2.40			3.97%
12/28/1988	13.10%	9.03%		-2.40			4.07%
12/30/1988	13.40%	9.04%		-2.40			4.36%
01/27/1989	13.00%	9.05%		-2.40			3.95%
01/31/1989	13.00%	9.05%		-2.40			3.95%
02/17/1989	13.00%	9.05%		-2.40			3.95%
02/20/1989	12.40%	9.05%		-2.40			3.35%
03/01/1989	12.76%	9.05%		-2.40			3.71%
03/08/1989	13.00%	9.05%		-2.40			3.95%
03/30/1989	14.00%	9.05%		-2.40			4.95%
04/05/1989	14.20%	9.05%		-2.40			5.15%
04/18/1989	13.00%	9.05%		-2.40			3.95%
05/05/1989	12.40%	9.05%		-2.40			3.35%
06/02/1989	13.20%	9.00%		-2.41			4.20%
06/08/1989	13.50%	8.98%		-2.41			4.52%
06/27/1989	13.25%	8.91%		-2.42			4.34%
06/30/1989	13.00%	8.90%		-2.42			4.10%
08/14/1989	12.50%	8.77%		-2.43			3.73%
09/28/1989	12.25%	8.63%		-2.45			3.62%
10/24/1989	12.50%	8.54%		-2.46			3.96%
11/09/1989	13.00%	8.49%		-2.47			4.51%
12/15/1989	13.00%	8.34%		-2.48			4.66%
12/20/1989	12.90%	8.32%		-2.49			4.58%
12/21/1989	12.90%	8.31%		-2.49			4.59%
12/27/1989	12.50%	8.29%		-2.49			4.21%
12/27/1989	13.00%	8.29%		-2.49			4.71%
01/10/1990	12.80%	8.24%		-2.50		19.95	4.56%
01/11/1990	12.90%	8.24%		-2.50		19.96	4.66%
01/17/1990	12.80%	8.22%		-2.50		21.59	4.58%
01/26/1990	12.00%	8.20%		-2.50		22.87	3.80%
02/09/1990	12.10%	8.17%		-2.50		23.58	3.93%
02/24/1990	12.86%	8.15%		-2.51		23.35	4.71%
03/30/1990	12.90%	8.16%		-2.51		22.17	4.74%
04/04/1990	15.76%	8.17%		-2.51		22.16	7.59%
04/12/1990	12.52%	8.18%		-2.50		22.04	4.34%
04/19/1990	12.75%	8.20%		-2.50		22.01	4.55%
05/21/1990	12.10%	8.28%		-2.49		21.42	3.82%

[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
05/29/1990	12.40%	8.30%		-2.49		21.25	4.10%
05/31/1990	12.00%	8.30%		-2.49		21.17	3.70%
06/04/1990	12.90%	8.30%		-2.49		21.11	4.60%
06/06/1990	12.25%	8.31%		-2.49		21.06	3.94%
06/15/1990	13.20%	8.32%		-2.49		20.80	4.88%
06/20/1990	12.92%	8.32%		-2.49		20.68	4.60%
06/27/1990	12.90%	8.33%		-2.49		20.52	4.57%
06/29/1990	12.50%	8.33%		-2.48		20.45	4.17%
07/06/1990	12.10%	8.34%		-2.48		20.33	3.76%
07/06/1990	12.35%	8.34%		-2.48		20.33	4.01%
08/10/1990	12.55%	8.41%		-2.48		20.52	4.14%
08/16/1990	13.21%	8.43%		-2.47		20.64	4.78%
08/22/1990	13.10%	8.45%		-2.47		20.82	4.65%
08/24/1990	13.00%	8.46%		-2.47		21.00	4.54%
09/26/1990	11.45%	8.59%		-2.45		21.96	2.86%
10/02/1990	13.00%	8.61%		-2.45		22.09	4.39%
10/05/1990	12.84%	8.62%		-2.45		22.18	4.22%
10/19/1990	13.00%	8.67%		-2.45		22.68	4.33%
10/25/1990	12.30%	8.68%		-2.44		22.81	3.62%
11/21/1990	12.70%	8.69%		-2.44		22.98	4.01%
12/13/1990	12.30%	8.67%		-2.44		22.96	3.63%
12/17/1990	12.87%	8.67%		-2.45		22.99	4.20%
12/18/1990	13.10%	8.67%		-2.45		23.00	4.43%
12/19/1990	12.00%	8.66%		-2.45		23.02	3.34%
12/20/1990	12.75%	8.66%		-2.45		23.04	4.09%
12/21/1990	12.50%	8.66%		-2.45		23.05	3.84%
12/27/1990	12.79%	8.66%		-2.45		23.11	4.13%
01/02/1991	13.10%	8.65%		-2.45		23.23	4.45%
01/04/1991	12.50%	8.65%		-2.45		23.31	3.85%
01/15/1991	12.75%	8.64%		-2.45		23.74	4.11%
01/25/1991	11.70%	8.63%		-2.45		23.92	3.07%
02/04/1991	12.50%	8.60%		-2.45		23.93	3.90%
02/07/1991	12.50%	8.59%		-2.45		23.93	3.91%
02/12/1991	13.00%	8.58%		-2.46		23.96	4.43%
02/14/1991	12.72%	8.57%		-2.46		23.98	4.15%
02/22/1991	12.80%	8.55%		-2.46		24.05	4.25%
03/06/1991	13.10%	8.53%		-2.46		24.14	4.57%
03/08/1991	12.30%	8.52%		-2.46		24.18	3.78%
03/08/1991	13.00%	8.52%		-2.46		24.18	4.48%
04/22/1991	13.00%	8.49%		-2.47		24.19	4.51%
05/07/1991	13.50%	8.47%		-2.47		24.21	5.03%
05/13/1991	13.25%	8.47%		-2.47		24.13	4.78%
05/30/1991	12.75%	8.44%		-2.47		23.59	4.31%
06/12/1991	12.00%	8.41%		-2.48		23.06	3.59%
06/25/1991	11.70%	8.39%		-2.48		22.50	3.31%
06/28/1991	12.50%	8.38%		-2.48		22.35	4.12%
07/01/1991	12.00%	8.38%		-2.48		22.30	3.62%
07/03/1991	12.50%	8.37%		-2.48		22.18	4.13%
07/19/1991	12.10%	8.34%		-2.48		21.59	3.76%
08/01/1991	12.90%	8.32%		-2.49		20.95	4.58%
08/16/1991	13.20%	8.29%		-2.49		20.17	4.91%
09/27/1991	12.50%	8.23%		-2.50		19.03	4.27%
09/30/1991	12.25%	8.23%		-2.50		19.01	4.02%
10/17/1991	13.00%	8.20%		-2.50		18.52	4.80%
10/23/1991	12.50%	8.20%		-2.50		18.27	4.30%
10/23/1991	12.55%	8.20%		-2.50		18.27	4.35%
10/31/1991	11.80%	8.19%		-2.50		17.73	3.61%
11/01/1991	12.00%	8.19%		-2.50		17.67	3.81%
11/05/1991	12.25%	8.19%		-2.50		17.58	4.06%
11/12/1991	12.50%	8.18%		-2.50		17.38	4.32%
11/12/1991	13.25%	8.18%		-2.50		17.38	5.07%
11/25/1991	12.40%	8.18%		-2.50		17.24	4.22%
11/26/1991	11.60%	8.18%		-2.50		17.22	3.42%
11/26/1991	12.50%	8.18%		-2.50		17.22	4.32%
11/27/1991	12.10%	8.18%		-2.50		17.21	3.92%
12/18/1991	12.25%	8.15%		-2.51		17.09	4.10%
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%
12/20/1991	12.65%	8.14%		-2.51		17.06	4.51%
01/09/1992	12.80%	8.09%		-2.51		17.13	4.71%
01/16/1992	12.75%	8.07%		-2.52		17.14	4.68%
01/21/1992	12.00%	8.06%		-2.52		17.13	3.94%
01/22/1992	13.00%	8.06%		-2.52		17.12	4.94%
01/27/1992	12.65%	8.05%		-2.52		17.08	4.60%
01/31/1992	12.00%	8.04%		-2.52		17.12	3.96%
02/11/1992	12.40%	8.03%		-2.52		17.16	4.37%
02/25/1992	12.50%	8.01%		-2.52		17.14	4.49%
03/16/1992	11.43%	7.98%		-2.53		17.25	3.45%
03/18/1992	12.28%	7.98%		-2.53		17.25	4.30%
04/02/1992	12.10%	7.95%		-2.53		17.23	4.15%
04/09/1992	11.45%	7.94%		-2.53		17.25	3.51%
04/10/1992	11.50%	7.93%		-2.53		17.24	3.57%

[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
04/14/1992	11.50%	7.93%		-2.53		17.22	3.57%
05/05/1992	11.50%	7.89%		-2.54		17.08	3.61%
05/12/1992	11.87%	7.88%		-2.54		17.08	3.99%
05/12/1992	12.46%	7.88%		-2.54		17.08	4.58%
06/01/1992	12.30%	7.87%		-2.54		17.01	4.43%
06/12/1992	10.90%	7.86%		-2.54		16.96	3.04%
06/26/1992	12.35%	7.85%		-2.54		16.91	4.50%
06/29/1992	11.00%	7.85%		-2.54		16.89	3.15%
06/30/1992	13.00%	7.85%		-2.55		16.87	5.15%
07/13/1992	11.90%	7.84%		-2.55		16.78	4.06%
07/13/1992	13.50%	7.84%		-2.55		16.78	5.66%
07/22/1992	11.20%	7.83%		-2.55		16.66	3.37%
08/03/1992	12.00%	7.81%		-2.55		16.51	4.19%
08/06/1992	12.50%	7.80%		-2.55		16.48	4.70%
09/22/1992	12.00%	7.71%		-2.56		15.90	4.29%
09/28/1992	11.40%	7.71%		-2.56		15.79	3.69%
09/30/1992	11.75%	7.70%		-2.56		15.76	4.05%
10/02/1992	13.00%	7.70%		-2.56		15.75	5.30%
10/12/1992	12.20%	7.70%		-2.56		15.86	4.50%
10/16/1992	13.16%	7.70%		-2.56		15.84	5.46%
10/30/1992	11.75%	7.71%		-2.56		15.75	4.04%
11/03/1992	12.00%	7.71%		-2.56		15.75	4.29%
12/03/1992	11.85%	7.68%		-2.57		15.37	4.17%
12/15/1992	11.00%	7.66%		-2.57		15.19	3.34%
12/16/1992	11.90%	7.66%		-2.57		15.16	4.24%
12/16/1992	12.40%	7.66%		-2.57		15.16	4.74%
12/17/1992	12.00%	7.66%		-2.57		15.13	4.34%
12/22/1992	12.30%	7.65%		-2.57		15.01	4.65%
12/22/1992	12.40%	7.65%		-2.57		15.01	4.75%
12/29/1992	12.25%	7.63%	8.61%	-2.57	0.98%	14.87	4.62%
12/30/1992	12.00%	7.63%	8.61%	-2.57	0.98%	14.85	4.37%
12/31/1992	11.90%	7.63%	8.61%	-2.57	0.98%	14.83	4.27%
01/12/1993	12.00%	7.61%	8.62%	-2.58	1.01%	14.72	4.39%
01/21/1993	11.25%	7.59%	8.61%	-2.58	1.02%	14.55	3.66%
02/02/1993	11.40%	7.56%	8.56%	-2.58	1.00%	14.36	3.84%
02/15/1993	12.30%	7.52%	8.53%	-2.59	1.01%	14.23	4.78%
02/24/1993	11.90%	7.49%	8.48%	-2.59	0.99%	14.19	4.41%
02/26/1993	11.80%	7.48%	8.46%	-2.59	0.98%	14.17	4.32%
02/26/1993	12.20%	7.48%	8.46%	-2.59	0.98%	14.17	4.72%
04/23/1993	11.75%	7.29%	8.29%	-2.62	1.00%	13.85	4.46%
05/11/1993	11.75%	7.25%	8.26%	-2.62	1.02%	13.85	4.50%
05/14/1993	11.50%	7.24%	8.26%	-2.63	1.02%	13.87	4.26%
05/25/1993	11.50%	7.23%	8.26%	-2.63	1.04%	13.88	4.27%
05/28/1993	11.00%	7.22%	8.26%	-2.63	1.04%	13.85	3.78%
06/03/1993	12.00%	7.21%	8.26%	-2.63	1.05%	13.84	4.79%
06/16/1993	11.50%	7.19%	8.24%	-2.63	1.06%	13.77	4.31%
06/18/1993	12.10%	7.18%	8.24%	-2.63	1.06%	13.76	4.92%
06/25/1993	11.67%	7.17%	8.23%	-2.64	1.06%	13.73	4.50%
07/21/1993	11.38%	7.10%	8.20%	-2.65	1.10%	13.46	4.28%
07/23/1993	10.46%	7.09%	8.19%	-2.65	1.10%	13.37	3.37%
08/24/1993	11.50%	6.96%	8.13%	-2.67	1.17%	12.80	4.54%
09/21/1993	10.50%	6.81%	8.05%	-2.69	1.24%	12.72	3.69%
09/29/1993	11.47%	6.77%	8.03%	-2.69	1.26%	12.73	4.70%
09/30/1993	11.60%	6.76%	8.03%	-2.69	1.27%	12.74	4.84%
11/02/1993	10.80%	6.60%	7.90%	-2.72	1.29%	12.67	4.20%
11/12/1993	12.00%	6.57%	7.87%	-2.72	1.30%	12.76	5.43%
11/26/1993	11.00%	6.52%	7.84%	-2.73	1.32%	12.85	4.48%
12/14/1993	10.55%	6.48%	7.80%	-2.74	1.32%	12.75	4.07%
12/16/1993	10.60%	6.48%	7.80%	-2.74	1.32%	12.73	4.12%
12/21/1993	11.30%	6.47%	7.80%	-2.74	1.33%	12.66	4.83%
01/04/1994	10.07%	6.44%	7.78%	-2.74	1.34%	12.50	3.63%
01/13/1994	11.00%	6.42%	7.77%	-2.75	1.35%	12.46	4.58%
01/21/1994	11.00%	6.40%	7.75%	-2.75	1.35%	12.39	4.60%
01/28/1994	11.35%	6.39%	7.74%	-2.75	1.35%	12.37	4.96%
02/03/1994	11.40%	6.38%	7.73%	-2.75	1.35%	12.34	5.02%
02/17/1994	10.60%	6.36%	7.71%	-2.76	1.35%	12.38	4.24%
02/25/1994	11.25%	6.35%	7.71%	-2.76	1.35%	12.40	4.90%
02/25/1994	12.00%	6.35%	7.71%	-2.76	1.35%	12.40	5.65%
03/01/1994	11.00%	6.35%	7.70%	-2.76	1.36%	12.41	4.65%
03/04/1994	11.00%	6.35%	7.70%	-2.76	1.36%	12.44	4.65%
04/25/1994	11.00%	6.41%	7.74%	-2.75	1.33%	13.02	4.59%
05/10/1994	11.75%	6.45%	7.77%	-2.74	1.32%	13.19	5.30%
05/13/1994	10.50%	6.46%	7.78%	-2.74	1.32%	13.24	4.04%
06/03/1994	11.00%	6.54%	7.84%	-2.73	1.30%	13.31	4.46%
06/27/1994	11.40%	6.65%	7.94%	-2.71	1.29%	13.42	4.75%
08/05/1994	12.75%	6.88%	8.14%	-2.68	1.26%	13.41	5.87%
10/31/1994	10.00%	7.33%	8.53%	-2.61	1.21%	13.76	2.67%
11/09/1994	10.85%	7.39%	8.60%	-2.61	1.21%	13.92	3.46%
11/09/1994	10.85%	7.39%	8.60%	-2.61	1.21%	13.92	3.46%
11/18/1994	11.20%	7.45%	8.65%	-2.60	1.20%	14.12	3.75%
11/22/1994	11.60%	7.47%	8.67%	-2.59	1.20%	14.14	4.13%
11/28/1994	11.06%	7.49%	8.69%	-2.59	1.20%	14.20	3.57%

[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
12/08/1994	11.50%	7.54%	8.75%	-2.58	1.21%	14.30	3.96%
12/08/1994	11.70%	7.54%	8.75%	-2.58	1.21%	14.30	4.16%
12/14/1994	10.95%	7.56%	8.77%	-2.58	1.21%	14.29	3.39%
12/15/1994	11.50%	7.57%	8.78%	-2.58	1.21%	14.27	3.93%
12/19/1994	11.50%	7.58%	8.79%	-2.58	1.21%	14.24	3.92%
12/28/1994	12.15%	7.61%	8.82%	-2.58	1.21%	14.15	4.54%
01/09/1995	12.28%	7.64%	8.86%	-2.57	1.22%	14.14	4.64%
01/31/1995	11.00%	7.69%	8.93%	-2.57	1.24%	13.72	3.31%
02/10/1995	12.60%	7.70%	8.95%	-2.56	1.25%	13.56	4.90%
02/17/1995	11.90%	7.70%	8.96%	-2.56	1.26%	13.50	4.20%
03/09/1995	11.50%	7.71%	8.98%	-2.56	1.26%	13.36	3.79%
03/20/1995	12.00%	7.72%	8.98%	-2.56	1.26%	13.34	4.28%
03/23/1995	12.81%	7.72%	8.98%	-2.56	1.26%	13.32	5.09%
03/29/1995	11.60%	7.72%	8.99%	-2.56	1.27%	13.31	3.88%
04/06/1995	11.10%	7.71%	8.99%	-2.56	1.28%	13.31	3.39%
04/07/1995	11.00%	7.71%	8.99%	-2.56	1.28%	13.30	3.29%
04/19/1995	11.00%	7.70%	8.99%	-2.56	1.29%	13.21	3.30%
05/12/1995	11.63%	7.68%	8.96%	-2.57	1.29%	13.20	3.95%
05/25/1995	11.20%	7.65%	8.94%	-2.57	1.30%	13.21	3.55%
06/09/1995	11.25%	7.60%	8.91%	-2.58	1.31%	13.25	3.65%
06/21/1995	12.25%	7.56%	8.88%	-2.58	1.32%	13.23	4.69%
06/30/1995	11.10%	7.52%	8.85%	-2.59	1.33%	13.19	3.58%
09/11/1995	11.30%	7.20%	8.58%	-2.63	1.38%	12.51	4.10%
09/27/1995	11.30%	7.12%	8.51%	-2.64	1.38%	12.25	4.18%
09/27/1995	11.50%	7.12%	8.51%	-2.64	1.38%	12.25	4.38%
09/27/1995	11.75%	7.12%	8.51%	-2.64	1.38%	12.25	4.63%
09/29/1995	11.00%	7.11%	8.49%	-2.64	1.38%	12.24	3.89%
11/09/1995	11.38%	6.90%	8.30%	-2.67	1.40%	12.46	4.48%
11/09/1995	12.36%	6.90%	8.30%	-2.67	1.40%	12.46	5.46%
11/17/1995	11.00%	6.86%	8.26%	-2.68	1.41%	12.50	4.14%
12/04/1995	11.35%	6.78%	8.21%	-2.69	1.43%	12.51	4.57%
12/11/1995	11.40%	6.74%	8.18%	-2.70	1.43%	12.52	4.66%
12/20/1995	11.60%	6.70%	8.14%	-2.70	1.44%	12.50	4.90%
12/27/1995	12.00%	6.66%	8.11%	-2.71	1.45%	12.48	5.34%
02/05/1996	12.25%	6.48%	7.98%	-2.74	1.50%	12.63	5.77%
03/29/1996	10.67%	6.42%	7.92%	-2.75	1.50%	13.47	4.25%
04/08/1996	11.00%	6.42%	7.92%	-2.75	1.50%	13.62	4.58%
04/11/1996	12.59%	6.43%	7.93%	-2.74	1.51%	13.73	6.16%
04/11/1996	12.59%	6.43%	7.93%	-2.74	1.51%	13.73	6.16%
04/24/1996	11.25%	6.43%	7.95%	-2.74	1.51%	13.92	4.82%
04/30/1996	11.00%	6.43%	7.95%	-2.74	1.52%	13.98	4.57%
05/13/1996	11.00%	6.44%	7.97%	-2.74	1.53%	14.14	4.56%
05/23/1996	11.25%	6.43%	7.98%	-2.74	1.54%	14.23	4.82%
06/25/1996	11.25%	6.48%	8.01%	-2.74	1.53%	14.71	4.77%
06/27/1996	11.20%	6.48%	8.01%	-2.74	1.53%	14.75	4.72%
08/12/1996	10.40%	6.57%	8.09%	-2.72	1.51%	15.35	3.83%
09/27/1996	11.00%	6.71%	8.18%	-2.70	1.48%	15.96	4.29%
10/16/1996	12.25%	6.76%	8.22%	-2.69	1.46%	16.20	5.49%
11/05/1996	11.00%	6.81%	8.25%	-2.69	1.44%	16.42	4.19%
11/26/1996	11.30%	6.83%	8.26%	-2.68	1.43%	16.58	4.47%
12/18/1996	11.75%	6.83%	8.27%	-2.68	1.44%	16.80	4.92%
12/31/1996	11.50%	6.83%	8.27%	-2.68	1.44%	16.84	4.67%
01/03/1997	10.70%	6.83%	8.27%	-2.68	1.43%	16.86	3.87%
02/13/1997	11.80%	6.82%	8.24%	-2.68	1.42%	17.23	4.98%
02/20/1997	11.80%	6.82%	8.24%	-2.69	1.42%	17.29	4.98%
03/31/1997	10.02%	6.80%	8.21%	-2.69	1.40%	17.83	3.22%
04/02/1997	11.65%	6.80%	8.21%	-2.69	1.40%	17.86	4.85%
04/28/1997	11.50%	6.81%	8.20%	-2.69	1.39%	18.20	4.69%
04/29/1997	11.70%	6.81%	8.20%	-2.69	1.39%	18.21	4.89%
07/17/1997	12.00%	6.77%	8.14%	-2.69	1.37%	19.03	5.23%
12/12/1997	11.00%	6.60%	7.96%	-2.72	1.36%	22.57	4.40%
12/23/1997	11.12%	6.57%	7.94%	-2.72	1.37%	22.84	4.55%
02/02/1998	12.75%	6.39%	7.81%	-2.75	1.42%	23.43	6.36%
03/02/1998	11.25%	6.29%	7.71%	-2.77	1.42%	23.40	4.96%
03/06/1998	10.75%	6.27%	7.70%	-2.77	1.43%	23.37	4.48%
03/20/1998	10.50%	6.22%	7.65%	-2.78	1.42%	23.35	4.28%
04/30/1998	12.20%	6.12%	7.55%	-2.79	1.42%	23.66	6.08%
07/10/1998	11.40%	5.94%	7.40%	-2.82	1.46%	23.13	5.46%
09/15/1998	11.90%	5.78%	7.30%	-2.85	1.52%	23.82	6.12%
11/30/1998	12.60%	5.58%	7.26%	-2.89	1.68%	26.04	7.02%
12/10/1998	12.20%	5.54%	7.25%	-2.89	1.71%	26.30	6.66%
12/17/1998	12.10%	5.52%	7.25%	-2.90	1.73%	26.55	6.58%
02/05/1999	10.30%	5.38%	7.24%	-2.92	1.86%	27.50	4.92%
03/04/1999	10.50%	5.34%	7.25%	-2.93	1.91%	28.15	5.16%
04/06/1999	10.94%	5.32%	7.28%	-2.93	1.96%	28.43	5.62%
07/29/1999	10.75%	5.52%	7.54%	-2.90	2.02%	25.84	5.23%
09/23/1999	10.75%	5.70%	7.72%	-2.86	2.02%	24.95	5.05%
11/17/1999	11.10%	5.90%	7.90%	-2.83	2.00%	24.34	5.20%
01/07/2000	11.50%	6.05%	8.03%	-2.81	1.98%	23.49	5.45%
01/07/2000	11.50%	6.05%	8.03%	-2.81	1.98%	23.49	5.45%
02/17/2000	10.60%	6.17%	8.15%	-2.78	1.98%	23.37	4.43%
03/28/2000	11.25%	6.20%	8.23%	-2.78	2.03%	22.98	5.05%

[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
05/24/2000	11.00%	6.18%	8.34%	-2.78	2.16%	23.85	4.82%
07/18/2000	12.20%	6.16%	8.40%	-2.79	2.24%	23.37	6.04%
09/29/2000	11.16%	6.03%	8.42%	-2.81	2.38%	22.44	5.13%
11/28/2000	12.90%	5.89%	8.40%	-2.83	2.51%	22.97	7.01%
11/30/2000	12.10%	5.88%	8.40%	-2.83	2.51%	23.03	6.22%
01/23/2001	11.25%	5.79%	8.33%	-2.85	2.54%	23.50	5.46%
02/08/2001	11.50%	5.77%	8.31%	-2.85	2.54%	23.17	5.73%
05/08/2001	10.75%	5.62%	8.12%	-2.88	2.50%	24.37	5.13%
06/26/2001	11.00%	5.62%	8.09%	-2.88	2.46%	24.90	5.38%
07/25/2001	11.02%	5.60%	8.06%	-2.88	2.46%	25.06	5.42%
07/25/2001	11.02%	5.60%	8.06%	-2.88	2.46%	25.06	5.42%
07/31/2001	11.00%	5.59%	8.05%	-2.88	2.46%	24.98	5.41%
08/31/2001	10.50%	5.56%	8.01%	-2.89	2.46%	24.50	4.94%
09/07/2001	10.75%	5.55%	8.01%	-2.89	2.45%	24.54	5.20%
09/10/2001	11.00%	5.55%	8.01%	-2.89	2.45%	24.57	5.45%
09/20/2001	10.00%	5.55%	8.00%	-2.89	2.45%	24.85	4.45%
10/24/2001	10.30%	5.54%	8.01%	-2.89	2.47%	25.70	4.76%
11/28/2001	10.60%	5.49%	8.01%	-2.90	2.51%	26.15	5.11%
12/03/2001	12.88%	5.49%	8.01%	-2.90	2.52%	26.20	7.39%
12/20/2001	12.50%	5.50%	8.03%	-2.90	2.53%	26.14	7.00%
01/22/2002	10.00%	5.50%	8.06%	-2.90	2.56%	25.52	4.50%
03/27/2002	10.10%	5.45%	8.09%	-2.91	2.65%	24.63	4.65%
04/22/2002	11.80%	5.45%	8.12%	-2.91	2.67%	24.46	6.35%
05/28/2002	10.17%	5.46%	8.15%	-2.91	2.68%	24.27	4.71%
06/10/2002	12.00%	5.47%	8.16%	-2.91	2.69%	24.33	6.53%
06/18/2002	11.16%	5.48%	8.17%	-2.90	2.70%	24.40	5.68%
06/20/2002	11.00%	5.48%	8.18%	-2.90	2.70%	24.45	5.52%
06/20/2002	12.30%	5.48%	8.18%	-2.90	2.70%	24.45	6.82%
07/15/2002	11.00%	5.48%	8.19%	-2.90	2.72%	24.13	5.52%
09/12/2002	12.30%	5.45%	8.14%	-2.91	2.69%	25.14	6.85%
09/26/2002	10.45%	5.41%	8.12%	-2.92	2.71%	25.82	5.04%
12/04/2002	11.55%	5.29%	8.04%	-2.94	2.75%	28.01	6.26%
12/13/2002	11.75%	5.27%	8.02%	-2.94	2.75%	28.25	6.48%
12/20/2002	11.40%	5.25%	8.01%	-2.95	2.76%	28.44	6.15%
01/08/2003	11.10%	5.19%	7.96%	-2.96	2.77%	28.87	5.91%
01/31/2003	12.45%	5.13%	7.89%	-2.97	2.76%	29.61	7.32%
02/28/2003	12.30%	5.05%	7.79%	-2.99	2.75%	30.69	7.25%
03/06/2003	10.75%	5.03%	7.77%	-2.99	2.74%	30.93	5.72%
03/07/2003	9.96%	5.02%	7.76%	-2.99	2.74%	30.99	4.94%
03/20/2003	12.00%	4.98%	7.70%	-3.00	2.71%	31.50	7.02%
04/03/2003	12.00%	4.96%	7.64%	-3.00	2.68%	31.71	7.04%
04/15/2003	11.15%	4.94%	7.59%	-3.01	2.65%	31.67	6.21%
06/25/2003	10.75%	4.79%	7.24%	-3.04	2.45%	28.30	5.96%
06/26/2003	10.75%	4.79%	7.23%	-3.04	2.44%	28.22	5.96%
07/09/2003	9.75%	4.79%	7.19%	-3.04	2.40%	27.50	4.96%
07/16/2003	9.75%	4.79%	7.16%	-3.04	2.37%	27.03	4.96%
07/25/2003	9.50%	4.80%	7.13%	-3.04	2.33%	26.35	4.70%
08/26/2003	10.50%	4.83%	7.02%	-3.03	2.19%	24.80	5.67%
12/17/2003	9.85%	4.94%	6.75%	-3.01	1.82%	20.53	4.91%
12/17/2003	10.70%	4.94%	6.75%	-3.01	1.82%	20.53	5.76%
12/18/2003	11.50%	4.94%	6.75%	-3.01	1.82%	20.45	6.56%
12/19/2003	12.00%	4.94%	6.75%	-3.01	1.81%	20.38	7.06%
12/19/2003	12.00%	4.94%	6.75%	-3.01	1.81%	20.38	7.06%
12/23/2003	10.50%	4.94%	6.75%	-3.01	1.81%	20.21	5.56%
01/13/2004	12.00%	4.95%	6.71%	-3.01	1.77%	19.36	7.05%
03/02/2004	10.75%	4.99%	6.62%	-3.00	1.64%	18.18	5.76%
03/26/2004	10.25%	5.02%	6.60%	-2.99	1.58%	17.98	5.23%
04/05/2004	11.25%	5.03%	6.60%	-2.99	1.57%	17.86	6.22%
05/18/2004	10.50%	5.07%	6.61%	-2.98	1.54%	17.45	5.43%
05/25/2004	10.25%	5.08%	6.60%	-2.98	1.53%	17.37	5.17%
05/27/2004	10.25%	5.08%	6.60%	-2.98	1.52%	17.34	5.17%
06/02/2004	11.22%	5.08%	6.60%	-2.98	1.52%	17.30	6.14%
06/30/2004	10.50%	5.10%	6.57%	-2.98	1.47%	16.97	5.40%
06/30/2004	10.50%	5.10%	6.57%	-2.98	1.47%	16.97	5.40%
07/16/2004	11.60%	5.11%	6.56%	-2.97	1.45%	16.72	6.49%
08/25/2004	10.25%	5.10%	6.53%	-2.98	1.43%	16.53	5.15%
09/09/2004	10.40%	5.10%	6.51%	-2.98	1.42%	16.36	5.30%
11/09/2004	10.50%	5.07%	6.43%	-2.98	1.37%	15.94	5.43%
11/23/2004	11.00%	5.06%	6.42%	-2.98	1.36%	15.75	5.94%
12/14/2004	10.97%	5.07%	6.41%	-2.98	1.35%	15.58	5.90%
12/21/2004	11.25%	5.07%	6.41%	-2.98	1.34%	15.51	6.18%
12/21/2004	11.50%	5.07%	6.41%	-2.98	1.34%	15.51	6.43%
12/22/2004	10.70%	5.07%	6.41%	-2.98	1.34%	15.49	5.63%
12/22/2004	11.50%	5.07%	6.41%	-2.98	1.34%	15.49	6.43%
12/29/2004	9.85%	5.07%	6.41%	-2.98	1.34%	15.33	4.78%
01/06/2005	10.70%	5.08%	6.41%	-2.98	1.33%	15.14	5.62%
02/18/2005	10.30%	4.98%	6.33%	-3.00	1.35%	14.60	5.32%
02/25/2005	10.50%	4.96%	6.31%	-3.00	1.35%	14.48	5.54%
03/10/2005	11.00%	4.93%	6.27%	-3.01	1.34%	14.19	6.07%
03/24/2005	10.30%	4.90%	6.23%	-3.02	1.34%	14.06	5.40%
04/04/2005	10.00%	4.88%	6.21%	-3.02	1.33%	14.02	5.12%
04/07/2005	10.25%	4.87%	6.20%	-3.02	1.33%	14.00	5.38%

[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
05/18/2005	10.25%	4.78%	6.08%	-3.04	1.30%	13.90	5.47%
05/25/2005	10.75%	4.76%	6.07%	-3.04	1.30%	13.77	5.99%
05/26/2005	9.75%	4.76%	6.06%	-3.04	1.30%	13.74	4.99%
06/01/2005	9.75%	4.75%	6.05%	-3.05	1.30%	13.66	5.00%
07/19/2005	11.50%	4.64%	5.95%	-3.07	1.31%	13.17	6.86%
08/05/2005	11.75%	4.62%	5.93%	-3.07	1.31%	12.95	7.13%
08/15/2005	10.13%	4.61%	5.92%	-3.08	1.31%	12.85	5.52%
09/28/2005	10.00%	4.54%	5.87%	-3.09	1.32%	12.77	5.46%
10/04/2005	10.75%	4.54%	5.87%	-3.09	1.33%	12.78	6.21%
12/12/2005	11.00%	4.55%	5.93%	-3.09	1.38%	12.96	6.45%
12/13/2005	10.75%	4.55%	5.93%	-3.09	1.38%	12.96	6.20%
12/21/2005	10.29%	4.54%	5.93%	-3.09	1.39%	12.91	5.75%
12/21/2005	10.40%	4.54%	5.93%	-3.09	1.39%	12.91	5.86%
12/22/2005	11.00%	4.54%	5.94%	-3.09	1.39%	12.90	6.46%
12/22/2005	11.15%	4.54%	5.94%	-3.09	1.39%	12.90	6.61%
12/28/2005	10.00%	4.54%	5.94%	-3.09	1.40%	12.87	5.46%
12/28/2005	10.00%	4.54%	5.94%	-3.09	1.40%	12.87	5.46%
01/05/2006	11.00%	4.53%	5.94%	-3.09	1.41%	12.82	6.47%
01/27/2006	9.75%	4.52%	5.94%	-3.10	1.42%	12.73	5.23%
03/03/2006	10.39%	4.53%	5.96%	-3.09	1.43%	12.40	5.86%
04/17/2006	10.20%	4.61%	6.05%	-3.08	1.44%	12.34	5.59%
04/26/2006	10.60%	4.64%	6.08%	-3.07	1.44%	12.34	5.96%
05/17/2006	11.60%	4.69%	6.14%	-3.06	1.45%	12.47	6.91%
06/06/2006	10.00%	4.74%	6.19%	-3.05	1.44%	12.72	5.26%
06/27/2006	10.75%	4.80%	6.25%	-3.04	1.45%	13.07	5.95%
07/06/2006	10.20%	4.83%	6.28%	-3.03	1.45%	13.12	5.37%
07/24/2006	9.60%	4.86%	6.32%	-3.02	1.46%	13.30	4.74%
07/26/2006	10.50%	4.86%	6.33%	-3.02	1.47%	13.30	5.64%
07/28/2006	10.05%	4.86%	6.33%	-3.02	1.47%	13.29	5.19%
08/23/2006	9.55%	4.89%	6.36%	-3.02	1.47%	13.19	4.66%
09/01/2006	10.54%	4.90%	6.36%	-3.02	1.47%	13.19	5.64%
09/14/2006	10.00%	4.91%	6.37%	-3.01	1.47%	13.24	5.09%
10/06/2006	9.67%	4.92%	6.37%	-3.01	1.45%	13.29	4.75%
11/21/2006	10.08%	4.95%	6.39%	-3.01	1.44%	13.11	5.13%
11/21/2006	10.08%	4.95%	6.39%	-3.01	1.44%	13.11	5.13%
11/21/2006	10.12%	4.95%	6.39%	-3.01	1.44%	13.11	5.17%
12/01/2006	10.25%	4.95%	6.38%	-3.00	1.43%	13.06	5.30%
12/01/2006	10.50%	4.95%	6.38%	-3.00	1.43%	13.06	5.55%
12/07/2006	10.75%	4.95%	6.38%	-3.00	1.43%	13.06	5.80%
12/21/2006	10.90%	4.95%	6.38%	-3.01	1.42%	12.98	5.95%
12/21/2006	11.25%	4.95%	6.38%	-3.01	1.42%	12.98	6.30%
12/22/2006	10.25%	4.95%	6.37%	-3.01	1.42%	12.97	5.30%
01/05/2007	10.00%	4.95%	6.37%	-3.01	1.42%	12.97	5.05%
01/11/2007	10.10%	4.95%	6.37%	-3.01	1.42%	12.98	5.15%
01/11/2007	10.10%	4.95%	6.37%	-3.01	1.42%	12.98	5.15%
01/11/2007	10.90%	4.95%	6.37%	-3.01	1.42%	12.98	5.95%
01/12/2007	10.10%	4.95%	6.37%	-3.01	1.42%	12.97	5.15%
01/13/2007	10.40%	4.95%	6.37%	-3.01	1.42%	12.97	5.45%
01/19/2007	10.80%	4.94%	6.36%	-3.01	1.42%	12.95	5.86%
03/21/2007	11.35%	4.87%	6.26%	-3.02	1.40%	12.82	6.48%
03/22/2007	9.75%	4.86%	6.26%	-3.02	1.40%	12.81	4.89%
05/15/2007	10.00%	4.81%	6.19%	-3.03	1.38%	12.23	5.19%
05/17/2007	10.25%	4.81%	6.18%	-3.04	1.38%	12.22	5.44%
05/17/2007	10.25%	4.81%	6.18%	-3.04	1.38%	12.22	5.44%
05/22/2007	10.20%	4.80%	6.18%	-3.04	1.37%	12.20	5.40%
05/22/2007	10.50%	4.80%	6.18%	-3.04	1.37%	12.20	5.70%
05/23/2007	10.70%	4.80%	6.18%	-3.04	1.37%	12.19	5.90%
05/25/2007	9.67%	4.80%	6.18%	-3.04	1.37%	12.18	4.87%
06/15/2007	9.90%	4.82%	6.18%	-3.03	1.36%	12.27	5.08%
06/21/2007	10.20%	4.83%	6.19%	-3.03	1.36%	12.30	5.37%
06/22/2007	10.50%	4.83%	6.19%	-3.03	1.36%	12.31	5.67%
06/28/2007	10.75%	4.84%	6.19%	-3.03	1.36%	12.38	5.91%
07/12/2007	9.67%	4.86%	6.21%	-3.02	1.35%	12.56	4.81%
07/19/2007	10.00%	4.87%	6.21%	-3.02	1.35%	12.65	5.13%
07/19/2007	10.00%	4.87%	6.21%	-3.02	1.35%	12.65	5.13%
08/15/2007	10.40%	4.88%	6.23%	-3.02	1.36%	13.75	5.52%
10/09/2007	10.00%	4.91%	6.31%	-3.01	1.41%	15.91	5.09%
10/17/2007	9.10%	4.91%	6.32%	-3.01	1.41%	16.13	4.19%
10/31/2007	9.96%	4.90%	6.33%	-3.02	1.43%	16.59	5.06%
11/29/2007	10.90%	4.87%	6.34%	-3.02	1.47%	18.10	6.03%
12/06/2007	10.75%	4.86%	6.35%	-3.02	1.49%	18.41	5.89%
12/13/2007	9.96%	4.86%	6.36%	-3.02	1.50%	18.60	5.10%
12/14/2007	10.70%	4.86%	6.36%	-3.02	1.51%	18.63	5.84%
12/14/2007	10.80%	4.86%	6.36%	-3.02	1.51%	18.63	5.94%
12/19/2007	10.20%	4.86%	6.37%	-3.03	1.52%	18.72	5.34%
12/20/2007	10.20%	4.85%	6.37%	-3.03	1.52%	18.75	5.35%
12/20/2007	11.00%	4.85%	6.37%	-3.03	1.52%	18.75	6.15%
12/28/2007	10.25%	4.85%	6.39%	-3.03	1.54%	18.83	5.40%
12/31/2007	11.25%	4.85%	6.39%	-3.03	1.54%	18.86	6.40%
01/08/2008	10.75%	4.83%	6.39%	-3.03	1.56%	19.13	5.92%
01/17/2008	10.75%	4.81%	6.40%	-3.03	1.58%	19.48	5.94%
01/28/2008	9.40%	4.80%	6.40%	-3.04	1.60%	19.95	4.60%

[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
01/30/2008	10.00%	4.79%	6.40%	-3.04	1.61%	20.10	5.21%
01/31/2008	10.71%	4.79%	6.40%	-3.04	1.61%	20.17	5.92%
02/29/2008	10.25%	4.75%	6.44%	-3.05	1.69%	21.41	5.50%
03/12/2008	10.25%	4.73%	6.46%	-3.05	1.73%	21.95	5.52%
03/25/2008	9.10%	4.68%	6.47%	-3.06	1.79%	22.51	4.42%
04/22/2008	10.25%	4.60%	6.49%	-3.08	1.89%	23.28	5.65%
04/24/2008	10.10%	4.60%	6.50%	-3.08	1.90%	23.32	5.50%
05/01/2008	10.70%	4.59%	6.50%	-3.08	1.92%	23.42	6.11%
05/19/2008	11.00%	4.56%	6.52%	-3.09	1.96%	23.33	6.44%
05/27/2008	10.00%	4.55%	6.53%	-3.09	1.98%	23.21	5.45%
06/10/2008	10.70%	4.54%	6.55%	-3.09	2.01%	22.88	6.16%
06/27/2008	10.50%	4.54%	6.58%	-3.09	2.04%	22.74	5.96%
06/27/2008	11.04%	4.54%	6.58%	-3.09	2.04%	22.74	6.50%
07/10/2008	10.43%	4.52%	6.60%	-3.10	2.07%	22.86	5.91%
07/16/2008	9.40%	4.52%	6.60%	-3.10	2.09%	23.05	4.88%
07/30/2008	10.80%	4.51%	6.64%	-3.10	2.13%	23.31	6.29%
07/31/2008	10.70%	4.51%	6.64%	-3.10	2.13%	23.32	6.19%
08/11/2008	10.25%	4.51%	6.66%	-3.10	2.16%	23.36	5.74%
08/26/2008	10.18%	4.50%	6.70%	-3.10	2.20%	23.26	5.68%
09/10/2008	10.30%	4.50%	6.73%	-3.10	2.23%	23.04	5.80%
09/24/2008	10.65%	4.48%	6.77%	-3.11	2.29%	23.44	6.17%
09/24/2008	10.65%	4.48%	6.77%	-3.11	2.29%	23.44	6.17%
09/24/2008	10.65%	4.48%	6.77%	-3.11	2.29%	23.44	6.17%
09/30/2008	10.20%	4.48%	6.79%	-3.11	2.32%	23.77	5.72%
10/08/2008	10.15%	4.46%	6.83%	-3.11	2.37%	24.58	5.69%
11/13/2008	10.55%	4.45%	7.14%	-3.11	2.69%	29.55	6.10%
11/17/2008	10.20%	4.44%	7.16%	-3.11	2.72%	29.97	5.76%
12/01/2008	10.25%	4.40%	7.27%	-3.12	2.87%	31.76	5.85%
12/23/2008	11.00%	4.27%	7.39%	-3.15	3.12%	34.10	6.73%
12/29/2008	10.00%	4.24%	7.41%	-3.16	3.17%	34.33	5.76%
12/29/2008	10.20%	4.24%	7.41%	-3.16	3.17%	34.33	5.96%
12/31/2008	10.75%	4.22%	7.42%	-3.17	3.20%	34.45	6.53%
01/14/2009	10.50%	4.15%	7.47%	-3.18	3.32%	35.20	6.35%
01/21/2009	10.50%	4.12%	7.49%	-3.19	3.38%	35.74	6.38%
01/21/2009	10.50%	4.12%	7.49%	-3.19	3.38%	35.74	6.38%
01/21/2009	10.50%	4.12%	7.49%	-3.19	3.38%	35.74	6.38%
01/27/2009	10.76%	4.09%	7.52%	-3.20	3.43%	36.20	6.67%
01/30/2009	10.50%	4.08%	7.53%	-3.20	3.46%	36.50	6.42%
02/04/2009	8.75%	4.06%	7.55%	-3.20	3.49%	36.86	4.69%
03/04/2009	10.50%	3.96%	7.64%	-3.23	3.68%	39.48	6.54%
03/12/2009	11.50%	3.93%	7.67%	-3.24	3.74%	40.32	7.57%
04/02/2009	11.10%	3.85%	7.76%	-3.26	3.91%	41.94	7.25%
04/21/2009	10.61%	3.80%	7.83%	-3.27	4.03%	42.82	6.81%
04/24/2009	10.00%	3.79%	7.85%	-3.27	4.06%	43.01	6.21%
04/30/2009	11.25%	3.78%	7.87%	-3.28	4.09%	43.20	7.47%
05/04/2009	10.74%	3.77%	7.88%	-3.28	4.11%	43.30	6.97%
05/20/2009	10.25%	3.74%	7.92%	-3.29	4.17%	43.85	6.51%
05/28/2009	10.50%	3.74%	7.94%	-3.29	4.20%	44.13	6.76%
06/22/2009	10.00%	3.76%	7.98%	-3.28	4.21%	44.90	6.24%
06/24/2009	10.80%	3.77%	7.98%	-3.28	4.21%	44.97	7.03%
07/08/2009	10.63%	3.77%	7.98%	-3.28	4.21%	44.89	6.86%
07/17/2009	10.50%	3.78%	7.96%	-3.28	4.19%	44.53	6.72%
08/31/2009	10.25%	3.82%	7.63%	-3.27	3.82%	39.06	6.43%
10/14/2009	10.70%	4.01%	7.28%	-3.22	3.27%	33.94	6.69%
10/23/2009	10.88%	4.06%	7.22%	-3.20	3.16%	33.27	6.82%
11/02/2009	10.70%	4.09%	7.17%	-3.20	3.08%	32.69	6.61%
11/03/2009	10.70%	4.10%	7.17%	-3.20	3.07%	32.55	6.60%
11/24/2009	10.25%	4.15%	7.05%	-3.18	2.89%	30.96	6.10%
11/25/2009	10.75%	4.16%	7.04%	-3.18	2.88%	30.84	6.59%
11/30/2009	10.35%	4.17%	7.02%	-3.18	2.85%	30.67	6.18%
12/03/2009	10.50%	4.18%	7.00%	-3.18	2.82%	30.27	6.32%
12/07/2009	10.70%	4.18%	6.98%	-3.17	2.80%	29.98	6.52%
12/16/2009	10.90%	4.21%	6.93%	-3.17	2.72%	29.08	6.69%
12/16/2009	11.00%	4.21%	6.93%	-3.17	2.72%	29.08	6.79%
12/18/2009	10.40%	4.22%	6.92%	-3.16	2.69%	28.81	6.18%
12/18/2009	10.40%	4.22%	6.92%	-3.16	2.69%	28.81	6.18%
12/22/2009	10.20%	4.23%	6.90%	-3.16	2.67%	28.54	5.97%
12/22/2009	10.40%	4.23%	6.90%	-3.16	2.67%	28.54	6.17%
12/22/2009	10.40%	4.23%	6.90%	-3.16	2.67%	28.54	6.17%
12/30/2009	10.00%	4.26%	6.86%	-3.16	2.60%	27.98	5.74%
01/04/2010	10.80%	4.28%	6.84%	-3.15	2.57%	27.77	6.52%
01/11/2010	11.00%	4.30%	6.80%	-3.15	2.50%	27.16	6.70%
01/26/2010	10.13%	4.35%	6.70%	-3.13	2.35%	26.14	5.78%
01/27/2010	10.40%	4.35%	6.69%	-3.13	2.33%	26.06	6.05%
01/27/2010	10.40%	4.35%	6.69%	-3.13	2.33%	26.06	6.05%
01/27/2010	10.70%	4.35%	6.69%	-3.13	2.33%	26.06	6.35%
02/09/2010	9.80%	4.38%	6.60%	-3.13	2.22%	25.50	5.42%
02/18/2010	10.60%	4.40%	6.55%	-3.12	2.16%	25.09	6.20%
02/24/2010	10.18%	4.41%	6.52%	-3.12	2.12%	24.84	5.77%
03/02/2010	9.63%	4.41%	6.49%	-3.12	2.08%	24.58	5.22%
03/04/2010	10.50%	4.41%	6.48%	-3.12	2.07%	24.45	6.09%
03/05/2010	10.50%	4.41%	6.47%	-3.12	2.06%	24.40	6.09%

[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
03/11/2010	11.90%	4.42%	6.44%	-3.12	2.03%	24.14	7.48%
03/17/2010	10.00%	4.41%	6.41%	-3.12	1.99%	23.87	5.59%
03/25/2010	10.15%	4.42%	6.37%	-3.12	1.95%	23.50	5.73%
04/02/2010	10.10%	4.43%	6.33%	-3.12	1.90%	23.19	5.67%
04/27/2010	10.00%	4.46%	6.26%	-3.11	1.81%	22.18	5.54%
04/29/2010	9.90%	4.46%	6.25%	-3.11	1.80%	22.13	5.44%
04/29/2010	10.06%	4.46%	6.25%	-3.11	1.80%	22.13	5.60%
04/29/2010	10.26%	4.46%	6.25%	-3.11	1.80%	22.13	5.80%
05/12/2010	10.30%	4.45%	6.21%	-3.11	1.76%	22.27	5.85%
05/12/2010	10.30%	4.45%	6.21%	-3.11	1.76%	22.27	5.85%
05/28/2010	10.10%	4.44%	6.17%	-3.11	1.73%	22.82	5.66%
05/28/2010	10.20%	4.44%	6.17%	-3.11	1.73%	22.82	5.76%
06/07/2010	10.30%	4.44%	6.17%	-3.11	1.73%	23.01	5.86%
06/16/2010	10.00%	4.44%	6.17%	-3.11	1.73%	23.17	5.56%
06/28/2010	9.67%	4.43%	6.17%	-3.12	1.73%	23.20	5.24%
06/28/2010	10.50%	4.43%	6.17%	-3.12	1.73%	23.20	6.07%
06/30/2010	9.40%	4.43%	6.17%	-3.12	1.74%	23.30	4.97%
07/01/2010	10.25%	4.43%	6.17%	-3.12	1.74%	23.35	5.82%
07/15/2010	10.53%	4.43%	6.16%	-3.12	1.74%	23.44	6.10%
07/15/2010	10.70%	4.43%	6.16%	-3.12	1.74%	23.44	6.27%
07/30/2010	10.70%	4.41%	6.16%	-3.12	1.74%	23.39	6.29%
08/04/2010	10.50%	4.41%	6.15%	-3.12	1.74%	23.39	6.09%
08/06/2010	9.83%	4.41%	6.15%	-3.12	1.74%	23.40	5.42%
08/25/2010	9.90%	4.37%	6.10%	-3.13	1.73%	23.38	5.53%
09/03/2010	10.60%	4.35%	6.07%	-3.14	1.73%	23.43	6.25%
09/14/2010	10.70%	4.33%	6.06%	-3.14	1.73%	23.46	6.37%
09/16/2010	10.00%	4.33%	6.05%	-3.14	1.73%	23.44	5.67%
09/16/2010	10.00%	4.33%	6.05%	-3.14	1.73%	23.44	5.67%
09/30/2010	9.75%	4.29%	6.02%	-3.15	1.73%	23.46	5.46%
10/14/2010	10.35%	4.24%	5.98%	-3.16	1.74%	23.48	6.11%
10/28/2010	10.70%	4.21%	5.95%	-3.17	1.74%	23.52	6.49%
11/02/2010	10.38%	4.20%	5.95%	-3.17	1.75%	23.57	6.18%
11/04/2010	10.70%	4.20%	5.94%	-3.17	1.75%	23.56	6.50%
11/19/2010	10.20%	4.18%	5.93%	-3.18	1.76%	23.30	6.02%
11/22/2010	10.00%	4.18%	5.93%	-3.18	1.76%	23.26	5.82%
12/01/2010	10.13%	4.16%	5.92%	-3.18	1.76%	23.19	5.97%
12/06/2010	9.86%	4.15%	5.91%	-3.18	1.76%	23.17	5.71%
12/09/2010	10.25%	4.15%	5.91%	-3.18	1.76%	23.12	6.10%
12/13/2010	10.70%	4.15%	5.91%	-3.18	1.76%	23.10	6.55%
12/14/2010	10.13%	4.15%	5.91%	-3.18	1.76%	23.10	5.98%
12/15/2010	10.44%	4.15%	5.91%	-3.18	1.76%	23.09	6.29%
12/17/2010	10.00%	4.15%	5.91%	-3.18	1.76%	23.08	5.85%
12/20/2010	10.60%	4.15%	5.91%	-3.18	1.76%	23.07	6.45%
12/21/2010	10.30%	4.14%	5.90%	-3.18	1.76%	23.07	6.16%
12/27/2010	9.90%	4.14%	5.90%	-3.18	1.76%	23.04	5.76%
12/29/2010	11.15%	4.14%	5.90%	-3.18	1.76%	23.04	7.01%
01/05/2011	10.15%	4.13%	5.90%	-3.19	1.76%	23.06	6.02%
01/12/2011	10.30%	4.12%	5.89%	-3.19	1.77%	23.04	6.18%
01/13/2011	10.30%	4.12%	5.89%	-3.19	1.77%	23.03	6.18%
01/18/2011	10.00%	4.12%	5.89%	-3.19	1.77%	23.02	5.88%
01/20/2011	9.30%	4.12%	5.88%	-3.19	1.76%	23.03	5.18%
01/20/2011	10.13%	4.12%	5.88%	-3.19	1.76%	23.03	6.01%
01/31/2011	9.60%	4.12%	5.88%	-3.19	1.76%	23.09	5.48%
02/03/2011	10.00%	4.12%	5.88%	-3.19	1.76%	23.10	5.88%
02/25/2011	10.00%	4.14%	5.89%	-3.18	1.74%	22.61	5.86%
03/25/2011	9.80%	4.18%	5.88%	-3.18	1.70%	21.32	5.62%
03/30/2011	10.00%	4.18%	5.87%	-3.17	1.69%	21.18	5.82%
04/12/2011	10.00%	4.21%	5.86%	-3.17	1.65%	20.76	5.79%
04/25/2011	10.74%	4.23%	5.86%	-3.16	1.63%	20.20	6.51%
04/26/2011	9.67%	4.23%	5.86%	-3.16	1.63%	20.15	5.44%
04/27/2011	10.40%	4.24%	5.86%	-3.16	1.62%	20.11	6.16%
05/04/2011	10.00%	4.24%	5.85%	-3.16	1.61%	19.87	5.76%
05/04/2011	10.00%	4.24%	5.85%	-3.16	1.61%	19.87	5.76%
05/24/2011	10.50%	4.27%	5.85%	-3.15	1.58%	19.45	6.23%
06/08/2011	10.75%	4.30%	5.85%	-3.15	1.55%	19.06	6.45%
06/16/2011	9.20%	4.32%	5.86%	-3.14	1.55%	18.86	4.88%
06/17/2011	9.95%	4.32%	5.86%	-3.14	1.55%	18.85	5.63%
07/13/2011	10.20%	4.36%	5.88%	-3.13	1.51%	18.50	5.84%
08/01/2011	9.20%	4.39%	5.89%	-3.13	1.50%	18.46	4.81%
08/08/2011	10.00%	4.38%	5.88%	-3.13	1.49%	18.77	5.62%
08/11/2011	10.00%	4.38%	5.87%	-3.13	1.49%	19.06	5.62%
08/12/2011	10.35%	4.37%	5.87%	-3.13	1.49%	19.14	5.98%
08/19/2011	10.25%	4.36%	5.85%	-3.13	1.49%	19.52	5.89%
09/02/2011	12.88%	4.32%	5.82%	-3.14	1.50%	20.30	8.56%
09/22/2011	10.00%	4.24%	5.77%	-3.16	1.52%	21.32	5.76%
10/12/2011	10.30%	4.14%	5.71%	-3.18	1.57%	22.80	6.16%
10/20/2011	10.50%	4.10%	5.68%	-3.19	1.59%	23.24	6.40%
11/30/2011	10.90%	3.87%	5.54%	-3.25	1.66%	25.24	7.03%
11/30/2011	10.90%	3.87%	5.54%	-3.25	1.66%	25.24	7.03%
12/14/2011	10.00%	3.80%	5.49%	-3.27	1.69%	25.64	6.20%
12/14/2011	10.30%	3.80%	5.49%	-3.27	1.69%	25.64	6.50%
12/20/2011	10.20%	3.76%	5.47%	-3.28	1.71%	25.73	6.44%

[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
12/21/2011	10.20%	3.76%	5.47%	-3.28	1.71%	25.74	6.44%
12/22/2011	9.90%	3.75%	5.46%	-3.28	1.71%	25.74	6.15%
12/22/2011	10.40%	3.75%	5.46%	-3.28	1.71%	25.74	6.65%
12/23/2011	10.19%	3.74%	5.46%	-3.28	1.71%	25.74	6.45%
01/25/2012	10.50%	3.57%	5.37%	-3.33	1.80%	25.85	6.93%
01/27/2012	10.50%	3.56%	5.36%	-3.34	1.80%	25.86	6.94%
02/15/2012	10.20%	3.47%	5.30%	-3.36	1.82%	26.07	6.73%
02/23/2012	9.90%	3.44%	5.28%	-3.37	1.84%	26.09	6.46%
02/27/2012	10.25%	3.43%	5.27%	-3.37	1.84%	26.10	6.82%
02/29/2012	10.40%	3.41%	5.26%	-3.38	1.85%	26.12	6.99%
03/29/2012	10.37%	3.32%	5.20%	-3.41	1.89%	25.97	7.05%
04/04/2012	10.00%	3.30%	5.19%	-3.41	1.90%	25.86	6.70%
04/26/2012	10.00%	3.21%	5.14%	-3.44	1.94%	25.88	6.79%
05/02/2012	10.00%	3.18%	5.13%	-3.45	1.95%	25.81	6.82%
05/07/2012	9.80%	3.17%	5.12%	-3.45	1.95%	25.81	6.63%
05/15/2012	10.00%	3.14%	5.10%	-3.46	1.95%	25.77	6.86%
05/29/2012	10.05%	3.11%	5.08%	-3.47	1.98%	25.29	6.94%
06/07/2012	10.30%	3.08%	5.07%	-3.48	2.00%	24.83	7.22%
06/14/2012	9.40%	3.06%	5.07%	-3.49	2.01%	24.50	6.34%
06/15/2012	10.40%	3.06%	5.06%	-3.49	2.01%	24.44	7.34%
06/18/2012	9.60%	3.06%	5.06%	-3.49	2.01%	24.37	6.54%
06/19/2012	9.25%	3.05%	5.06%	-3.49	2.01%	24.30	6.20%
06/26/2012	10.10%	3.04%	5.06%	-3.49	2.02%	23.90	7.06%
06/29/2012	10.00%	3.04%	5.05%	-3.49	2.02%	23.63	6.96%
07/09/2012	10.20%	3.03%	5.05%	-3.50	2.02%	23.23	7.17%
07/16/2012	9.80%	3.02%	5.04%	-3.50	2.02%	22.67	6.78%
07/20/2012	9.31%	3.01%	5.04%	-3.50	2.03%	22.15	6.30%
07/20/2012	9.81%	3.01%	5.04%	-3.50	2.03%	22.15	6.80%
09/13/2012	9.80%	2.94%	4.99%	-3.53	2.05%	19.17	6.86%
09/19/2012	9.80%	2.94%	4.99%	-3.53	2.05%	18.89	6.86%
09/19/2012	10.05%	2.94%	4.99%	-3.53	2.05%	18.89	7.11%
09/26/2012	9.50%	2.94%	4.98%	-3.53	2.04%	18.55	6.56%
10/12/2012	9.60%	2.93%	4.96%	-3.53	2.02%	18.06	6.67%
10/23/2012	9.75%	2.93%	4.94%	-3.53	2.00%	17.86	6.82%
10/24/2012	10.30%	2.93%	4.93%	-3.53	2.00%	17.85	7.37%
11/09/2012	10.30%	2.92%	4.90%	-3.53	1.98%	17.75	7.38%
11/28/2012	10.40%	2.90%	4.86%	-3.54	1.97%	17.61	7.50%
11/29/2012	9.75%	2.89%	4.86%	-3.54	1.97%	17.59	6.86%
11/29/2012	9.88%	2.89%	4.86%	-3.54	1.97%	17.59	6.99%
12/05/2012	9.71%	2.89%	4.85%	-3.54	1.96%	17.53	6.82%
12/05/2012	10.40%	2.89%	4.85%	-3.54	1.96%	17.53	7.51%
12/12/2012	9.80%	2.88%	4.84%	-3.55	1.96%	17.49	6.92%
12/13/2012	9.50%	2.88%	4.84%	-3.55	1.96%	17.48	6.62%
12/13/2012	10.50%	2.88%	4.84%	-3.55	1.96%	17.48	7.62%
12/14/2012	10.40%	2.88%	4.83%	-3.55	1.96%	17.47	7.52%
12/19/2012	9.71%	2.87%	4.83%	-3.55	1.95%	17.46	6.84%
12/19/2012	10.25%	2.87%	4.83%	-3.55	1.95%	17.46	7.38%
12/20/2012	9.50%	2.87%	4.83%	-3.55	1.95%	17.44	6.63%
12/20/2012	9.80%	2.87%	4.83%	-3.55	1.95%	17.44	6.93%
12/20/2012	10.25%	2.87%	4.83%	-3.55	1.95%	17.44	7.38%
12/20/2012	10.25%	2.87%	4.83%	-3.55	1.95%	17.44	7.38%
12/20/2012	10.30%	2.87%	4.83%	-3.55	1.95%	17.44	7.43%
12/20/2012	10.40%	2.87%	4.83%	-3.55	1.95%	17.44	7.53%
12/20/2012	10.45%	2.87%	4.83%	-3.55	1.95%	17.44	7.58%
12/21/2012	10.20%	2.87%	4.82%	-3.55	1.95%	17.43	7.33%
12/26/2012	9.80%	2.86%	4.82%	-3.55	1.96%	17.44	6.94%
01/09/2013	9.70%	2.85%	4.79%	-3.56	1.95%	17.48	6.85%
01/09/2013	9.70%	2.85%	4.79%	-3.56	1.95%	17.48	6.85%
01/09/2013	9.70%	2.85%	4.79%	-3.56	1.95%	17.48	6.85%
01/16/2013	9.60%	2.84%	4.78%	-3.56	1.94%	17.44	6.76%
01/16/2013	9.60%	2.84%	4.78%	-3.56	1.94%	17.44	6.76%
02/13/2013	10.20%	2.84%	4.74%	-3.56	1.90%	17.01	7.36%
02/22/2013	9.75%	2.85%	4.73%	-3.56	1.88%	16.90	6.90%
02/27/2013	10.00%	2.86%	4.73%	-3.56	1.87%	16.86	7.14%
03/14/2013	9.30%	2.88%	4.72%	-3.55	1.84%	16.37	6.42%
03/27/2013	9.80%	2.90%	4.71%	-3.54	1.81%	15.90	6.90%
05/01/2013	9.84%	2.94%	4.66%	-3.53	1.72%	15.26	6.90%
05/15/2013	10.30%	2.96%	4.64%	-3.52	1.68%	15.03	7.34%
05/30/2013	10.20%	2.98%	4.64%	-3.51	1.66%	14.87	7.22%
05/31/2013	9.00%	2.98%	4.64%	-3.51	1.66%	14.88	6.02%
06/11/2013	10.00%	3.00%	4.64%	-3.51	1.64%	14.95	7.00%
06/21/2013	9.75%	3.02%	4.65%	-3.50	1.62%	15.00	6.73%
06/25/2013	9.80%	3.03%	4.65%	-3.50	1.62%	15.02	6.77%
07/12/2013	9.36%	3.07%	4.68%	-3.48	1.60%	15.06	6.29%
08/08/2013	9.83%	3.14%	4.73%	-3.46	1.59%	14.83	6.69%
08/14/2013	9.15%	3.16%	4.75%	-3.45	1.59%	14.73	5.99%
09/11/2013	10.20%	3.26%	4.83%	-3.42	1.57%	14.57	6.94%
09/11/2013	10.25%	3.26%	4.83%	-3.42	1.57%	14.57	6.99%
09/24/2013	10.20%	3.31%	4.87%	-3.41	1.57%	14.47	6.89%
10/03/2013	9.65%	3.33%	4.89%	-3.40	1.56%	14.45	6.32%
11/06/2013	10.20%	3.41%	4.96%	-3.38	1.55%	14.40	6.79%
11/21/2013	10.00%	3.44%	4.98%	-3.37	1.54%	14.36	6.56%

[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
11/26/2013	10.00%	3.45%	4.99%	-3.37	1.54%	14.35	6.55%
12/03/2013	10.25%	3.47%	5.00%	-3.36	1.53%	14.38	6.78%
12/04/2013	9.50%	3.47%	5.00%	-3.36	1.53%	14.38	6.03%
12/05/2013	10.20%	3.48%	5.01%	-3.36	1.53%	14.38	6.72%
12/09/2013	8.72%	3.48%	5.01%	-3.36	1.53%	14.35	5.24%
12/09/2013	9.75%	3.48%	5.01%	-3.36	1.53%	14.35	6.27%
12/13/2013	9.75%	3.50%	5.02%	-3.35	1.52%	14.34	6.25%
12/16/2013	9.95%	3.50%	5.03%	-3.35	1.52%	14.35	6.45%
12/16/2013	9.95%	3.50%	5.03%	-3.35	1.52%	14.35	6.45%
12/16/2013	10.12%	3.50%	5.03%	-3.35	1.52%	14.35	6.62%
12/17/2013	9.50%	3.51%	5.03%	-3.35	1.52%	14.36	5.99%
12/17/2013	10.95%	3.51%	5.03%	-3.35	1.52%	14.36	7.44%
12/18/2013	8.72%	3.51%	5.03%	-3.35	1.52%	14.37	5.21%
12/18/2013	9.80%	3.51%	5.03%	-3.35	1.52%	14.37	6.29%
12/19/2013	10.15%	3.51%	5.04%	-3.35	1.52%	14.37	6.64%
12/30/2013	9.50%	3.54%	5.05%	-3.34	1.51%	14.40	5.96%
02/20/2014	9.20%	3.68%	5.14%	-3.30	1.46%	14.61	5.52%
02/26/2014	9.75%	3.69%	5.15%	-3.30	1.46%	14.64	6.06%
03/17/2014	9.55%	3.72%	5.17%	-3.29	1.45%	14.72	5.83%
03/26/2014	9.40%	3.73%	5.17%	-3.29	1.45%	14.67	5.67%
03/26/2014	9.96%	3.73%	5.17%	-3.29	1.45%	14.67	6.23%
04/02/2014	9.70%	3.73%	5.17%	-3.29	1.45%	14.59	5.97%
05/16/2014	9.80%	3.70%	5.11%	-3.30	1.40%	14.38	6.10%
05/30/2014	9.70%	3.68%	5.08%	-3.30	1.40%	14.34	6.02%
06/06/2014	10.40%	3.67%	5.07%	-3.30	1.40%	14.27	6.73%
06/30/2014	9.55%	3.64%	5.02%	-3.31	1.38%	13.95	5.91%
07/02/2014	9.62%	3.64%	5.02%	-3.31	1.38%	13.91	5.98%
07/10/2014	9.95%	3.63%	5.00%	-3.32	1.37%	13.86	6.32%
07/23/2014	9.75%	3.61%	4.97%	-3.32	1.36%	13.71	6.14%
07/29/2014	9.45%	3.60%	4.96%	-3.32	1.36%	13.58	5.85%
07/31/2014	9.90%	3.60%	4.95%	-3.32	1.35%	13.57	6.30%
08/20/2014	9.75%	3.57%	4.92%	-3.33	1.36%	13.61	6.18%
08/25/2014	9.60%	3.56%	4.91%	-3.34	1.36%	13.59	6.04%
08/29/2014	9.80%	3.54%	4.90%	-3.34	1.36%	13.57	6.26%
09/11/2014	9.60%	3.51%	4.88%	-3.35	1.37%	13.56	6.09%
09/15/2014	10.25%	3.51%	4.88%	-3.35	1.37%	13.57	6.74%
10/09/2014	9.80%	3.45%	4.83%	-3.37	1.39%	13.61	6.35%
11/06/2014	9.56%	3.37%	4.79%	-3.39	1.41%	14.11	6.19%
11/06/2014	10.20%	3.37%	4.79%	-3.39	1.41%	14.11	6.83%
11/14/2014	10.20%	3.35%	4.78%	-3.40	1.42%	13.98	6.85%
11/26/2014	9.70%	3.33%	4.77%	-3.40	1.44%	13.82	6.37%
11/26/2014	10.20%	3.33%	4.77%	-3.40	1.44%	13.82	6.87%
12/04/2014	9.68%	3.31%	4.76%	-3.41	1.45%	13.79	6.37%
12/10/2014	9.25%	3.29%	4.75%	-3.41	1.46%	13.80	5.96%
12/10/2014	9.25%	3.29%	4.75%	-3.41	1.46%	13.80	5.96%
12/11/2014	10.07%	3.29%	4.75%	-3.42	1.46%	13.83	6.78%
12/12/2014	10.20%	3.28%	4.75%	-3.42	1.47%	13.87	6.92%
12/17/2014	9.17%	3.27%	4.75%	-3.42	1.48%	13.96	5.90%
12/18/2014	9.83%	3.26%	4.75%	-3.42	1.48%	13.98	6.57%
01/23/2015	9.50%	3.14%	4.69%	-3.46	1.55%	14.37	6.36%
02/24/2015	9.83%	3.04%	4.65%	-3.49	1.61%	14.67	6.79%
03/18/2015	9.75%	2.98%	4.64%	-3.51	1.66%	14.88	6.77%
03/25/2015	9.50%	2.96%	4.63%	-3.52	1.67%	14.94	6.54%
03/26/2015	9.72%	2.95%	4.63%	-3.52	1.68%	14.97	6.77%
04/23/2015	10.20%	2.87%	4.61%	-3.55	1.74%	15.19	7.33%
04/29/2015	9.53%	2.86%	4.60%	-3.56	1.75%	15.20	6.67%
05/01/2015	9.60%	2.85%	4.60%	-3.56	1.75%	15.23	6.75%
05/26/2015	9.75%	2.83%	4.63%	-3.56	1.80%	15.16	6.92%
06/17/2015	9.00%	2.82%	4.66%	-3.57	1.84%	15.29	6.18%
06/17/2015	9.00%	2.82%	4.66%	-3.57	1.84%	15.29	6.18%
09/02/2015	9.50%	2.79%	4.79%	-3.58	2.00%	15.67	6.71%
09/10/2015	9.30%	2.79%	4.81%	-3.58	2.02%	15.97	6.51%
10/15/2015	9.00%	2.81%	4.90%	-3.57	2.09%	16.67	6.19%
11/19/2015	10.00%	2.88%	5.03%	-3.55	2.15%	16.29	7.12%
11/19/2015	10.30%	2.88%	5.03%	-3.55	2.15%	16.29	7.42%
12/03/2015	10.00%	2.90%	5.08%	-3.54	2.19%	16.27	7.10%
12/09/2015	9.14%	2.90%	5.10%	-3.54	2.20%	16.32	6.24%
12/09/2015	9.14%	2.90%	5.10%	-3.54	2.20%	16.32	6.24%
12/11/2015	10.30%	2.90%	5.11%	-3.54	2.21%	16.41	7.40%
12/15/2015	9.60%	2.91%	5.12%	-3.54	2.22%	16.49	6.69%
12/17/2015	9.70%	2.91%	5.13%	-3.54	2.23%	16.53	6.79%
12/18/2015	9.50%	2.91%	5.14%	-3.54	2.23%	16.56	6.59%
12/30/2015	9.50%	2.93%	5.17%	-3.53	2.25%	16.59	6.57%
01/06/2016	9.50%	2.94%	5.20%	-3.53	2.26%	16.71	6.56%
02/23/2016	9.75%	2.94%	5.33%	-3.53	2.40%	18.29	6.81%
03/16/2016	9.85%	2.91%	5.36%	-3.54	2.45%	18.67	6.94%
04/29/2016	9.80%	2.83%	5.31%	-3.56	2.47%	18.56	6.97%
06/03/2016	9.75%	2.80%	5.24%	-3.57	2.43%	18.78	6.95%
06/08/2016	9.48%	2.80%	5.23%	-3.58	2.43%	18.67	6.68%
06/15/2016	9.00%	2.78%	5.20%	-3.58	2.42%	18.34	6.22%
06/15/2016	9.00%	2.78%	5.20%	-3.58	2.42%	18.34	6.22%
07/18/2016	9.98%	2.71%	5.08%	-3.61	2.37%	17.47	7.27%

[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
08/09/2016	9.85%	2.66%	4.98%	-3.63	2.32%	17.06	7.19%
08/18/2016	9.50%	2.63%	4.94%	-3.64	2.30%	16.96	6.87%
08/24/2016	9.75%	2.62%	4.91%	-3.64	2.29%	16.91	7.13%
09/01/2016	9.50%	2.59%	4.87%	-3.65	2.27%	16.79	6.91%
09/08/2016	10.00%	2.58%	4.84%	-3.66	2.26%	16.69	7.42%
09/28/2016	9.58%	2.54%	4.75%	-3.67	2.22%	16.54	7.04%
09/30/2016	9.90%	2.53%	4.74%	-3.68	2.21%	16.46	7.37%
11/09/2016	9.80%	2.48%	4.58%	-3.70	2.10%	15.66	7.32%
11/10/2016	9.50%	2.48%	4.58%	-3.70	2.09%	15.62	7.02%
11/15/2016	9.55%	2.49%	4.57%	-3.69	2.08%	15.52	7.06%
11/18/2016	10.00%	2.50%	4.56%	-3.69	2.07%	15.39	7.50%
11/29/2016	10.55%	2.51%	4.55%	-3.69	2.04%	14.98	8.04%
12/01/2016	10.00%	2.51%	4.55%	-3.68	2.03%	14.90	7.49%
12/06/2016	8.64%	2.52%	4.54%	-3.68	2.02%	14.79	6.12%
12/06/2016	8.64%	2.52%	4.54%	-3.68	2.02%	14.79	6.12%
12/07/2016	10.10%	2.52%	4.53%	-3.68	2.01%	14.74	7.58%
12/12/2016	9.60%	2.53%	4.53%	-3.68	2.00%	14.63	7.07%
12/14/2016	9.10%	2.53%	4.52%	-3.68	1.99%	14.59	6.57%
12/19/2016	9.00%	2.54%	4.52%	-3.67	1.98%	14.52	6.46%
12/19/2016	9.37%	2.54%	4.52%	-3.67	1.98%	14.52	6.83%
12/22/2016	9.60%	2.55%	4.51%	-3.67	1.96%	14.41	7.05%
12/22/2016	9.90%	2.55%	4.51%	-3.67	1.96%	14.41	7.35%
12/28/2016	9.50%	2.55%	4.50%	-3.67	1.95%	14.34	6.95%
01/12/2017	9.60%	2.58%	4.48%	-3.66	1.90%	14.23	7.02%
01/18/2017	9.45%	2.58%	4.48%	-3.66	1.89%	14.20	6.87%
01/24/2017	9.00%	2.59%	4.47%	-3.65	1.88%	14.13	6.41%
01/31/2017	10.10%	2.60%	4.47%	-3.65	1.87%	14.05	7.50%
02/15/2017	9.60%	2.62%	4.46%	-3.64	1.84%	13.90	6.98%
02/22/2017	9.60%	2.64%	4.46%	-3.64	1.82%	13.82	6.96%
02/24/2017	9.75%	2.64%	4.46%	-3.63	1.82%	13.80	7.11%
02/28/2017	10.10%	2.64%	4.46%	-3.63	1.82%	13.78	7.46%
03/02/2017	9.41%	2.65%	4.46%	-3.63	1.81%	13.75	6.76%
03/20/2017	9.50%	2.68%	4.46%	-3.62	1.78%	13.56	6.82%
04/04/2017	10.25%	2.71%	4.46%	-3.61	1.75%	13.30	7.54%
04/12/2017	9.40%	2.74%	4.47%	-3.60	1.73%	13.09	6.66%
04/20/2017	9.50%	2.76%	4.47%	-3.59	1.71%	13.06	6.74%
05/03/2017	9.50%	2.79%	4.48%	-3.58	1.70%	12.95	6.71%
05/11/2017	9.20%	2.81%	4.50%	-3.57	1.68%	12.88	6.39%
05/18/2017	9.50%	2.83%	4.50%	-3.57	1.68%	12.88	6.67%
05/23/2017	9.70%	2.84%	4.51%	-3.56	1.67%	12.86	6.86%
06/16/2017	9.65%	2.89%	4.52%	-3.54	1.63%	12.69	6.76%
06/22/2017	9.70%	2.90%	4.52%	-3.54	1.63%	12.65	6.80%
06/22/2017	9.70%	2.90%	4.52%	-3.54	1.63%	12.65	6.80%
07/24/2017	9.50%	2.95%	4.53%	-3.52	1.59%	12.24	6.55%
08/15/2017	10.00%	2.97%	4.53%	-3.52	1.56%	11.97	7.03%
09/22/2017	9.60%	2.93%	4.48%	-3.53	1.55%	11.47	6.67%
09/28/2017	9.80%	2.92%	4.47%	-3.53	1.54%	11.43	6.88%
10/20/2017	9.50%	2.91%	4.42%	-3.54	1.51%	11.23	6.59%
10/26/2017	10.20%	2.91%	4.42%	-3.54	1.51%	11.22	7.29%
10/26/2017	10.25%	2.91%	4.42%	-3.54	1.51%	11.22	7.34%
10/26/2017	10.30%	2.91%	4.42%	-3.54	1.51%	11.22	7.39%
11/06/2017	10.25%	2.90%	4.40%	-3.54	1.50%	11.15	7.35%
11/15/2017	11.95%	2.89%	4.39%	-3.54	1.50%	11.15	9.06%
11/30/2017	10.00%	2.88%	4.37%	-3.55	1.49%	11.11	7.12%
11/30/2017	10.00%	2.88%	4.37%	-3.55	1.49%	11.11	7.12%
12/05/2017	9.50%	2.88%	4.36%	-3.55	1.48%	11.11	6.62%
12/06/2017	8.40%	2.87%	4.36%	-3.55	1.48%	11.10	5.53%
12/06/2017	8.40%	2.87%	4.36%	-3.55	1.48%	11.10	5.53%
12/07/2017	9.80%	2.87%	4.36%	-3.55	1.48%	11.10	6.93%
12/14/2017	9.60%	2.86%	4.35%	-3.55	1.48%	11.04	6.74%
12/14/2017	9.65%	2.86%	4.35%	-3.55	1.48%	11.04	6.79%
12/18/2017	9.50%	2.86%	4.34%	-3.55	1.48%	11.02	6.64%
12/20/2017	9.58%	2.86%	4.34%	-3.56	1.48%	11.01	6.72%
12/21/2017	9.10%	2.85%	4.33%	-3.56	1.48%	10.99	6.25%
12/28/2017	9.50%	2.85%	4.32%	-3.56	1.48%	10.96	6.65%
12/29/2017	9.51%	2.85%	4.32%	-3.56	1.47%	10.96	6.66%
01/18/2018	9.70%	2.84%	4.29%	-3.56	1.46%	10.84	6.86%
01/31/2018	9.30%	2.84%	4.28%	-3.56	1.44%	10.77	6.46%
02/02/2018	9.98%	2.84%	4.28%	-3.56	1.44%	10.77	7.14%
02/23/2018	9.90%	2.85%	4.27%	-3.56	1.42%	11.71	7.05%
03/12/2018	9.25%	2.86%	4.27%	-3.55	1.41%	12.07	6.39%
03/15/2018	9.00%	2.87%	4.27%	-3.55	1.40%	12.17	6.13%
03/29/2018	10.00%	2.88%	4.28%	-3.55	1.40%	12.68	7.12%
04/12/2018	9.90%	2.89%	4.29%	-3.54	1.40%	13.14	7.01%
04/13/2018	9.73%	2.89%	4.29%	-3.54	1.40%	13.17	6.84%
04/18/2018	9.25%	2.89%	4.29%	-3.54	1.40%	13.24	6.36%
04/18/2018	10.00%	2.89%	4.29%	-3.54	1.40%	13.24	7.11%
04/26/2018	9.50%	2.90%	4.30%	-3.54	1.40%	13.41	6.60%
05/30/2018	9.95%	2.94%	4.35%	-3.53	1.41%	13.83	7.01%
05/31/2018	9.50%	2.94%	4.35%	-3.53	1.41%	13.85	6.56%
06/14/2018	8.80%	2.96%	4.37%	-3.52	1.42%	13.84	5.84%
06/22/2018	9.50%	2.97%	4.39%	-3.52	1.42%	13.90	6.53%

[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
06/22/2018	9.90%	2.97%	4.39%	-3.52	1.42%	13.90	6.93%
06/28/2018	9.35%	2.97%	4.40%	-3.52	1.43%	14.02	6.38%
06/29/2018	9.50%	2.97%	4.40%	-3.52	1.43%	14.04	6.53%
08/08/2018	9.53%	2.99%	4.46%	-3.51	1.46%	14.44	6.54%
08/21/2018	9.70%	3.00%	4.48%	-3.51	1.47%	14.56	6.70%
08/24/2018	9.28%	3.01%	4.48%	-3.50	1.48%	14.60	6.27%
09/05/2018	9.56%	3.02%	4.50%	-3.50	1.48%	14.65	6.54%
09/14/2018	10.00%	3.03%	4.52%	-3.50	1.49%	14.77	6.97%
09/20/2018	9.80%	3.04%	4.53%	-3.49	1.49%	14.79	6.76%
09/26/2018	9.77%	3.05%	4.54%	-3.49	1.50%	14.83	6.72%
09/26/2018	10.00%	3.05%	4.54%	-3.49	1.50%	14.83	6.95%
09/27/2018	9.30%	3.05%	4.55%	-3.49	1.50%	14.84	6.25%
10/04/2018	9.85%	3.06%	4.56%	-3.49	1.51%	14.91	6.79%
10/29/2018	9.60%	3.10%	4.63%	-3.47	1.53%	15.82	6.50%
10/31/2018	9.99%	3.11%	4.64%	-3.47	1.53%	15.92	6.88%
11/01/2018	8.69%	3.11%	4.64%	-3.47	1.53%	15.96	5.58%
12/04/2018	8.69%	3.14%	4.72%	-3.46	1.58%	15.95	5.55%
12/13/2018	9.30%	3.14%	4.73%	-3.46	1.59%	16.06	6.16%
12/14/2018	9.50%	3.14%	4.73%	-3.46	1.59%	16.05	6.36%
12/19/2018	9.84%	3.14%	4.74%	-3.46	1.60%	16.15	6.70%
12/20/2018	9.65%	3.14%	4.74%	-3.46	1.60%	16.20	6.51%
12/21/2018	9.30%	3.14%	4.74%	-3.46	1.60%	16.27	6.16%
01/09/2019	10.00%	3.14%	4.76%	-3.46	1.62%	16.68	6.86%
02/27/2019	9.75%	3.12%	4.80%	-3.47	1.68%	16.51	6.63%
03/13/2019	9.60%	3.12%	4.80%	-3.47	1.68%	16.59	6.48%
03/14/2019	9.00%	3.12%	4.80%	-3.47	1.68%	16.59	5.88%
03/14/2019	9.40%	3.12%	4.80%	-3.47	1.68%	16.59	6.28%
03/22/2019	9.65%	3.12%	4.80%	-3.47	1.68%	16.58	6.53%
04/30/2019	9.73%	3.11%	4.78%	-3.47	1.67%	16.51	6.62%
04/30/2019	9.73%	3.11%	4.78%	-3.47	1.67%	16.51	6.62%
05/01/2019	9.50%	3.11%	4.78%	-3.47	1.67%	16.52	6.39%
05/02/2019	10.00%	3.11%	4.78%	-3.47	1.67%	16.53	6.89%
05/08/2019	9.50%	3.10%	4.77%	-3.47	1.67%	16.61	6.40%
05/14/2019	8.75%	3.10%	4.77%	-3.48	1.67%	16.73	5.65%
05/16/2019	9.50%	3.09%	4.77%	-3.48	1.67%	16.76	6.41%
05/23/2019	9.90%	3.09%	4.76%	-3.48	1.67%	16.85	6.81%

Average: 4.68%
of Rate Cases: 1,594

Summary of Adjustment Clauses & Alternative Regulation/Incentive Plans

Company	Parent	State	Adjustment Clauses						Alternative Regulation / Incentive Plans								
			Fuel/ Purchased Power	Decoupling (F/P) [1]	New Capital Investment [2]	Energy Efficiency [3]	Renewables & RPS [4]	Environmental [5]	Other [6]	Formula- Based Rates	Performance Based Rate-making [7]	CWIP Allowed in Rate Base (L/F)	Forward Test Year	Price Freeze/ Cap	Earnings Sharing	Formula- Based ROE	Service Quality/ Performance
ALLETE (Minnesota Power)	ALE	Minnesota	✓			✓	✓	✓				L	✓				
Superior Water, Light and Power Company	ALE	Wisconsin	✓					✓				L					
Interstate Power and Light Company	LNT	Iowa	✓					✓						✓			
Wisconsin Power and Light Company	LNT	Wisconsin	✓					✓				L	✓	✓			
Southwestern Electric Power Company	AEP	Arkansas	✓	P	✓			✓				✓			✓		
Indiana Michigan Power Company	AEP	Indiana	✓	P	✓			✓				F	✓				
Kentucky Power Company	AEP	Kentucky	✓	P	✓			✓				F					
Southwestern Electric Power Company	AEP	Louisiana	✓	P	✓			✓			✓	L			✓		
Indiana Michigan Power Company	AEP	Michigan	✓	P	✓			✓				L	✓				
Ohio Power Company	AEP	Ohio	✓	P	✓			✓				L			✓		
Public Service Company of Oklahoma	AEP	Oklahoma	✓		✓			✓				F			✓		
Kingsport Power Company	AEP	Tennessee	✓		✓			✓				F	✓				
AEP Texas Central Company	AEP	Texas	NA		✓			✓				L					
AEP Texas North Company	AEP	Texas	NA		✓			✓				L					
Southwestern Electric Power Company	AEP	Texas	✓		✓			✓				L					
Appalachian Power Company	AEP	Virginia	✓		✓			✓				F	✓		✓		✓
Appalachian Power / Wheeling Power	AEP	West Virginia	✓		✓			✓				L					
United Illuminating Company	AGR	Connecticut	✓	F				✓				✓			✓		
Central Maine Power Company	AGR	Maine	✓	F				✓				✓			✓		
New York State Electric & Gas Corporation	AGR	New York	✓	F				✓				✓			✓		
Rochester Gas and Electric Corporation	AGR	New York	✓	F				✓				✓			✓		
Consumers Energy Company	OMS	Michigan	✓					✓				L	✓				
DTE Electric Company	DTE	Michigan	✓					✓				L					
Duke Energy Florida, LLC	DUK	Florida	✓		✓			✓				✓			✓		
Duke Energy Indiana, LLC	DUK	Indiana	✓	P	✓			✓				F					
Duke Energy Kentucky, Inc.	DUK	Kentucky	✓	P	✓			✓				F	✓				
Duke Energy Carolinas, LLC	DUK	North Carolina	✓	P	✓			✓				✓			✓		
Duke Energy Progress, LLC	DUK	North Carolina	✓	P	✓			✓				✓					
Duke Energy Ohio, Inc.	DUK	Ohio	✓		✓			✓				✓			✓		
Duke Energy Carolinas, LLC	DUK	South Carolina	✓	P	✓			✓				✓					
Duke Energy Progress, LLC	DUK	South Carolina	✓	P	✓			✓				✓					
El Paso Electric Company	EE	New Mexico	✓					✓				✓					
El Paso Electric Company	EE	Texas	✓					✓				✓					
Kansas City Power & Light Company	EVRG	Kansas	✓					✓				F			✓		
Kansas City Power & Light Company	EVRG	Missouri	✓	P				✓				✓					
KCP&L Greater Missouri Operations Company	EVRG	Missouri	✓					✓				✓					
Westar Energy (KPL)	EVRG	Kansas	✓	P				✓				✓					✓
Hawaii Electric Light Company, Inc.	HE	Hawaii	✓	F	✓			✓				✓	✓		✓		
Hawaiian Electric Company, Inc.	HE	Hawaii	✓	F	✓			✓				✓	✓		✓		
Maui Electric Company, Limited	HE	Hawaii	✓	F	✓			✓				✓	✓		✓		
Florida Power & Light Company	NEE	Florida	✓					✓				F			✓		
Gulf Power Company	NEE	Florida	✓					✓				F			✓		
NorthWestern Energy	NWE	Montana	✓					✓				✓			✓		
NorthWestern Energy	NWE	South Dakota	✓					✓				✓			✓		
Oklahoma Gas and Electric Company	OGE	Arkansas	✓	P	✓			✓				✓					
Oklahoma Gas and Electric Company	OGE	Oklahoma	✓	P	✓			✓				✓					
Otter Tail Power Company	OTTR	Minnesota	✓		✓			✓				L					
Otter Tail Power Company	OTTR	North Dakota	✓		✓			✓				F	✓				
Otter Tail Power Company	OTTR	South Dakota	✓		✓			✓				L					
Arizona Public Service Company	PNW	Arizona	✓					✓				✓			✓		
Public Service Company of New Mexico	PNM	New Mexico	✓					✓				✓			✓		
Texas-New Mexico Power Company	PNM	Texas	NA		✓			✓				F	✓				
Portland General Electric Company	POR	Oregon	✓	P				✓				L					
Alabama Power Company	SO	Alabama	✓		✓			✓				✓					
Georgia Power Company	SO	Georgia	✓		✓			✓				✓			✓		
Mississippi Power Company	SO	Mississippi	✓	P	✓			✓				F	✓		✓		✓
Upper Michigan Energy Resources Corp	WEC	Michigan	✓					✓				L	✓				
Wisconsin Electric Power	WEC	Wisconsin	✓					✓				L	✓		✓		
Wisconsin Public Service Company	WEC	Wisconsin	✓					✓				L	✓		✓		
Public Service Company of Colorado	XEL	Colorado	✓		✓			✓				✓			✓		
Northern States Power Company - WI	XEL	Michigan	✓					✓				✓			✓		
Northern States Power Company - MN	XEL	Minnesota	✓	F	✓			✓				✓			✓		
Southwestern Public Service Company	XEL	New Mexico	✓					✓				F			✓		
Northern States Power Company - MN	XEL	North Dakota	✓					✓				F			✓		
Northern States Power Company - MN	XEL	South Dakota	✓	P	✓			✓				L			✓		
Southwestern Public Service Company	XEL	Texas	✓		✓			✓				L			✓		
Northern States Power Company - WI	XEL	Wisconsin	✓					✓				L	✓		✓		

Notes:

A mechanism may cover one or more cost categories; therefore, designations may not indicate separate mechanisms for each category. Texas T&D utilities do not have retail obligation, thus do not need a purchased power clause

[3] Utility-sponsored conservation, energy efficiency, load control, or other demand side management programs.

[6] Pension expenses, bad debt costs, storm costs, vegetation management, RTO/Transmission Expense, capacity costs, transmission costs, government & franchise fees and taxes, economic development, and low income programs.

[1] Full or partial decoupling (such as Straight-Fixed Variable rate design, weather normalization clauses, and recovery of lost revenues as a result of Energy Efficiency programs).

[4] Recovers costs associated with renewable energy projects, Distributed Energy Resources, REC purchases, net metering, RPS expense, and renewable PPAs.

[7] Includes multiyear rate plans.

[2] Includes recovery of costs related to targeted new generation projects, infrastructure replacement, system integrity/hardening, Smart Grid, AMI metering, and other capital expenditures.

[5] EPA upgrade costs, emissions control & allowance purchase costs, nuclear/coal plant decommissioning, and other costs to comply with state and federal environmental mandates.

Sources: *Alternative Regulation/Incentive Plans: A State-by-State Overview*, November 19, 2013; Regulatory Research Associates, *Adjustment Clauses: A State-by-State Overview*, September 28, 2018; Regulatory Research Associates, *Rate Freezes: Their historical context and prevalence today*, October 15, 2018; ACEEE Utility Business Model Database; Regulatory Research Associates *Commission Profiles*; SEC Form 10-Ks; Company Tariffs.

