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**Before the Public Service Commission
of the State of Missouri**

Direct Testimony

of

Robert B. Hevert

on behalf of

**The Empire District Electric Company
a Liberty Utilities Company**

August 2019



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ROBERT B HEVERT
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION
CASE NO. ER-2019-0374

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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, Liberty-Empire). 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
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION
CASE NO. ER-2019-0374

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 West
4 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 Public
7 Service Commission (“Commission”) on behalf of The Empire District Electric Company,
8 a Liberty Utilities company (“Liberty-Empire” or the “Company”), an indirect, wholly
9 owned subsidiary of Algonquin Power & Utilities Corp. (“APUC”).

10 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.**

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

14 **Q. PLEASE DESCRIBE YOUR EXPERIENCE IN THE ENERGY AND UTILITY**
15 **INDUSTRIES.**

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

1 due diligence, and strategic matters. As an expert witness, I have provided testimony in
2 more than 250 proceedings regarding various financial and regulatory matters before
3 numerous state utility regulatory agencies (including this Commission), the Federal Energy
4 Regulatory Commission (“FERC”), the Federal Courts, and the Alberta Utilities
5 Commission. A summary of my professional and educational background, including a list
6 of my testimony in prior proceedings, is included in Attachment A to my Direct Testimony.

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

8 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

9 A. My Direct Testimony presents evidence and provides a recommendation regarding the
10 appropriate Return on Equity (“ROE,” also referred to as Cost of Equity) to be used in
11 establishing the Company’s electric rates in this proceeding.¹ My analyses and conclusions
12 are supported by the data presented in Schedules RBH-D1 through RBH-D10, which have
13 been prepared by me or under my direction.

14 **Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE APPROPRIATE COST**
15 **OF EQUITY FOR THE COMPANY?**

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

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

1 I note that the Cost of Equity, which is the return required by equity investors to assume
2 the risks of ownership, is a market-based concept. Because it is unobservable, the Cost of
3 Equity must be estimated based on financial models applied to market data. As a
4 consequence, there may be differences of opinion among analysts as to the data,
5 assumptions and models used in estimating the Cost of Equity.

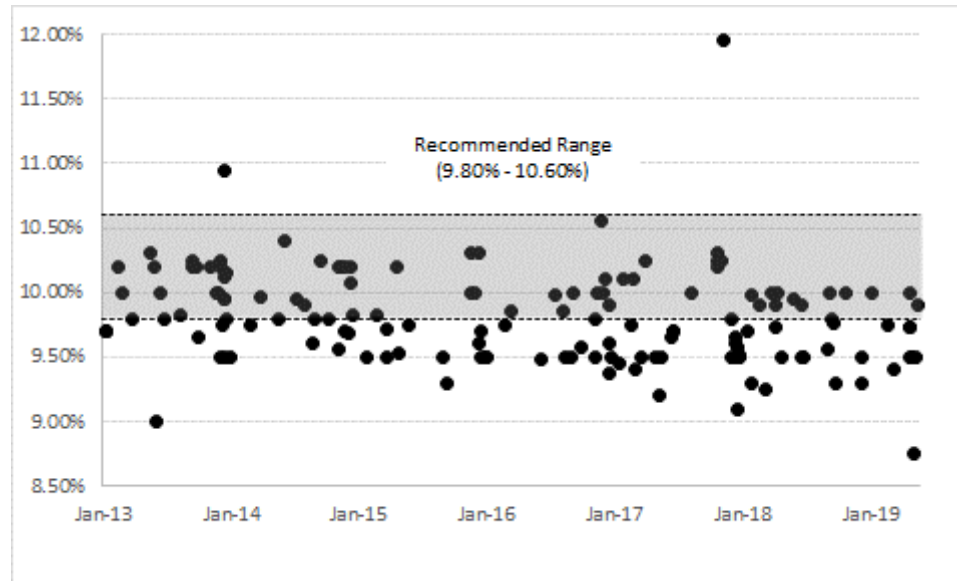
6 **Q. HAVE YOU CONSIDERED YOUR PROPOSED ROE IN THE CONTEXT OF**
7 **RETURNS RECENTLY AUTHORIZED FOR VERTICALLY INTEGRATED**
8 **ELECTRIC UTILITIES IN OTHER JURISDICTIONS?**

9 A. Yes. As the Commission noted in prior orders, to evaluate the reasonableness of ROE
10 proposals it is appropriate to give some consideration to authorized ROEs in other
11 jurisdictions.² As shown in Chart 1, below, my proposed range is consistent with returns
12 authorized since 2013 for vertically integrated utilities.

² 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).

1

Chart 1: Vertically Integrated Electric Authorized Returns³



2

3 **Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE ANALYSES THAT LED TO**
4 **YOUR ROE RECOMMENDATION.**

5 A. Because all financial models are subject to various assumptions and constraints, equity
6 analysts and investors tend to use multiple methods to develop their return requirements. I
7 therefore relied on three widely accepted approaches to develop my ROE recommendation:
8 (1) the Constant Growth Discounted Cash Flow (“DCF”) model; (2) the Capital Asset
9 Pricing Model (“CAPM”) and Empirical CAPM (“ECAPM”); and (3) the Bond Yield Plus
10 Risk Premium approach. I also have provided an Expected Earnings analysis, which I have
11 applied as a corroborating method. As discussed in Sections V and VII, I considered the
12 results of those methods in the context of general capital market factors. Based on those
13 analyses, and the considerations discussed earlier, I believe represents reasonable estimates
14 of the Company’s Cost of Equity fall in the range of 9.80 percent to 10.60 percent.

³ Source: S&P Global Market Intelligence.

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

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

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

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

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

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

11 Section VII – Highlights the current capital market conditions and their effect on the
12 Company’s Cost of Equity;

13 Section VIII – Addresses the Company’s capital structure; and

14 Section IX – Summarizes my conclusions and recommendations.

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

16 **Q. BEFORE ADDRESSING THE SPECIFIC ASPECTS OF THIS PROCEEDING,**
17 **PLEASE PROVIDE AN OVERVIEW OF THE ISSUES SURROUNDING THE**
18 **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 an
20 equity investment in a firm. That is, investors will only provide funds to a firm if the return
21 that they expect is equal to, or greater than, the return that they require to accept the risk of
22 providing funds to the firm. From the firm’s perspective, that required return, whether it

1 is provided to debt or equity investors, has a cost. Individually, we speak of the “Cost of
2 Debt” and the “Cost of Equity;” together, they are referred to as the “Cost of Capital.”

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

10 Although both debt and equity have required costs, they differ in certain
11 fundamental ways. Most noticeably, the Cost of Debt is contractually defined and can be
12 directly observed as the interest rate or yield on debt securities.⁴ The Cost of Equity, on
13 the other hand, is neither directly observable nor a contractual obligation. Rather, equity
14 investors have a claim on cash flows only after debt holders are paid; the uncertainty (or
15 risk) associated with those residual cash flows determines the Cost of Equity. Because
16 equity investors bear that additional “residual risk,” they require higher returns than debt
17 holders. In that basic sense, equity and debt investors differ; they invest in different
18 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
21 my Direct Testimony, each of those models is subject to its own set of assumptions, which
22 may be more or less applicable under differing market conditions. In addition, because the

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

1 Cost of Equity is premised on opportunity costs, the models typically are applied to a group
2 of “comparable” or “proxy” companies. The choice of models (including their inputs), the
3 selection of proxy companies, and the interpretation of the model results all require the
4 application of reasoned judgment. That judgment should consider data and information,
5 both quantitative and qualitative, 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.
8 A given utility stock may require a higher return based on the risks to which it is exposed
9 relative to other utilities. That is, utilities may be viewed as a “sector”, however, that does
10 not mean that all utilities require the same return. The assessment of relative risk and its
11 effect on the Cost of Equity requires the application of reasoned, experienced judgment
12 applied to a variety of data, much of which is qualitative in nature.

13 **Q. PLEASE NOW PROVIDE A BRIEF SUMMARY OF THE REGULATORY**
14 **GUIDELINES ESTABLISHED FOR THE PURPOSE OF DETERMINING THE**
15 **ROE.**

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

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

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

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

18 The cases also recognize that the fixing of rates is a matter largely of
19 prophecy and because of this commissions, in carrying out their
20 functions, necessarily deal in what are called ‘zones of reasonableness’,
21 the result of which is that they have some latitude in exercising this most
22 difficult function.⁶

23 That is, the Commission has found it appropriate to consider both quantitative and
24 qualitative information when developing its zone of reasonableness. Consistent with
25 Missouri precedent, I discuss throughout my Direct Testimony that the estimation of the

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

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

1 market required ROE (and the zone of reasonableness) does not lend itself to a strict
2 mathematical solution.

3 **Q. WHY IS IT IMPORTANT FOR A UTILITY TO BE ALLOWED THE**
4 **OPPORTUNITY TO EARN A RETURN ADEQUATE TO ATTRACT EQUITY**
5 **CAPITAL AT REASONABLE TERMS?**

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

19 **Q. HOW IS THE *HOPE* AND *BLUEFIELD* "COMPARABLE RISK" STANDARD**
20 **REFLECTED IN THE COST OF EQUITY ESTIMATION PROCESS?**

21 A. The "comparable risk" standard is a natural outcome of the risk/return relationship, which
22 is a fundamental principle of finance. Under the risk/return relationship, investors require

1 a higher return for taking on greater risk. Risk, in turn, relates to the uncertainty of a given
2 outcome. As illustrated in Chart 2 (below), as risk increases, so does the required return.

3 **Chart 2: Risk and Return Principle Illustration**



4
5 The “comparable risk” standard indicates that the required return for companies with
6 “corresponding risks” should be the same. As a practical matter, however, no two
7 companies are identical, and no single model provides the most reliable estimate of
8 investor-required returns under all market conditions. In essence, practitioners and
9 academics recognize that financial models are simply tools to be used in the ROE
10 estimation process, and that strict adherence to any single approach, or to the specific
11 results of any single approach, can lead to flawed or misleading conclusions. That position
12 is consistent with another of the *Hope* and *Bluefield* principles — that the analytical result,
13 rather than the method employed, controls in arriving at ROE determinations.

1 **Q. DID THE COMMISSION PROVIDE ANY CONDITIONS IN ITS ORDER**
2 **APPROVING APUC'S ACQUISITION OF LIBERTY-EMPIRE THAT ARE**
3 **RELEVANT IN THIS PROCEEDING?**

4 A. Yes. As part of its *Order Approving Stipulations and Agreements and Authorizing Merger*
5 *Transaction* issued in Case No. EM-2016-0213, the Commission approved and directed
6 Liberty-Empire's compliance with the Stipulation and Agreement dated August 4, 2016,
7 and executed by APUC, the applicant utilities, and the Staff of the Commission. That
8 Stipulation and Agreement included the following conditions:

9 Empire shall not seek an increase to the cost of capital as a result of this
10 Transaction or Empire's ongoing affiliation with Algonquin Power &
11 Utilities Corp. and its affiliates other than Empire after the Transaction.
12 Any net increase in the cost of capital Empire seeks shall be supported
13 by documentation that: (a) the increases are a result of factors not
14 associated with the Transaction or the post Transaction operations of
15 Algonquin Power & Utilities Corp. or its non-Empire affiliates; (b) the
16 increases are not a result of changes in business, market, economic or
17 other conditions caused by the Transaction or the post Transaction
18 operations of Algonquin Power & Utilities Corp. or its non-Empire
19 affiliates; and (c) the increases are not a result of changes in the risk
20 profile of Empire caused by the Transaction or the post Transaction
21 operations of Algonquin Power & Utilities Corp. or its non-Empire
22 affiliates. The provisions of this section are intended to recognize the
23 Commission's authority to consider, in appropriate proceedings,
24 whether this Transaction or the post Transaction operations of
25 Algonquin Power & Utilities Corp. or its non-Empire affiliates has
26 resulted in capital cost increases for Empire. Nothing in this agreement
27 shall restrict the Commission from disallowing such capital cost
28 increases from recovery in Empire's rates.⁷

29 ***

30 If Empire's per books capital structure is different from that of the entity
31 or entities in which Empire relies for its financing needs, Empire shall
32 be required to provide evidence in subsequent rate cases as to why
33 Empire's per book capital structure is the most economical for purposes
34 of determining a fair and reasonable allowed rate of return for purposes

⁷ Missouri Public Service Commission, Docket No. EM-2016-0213, Appendix A at 4.

1 of determining Empire's revenue requirement.⁸

2 **Q. DOES YOUR RECOMMENDATION ADHERE TO THOSE CONDITIONS?**

3 A. Yes, it does. As discussed below, the analyses on which my recommendation is based are
4 performed by reference to a proxy group of similarly situated, but unaffiliated companies.
5 That is, my analyses are based on market-based and other information relevant to Liberty-
6 Empire, using a comparable group of companies unaffiliated with Liberty-Empire. That
7 approach, and my recommendation, are not affected by the merger. Consequently, my
8 recommendation does not adversely affect customers as a result of the merger. As to the
9 Company's capital structure, my Direct Testimony explains it is reasonable in the context
10 of industry practice and, therefore, reasonable and appropriate for the purpose of
11 establishing its revenue requirement.

IV. PROXY GROUP SELECTION

12 **Q. AS A PRELIMINARY MATTER, WHY IS IT NECESSARY TO SELECT A**
13 **GROUP OF PROXY COMPANIES TO DETERMINE THE COST OF EQUITY**
14 **FOR THE COMPANY?**

15 A. Because the ROE is market-based, and given that Liberty-Empire is not a publicly traded
16 entity, it is necessary to establish a group of comparable, publicly traded companies to
17 serve as its "proxy." Even if the Company were publicly traded, it is possible that transitory
18 events, such as asset impairment charges that are subsequently reversed, or temporary
19 trading activity associated with unfounded rumors, could bias its market value in one way
20 or another over a given period. A significant benefit of using a proxy group is that it
21 moderates the effects of anomalous, temporary events associated with any one company.

⁸ *Ibid.*

1 Please see Appendix A to this Direct Testimony for a description of how I selected the
2 companies in the proxy group. Applying the screening criteria discussed in Appendix A
3 results in a proxy group that, when taken as a whole, is fundamentally comparable to
4 Liberty-Empire's investment profile.

5 **Q. PLEASE PROVIDE A SUMMARY PROFILE OF LIBERTY-EMPIRE.**

6 A. Liberty-Empire is a wholly owned subsidiary of Liberty Utilities (Central) Co., which in
7 turn is owned by Liberty Utilities Co. ("LUCo"), which in turn is an indirect wholly owned
8 subsidiary of APUC. Liberty-Empire provides electric generation, transmission, and
9 distribution services to approximately 173,000 retail electric customers in portions of
10 Arkansas, Kansas, Missouri, and Oklahoma.⁹ Approximately 155,000 of those customers
11 are located in Missouri.¹⁰ Liberty-Empire's current long-term issuer credit rating from
12 Standard & Poor's ("S&P") is BBB (outlook: stable) by S&P and its long-term issuer rating
13 from Moody's Investor Service ("Moody's") is Baa1.¹¹

14 **Q. WHAT COMPANIES ARE INCLUDED IN YOUR PROXY GROUP?**

15 A. Table 1 (below) identifies the 20 companies included in the proxy group.

⁹ Source: FERC Form 3-Q (May 30, 2019), at 301.

¹⁰ Company provided data.

¹¹ Source: S&P Global Market Intelligence.

1

Table 1: Proxy Group Screening Results

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Avangrid, Inc.	AGR
CMS Energy Corporation	CMS
DTE Energy Company	DTE
Duke Energy Corporation	DUK
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

2

3 **Q. DOES THE USE OF A PROXY GROUP SUGGEST THAT THE ROE ESTIMATES**
4 **WILL BE TIGHTLY CLUSTERED AROUND THE AVERAGE RESULTS?**

5 A. No, it does not. Even with carefully selected proxy groups, it is common for analytical
6 results to reflect a seemingly wide range.¹² Despite the care taken to select comparable
7 proxy companies, market expectations regarding future risks and growth opportunities will
8 vary from company to company. Although selecting proxy companies and developing the
9 range of results are critical issues, an equally important concern is how to select the Cost

¹² In Appendix B, I provide more thorough discussions of the models used to estimate the ROE.

1 of Equity within that range. That selection necessarily considers a wide range of both
2 quantitative and qualitative information; as noted earlier, it is not an entirely mathematical
3 analysis.

V. COST OF EQUITY ESTIMATION

4 **Q. PLEASE BRIEFLY DISCUSS THE ROE IN THE CONTEXT OF THE**
5 **REGULATED RATE OF RETURN.**

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

9 **Q. HOW HAVE YOU DETERMINED THE INVESTOR-REQUIRED ROE?**

10 A. Because the Cost of Equity is not directly observable, it must be estimated based on both
11 quantitative and qualitative information. Although a number of empirical models have
12 been developed for that purpose, all are subject to limiting assumptions or other constraints.
13 Consequently, many finance texts recommend using multiple approaches to estimate the
14 Cost of Equity as detailed in Appendix B.¹³ When faced with the task of estimating the
15 Cost of Equity, analysts and investors are inclined to gather and evaluate as much relevant
16 data as reasonably can be analyzed and, therefore, rely on multiple analytical approaches.
17 As a practical matter, no individual model is more reliable than all others under all market
18 conditions. Therefore, it is important to use multiple approaches to mitigate the effects of
19 assumptions and inputs associated with any single approach. The use of multiple methods,
20 and the consideration given to them, recently was addressed by the FERC. In its November

¹³ 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 15, 2018 *Order Directing Briefs*, FERC found that “in light of current investor behavior
2 and capital market conditions, relying on the DCF methodology alone will not produce a
3 just and reasonable ROE.”¹⁴

4 In its October 16, 2018 *Order Directing Briefs*, FERC found that although it
5 “previously relied solely on the DCF model to produce the evidentiary zone of
6 reasonableness...”, it is “...concerned that relying on that methodology alone will not
7 produce just and reasonable results.”¹⁵ As FERC explained, because the Cost of Equity
8 depends on what the market expects, it is important to understand “how investors analyze
9 and compare their investment opportunities.”¹⁶ FERC also explained that, although certain
10 investors may give some weight to the DCF approach, other investors “place greater weight
11 on one or more of the other methods...”¹⁷

12 Consistent with that approach, I have considered the results of the Constant Growth
13 DCF model, the CAPM and ECAPM, and the Bond Yield Plus Risk Premium approach. I
14 also have provided an Expected Earnings analysis, which I have applied as a corroborating
15 method. FERC issued similar guidance using the Expected Earnings analysis in its
16 determination of the “zone of reasonableness”, observing that “investors use those
17 models”.¹⁸

18 **Q. WHY DID YOU SELECT THOSE MODELS?**

19 A. I selected those models for two reasons. First, because the purpose of ROE analyses is to
20 estimate the return that investors require, and it is important to use the models on which

¹⁴ Docket Nos. EL14-12-003 and EL15-45-000, *Order Directing Briefs*, 165 FERC ¶ 61,118 (November 15, 2018), at para. 34.

¹⁵ Docket No. EL11-66-001, *et al.*, *Order Directing Briefs*, at 30.

¹⁶ *Ibid.*, at 33.

¹⁷ *Ibid.*, at 35. See, also, Docket No. PL19-4-000, *Inquiry Regarding the Commission's Policy for Determining Return on Equity*, March 21, 2019

¹⁸ *Ibid.*, at 29 (italics in original).

1 those investors rely. As discussed in Appendix B, the models that I apply are commonly
2 used in practice. Second, the models focus on different aspects of return requirements, and
3 provide different insights to investors' views of risk and return. Using multiple methods
4 provides a broader, and therefore, more reliable perspective on investors' return
5 requirements.

6 **Q. PLEASE BRIEFLY DESCRIBE THE CONSTANT GROWTH DCF MODEL.**

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

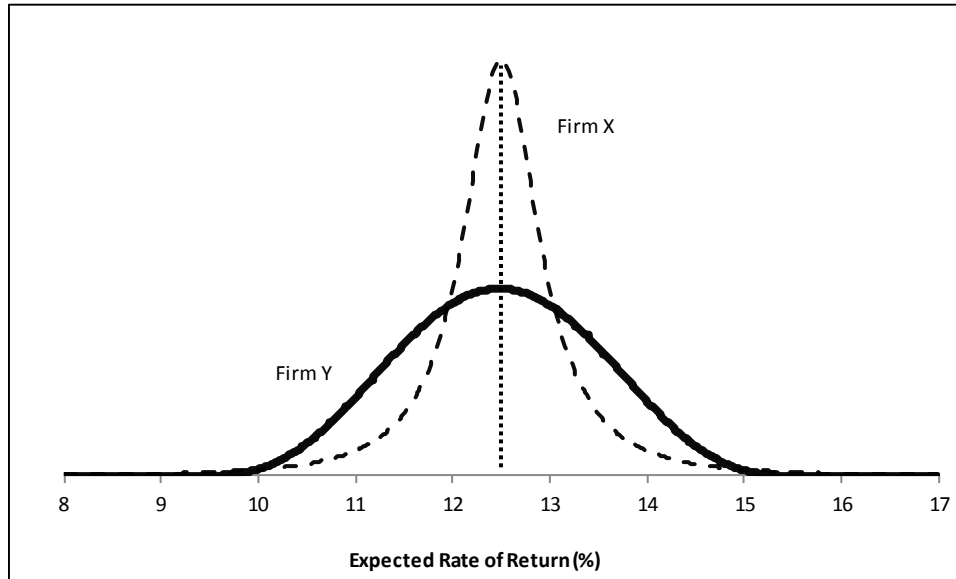
16 **Q. PLEASE BRIEFLY DESCRIBE THE CAPITAL ASSET PRICING MODEL.**

17 A. Whereas DCF models focus on expected cash flows, Risk Premium-based models such as
18 the CAPM focus on the additional return that investors require for taking on additional risk.
19 In finance, "risk" generally refers to the variation in expected returns, rather than the
20 expected return itself. Consider two firms, X and Y, with expected returns, and the
21 expected variation in returns noted in Chart 3, below. Although the two have the same

¹⁹ 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.

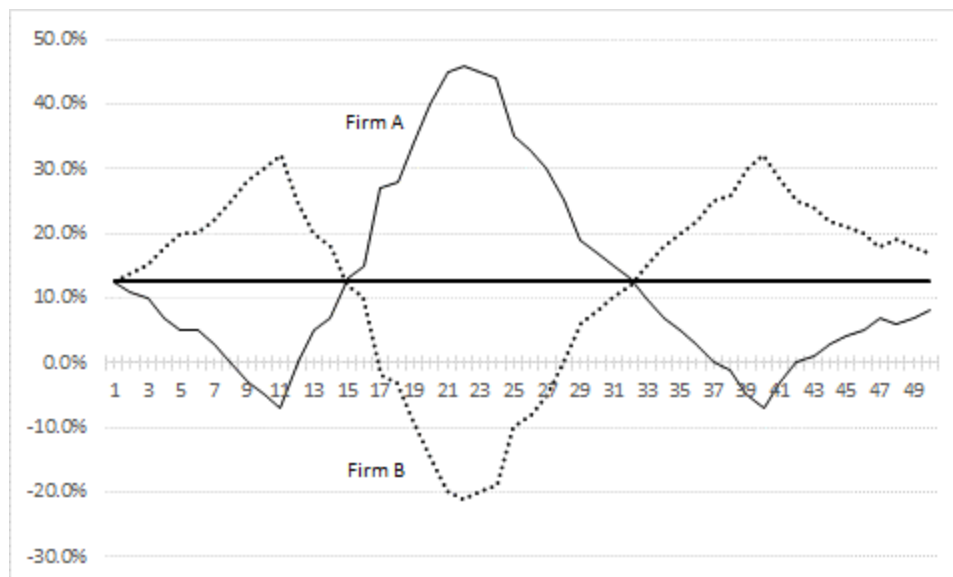
1 expected return (12.50 percent), Firm Y's are far more variable. From that perspective,
2 Firm Y would be considered the riskier investment.

3 **Chart 3: Expected Return and Risk**



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

8 **Chart 4: Relative Risk**



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

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

$$15 \quad \text{Risk Free Rate} + \text{Risk Premium} = \text{Cost of Equity} [1]$$

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

$$22 \quad \text{Risk Free Rate} + (\text{Beta Coefficient} \times \text{Market Risk Premium}) = \text{Cost of Equity} [2]$$

23 As with the Constant Growth DCF model, it is important to understand the CAPM’s inputs,
24 assumptions, and results in the context of observable market data. Appendix A, part B

1 explains that Beta coefficients reflect two aspects of stock price movements: (1) the
2 variability of the subject company's returns relative to the market; and (2) the correlation
3 of the subject company's returns to the market's returns. Both are important factors. When
4 utility stock prices fall, but the overall market increases, the correlation will fall. When
5 that happens (all else remaining equal), Beta coefficients also will fall. That is especially
6 the case when they are calculated over relatively short periods, as Bloomberg does. The
7 question then becomes whether those Beta coefficients are likely to reflect investors' views
8 of utility risk going forward. Here again, a certain amount of judgment must be applied.

9 **Q. PLEASE BRIEFLY DESCRIBE THE BOND YIELD PLUS RISK PREMIUM.**

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

$$17 \quad \text{Bond Yield} + \text{Equity Risk Premium} = \text{Cost of Equity} [3]$$

18 **Q. WHAT ARE THE RESULTS OF YOUR DCF-BASED ANALYSIS?**

19 A. The results of the model described above are provided in Table 2, below.²⁰

²⁰ See, Appendix B for a more detailed description of the models, assumptions, and inputs described in Section V.

Table 2: Summary of DCF Results

	Mean Low	Mean	Mean High
30-Day Average	8.09%	8.93%	9.82%
90-Day Average	8.17%	9.01%	9.90%
180-Day Average	8.31%	9.15%	10.04%

- 1 **Q. PLEASE NOW SUMMARIZE YOUR REMAINING ANALYTICAL RESULTS.**
- 2 A. The Risk Premium-based results, including the CAPM, ECAPM, and Bond Yield Plus Risk
- 3 Premium methods, are provided below.

Table 3: 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 (2.63%)	8.71%	8.66%
Near Term Projected 30-Year Treasury (2.70%)	8.78%	8.73%
<i>CAPM - Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (2.63%)	9.69%	9.63%
Near Term Projected 30-Year Treasury (2.70%)	9.76%	9.70%
<i>ECAPM - Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (2.63%)	10.25%	10.19%
Near Term Projected 30-Year Treasury (2.70%)	10.32%	10.26%
<i>ECAPM - Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (2.63%)	10.98%	10.92%
Near Term Projected 30-Year Treasury (2.70%)	11.05%	10.99%
<i>Bond Yield Plus Risk Premium Approach</i>		
Current 30-Year Treasury (2.63%)	9.90%	
Near Term Projected 30-Year Treasury (2.70%)	9.90%	
Long-Term Projected 30-Year Treasury (3.70%)	10.06%	

- 1
- 2 **Q. PLEASE BRIEFLY DESCRIBE THE EXPECTED EARNINGS ANALYSIS.**
- 3 A. The Expected Earnings analysis is based on the principle of opportunity costs. By taking
- 4 historical returns on book equity and comparing those to authorized ROEs, investors are
- 5 able to directly compare returns from investments of similar risk. In addition to historical
- 6 returns, Value Line also provides projected returns on book equity. Because the Cost of
- 7 Equity is forward-looking, I relied solely on forward-looking projections in the Expected
- 8 Earnings analysis.²¹ The Expected Earnings analysis results in an average ROE estimate

²¹ 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.

1 of 10.35 percent and median ROE estimate of 10.53 percent. As noted earlier, I used those
2 results to assess the reasonableness of the DCF, CAPM, ECAPM, and Bond-Yield Plus
3 Risk Premium results.²²

VI. BUSINESS RISKS AND OTHER CONSIDERATIONS

4 **Q. DO THE MEAN ANALYTICAL RESULTS FOR THE PROXY GROUP PROVIDE**
5 **AN APPROPRIATE ESTIMATE OF THE COST OF EQUITY FOR LIBERTY-**
6 **EMPIRE?**

7 A. No, the mean results do not necessarily provide an appropriate estimate of the Company's
8 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
10 of results. Those factors include the regulatory environment, and Liberty-Empire's small
11 size relative to the proxy group in terms of both number of customers and implied market
12 capitalization. Those risk factors, which are discussed below, should be considered with
13 respect to their overall effect on Liberty-Empire's risk profile, and therefore its Cost of
14 Equity. I also have considered the effect, if any, of the Company's rate mechanisms,
15 including its proposed weather normalization mechanism, on its Cost of Equity.

16 A. ***Regulatory Environment***

17 **Q. HOW DOES THE REGULATORY ENVIRONMENT IN WHICH A UTILITY**
18 **OPERATES AFFECT ITS ACCESS TO AND THE COST OF CAPITAL?**

19 A. The regulatory environment can significantly affect both the access to and the cost of
20 capital in several ways. First, the proportion of and cost of debt capital available to utility

²² See, Docket Nos. EL14-12-003 and EL15-45-000, *Order Directing Briefs*, 165 FERC ¶ 61,118 (November 15, 2018).

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

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

18 **B. *Small Size***

19 **Q. HAVE YOU ALSO CONSIDERED THE COMPANY'S RELATIVELY SMALL**
20 **SIZE IN ARRIVING AT YOUR ROE RECOMMENDATION?**

21 **A.** Yes, I have. Both the financial and academic communities have long accepted the
22 proposition that the Cost of Equity for small firms is subject to a size effect. Although
23 empirical evidence of the size effect often is based on studies of industries beyond

1 regulated utilities, utility analysts also have noted the risks with associated small market
2 capitalizations. Specifically, Ibbotson Associates noted:

3 For small utilities, investors face additional obstacles, such as smaller
4 customer base, limited financial resources, and a lack of diversification
5 across customers, energy sources, and geography. These obstacles
6 imply a higher investor return.²³

7 Small size, therefore, leads to two categories of increased risk for investors: (1) liquidity
8 risk (i.e., the risk of not being able to sell one's shares in a timely manner due to the
9 relatively thin market for the securities); and (2) fundamental business risks.

10 **Q. HOW DOES THE COMPANY COMPARE IN SIZE TO THE PROXY**
11 **COMPANIES?**

12 A. Liberty-Empire is substantially smaller than the proxy group, both in terms of numbers of
13 customers and annual revenues. Schedule RBH-D7 estimates the implied market
14 capitalization for Liberty-Empire (i.e., the implied market capitalization if the Company
15 were a stand-alone, publicly traded entity). That is, because Liberty-Empire is a subsidiary
16 of APUC, an estimated stand-alone market capitalization must be calculated. To do so, I
17 applied the median market to book ratio for the twenty-member proxy group to Liberty-
18 Empire's Missouri-implied jurisdictional equity of \$750.00 million. The implied market
19 capitalization based on that calculation is \$1,643 million, which is 10.84 percent of the
20 median level of the proxy group.

21 **Q. HOW DOES THE SMALL SIZE AFFECT BUSINESS RISK?**

22 A. In general, smaller companies are less able to withstand adverse events that affect their
23 revenues and expenses. The effect of weather variability, the loss of large customers to
24 bypass opportunities, or the destruction of demand as a result of general macroeconomic

²³ Michael Annin, *Equity and the Small-Stock Effect*, Public Utilities Fortnightly, Oct. 15, 1995.

1 conditions or fuel price volatility will have a proportionately greater effect on the earnings
2 and cash flow volatility of smaller utilities. Similarly, capital expenditures for non-revenue
3 producing investments such as system maintenance and replacements will put
4 proportionately greater pressure on customer costs, potentially leading to customer attrition
5 or demand reduction. Taken together, such risks affect the return required by investors for
6 smaller companies.

7 **Q. HOW DID YOU ESTIMATE THE SIZE PREMIUM FOR LIBERTY-EMPIRE?**

8 A. In its *2019 Cost of Capital Navigator*, Duff & Phelps presents its calculation of the size
9 premium for deciles of market capitalizations relative to the S&P 500 Index. As shown on
10 Schedule RBH-D7, the proxy group's mean and median market capitalization are
11 approximately \$23.06 billion and \$15.15 billion, respectively. Those levels correspond to
12 the 2nd decile of Morningstar's market capitalization data. Using the median market
13 capitalization in the Morningstar analysis, the proxy group has a size premium of 0.52
14 percent. The implied market capitalization for Liberty-Empire is approximately \$1,643
15 million, which falls within the 7th decile and corresponds to a size premium of 1.58 percent
16 (or 158 basis points). The difference between those size premiums is 106 basis points (1.58
17 percent – 0.52 percent).

18 **Q. HAVE YOU CONSIDERED THE SMALLER SIZE OF LIBERTY-EMPIRE IN**
19 **YOUR RECOMMENDED RETURN ON EQUITY FOR THE COMPANY?**

20 A. Yes. Although I have quantified the small size effect, rather than proposing a specific
21 premium, I have considered the Company's relatively small size in my assessment to
22 determine where, within a reasonable range of returns, its required ROE appropriately falls.

23

1 C. *Weather Normalization Mechanism*

2 Q. ARE YOU AWARE THAT THE COMPANY HAS PROPOSED A WEATHER
3 NORMALIZATION RIDER (“WNR”) THAT MEETS THE REQUIREMENTS OF
4 SENATE BILL 564 IN THIS CASE?²⁴

5 A. Yes, I understand that the proposed WNR allows the Company to adjust for each customer,
6 in each month, and in each billing cycle (i.e., on a “real-time” basis), base rate revenues
7 for electric sales in order to reconcile actual base rate revenues and weather-normalized
8 base rate revenues. Under such a mechanism, customers will receive a monthly credit
9 when actual revenues exceed weather normalized revenues, or a surcharge when actual
10 revenues are less than the weather normalized revenues.

11 Q. DOES THE WEATHER NORMALIZATION RIDER REDUCE LIBERTY-
12 EMPIRE’S COST OF EQUITY?

13 A. No, it does not.

14 Q. WHY IS THAT THE CASE?

15 A. To help put the issue in context, I will generally describe RSMo. 386.266, as modified by
16 Senate Bill 564 to include electric utilities and weather normalization. Among other things,
17 RSMo. 386.266 allows the Company to:

18 make an application to the commission to approve rate schedules
19 authorizing periodic rate adjustments outside of general rate
20 proceedings to [reflect the nongas revenue effects] adjust rates of
21 customers in eligible customer classes to account for the utility revenues
22 of increases or decreases in residential and commercial customer usage
23 due to variations in either weather, conservation, or both.²⁵

²⁴ Senate Bill No. 564, General Assembly of the State of Missouri 2018.

²⁵ *Ibid.*

1 Because the Cost of Equity is based on the principle of comparative risks and
2 returns, the relevant analytical issue is not whether the Company itself is exposed to less
3 risk due to the ability to implement a weather normalization mechanism. Rather, the
4 question is whether this mechanism reduces the Company's risk relative to its peer utilities
5 to the point that investors would specifically and measurably reduce their return
6 requirement because of it.²⁶ That is not likely the case with a weather normalization
7 mechanism.

8 As noted in Schedule RBH-D10, there are a number of cost recovery mechanisms
9 in place at the proxy companies, including, but not limited to, decoupling, mechanisms
10 related to new capital investments, energy efficiency, and renewables. In addition, there
11 are a number of regulatory constructs including, but not limited to formula-based rate plans,
12 which provide comprehensive adjustment mechanisms that automatically adjust rates in
13 the event the subject company earns a return above or below an authorized range,
14 performance-based ratemaking, construction work in progress ("CWIP") allowed in rate
15 base, forward test years, and earnings sharing. As such, the use of such a mechanism does
16 not make Liberty-Empire less risky than its peers. Rather, implementing a weather
17 normalization mechanism would increase Liberty-Empire's comparability to the proxy
18 group in terms of regulatory treatment.

²⁶ See, generally, *Bluefield* and *Hope*.

1 **Q. IN ACCORDANCE WITH 4 CSR 240-20.090(2)(A)14, PLEASE PROVIDE AN**
2 **EXPLANATION OF ANY CHANGES IN BUSINESS RISK TO THE COMPANY**
3 **RESULTING FROM THE FUEL ADJUSTMENT CLAUSE (“FAC”) IT**
4 **PROPOSES TO CONTINUE IN THIS PROCEEDING, IN ADDITION TO ANY**
5 **OTHER CHANGES IN BUSINESS RISK EXPERIENCED BY THE COMPANY.**

6 A. FAC mechanisms are prevalent throughout the industry. As shown in Schedule RBH-D10,
7 all the vertically integrated companies in my proxy group have a fuel adjustment
8 mechanism currently in place. As a consequence, the continuation of an FAC for Liberty-
9 Empire would leave its business and regulatory risk profile comparable to the risk profiles
10 of other electric utilities, as it relates to fuel cost recovery. Therefore, no downward
11 adjustment to Liberty-Empire’s rate of return would be reasonable or appropriate as a result
12 of the continuation of an FAC. Of course, discontinuing the FAC for Liberty-Empire likely
13 would require an upward adjustment to the Company’s return, to recognize the incremental
14 risk of fuel cost recovery relative to other electric utilities.

15 **Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE REGULATORY RISK**
16 **FACED BY THE COMPANY, AND HOW THAT RISK WEIGHS IN YOUR ROE**
17 **RECOMMENDATION?**

18 A. Although the Company does have rate mechanisms in place, it is not able to take advantage
19 of other regulatory lag-reducing mechanisms, such as the inclusion of CWIP in rate base,
20 forecast test years, or formula rates that are available to other proxy companies. On
21 balance, it therefore appears the Company faces somewhat higher regulatory risks than its
22 peers. Those risks suggest a return in the middle of the range of results is reasonable.

1 **Q. HOW DO THE BUSINESS RISKS DISCUSSED ABOVE AFFECT YOUR ROE**
2 **RECOMMENDATION?**

3 A. As discussed earlier, it is very difficult, and likely imprecise, to associate a given area of
4 risk with a specific increment to the required return. It is important, however, to reflect the
5 risks that investors recognize in selecting the ROE range and recommendation. I therefore
6 considered those risks in selecting my recommended range from the overall range of
7 analytical results.

VII. CAPITAL MARKET ENVIRONMENT

8 **Q. DO ECONOMIC CONDITIONS INFLUENCE THE REQUIRED COST OF**
9 **CAPITAL AND REQUIRED RETURN ON COMMON EQUITY?**

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

17 **Q. HAS MARKET VOLATILITY INCREASED IN RECENT MONTHS?**

18 A. Yes, it has. A visible and widely reported measure of expected volatility is the Cboe
19 Options Exchange ("Cboe") Volatility Index, often referred to as the VIX. As Cboe
20 explains, the VIX is a calculation designed to produce a measure of constant, 30-day
21 expected volatility of the U.S. stock market, derived from real-time, mid-quote prices of

1 S&P 500® Index call and put options.²⁷ Simply, the VIX is a market-based measure of
2 expected volatility. Because volatility is a measure of risk, increases in the VIX, or in its
3 volatility, are a broad indicator of expected increases in market risk.

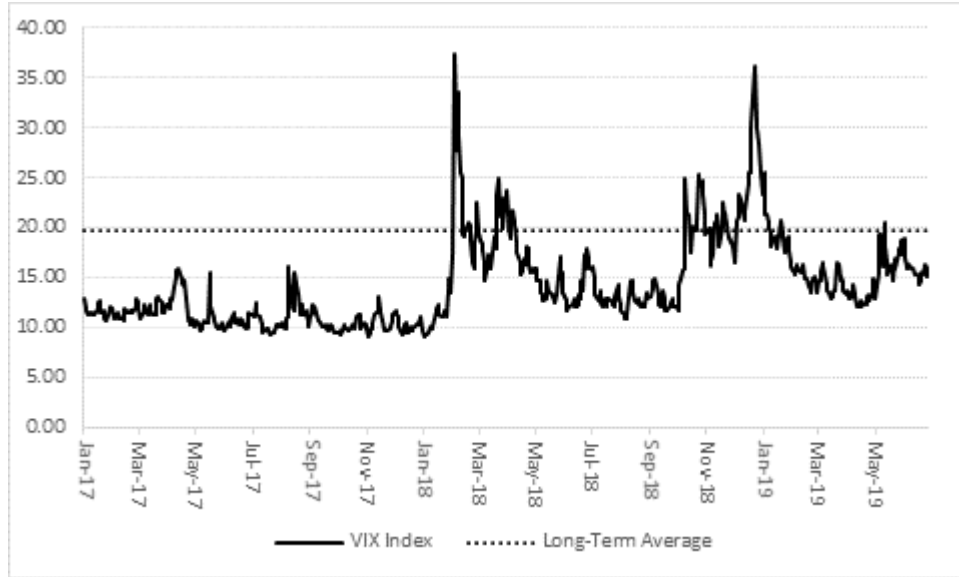
4 Although the VIX is not expressed as a percentage, it should be understood as such.
5 That is, if the VIX stood at 15.00, it would be interpreted as an expected standard deviation
6 in annual market returns of 15.00 percent over the coming 30 days. Since 2000, the VIX
7 has averaged about 19.61, which is highly consistent with the long-term standard deviation
8 on annual market returns (19.80 percent, as reported by Duff & Phelps).

9 As Chart 5 (below) demonstrates, in 2017 market volatility was well below its long-
10 term average, and moved within a somewhat narrow range; the VIX averaged about 11.09,
11 with a standard deviation of 1.36. Throughout 2018 and into 2019, the VIX average
12 increased to 16.37 with a standard deviation of 4.41. That is, from 2017 to 2019 both the
13 level and the volatility of market volatility increased.

²⁷ Source: <http://www.cboe.com/vix>

1

Chart 5: VIX Since January 2017²⁸



2

3

Table 4 (below) further demonstrates the increase in market uncertainty from 2017 to 2019.

4

As that table notes, the standard deviation (that is, the volatility of volatility) in 2018-2019

5

is about 3.25 times higher than its 2017 level (1.36).

6

Table 4: VIX Levels and Volatility²⁹

Long-Term Average	19.606
2018-2019 Average	16.367
2018-2019 Maximum	37.320
2018-2019 Minimum	9.150
2018-2019 Standard Deviation	4.414
2017 Average	11.090
2017 Maximum	16.040
2017 Minimum	9.140
2017 Standard Deviation	1.356

7

8

The increase in volatility is not surprising as market participants reassess investment

9

alternatives in light of the Federal Reserve's evolving monetary policy.

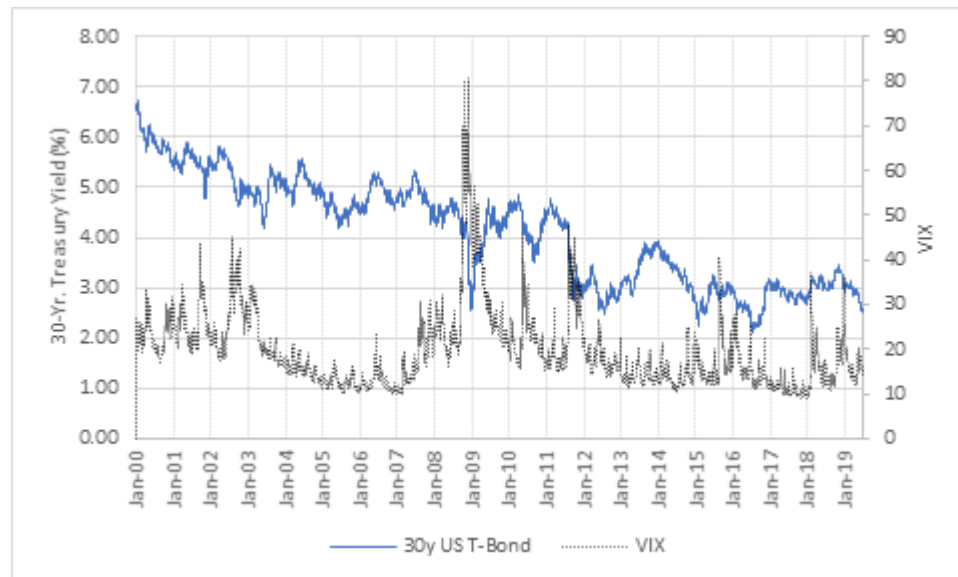
²⁸ Source: Bloomberg Professional Services. Data as of June 28, 2019.

²⁹ Source: Bloomberg Professional Services. Data as of June 28, 2019.

1 **Q. IS THERE A RELATIONSHIP BETWEEN EQUITY MARKET VOLATILITY**
2 **AND INTEREST RATES?**

3 A. Yes, there is. Significant and abrupt increases in volatility tend to be associated with
4 declines in Treasury yields. That relationship makes intuitive sense; as investors see
5 increasing risk their objectives may shift principally to capital preservation (that is,
6 avoiding a capital loss). A means of doing so is to allocate capital to the relative safety of
7 Treasury securities, in a “flight to safety”. Because Treasury yields are inversely related
8 to Treasury bond prices, as investors bid up the prices of bonds, they bid down the yields
9 (see, Chart 6, below, showing decreases in the 30-year Treasury yield coincident with
10 significant increases in the VIX).

11 **Chart 6: 30-Year Treasury Yields vs. VIX³⁰**



12
13 In those instances, the fall in yields does not reflect a reduction in required returns, it
14 reflects an increase in risk aversion and, therefore, an increase in required equity returns.

³⁰ Source: S&P Global Market Intelligence, Yahoo Finance.

1 **Q. IS MARKET VOLATILITY EXPECTED TO INCREASE FROM ITS CURRENT**
2 **LEVELS?**

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

5 The implied volatility term structure observed in SPX options markets
6 is analogous to the term structure of interest rates observed in fixed
7 income markets. Similar to the calculation of forward rates of interest,
8 it is possible to observe the option market's expectation of future market
9 volatility through use of the SPX implied volatility term structure.³¹

10 The expected VIX value in June 2020 is about 17.23, suggesting investors see a reversion
11 to long-term average volatility over the coming months.³²

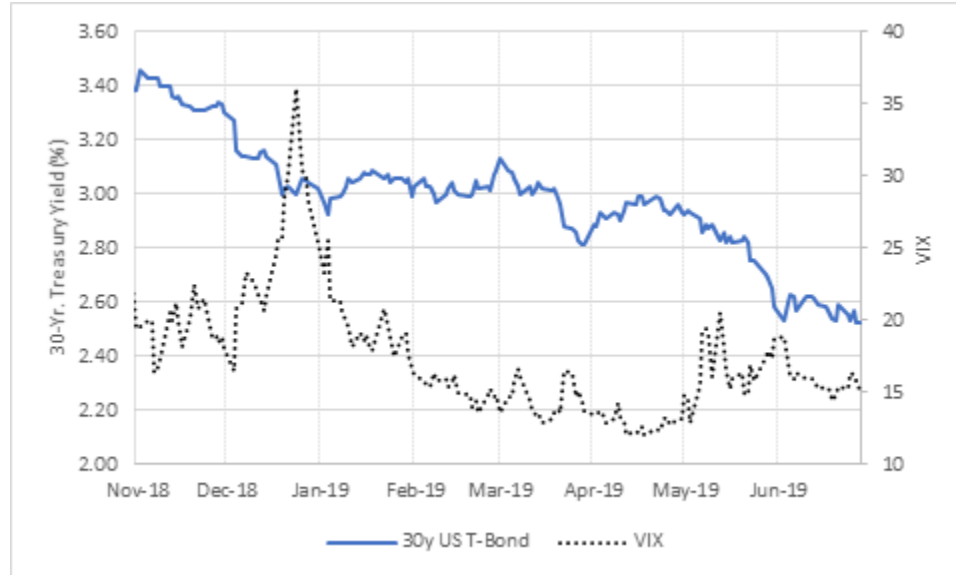
12 **Q. HAVE RECENT DECLINES IN THE TREASURY YIELD BEEN ASSOCIATED**
13 **WITH INCREASES IN MARKET VOLATILITY?**

14 A. Yes, they have. Since November 2018, the periods during which Treasury yields fell
15 coincided with increases in the VIX (see Chart 7, below).

³¹ Source: <http://www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data>.

³² Source: <http://www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data>, accessed 7/9/2019.

1 **Chart 7: 30-Year Treasury Yields vs. VIX (November 2018 – June 2019)³³**



2

3 **Q. WHAT CONCLUSIONS DO YOU DRAW FROM THOSE ANALYSES?**

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

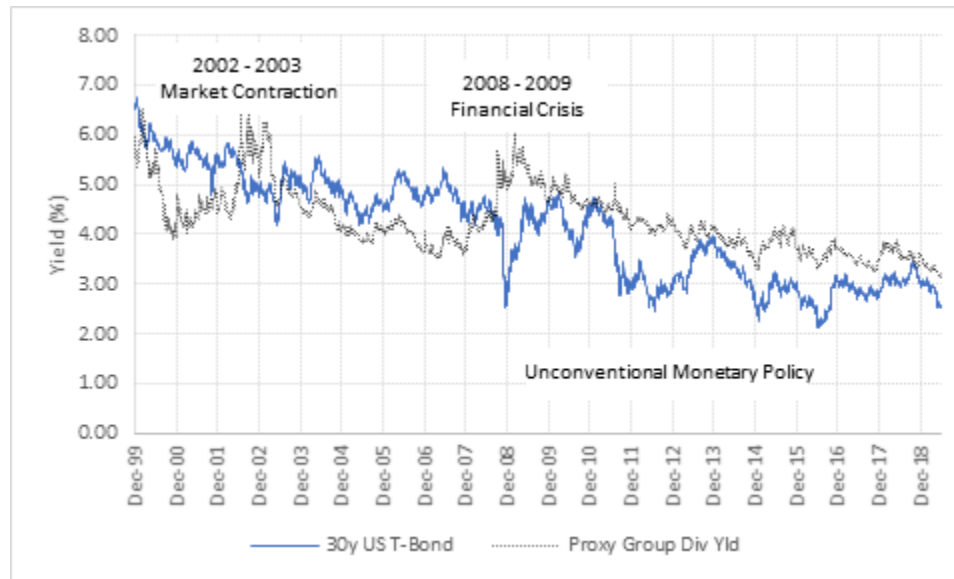
10 **Q. HAVE UTILITY DIVIDEND YIELDS CLOSELY FOLLOWED LONG-TERM**
11 **TREASURY YIELDS?**

12 A. Although they have been directionally related over time, the fundamental relationship
13 between Treasury yields and utility dividend yields changed after the 2008/2009 financial
14 crisis. From 2000 through 2008, Treasury yields generally exceeded dividend yields; the
15 exception was the 2002-2003 market contraction. Then, as in 2008-2009, investors sought

³³ Source: S&P Global Market Intelligence, Yahoo Finance.

1 the safety of Treasury securities, accepting lower yields in exchange for a greater likelihood
2 of capital preservation. Once the contraction ended (in latter half of 2003), the relationship
3 was restored, and Treasury yields again exceeded dividend yields (see Chart 8, below).

4 **Chart 8: Utility Dividend Yields and 30-Year Treasury Yields³⁴**



5
6 In the 2008/2009 financial crisis, Treasury bond prices increased (yields
7 decreased), and utility stock prices decreased (yields increased) such that the prior
8 relationship inverted. As the Federal Reserve implemented and maintained
9 “unconventional” monetary policies in reaction to the financial crisis (i.e., Quantitative
10 Easing) with the intended consequence of lowering long-term interest rates, the now-
11 inverted relationship between Treasury yields and utility dividend yields persisted.

12 Even though the “yield spread”³⁵ became inverted after the financial crisis, it has
13 not been static. That is, as Treasury yields fell in response to central bank policies, dividend
14 yields did not fall to the same degree; the yield spread widened (see Chart 8, above). That

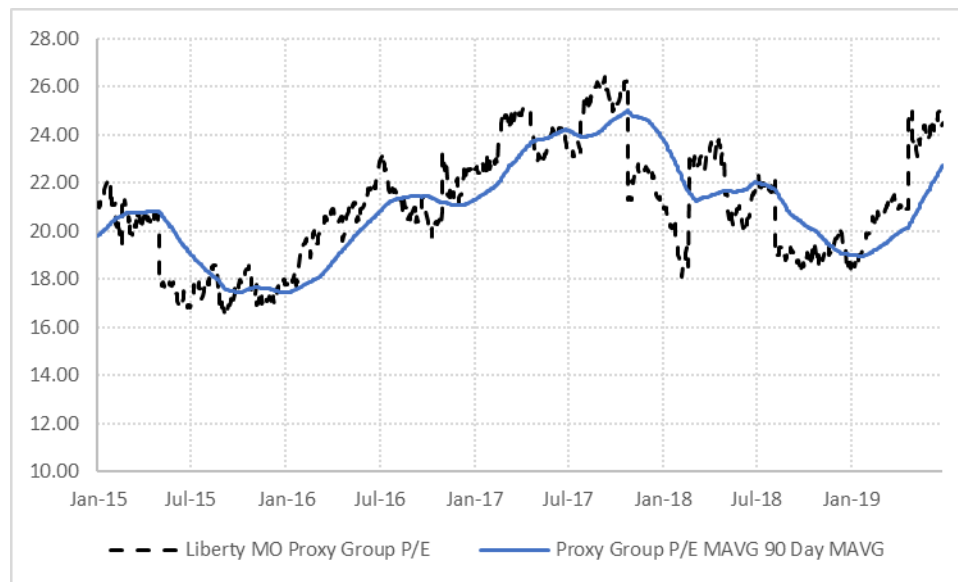
³⁴ Source: S&P Global Market Intelligence
³⁵ Defined here as dividend yields less Treasury yields.

1 data suggests that, although utility prices are sensitive to long-term Treasury yields, the
2 relationship is not unbounded.

3 **Q. IS THAT RELATIONSHIP ALSO SEEN IN UTILITY PRICE/EARNINGS (“P/E”)**
4 **RATIOS?**

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

8 **Chart 9: Proxy Group Average Price/Earnings Ratio³⁶**



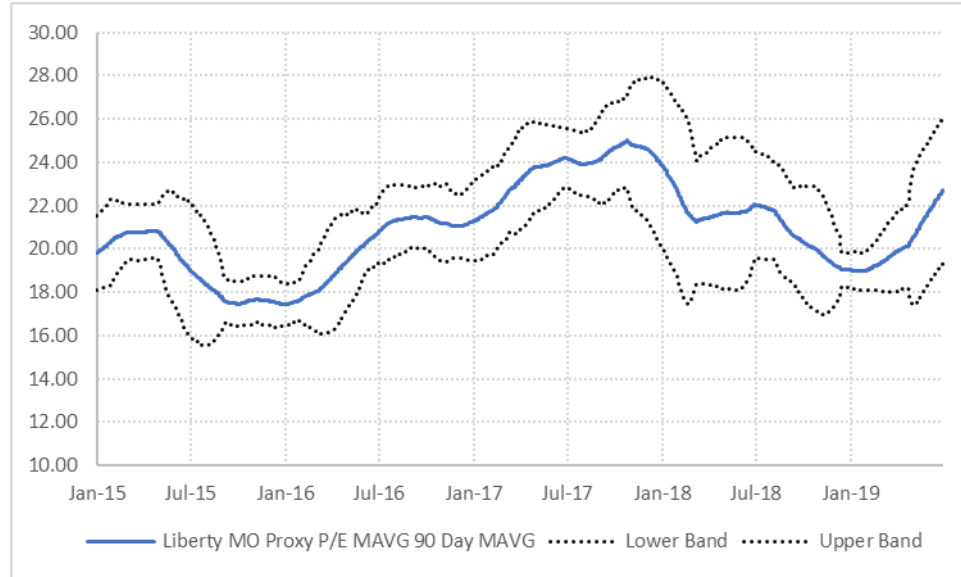
9
10

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

³⁶ Calculated as an index. Source: S&P Global Market Intelligence.

1

Chart 10: Proxy Group Average P/E Ratio Bands³⁷



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

³⁷ 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**
2 **CURRENT CAPITAL MARKET ENVIRONMENT, AND HOW DO THOSE**
3 **CONCLUSIONS AFFECT YOUR ROE RECOMMENDATION?**

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

10 On balance, it remains important to consider changes in market conditions, the
11 likely causes of those changes, and how model results are affected by them. Those
12 assessments necessarily involve the application of reasoned and experienced judgment. As
13 discussed throughout my testimony, that judgment supports my recommended range of
14 9.80 percent to 10.60 percent.

VIII. CAPITAL STRUCTURE

15 **Q. WHAT IS THE COMPANY'S PROPOSED CAPITAL STRUCTURE?**

16 A. The Company proposes an authorized capital structure consisting of 51.91 percent common
17 equity and 48.09 percent long-term debt based on Liberty-Empire's capital structure as of
18 March 31, 2019.

19 **Q. WHAT ARE THE COMMON PRINCIPLES THAT SUPPORT UTILITY**
20 **FINANCING PRACTICE?**

21 A. Although capital structure management is complex, there are certain principles that
22 commonly apply among utilities. In my experience, the financing practice sometimes

1 referred to as “maturity matching” is chief among those principles. That practice aligns
2 the average life of the securities in the capital structure with the average lives of the assets
3 being financed.³⁸ As noted by Brigham and Houston, “[t]his strategy minimizes the risk
4 that the firm will be unable to pay off its maturing obligations.”³⁹

5 The perpetual nature of common equity makes it an important component of the
6 capital structure. Because long-term debt generally has a duration shorter than the average
7 life of the rate base, common equity is needed to extend the capital structure’s duration to
8 more closely match that of the rate base. That is, owing to its perpetual life, common equity
9 extends the weighted average life of the capital structure, and mitigates financing risk.
10 Conversely, relying more heavily on debt increases the risk of refinancing maturing
11 obligations during less accommodating market environments.

12 It also is important to keep in mind that capital structures, and the financial strength
13 they support, are set not only to ensure capital access during normal markets, but to enable
14 access when markets are constrained. The reason is straightforward: The obligation to
15 serve is not contingent on capital market conditions. When markets are constrained, only
16 those utilities with sufficient financial strength are able to attract capital at reasonable
17 terms. That ability provides those utilities with critically important financing flexibility.

18 The requirement to access the capital markets in all market conditions can be
19 contrasted with the financial needs of entities without the legal obligation to serve. Because
20 of that obligation, the financial flexibility brought about by the access to both long-term
21 capital and short-term liquidity is critical for utilities’ financial integrity, and their ability

³⁸ This is not to say that an individual dollar may be traced from its source to its use.

³⁹ Brigham, Eugene F. and Houston, Joel F., Fundamentals of Financial Management, Concise 4th Ed., Thomson-Southwestern, 2004, at 574. Maturity matching was also noted by the Commission in Decision 20622-D01-2016, 2016 Generic Cost of Capital, October 7, 2016, pp. 571, at 124.

1 to continually attract capital. Non-regulated entities have options to choose whether,
2 where, and when to make investments; what services or products will be offered; whether
3 to invest in expansions; and whether to cease operations in a given location. That is, non-
4 regulated companies may adjust the timing and amount of their major capital expenditures
5 to align with economic cycles, and to defer decisions and investments to better match
6 market conditions. Regulated companies do not have those options. Ensuring the financial
7 strength to access capital because of the reduced spending flexibility therefore is critically
8 important to utilities, their investors, and their customers.

9 As noted above, an appropriate capital structure is important not only to ensure
10 long-term financial integrity, it also is critical to enabling access to capital during
11 constrained markets, or when near-term liquidity is needed to fund extraordinary
12 requirements. In that important respect, the capital structure, and the financial strength it
13 engenders, must support both normal circumstances and periods of market uncertainty.

14 **Q. HOW DOES THE CAPITAL STRUCTURE AFFECT THE COST OF EQUITY?**

15 A. The capital structure relates to a company's financial risk, which is the additional risk that
16 the subject company may not have adequate cash flows to meet its financial obligations, is
17 created by the introduction of senior capital, *i.e.*, debt and preferred stock, into the capital
18 structure. Intuitively, as the degree of financial leverage increases, the risk of financial
19 distress also increases. Even if two firms face the same business risks, the company with
20 meaningfully higher levels of debt in its capital structure is likely to have greater financial
21 risk and, therefore, higher costs of both debt and equity. As Brigham and Gapenski point
22 out, "...the use of debt, or financial leverage, concentrates the firm's business risk on its

1 stockholders.”⁴⁰ Because their risk is increased, equity investors require higher returns as
2 the use of debt increases. The capital structure therefore is an important consideration in
3 establishing a just and reasonable rate of return.

4 **Q. PLEASE DISCUSS YOUR ANALYSIS OF THE CAPITAL STRUCTURES OF**
5 **THE PROXY GROUP COMPANIES.**

6 A. I calculated the average operating utility capital structure for each of the proxy group
7 companies over the last eight calendar quarters. As shown in Schedule RBH-D8, the proxy
8 group had a mean equity ratio of 53.42 percent and a mean long-term debt ratio of 46.58
9 percent. The common equity ratios range from 46.31 percent to 60.40 percent. Based on
10 that review, it is apparent that the Company’s proposed capital structure in this case is
11 consistent with the capital structures of the proxy companies.

12 **Q. WHAT IS YOUR CONCLUSION REGARDING AN APPROPRIATE CAPITAL**
13 **STRUCTURE FOR LIBERTY-EMPIRE?**

14 A. Considering the range of equity ratios employed by the proxy group companies as well as
15 the average actual equity ratio of 53.42 percent, I believe Liberty-Empire’s current 51.91
16 percent equity ratio is reasonable and appropriate.

IX. CONCLUSIONS AND RECOMMENDATION

17 **Q. WHAT IS YOUR CONCLUSION REGARDING THE COMPANY’S COST OF**
18 **EQUITY?**

19 A. As discussed in Section V (and as shown in Schedules RBH-D1 through RBH-D10), I have
20 performed several analyses to estimate Liberty-Empire’s Cost of Equity. In light of those

⁴⁰ Eugene F. Brigham, Louis C. Gapenski, Financial Management, Theory and Practice, 1994, The Dryden Press, at 528.

1 results, and taking into consideration other relevant and observable market data, I believe
2 that an ROE in the range of 9.80 percent to 10.60 percent represents the range of returns
3 required by equity investors under current and expected market conditions. Within that
4 range, I believe an ROE of 9.95 percent represents a reasonable estimate of the Cost of
5 Equity for Liberty-Empire. As discussed earlier in my testimony, my recommendation
6 reflects analytical results based on a proxy group of vertically integrated electric utilities,
7 and takes into consideration capital market conditions.

8 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

9 A. Yes, it does.

10

1 **APPENDIX A –**

2 ***A. Proxy Group Selection***

3 **Q. HOW DID YOU SELECT THE COMPANIES INCLUDED IN YOUR PROXY**
4 **GROUP?**

5 A. I began with the universe of companies that Value Line classifies as Electric Utilities, and
6 applied the following screening criteria:

- 7 • Because certain of the models used in my analyses assume that earnings and
8 dividends grow over time, I excluded companies that do not consistently pay
9 quarterly cash dividends;
- 10 • To ensure that the growth rates used in my analyses are not biased by a single
11 analyst, all the companies in my proxy group have been covered by at least two
12 utility industry equity analysts;
- 13 • All the companies in my proxy group have investment grade senior unsecured
14 bond and/or corporate credit ratings from S&P;
- 15 • I excluded companies that were not vertically integrated, i.e., utilities that own
16 and operate regulated generation, transmission, and distribution assets;
- 17 • To incorporate companies that are primarily regulated, I included companies
18 with at least 60.00 percent of operating income derived from regulated
19 operations;
- 20 • To incorporate companies that are primarily regulated electric distribution
21 utilities, I included companies with at least 60.00 percent of operating income
22 derived from regulated electric operations; and

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

3 **Q. DID YOU INCLUDE ALGONQUIN POWER UTILITIES CORPORATION IN**
4 **YOUR PROXY GROUP?**

5 A. No. APUC is publicly traded (ticker: AQN), but not part of the Value Line universe of
6 Electric Utilities.⁴¹ Even if it were and met the screening criteria discussed earlier, to avoid
7 the circular logic that otherwise would occur, it has been my consistent practice to exclude
8 the subject company (or its parent) from the proxy group.

9 **Q. WHAT COMPANIES MET THOSE SCREENING CRITERIA?**

10 A. The criteria discussed above resulted in a proxy group of the following 20 companies:

⁴¹ Value Line includes APUC in the “Power” industry.

1

Table 5: Proxy Group Screening Results

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company, Inc.	AEP
Avangrid, Inc.	AGR
CMS Energy Corporation	CMS
DTE Energy Company	DTE
Duke Energy Corporation	DUK
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

2

1 **APPENDIX B**

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

3 **Q. PLEASE MORE FULLY DESCRIBE THE CONSTANT GROWTH DCF**
4 **APPROACH.**

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

11
$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_\infty}{(1+k)^\infty} \quad [4]$$

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

15
$$k = \frac{D_0 (1+g)}{P} + g \quad [5]$$

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

19 **Q. WHAT ASSUMPTIONS UNDERLIE THE CONSTANT GROWTH DCF MODEL?**

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

1 **Q. WHAT MARKET DATA DID YOU USE TO CALCULATE THE DIVIDEND**
2 **YIELD IN YOUR CONSTANT GROWTH DCF MODEL?**

3 A. The dividend yield is based on the proxy companies' current annualized dividend, and
4 average closing stock prices over the 30-, 90-, and 180-trading day periods as of June 28,
5 2019.

6 **Q. WHY DID YOU USE THREE AVERAGING PERIODS TO CALCULATE AN**
7 **AVERAGE STOCK PRICE?**

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

13 **Q. DID YOU MAKE ANY ADJUSTMENTS TO THE DIVIDEND YIELD TO**
14 **ACCOUNT FOR PERIODIC GROWTH IN DIVIDENDS?**

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

1 **Q. IS IT IMPORTANT TO SELECT APPROPRIATE MEASURES OF LONG-TERM**
2 **GROWTH IN APPLYING THE DCF MODEL?**

3 A. Yes. In its Constant Growth form, the DCF model (*i.e.*, as presented in Equation [5] above)
4 assumes a single growth estimate in perpetuity. Accordingly, in order to reduce the long-
5 term growth rate to a single measure, one must assume a fixed payout ratio, and the same
6 constant growth rate for earnings per share (“EPS”), dividends per share, and book value
7 per share. Since dividend growth can only be sustained by earnings growth, the model
8 should incorporate a variety of measures of long-term earnings growth. That can be
9 accomplished by averaging those measures of long-term growth that tend to be least
10 influenced by capital allocation decisions that companies may make in response to near-
11 term changes in the business environment. Because such decisions may directly affect
12 near-term dividend payout ratios, estimates of earnings growth are more indicative of long-
13 term investor expectations than are dividend growth estimates. For the purposes of the
14 Constant Growth DCF model, therefore, growth in EPS represents the appropriate measure
15 of long-term growth.

16 **Q. PLEASE SUMMARIZE THE FINDINGS OF ACADEMIC RESEARCH ON THE**
17 **APPROPRIATE MEASURE FOR ESTIMATING EQUITY RETURNS USING**
18 **THE DCF MODEL.**

19 A. The relationship between various growth rates and stock valuation metrics has been the
20 subject of much academic research.⁴² As noted over 40 years ago by Charles Phillips in

21 The Economics of Regulation:

22 For many years, it was thought that investors bought utility stocks
23 largely on the basis of dividends. More recently, however, studies

⁴² See, Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return*, Financial Management (Spring 1986).

1 indicate that the market is valuing utility stocks with reference to total
2 per share earnings, so that the earnings-price ratio has assumed
3 increased emphasis in rate cases.⁴³

4 Philips' conclusion continues to hold true. Subsequent academic research has clearly and
5 consistently indicated that measures of earnings and cash flow are strongly related to
6 returns, and that analysts' forecasts of growth are superior to other measures of growth in
7 predicting stock prices.⁴⁴ For example, Vander Weide and Carleton state that, "[our]
8 results ... are consistent with the hypothesis that investors use analysts' forecasts, rather
9 than historically oriented growth calculations, in making stock buy-and-sell decisions."⁴⁵
10 Other research specifically notes the importance of analysts' growth estimates in
11 determining the Cost of Equity, and in the valuation of equity securities. Dr. Robert Harris
12 noted that "a growing body of knowledge shows that analysts' earnings forecast are indeed
13 reflected in stock prices." Citing Cragg and Malkiel, Dr. Harris notes that those authors
14 "found that the evaluations of companies that analysts make are the sorts of ones on which
15 market valuation is based."⁴⁶ Similarly, Brigham, Shome and Vinson noted that "evidence
16 in the current literature indicates that (i) analysts' forecasts are superior to forecasts based
17 solely on time series data; and (ii) investors do rely on analysts' forecasts."⁴⁷

18 To that point, the research of Vander Weide and Carleton demonstrates that
19 earnings growth projections have a statistically significant relationship to stock valuation

⁴³ Charles F. Phillips, Jr., The Economics of Regulation, at 285 (Rev. ed. 1969).

⁴⁴ See, e.g., Andreas C. Christofi, Petros C. Christofi, Marcus Lori and Donald M. Moliver, *Evaluating Common Stocks Using Value Line's Projected Cash Flows and Implied Growth Rate*, Journal of Investing (Spring 1999); Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, 21 (Summer 1992); and Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

⁴⁵ James H. Vander Weide and Willard T. Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

⁴⁶ Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return*, Financial Management (Spring 1986).

⁴⁷ 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).

1 levels, while dividend growth rates do not.⁴⁸ Those findings suggest that investors form
2 their investment decisions based on expectations of growth in earnings, not dividends.
3 Consequently, earnings growth, not dividend growth, is the appropriate estimate for the
4 purpose of the Constant Growth DCF model.

5 **Q. PLEASE SUMMARIZE YOUR INPUTS TO THE CONSTANT GROWTH DCF**
6 **MODEL.**

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

- 9 • The average daily closing prices for the 30-, 90-, and 180-trading days ended
10 June 28, 2019, for the term P_0 ; and
- 11 • The annualized dividend per share as of June 28, 2019, for the term D_0 ;

12 I then calculated my DCF results using each of the following growth terms:

- 13 • The Zacks consensus long-term earnings growth estimates;
- 14 • The First Call consensus long-term earnings growth estimates; and
- 15 • The Value Line long-term earnings growth estimates.⁴⁹

16 **Q. HOW DID YOU CALCULATE THE DCF RESULTS?**

17 A. For each proxy company, I calculated the mean, mean high, and mean low results. For the
18 mean result, I combined the average of the EPS growth rate estimates reported by Value
19 Line, Zacks, and First Call with the subject company's dividend yield for each proxy
20 company and then calculated the average result for those estimates. I calculated the high
21 DCF result by combining the maximum EPS growth rate estimate as reported by Value

⁴⁸ See, Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

⁴⁹ See, Schedule RBH-D1.

1 Line, Zacks, and First Call with the subject company's dividend yield. The mean high
2 result simply is the average of those estimates. I used the same approach to calculate the
3 low DCF result, using instead the minimum of the Value Line, Zacks, and First Call
4 estimate for each proxy company, and calculating the average result for those estimates.

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

6 A. My Constant Growth DCF results are summarized in Table 6, below (*see also* Schedule
7 RBH-D1).

8 **Table 6: Constant Growth DCF Results⁵⁰**

	Mean Low	Mean	Mean High
30-Trading Day Average	8.09%	8.93%	9.82%
90-Trading Day Average	8.17%	9.01%	9.90%
180-Trading Day Average	8.31%	9.15%	10.04%

9
10 **Q. DID YOU UNDERTAKE ANY ADDITIONAL ANALYSES TO SUPPORT YOUR**
11 **RECOMMENDATION?**

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

14 **B. *Capital Asset Pricing Model***

15 **Q. PLEASE DESCRIBE THE GENERAL FORM OF THE CAPM.**

16 A. The CAPM is a risk premium method that estimates the Cost of Equity for a given security
17 as a function of a risk-free return plus a risk premium (to compensate investors for the non-
18 diversifiable or "systematic" risk of that security). The CAPM describes the relationship
19 between a security's investment risk and the market rate of return. The CAPM assumes

⁵⁰ See, Schedule RBH-D1.

1 that all other risk, *i.e.*, all non-market or unsystematic risk, can be eliminated through
2 diversification. The risk that cannot be eliminated through diversification is called market,
3 or systematic, risk. In addition, the CAPM presumes that investors require compensation
4 only for systematic risk that is the result of macroeconomic and other events that affect the
5 returns on all assets.

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

$$8 \quad K_e = r_f + \beta(r_m - r_f) \quad [6]$$

9 where:

10 K_e = the required market ROE for a security;

11 β = the Beta coefficient of that security;

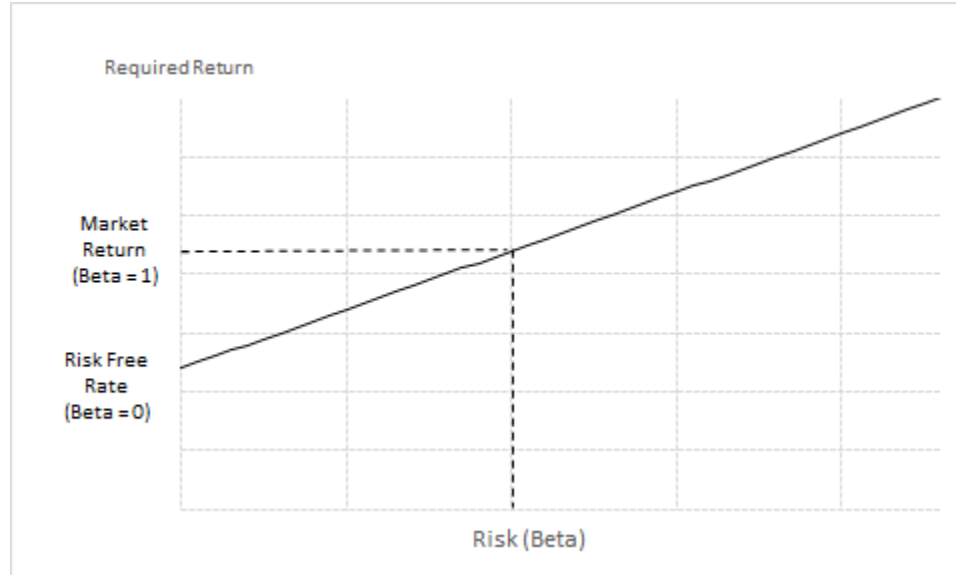
12 r_f = the risk-free rate of return; and

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

14 Equation [6] describes the Security Market Line (“SML”), or the CAPM risk-return
15 relationship, which is graphically depicted in Chart 11 below. The intercept is the risk-free
16 rate (r_f) which has a Beta coefficient of zero, the slope is the expected market risk premium
17 ($r_m - r_f$). By definition, r_m , the return on the market has a Beta coefficient of 1.00. CAPM
18 states that in well-behaving capital markets, the expected equity risk premium on a given
19 security is proportional to its Beta coefficient.

1

Chart 11: Security Market Line



2

3

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

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In Equation [6], the term $(r_m - r_f)$ represents the Market Risk Premium.⁵¹ According to the theory underlying the CAPM, since unsystematic risk can be diversified away by adding securities to investment portfolios, the market will not compensate investors for bearing that risk. Therefore, investors should be concerned only with systematic or non-diversifiable risk. Non-diversifiable risk is measured by the Beta coefficient, which is defined as:

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

⁵¹ The Market Risk Premium is defined as the incremental return of the market portfolio over the risk-free rate.

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

6 **Q. WHAT ASSUMPTIONS DID YOU INCLUDE IN YOUR CAPM ANALYSIS?**

7 A. It is important to select the term (or maturity) of the risk-free rate that best matches the life
8 of the underlying investment. Electric utilities typically are long-duration investments and,
9 as such, the 30-year Treasury yield is more suitable for the purpose of calculating the Cost
10 of Equity. As such, I used two different measures of the risk-free rate: (1) the current 30-
11 day average yield on 30-year Treasury bonds (*i.e.*, 2.63 percent)⁵²; and (2) the projected
12 30-year Treasury yield (*i.e.*, 2.70 percent).⁵³

13 **Q. WHY HAVE YOU RELIED UPON THE 30-YEAR TREASURY YIELD FOR**
14 **YOUR CAPM ANALYSIS?**

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

⁵² Source: Bloomberg Professional Services

⁵³ Source: *Blue Chip Financial Forecast*, Vol. 38, No. 7, July 1, 2019, at 2.

1 **Q. PLEASE DESCRIBE YOUR *EX-ANTE* APPROACH TO ESTIMATING THE**
2 **MARKET RISK PREMIUM.**

3 A. The approach is based on the market required return, less the current 30-year Treasury
4 yield. To estimate the market required return, I calculated the market capitalization
5 weighted average ROE based on the Constant Growth DCF model. To do so, I relied on
6 data from two sources: (1) Bloomberg; and (2) Value Line.⁵⁴ With respect to Bloomberg-
7 derived growth estimates, I calculated the expected dividend yield (using the same one-
8 half growth rate assumption described earlier), and combined that amount with the
9 projected earnings growth rate to arrive at the market capitalization weighted average DCF
10 result. I performed that calculation for each of the S&P 500 companies for which
11 Bloomberg provided consensus growth rates. I then subtracted the current 30-year
12 Treasury yield from that amount to arrive at the market DCF-derived *ex-ante* market risk
13 premium estimate. In the case of Value Line, I performed the same calculation, again using
14 all companies for which five-year earnings growth rates were available. The results of
15 those calculations are provided in Schedule RBH-D2.

16 As discussed above, each input to the CAPM should be forward-looking.
17 Witnesses in prior rate cases have relied on historical measures of the MRP.⁵⁵ While it
18 may be instructive to review historical MRPs to inform the reasonableness of an *ex-ante*
19 estimate (as I have done below), they do not include investors' expectations, and therefore
20 are not appropriate for use in the CAPM. As such, I believe my *ex-ante* approach is
21 reasonable.

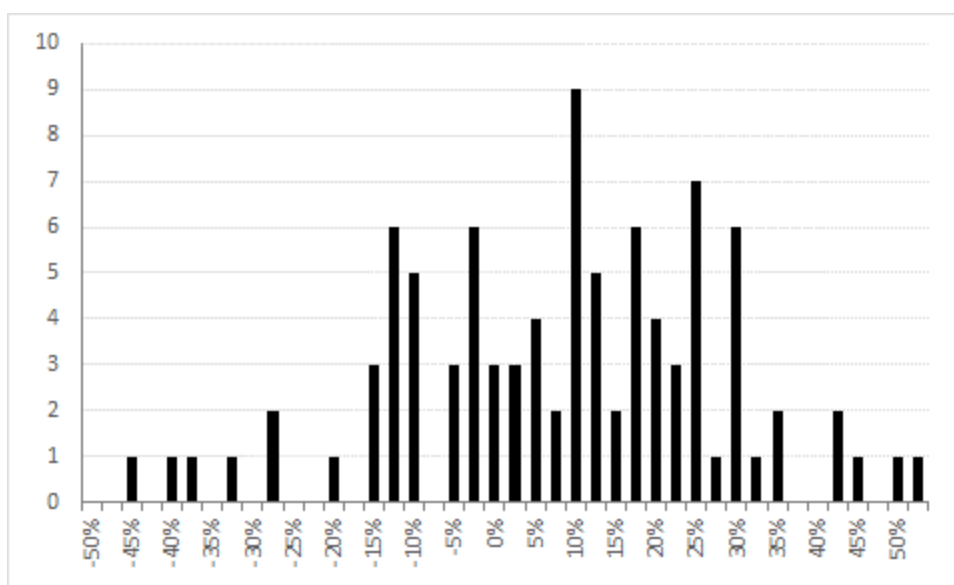
⁵⁴ Schedule RBH-D2.

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

1 **Q. HAVE YOU UNDERTAKEN ANY ANALYSES TO DETERMINE THE**
2 **REASONABLENESS OF THE *EX-ANTE* MRP CALCULATION?**

3 A. Yes, I have considered how often various ranges of MRPs have been observed over the
4 1926 to 2018 period. To perform that analysis, I gathered the annual Market Risk Premia
5 reported by Duff & Phelps and produced a histogram of those observations. The results of
6 that analysis, which are presented in Chart 12, demonstrate that MRPs in the range of
7 approximately 11.52 percent (the average of my MRP estimates) and higher occurred quite
8 often.

9 **Chart 12: Frequency Distribution of MRP, 1926 -2018⁵⁶**



10
11 **Q. HOW DID YOU APPLY YOUR EXPECTED MARKET RISK PREMIUM AND**
12 **RISK-FREE RATE ESTIMATES?**

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

⁵⁶ Source: Duff & Phelps, 2019 SBBI, Appendix A-1, A-7.

1 **Q. WHAT BETA COEFFICIENT DID YOU USE IN YOUR CAPM MODEL?**

2 A. As shown in Schedule RBH-D3, I considered the Beta coefficients reported by two sources:
3 Bloomberg and Value Line. While both of those services adjust their calculated (or “raw”)
4 Beta coefficients to reflect the tendency of the Beta coefficient to regress to the market
5 mean of 1.00, Value Line calculates the Beta coefficient over a five-year period, while
6 Bloomberg’s calculation is based on two years of data.

7 **Q. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSIS?**

8 A. As shown in Table 7 the CAPM analyses suggest an ROE range of 8.66 percent to 9.76
9 percent (*see* also Schedule RBH-D4).

10 **Table 7: Summary of CAPM Results⁵⁷**

	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium
<i>Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (2.63%)	8.71%	8.66%
Near Term Projected 30-Year Treasury (2.70%)	8.78%	8.73%
<i>Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (2.63%)	9.69%	9.63%
Near Term Projected 30-Year Treasury (2.70%)	9.76%	9.70%

11
12 **Q. DID YOU CONSIDER ANOTHER FORM OF THE CAPM IN YOUR ANALYSIS?**
13 A. Yes. I also included the Empirical CAPM approach, which calculates the product of the
14 adjusted Beta coefficient and the Market Risk Premium, and applies a weight of 75.00
15 percent to that result. The model then applies a 25.00 percent weight to the Market Risk
16 Premium, without any effect from the Beta coefficient.⁵⁸ The results of the two

⁵⁷ See, Schedule RBH-D4.

⁵⁸ See, e.g., Roger A. Morin, *New Regulatory Finance*, at 189-190 (2006).

1 calculations are summed, along with the risk-free rate, to produce the ECAPM result, as
2 noted in Equation [8] below:

$$3 \quad k_e = r_f + 0.75\beta(r_m - r_f) + 0.25(r_m - r_f) \quad [8]$$

4 where:

5 k_e = the required market ROE.

6 β = Adjusted Beta coefficient of an individual security.

7 r_f = the risk-free rate of return.

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

9 **Q. WHAT IS THE BENEFIT OF THE ECAPM APPROACH?**

10 A. The ECAPM addresses the tendency of the CAPM to under-estimate the Cost of Equity for
11 companies, such as regulated utilities, with low Beta coefficients. As discussed below, the
12 ECAPM recognizes the results of academic research indicating that the risk-return
13 relationship is different (in essence, flatter) than estimated by the CAPM, and that the
14 CAPM under-estimates the alpha, or the constant return term.⁵⁹

15 Numerous tests of the CAPM have measured the extent to which security returns
16 and Beta coefficients are related as predicted by the CAPM. The ECAPM method reflects
17 the finding that the actual SML described by the CAPM formula is not as steeply sloped
18 as the predicted SML.⁶⁰ Fama and French state that “[t]he returns on the low beta portfolios
19 are too high, and the returns on the high beta portfolios are too low.”⁶¹ Similarly, Morin
20 states:

⁵⁹ *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.”).

⁶⁰ *Ibid.*, at 175. The Security Market Line plots the CAPM estimate on the Y-axis, and Beta coefficients on the X-axis.

⁶¹ 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.

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

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

$$6 \quad K = R_F + x (R_M - R_F) + (1-x) \beta(R_M - R_F)$$

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

$$10 \quad K = R_F + 0.25(R_M - R_F) + 0.75 \beta(R_M - R_F)^{62}$$

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

19 Some have argued that the use of the ECAPM is inconsistent with the
20 use of adjusted betas, such as those supplied by Value Line and
21 Bloomberg. This is because the reason for using the ECAPM is to allow
22 for the tendency of betas to regress toward the mean value of 1.00 over
23 time, and, since Value Line betas are already adjusted for such trend, an
24 ECAPM analysis results in double-counting. This argument is
25 erroneous. Fundamentally, the ECAPM is not an adjustment, increase
26 or decrease, in beta. This is obvious from the fact that the expected
27 return on high beta securities is actually lower than that produced by the
28 CAPM estimate. The ECAPM is a formal recognition that the observed
29 risk-return tradeoff is flatter than predicted by the CAPM based on
30 myriad empirical evidence. The ECAPM and the use of adjusted betas
31 comprised two separate features of asset pricing. Even if a company's
32 beta is estimated accurately, the CAPM still understates the return for

⁶² Roger A. Morin, *New Regulatory Finance*, at 175, 190 (2006).

1 low-beta stocks. Even if the ECAPM is used, the return for low-beta
2 securities is understated if the betas are understated. Referring back to
3 Figure 6-1, the ECAPM is a return (vertical axis) adjustment and not a
4 beta (horizontal axis) adjustment. Both adjustments are necessary.⁶³

5 Therefore, it is appropriate to rely on adjusted Beta coefficients in both the CAPM and
6 ECAPM. As with the CAPM, my application of the ECAPM uses the Market DCF-derived
7 *ex-ante* Market Risk Premium estimate, the current yield on 30-year Treasury securities as
8 the risk-free rate, and two estimates of the Beta coefficient. The results of my ECAPM
9 analyses are shown on Schedule RBH-D4 and summarized in Table 8 below.

10 **Table 8: 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%)	10.25%	10.19%
Near Term Projected 30-Year Treasury (3.03%)	10.32%	10.26%
<i>Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (2.85%)	10.98%	10.92%
Near Term Projected 30-Year Treasury (3.03%)	11.05%	10.99%

11
12 **C. *Bond Yield Plus Risk Premium Approach***

13 **Q. PLEASE DESCRIBE THE BOND YIELD PLUS RISK PREMIUM APPROACH.**

14 A. This approach is based on the basic financial tenet of risk and return, namely, that equity
15 investors bear the residual risk associated with ownership and therefore require a premium
16 over the return they would have earned as a bondholder. That is, since returns to equity
17 holders are more risky than returns to bondholders, equity investors must be compensated

⁶³ *Ibid.*, at 191.

1 for bearing that additional risk. Risk premium approaches, therefore, estimate the Cost of
2 Equity as the sum of the equity risk premium and the yield on a particular class of bonds.
3 As noted in my discussion of the CAPM, since the equity risk premium is not directly
4 observable, it typically is estimated using a variety of approaches, some of which
5 incorporate *ex-ante*, or forward-looking estimates of the Cost of Equity, and others that
6 consider historical, or *ex-post*, estimates. An alternative approach is to use actual
7 authorized returns for electric utilities to estimate the Equity Risk Premium.

8 **Q. PLEASE EXPLAIN HOW YOU PERFORMED YOUR BOND YIELD PLUS RISK**
9 **PREMIUM ANALYSIS.**

10 A. As indicated above, I first defined the Risk Premium as the difference between the
11 authorized ROE and the then-prevailing level of long-term (*i.e.*, 30-year) Treasury yield. I
12 then gathered data for 1,594 electric utility rate proceedings between January 1, 1980 and
13 June 28, 2019. In addition to the authorized ROE, I also calculated the average period
14 between the filing of the case and the date of the final order (the “lag period”). To reflect
15 the prevailing level of interest rates during the pendency of the proceedings, I calculated
16 the average 30-year Treasury yield over the average lag period (approximately 200 days).
17 Because the data covers a number of economic cycles, the analysis also may be used to
18 assess the stability of the Equity Risk Premium. Prior research, for example, has shown
19 that the Equity Risk Premium is inversely related to the level of interest rates. That analysis
20 is particularly relevant given the relatively low, but increasing level of current Treasury
21 yields.

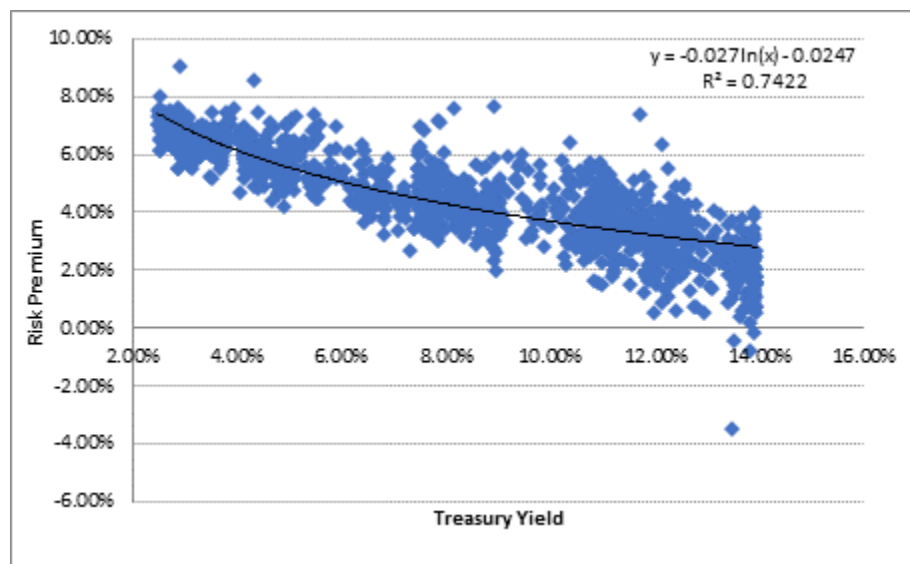
1 **Q. HOW DID YOU ANALYZE THE RELATIONSHIP BETWEEN INTEREST**
2 **RATES AND THE EQUITY RISK PREMIUM?**

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

10
$$RP = \alpha + \beta(LN(T_{30})) \quad [9]$$

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

14 **Chart 13: Equity Risk Premium⁶⁴**



15

⁶⁴ See, Schedule RBH-D5.

1 As Chart 13 illustrates, over time there has been a statistically significant, negative
2 relationship between the 30-year Treasury yield and the Equity Risk Premium.
3 Consequently, simply applying the long-term average Equity Risk Premium of 4.68 percent
4 would significantly understate the Cost of Equity and produce results well below any
5 reasonable estimate. Based on the regression coefficients in Chart 13, however, the implied
6 ROE is between 9.90 percent and 10.06 percent (*see* Table 9 and Schedule RBH-D5).

7 **Table 9: Summary of Bond Yield Plus Risk Premium Results⁶⁵**

	<i>Return on Equity</i>
Current 30-Year Treasury (2.63%)	9.90%
Near Term Projected 30-Year Treasury (2.70%)	9.90%
Long Term Projected 30-Year Treasury (3.70%)	10.06%

8
9 **Q. HAS THE COMMISSION CONSIDERED AUTHORIZED ROES IN OTHER**
10 **JURISDICTIONS IN SETTING THE AUTHORIZED ROE FOR A SUBJECT**
11 **COMPANY?**

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

15 The Commission mentions the average allowed return on equity
16 because Spire Missouri must compete with other utilities all over the
17 country for the same capital. Therefore, the average allowed return on
18 equity provides a reasonableness test for the recommendations offered
19 by the return on equity experts.⁶⁶

⁶⁵ See, Schedule RBH-D5.

⁶⁶ 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 The Bond Yield Plus Risk Premium approach relies on the same data over an
2 approximately 39-year period, while also considering the inverse relationship between
3 Treasury yields and the Equity Risk Premium. That is, the Bond Yield Plus Risk Premium
4 approach provides additional information beyond a simple average of authorized ROEs in
5 that it accounts for different market environments and considers the long-term relationship
6 between the inputs to the analysis.

7 **Q. HAVE YOU PROVIDED AN ALTERNATIVE BOND YIELD PLUS RISK**
8 **PREMIUM ANALYSIS TO ACCOUNT FOR HOW MARKET CONDITIONS**
9 **MAY AFFECT THE INVERSE RELATIONSHIP BETWEEN INTEREST RATES**
10 **AND THE EQUITY RISK PREMIUM?**

11 A. To address the prospect that the market conditions affect the relationship between interest
12 rates and the Equity Risk Premium, I first calculated the “credit spread”, or the difference
13 between the Moody’s Baa-Utility Bond yield and the 30-Year Treasury yield. To reflect
14 the risk of equity investments, I calculated the market volatility as measured by the VIX
15 since 1990, the first year for which data was available. I then performed a regression
16 analysis in which the Equity Risk Premium is the dependent variable, and Treasury yields,
17 credit spreads, and the VIX were the explanatory variables. There were three principal
18 findings from those analyses (*see* Schedule RBH-D9):

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

- 21 1. There is a high degree of correlation between credit spreads and the VIX,
22 indicating that the two move closely together. That is, the “relative risk” of the
23 two is not a meaningful factor.

- 1 2. Based on the current, and projected Treasury yields, the expected ROE falls in
2 the range of 9.70 percent to 9.85 percent. Those results overlap with my
3 recommended range, are consistent with the results of my updated Bond Yield
4 Plus Risk Premium analysis (*see* Schedule RBH-D7).
- 5 3. Lastly, please note that neither the VIX nor credit spreads added significantly
6 to the explanatory value of the regression equations.

7 **D. *Expected Earnings Approach***

8 **Q. PLEASE DESCRIBE THE EXPECTED EARNINGS APPROACH.**

9 A. The Expected Earnings approach supplements market-based models by highlighting
10 information that is important to investors, providing a direct measure of the book-based
11 return comparable-risk utilities are expected to earn. The standard revenue requirements
12 formula explicitly recognizes the validity of book value of equity by choosing to measure
13 capital structure based on book value rather than market value. Because it looks to the
14 earnings expected of comparable-risk companies, the approach is consistent with the *Hope*
15 and *Bluefield* “comparable return” standard. The Expected Earnings approach therefore
16 provides a simple and direct measure of equity investors’ expected opportunity cost on the
17 book value of equity, without the need for assumptions regarding investor behavior..

18 **Q. PLEASE EXPLAIN HOW THE EXPECTED EARNINGS ANALYSIS IS**
19 **CONDUCTED.**

20 A. The Expected Earnings analysis typically takes the actual earnings on book value of
21 investment for each of the members of the proxy group and compares those values to the
22 rate of return in question. Although the traditional approach uses data based on historical
23 accounting records, it is common to use forecasted data in conducting the analysis.

1 Projected returns on book investment are provided by various industry publications (*e.g.*,
2 Value Line), which I have used in my analysis.

3 I relied on Value Line's projected Return on Common Equity for the period 2022-
4 2024, and adjusted those projected returns to account for the fact that they reflect common
5 shares outstanding at the end of the period, rather than the average shares outstanding over
6 the course of the year.⁶⁷ The Expected Earnings analysis results in an average value of
7 10.35 percent and a median value of 10.53 percent (*see* Schedule RBH-D6).

⁶⁷ 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



Testimony Listing of:
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				
Duke Energy Indiana, Inc.	07/19	Duke Energy Indiana, Inc.	Cause No. 45253	Return on Equity
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



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

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Empire District Electric Company	12/18	Empire District Electric Company	Docket No. 19-EPDE-223-RTS	Alternative Ratemaking Mechanisms
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.	06/19	Northern Utilities, Inc.	Docket No. 2019-00049	Return on Equity
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



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Delmarva Power & Light Company	12/10	Delmarva Power & Light Company	Case No. 9249	Return on Equity
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



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
National Grid	08/09	Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid	DPU 09-38	Return on Equity – Solar Generation
Bay State Gas Company	04/09	Bay State Gas Company	DPU 09-30	Return on Equity
NSTAR Electric	09/04	NSTAR Electric	DTE 04-85	Divestiture of Power Purchase Agreement
NSTAR Electric	08/04	NSTAR Electric	DTE 04-78	Divestiture of Power Purchase Agreement
NSTAR Electric	07/04	NSTAR Electric	DTE 04-68	Divestiture of Power Purchase Agreement
NSTAR Electric	07/04	NSTAR Electric	DTE 04-61	Divestiture of Power Purchase Agreement
NSTAR Electric	06/04	NSTAR Electric	DTE 04-60	Divestiture of Power Purchase Agreement
Unitil Corporation	01/04	Fitchburg Gas and Electric	DTE 03-52	Integrated Resource Plan; Gas Demand Forecast
Bay State Gas Company	01/93	Bay State Gas Company	DPU 93-14	Divestiture of Shelf Registration
Bay State Gas Company	01/91	Bay State Gas Company	DPU 91-25	Divestiture of Shelf Registration
Michigan Public Service Commission				
Indiana Michigan Power Company	06/19	Indiana Michigan Power Company	Case No. U-20359	Return on Equity
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



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	08/13	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	Docket No. G-008/GR-13-316	Return on Equity
Xcel Energy, Inc.	11/12	Northern States Power Company	Docket No. E002/GR-12-961	Return on Equity
Otter Tail Power Corporation	04/10	Otter Tail Power Company	Docket No. E-017/GR-10-239	Return on Equity
Minnesota Power a division of ALLETE, Inc.	11/09	Minnesota Power	Docket No. E-015/GR-09-1151	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Minnesota Gas	11/08	CenterPoint Energy Minnesota Gas	Docket No. G-008/GR-08-1075	Return on Equity
Otter Tail Power Corporation	10/07	Otter Tail Power Company	Docket No. E-017/GR-07-1178	Return on Equity
Xcel Energy, Inc.	11/05	Northern States Power Company -Minnesota	Docket No. E-002/GR-05-1428	Return on Equity (electric)
Xcel Energy, Inc.	09/04	Northern States Power Company - Minnesota	Docket No. G-002/GR-04-1511	Return on Equity (gas)
Mississippi Public Service Commission				
CenterPoint Energy Resources, Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Mississippi Gas	07/09	CenterPoint Energy Mississippi Gas	Docket No. 09-UN-334	Return on Equity
Missouri Public Service Commission				
Union Electric Company d/b/a Ameren Missouri	07/19	Union Electric Company d/b/a Ameren Missouri	Case No. ER-2019-0335	Return on Equity
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)



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



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Unitil Energy Systems, Inc., EnergyNorth Natural Gas, Inc. d/b/a National Grid NH, Granite State Electric Company d/b/a National Grid, and Northern Utilities, Inc. – New Hampshire Division	08/08	Unitil Energy Systems, Inc., EnergyNorth Natural Gas, Inc. d/b/a National Grid NH, Granite State Electric Company d/b/a National Grid, and Northern Utilities, Inc. – New Hampshire Division	Docket No. DG 07-072	Carrying Charge Rate on Cash Working Capital
New Jersey Board of Public Utilities				
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)



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
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)
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



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Duke Energy Progress, LLC	06/17	Duke Energy Progress, LLC	Docket No. E-2, Sub 1142	Return on Equity
Public Service Company of North Carolina, Inc.	03/16	Public Service Company of North Carolina, Inc.	Docket No. G-5, Sub 565	Return on Equity
Dominion North Carolina Power	03/16	Dominion North Carolina Power	Docket No. E-22, Sub 532	Return on Equity
Duke Energy Carolinas, LLC	02/13	Duke Energy Carolinas, LLC	Docket No. E-7, Sub 1026	Return on Equity
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



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
The Narragansett Electric Company d/b/a National Grid	11/17	The Narragansett Electric Company d/b/a National Grid	Docket No. 4770	Return on Equity (electric & gas)
The Narragansett Electric Company d/b/a National Grid	04/12	The Narragansett Electric Company d/b/a National Grid	Docket No. 4323	Return on Equity (electric & gas)
National Grid RI – Gas	08/08	National Grid RI – Gas	Docket No. 3943	Revenue Decoupling and Return on Equity
South Carolina Public Service Commission				
Duke Energy Carolinas, LLC	11/18	Duke Energy Carolinas, LLC	Docket No. 2018-319-E	Return on Equity
Duke Energy Progress, LLC	11/18	Duke Energy Progress, LLC	Docket No. 2018-318-E	Return on Equity
South Carolina Electric & Gas	08/18	South Carolina Electric & Gas	Docket No. 2017-370-E	Return on Equity
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



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SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Southwestern Electric Power Company	12/16	Southwestern Electric Power Company	Docket No. 46449	Return on Equity (electric)
Sharyland Utilities, L.P.	04/16	Sharyland Utilities, L.P.	Docket No. 45414	Return on Equity
Southwestern Public Service Company	02/16	Southwestern Public Service Company	Docket No. 44524	Return on Equity (electric)
Wind Energy Transmission Texas, LLC	05/15	Wind Energy Transmission Texas, LLC	Docket No. 44746	Return on Equity
Cross Texas Transmission	12/14	Cross Texas Transmission	Docket No. 43950	Return on Equity
Southwestern Public Service Company	12/14	Southwestern Public Service Company	Docket No. 43695	Return on Equity (electric)
Sharyland Utilities, L.P.	05/13	Sharyland Utilities, L.P.	Docket No. 41474	Return on Equity
Wind Energy Texas Transmission, LLC	08/12	Wind Energy Texas Transmission, LLC	Docket No. 40606	Return on Equity
Southwestern Electric Power Company	07/12	Southwestern Electric Power Company	Docket No. 40443	Return on Equity
Oncor Electric Delivery Company, LLC	01/11	Oncor Electric Delivery Company, LLC	Docket No. 38929	Return on Equity
Texas-New Mexico Power Company	08/10	Texas-New Mexico Power Company	Docket No. 38480	Return on Equity (electric)
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



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

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	03/15	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10432	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	07/12	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10182	Return on Equity
Atmos Energy Corporation – West Texas Division	06/12	Atmos Energy Corporation – West Texas Division	GUD 10174	Return on Equity
Atmos Energy Corporation – Mid-Texas Division	06/12	Atmos Energy Corporation – Mid-Texas Division	GUD 10170	Return on Equity
CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	12/10	CenterPoint Energy Resources Corp. d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD 10038	Return on Equity
Atmos Pipeline – Texas	09/10	Atmos Pipeline - Texas	GUD 10000	Return on Equity
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				
Dominion Energy Utah	07/19	Dominion Energy Utah	Docket No. 19-057-02	Return on Equity
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



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

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Virginia Natural Gas, Inc.	03/17	Virginia Natural Gas, Inc.	Case No. PUE-2016-00143	Return on Equity
Virginia Electric and Power Company	10/16	Virginia Electric and Power Company	Case No. PUE-2016-00112; PUE-2016-00113; PUE-2016-00136	Return on Equity
Washington Gas Light Company	06/16	Washington Gas Light Company	Case No. PUE-2016-00001	Return on Equity
Virginia Electric and Power Company	06/16	Virginia Electric and Power Company	Case Nos. PUE-2016-00063; PUE-2016-00062; PUE-2016-00061; PUE-2016-00060; PUE-2016-00059	Return on Equity
Virginia Electric and Power Company	12/15	Virginia Electric and Power Company	Case Nos. PUE-2015-00058; PUE-2015-00059; PUE-2015-00060; PUE-2015-00061; PUE-2015-00075; PUE-2015-00089; PUE-2015-00102; PUE-2015-00104	Return on Equity
Virginia Electric and Power Company	03/15	Virginia Electric and Power Company	Case No. PUE-2015-00027	Return on Equity
Virginia Electric and Power Company	03/13	Virginia Electric and Power Company	Case No. PUE-2013-00020	Return on Equity
Virginia Natural Gas, Inc.	02/11	Virginia Natural Gas, Inc.	Case No. PUE-2010-00142	Capital Structure
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	\$83.46	2.82%	2.90%	7.20%	6.00%	5.00%	6.07%	7.89%	8.97%	10.12%
Alliant Energy Corporation	LNT	\$1.42	\$48.76	2.91%	2.99%	5.50%	4.80%	6.50%	5.60%	7.78%	8.59%	9.51%
Ameren Corporation	AEE	\$1.90	\$75.44	2.52%	2.59%	6.20%	4.90%	6.50%	5.87%	7.48%	8.46%	9.10%
American Electric Power Company, Inc.	AEP	\$2.68	\$88.52	3.03%	3.11%	5.60%	5.93%	4.00%	5.18%	7.09%	8.28%	9.05%
Avangrid, Inc.	AGR	\$1.76	\$50.88	3.46%	3.60%	7.60%	6.80%	10.00%	8.13%	10.38%	11.73%	13.63%
CMS Energy Corporation	CMS	\$1.53	\$57.53	2.66%	2.75%	6.40%	7.08%	7.00%	6.83%	9.14%	9.58%	9.83%
DTE Energy Company	DTE	\$3.78	\$128.30	2.95%	3.02%	6.00%	4.05%	5.50%	5.18%	7.06%	8.21%	9.03%
Duke Energy Corporation	DUK	\$3.71	\$87.46	4.24%	4.37%	4.80%	7.13%	6.00%	5.98%	9.14%	10.35%	11.52%
Evergy, Inc	EVRG	\$1.90	\$59.74	3.18%	3.28%	6.60%	6.15%	NMF	6.38%	9.43%	9.66%	9.89%
Hawaiian Electric Industries, Inc.	HE	\$1.28	\$42.67	3.00%	3.08%	5.60%	6.10%	4.50%	5.40%	7.57%	8.48%	9.19%
NextEra Energy, Inc.	NEE	\$5.00	\$203.25	2.46%	2.57%	8.00%	8.23%	10.00%	8.74%	10.56%	11.31%	12.58%
NorthWestern Corporation	NWE	\$2.30	\$72.34	3.18%	3.23%	3.00%	3.51%	3.00%	3.17%	6.23%	6.40%	6.75%
OGE Energy Corp.	OGE	\$1.46	\$42.80	3.41%	3.50%	4.60%	3.80%	6.50%	4.97%	7.28%	8.46%	10.02%
Otter Tail Corporation	OTTR	\$1.40	\$51.45	2.72%	2.82%	7.00%	9.00%	5.00%	7.00%	7.79%	9.82%	11.84%
Pinnacle West Capital Corporation	PNW	\$2.95	\$96.28	3.06%	3.14%	5.00%	5.01%	5.00%	5.00%	8.14%	8.14%	8.15%
PNM Resources, Inc.	PNM	\$1.16	\$49.34	2.35%	2.43%	5.20%	6.15%	8.50%	6.62%	7.61%	9.05%	10.95%
Portland General Electric Company	POR	\$1.54	\$54.19	2.84%	2.91%	4.90%	5.20%	4.50%	4.87%	7.41%	7.78%	8.12%
Southern Company	SO	\$2.48	\$54.74	4.53%	4.61%	4.50%	2.17%	3.50%	3.39%	6.75%	8.00%	9.13%
WEC Energy Group, Inc.	WEC	\$2.36	\$82.81	2.85%	2.93%	5.90%	5.82%	6.00%	5.91%	8.75%	8.84%	8.94%
Xcel Energy Inc.	XEL	\$1.62	\$59.22	2.74%	2.81%	5.60%	6.24%	5.50%	5.78%	8.31%	8.59%	9.06%
Proxy Group Mean				3.05%	3.13%	5.76%	5.70%	5.92%	5.80%	8.09%	8.93%	9.82%
Proxy Group Median				2.93%	3.01%	5.60%	5.97%	5.50%	5.82%	7.79%	8.59%	9.35%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals indicated number of trading day average as of June 28, 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	\$82.32	2.85%	2.94%	7.20%	6.00%	5.00%	6.07%	7.93%	9.01%	10.16%
Alliant Energy Corporation	LNT	\$1.42	\$47.34	3.00%	3.08%	5.50%	4.80%	6.50%	5.60%	7.87%	8.68%	9.60%
Ameren Corporation	AEE	\$1.90	\$73.30	2.59%	2.67%	6.20%	4.90%	6.50%	5.87%	7.56%	8.53%	9.18%
American Electric Power Company, Inc.	AEP	\$2.68	\$85.14	3.15%	3.23%	5.60%	5.93%	4.00%	5.18%	7.21%	8.41%	9.17%
Avangrid, Inc.	AGR	\$1.76	\$50.31	3.50%	3.64%	7.60%	6.80%	10.00%	8.13%	10.42%	11.77%	13.67%
CMS Energy Corporation	CMS	\$1.53	\$55.72	2.75%	2.84%	6.40%	7.08%	7.00%	6.83%	9.23%	9.67%	9.92%
DTE Energy Company	DTE	\$3.78	\$125.36	3.02%	3.09%	6.00%	4.05%	5.50%	5.18%	7.13%	8.28%	9.11%
Duke Energy Corporation	DUK	\$3.71	\$88.86	4.18%	4.30%	4.80%	7.13%	6.00%	5.98%	9.08%	10.28%	11.45%
Evergy, Inc	EVRG	\$1.90	\$57.95	3.28%	3.38%	6.60%	6.15%	NMF	6.38%	9.53%	9.76%	9.99%
Hawaiian Electric Industries, Inc.	HE	\$1.28	\$41.23	3.10%	3.19%	5.60%	6.10%	4.50%	5.40%	7.67%	8.59%	9.30%
NextEra Energy, Inc.	NEE	\$5.00	\$194.77	2.57%	2.68%	8.00%	8.23%	10.00%	8.74%	10.67%	11.42%	12.70%
NorthWestern Corporation	NWE	\$2.30	\$70.60	3.26%	3.31%	3.00%	3.51%	3.00%	3.17%	6.31%	6.48%	6.83%
OGE Energy Corp.	OGE	\$1.46	\$42.43	3.44%	3.53%	4.60%	3.80%	6.50%	4.97%	7.31%	8.49%	10.05%
Otter Tail Corporation	OTTR	\$1.40	\$50.66	2.76%	2.86%	7.00%	9.00%	5.00%	7.00%	7.83%	9.86%	11.89%
Pinnacle West Capital Corporation	PNW	\$2.95	\$95.03	3.10%	3.18%	5.00%	5.01%	5.00%	5.00%	8.18%	8.19%	8.19%
PNM Resources, Inc.	PNM	\$1.16	\$47.17	2.46%	2.54%	5.20%	6.15%	8.50%	6.62%	7.72%	9.16%	11.06%
Portland General Electric Company	POR	\$1.54	\$52.41	2.94%	3.01%	4.90%	5.20%	4.50%	4.87%	7.50%	7.88%	8.22%
Southern Company	SO	\$2.48	\$52.76	4.70%	4.78%	4.50%	2.17%	3.50%	3.39%	6.92%	8.17%	9.31%
WEC Energy Group, Inc.	WEC	\$2.36	\$79.37	2.97%	3.06%	5.90%	5.82%	6.00%	5.91%	8.88%	8.97%	9.06%
Xcel Energy Inc.	XEL	\$1.62	\$56.98	2.84%	2.93%	5.60%	6.24%	5.50%	5.78%	8.42%	8.71%	9.17%
Proxy Group Mean				3.12%	3.21%	5.76%	5.70%	5.92%	5.80%	8.17%	9.01%	9.90%
Proxy Group Median				3.01%	3.09%	5.60%	5.97%	5.50%	5.82%	7.85%	8.69%	9.45%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals indicated number of trading day average as of June 28, 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
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	\$79.64	2.95%	3.04%	7.20%	6.00%	5.00%	6.07%	8.02%	9.11%	10.26%
Alliant Energy Corporation	LNT	\$1.42	\$45.56	3.12%	3.20%	5.50%	4.80%	6.50%	5.60%	7.99%	8.80%	9.72%
Ameren Corporation	AEE	\$1.90	\$70.25	2.70%	2.78%	6.20%	4.90%	6.50%	5.87%	7.67%	8.65%	9.29%
American Electric Power Company, Inc.	AEP	\$2.68	\$80.60	3.33%	3.41%	5.60%	5.93%	4.00%	5.18%	7.39%	8.59%	9.35%
Avangrid, Inc.	AGR	\$1.76	\$49.85	3.53%	3.67%	7.60%	6.80%	10.00%	8.13%	10.45%	11.81%	13.71%
CMS Energy Corporation	CMS	\$1.53	\$53.26	2.87%	2.97%	6.40%	7.08%	7.00%	6.83%	9.36%	9.80%	10.05%
DTE Energy Company	DTE	\$3.78	\$120.21	3.14%	3.23%	6.00%	4.05%	5.50%	5.18%	7.26%	8.41%	9.24%
Duke Energy Corporation	DUK	\$3.71	\$87.47	4.24%	4.37%	4.80%	7.13%	6.00%	5.98%	9.14%	10.34%	11.52%
Evergy, Inc	EVRG	\$1.90	\$57.81	3.29%	3.39%	6.60%	6.15%	NMF	6.38%	9.54%	9.77%	10.00%
Hawaiian Electric Industries, Inc.	HE	\$1.28	\$39.14	3.27%	3.36%	5.60%	6.10%	4.50%	5.40%	7.84%	8.76%	9.47%
NextEra Energy, Inc.	NEE	\$5.00	\$185.45	2.70%	2.81%	8.00%	8.23%	10.00%	8.74%	10.80%	11.56%	12.83%
NorthWestern Corporation	NWE	\$2.30	\$66.24	3.47%	3.53%	3.00%	3.51%	3.00%	3.17%	6.52%	6.70%	7.04%
OGE Energy Corp.	OGE	\$1.46	\$40.85	3.57%	3.66%	4.60%	3.80%	6.50%	4.97%	7.44%	8.63%	10.19%
Otter Tail Corporation	OTTR	\$1.40	\$49.32	2.84%	2.94%	7.00%	9.00%	5.00%	7.00%	7.91%	9.94%	11.97%
Pinnacle West Capital Corporation	PNW	\$2.95	\$90.95	3.24%	3.32%	5.00%	5.01%	5.00%	5.00%	8.32%	8.33%	8.33%
PNM Resources, Inc.	PNM	\$1.16	\$44.33	2.62%	2.70%	5.20%	6.15%	8.50%	6.62%	7.88%	9.32%	11.23%
Portland General Electric Company	POR	\$1.54	\$49.67	3.10%	3.18%	4.90%	5.20%	4.50%	4.87%	7.67%	8.04%	8.38%
Southern Company	SO	\$2.48	\$49.57	5.00%	5.09%	4.50%	2.17%	3.50%	3.39%	7.23%	8.48%	9.62%
WEC Energy Group, Inc.	WEC	\$2.36	\$75.15	3.14%	3.23%	5.90%	5.82%	6.00%	5.91%	9.05%	9.14%	9.23%
Xcel Energy Inc.	XEL	\$1.62	\$53.84	3.01%	3.10%	5.60%	6.24%	5.50%	5.78%	8.59%	8.88%	9.34%
Proxy Group Mean				3.26%	3.35%	5.76%	5.70%	5.92%	5.80%	8.31%	9.15%	10.04%
Proxy Group Median				3.14%	3.23%	5.60%	5.97%	5.50%	5.82%	7.95%	8.84%	9.67%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals indicated number of trading day average as of June 28, 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])

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
14.88%	2.63%	12.25%

[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
Agilent Technologies Inc	A	23,595.22	0.09%	0.88%	11.00%	11.93%	0.0109%
American Airlines Group Inc	AAL	14,506.07	0.06%	1.48%	14.51%	16.09%	0.0090%
Advance Auto Parts Inc	AAP	11,057.52	0.04%	0.16%	15.68%	15.85%	0.0068%
Apple Inc	AAPL	910,644.76	3.53%	1.51%	9.35%	10.93%	0.3855%
AbbVie Inc	ABBV	107,506.72	0.42%	5.84%	5.12%	11.11%	0.0463%
AmerisourceBergen Corp	ABC	17,919.69	0.07%	1.88%	4.99%	6.92%	0.0048%
ABIOMED Inc	ABMD	11,795.82	0.05%	0.00%	29.00%	29.00%	0.0133%
Abbott Laboratories	ABT	148,367.64	0.57%	1.46%	9.70%	11.23%	0.0645%
Accenture PLC	ACN	124,342.68	0.48%	1.60%	10.43%	12.12%	0.0584%
Adobe Inc	ADBE	143,034.53	0.55%	0.00%	17.16%	17.16%	0.0951%
Analog Devices Inc	ADI	41,734.95	0.16%	1.84%	12.10%	14.06%	0.0227%
Archer-Daniels-Midland Co	ADM	22,854.74	0.09%	3.47%	0.60%	4.08%	0.0036%
Automatic Data Processing Inc	ADP	71,956.28	0.28%	1.74%	13.50%	15.36%	0.0428%
Alliance Data Systems Corp	ADS	7,340.50	0.03%	1.76%	12.47%	14.34%	0.0041%
Autodesk Inc	ADSK	35,776.03	0.14%	0.00%	64.51%	64.51%	0.0894%
Ameren Corp	AEE	18,433.42	0.07%	2.59%	5.81%	8.48%	0.0061%
American Electric Power Co Inc	AEP	43,427.26	0.17%	3.08%	5.98%	9.15%	0.0154%
AES Corp/VA	AES	11,124.07	0.04%	3.29%	8.33%	11.76%	0.0051%
Aflac Inc	AFL	40,859.16	0.16%	1.99%	3.43%	5.45%	0.0086%
Allergan PLC	AGN	54,883.87	0.21%	1.77%	5.37%	7.18%	0.0153%
American International Group Inc	AIG	46,340.47	0.18%	2.44%	11.00%	13.57%	0.0244%
Apartment Investment & Management Co	AIV	7,459.28	0.03%	4.15%	8.76%	13.09%	0.0038%
Assurant Inc	AIZ	6,539.68	N/A	N/A	N/A	N/A	N/A
Arthur J Gallagher & Co	AJG	16,226.22	0.06%	1.96%	9.63%	11.68%	0.0073%
Akamai Technologies Inc	AKAM	13,150.73	0.05%	0.00%	13.70%	13.70%	0.0070%
Albemarle Corp	ALB	7,460.41	0.03%	2.01%	13.41%	15.56%	0.0045%
Align Technology Inc	ALGN	21,897.34	0.08%	0.00%	22.22%	22.22%	0.0188%
Alaska Air Group Inc	ALK	7,886.49	0.03%	2.15%	13.20%	15.49%	0.0047%
Allstate Corp/The	ALL	33,873.63	0.13%	1.90%	9.00%	10.99%	0.0144%
Allegion PLC	ALLE	10,385.70	0.04%	0.96%	10.49%	11.50%	0.0046%
Alexion Pharmaceuticals Inc	ALXN	29,370.59	0.11%	0.00%	17.50%	17.50%	0.0199%
Applied Materials Inc	AMAT	42,040.47	0.16%	1.85%	9.37%	11.30%	0.0184%
Amcor PLC	AMCR	18,654.36	0.07%	4.05%	5.38%	9.54%	0.0069%
Advanced Micro Devices Inc	AMD	32,848.21	0.13%	0.00%	18.30%	18.30%	0.0233%
AMETEK Inc	AME	20,697.07	0.08%	0.63%	9.13%	9.79%	0.0078%
Affiliated Managers Group Inc	AMG	4,717.51	0.02%	1.39%	9.10%	10.55%	0.0019%
Amgen Inc	AMGN	112,398.95	0.44%	3.10%	5.70%	8.89%	0.0387%
Ameriprise Financial Inc	AMP	19,437.55	0.08%	2.62%	3.20%	5.86%	0.0044%
American Tower Corp	AMT	90,371.69	0.35%	1.83%	20.09%	22.11%	0.0774%
Amazon.com Inc	AMZN	932,294.22	3.61%	0.00%	44.95%	44.95%	1.6232%
Arista Networks Inc	ANET	19,892.74	0.08%	0.00%	21.79%	21.79%	0.0168%
ANSYS Inc	ANSS	17,190.22	0.07%	0.00%	10.60%	10.60%	0.0071%
Anthem Inc	ANTM	72,583.20	0.28%	1.14%	14.85%	16.07%	0.0452%
Aon PLC	ACN	46,415.87	0.18%	0.89%	10.00%	10.94%	0.0197%
AO Smith Corp	AOS	7,884.99	0.03%	1.93%	8.00%	10.01%	0.0031%
Apache Corp	APA	10,890.42	0.04%	3.45%	-17.05%	-13.89%	-0.0059%
Anadarko Petroleum Corp	APC	35,429.50	0.14%	1.51%	16.91%	18.54%	0.0254%
Air Products & Chemicals Inc	APD	49,831.41	0.19%	2.02%	12.48%	14.63%	0.0282%
Amphenol Corp	APH	28,660.37	0.11%	0.93%	9.98%	10.96%	0.0122%
Aptiv PLC	APTIV	20,840.83	0.08%	1.12%	8.89%	10.06%	0.0081%
Alexandria Real Estate Equities Inc	ARE	16,644.25	0.06%	2.79%	4.76%	7.61%	0.0049%
Arconic Inc	ARNC	11,583.60	0.04%	0.41%	9.90%	10.33%	0.0046%
Atmos Energy Corp	ATO	12,349.28	0.05%	1.99%	7.00%	9.06%	0.0043%
Activision Blizzard Inc	ATVI	36,155.52	0.14%	0.78%	10.45%	11.27%	0.0158%
AvalonBay Communities Inc	AVB	28,323.96	0.11%	2.98%	5.42%	8.47%	0.0093%
Broadcom Inc	AVGO	114,589.46	0.44%	3.68%	13.31%	17.23%	0.0765%
Avery Dennison Corp	AVY	9,765.23	0.04%	1.81%	5.55%	7.41%	0.0028%
American Water Works Co Inc	AWK	20,940.18	0.08%	1.70%	9.00%	10.77%	0.0087%
American Express Co	AXP	103,082.34	0.40%	1.31%	12.40%	13.78%	0.0550%
AutoZone Inc	AZO	26,968.58	0.10%	0.00%	12.58%	12.58%	0.0131%
Boeing Co/The	BA	204,803.10	0.79%	2.22%	12.26%	14.61%	0.1159%
Bank of America Corp	BAC	275,737.89	1.07%	2.35%	10.10%	12.57%	0.1343%
Baxter International Inc	BAX	41,860.51	0.16%	0.97%	11.90%	12.93%	0.0210%
BB&T Corp	BBT	37,632.72	0.15%	3.45%	8.48%	12.08%	0.0176%
Best Buy Co Inc	BBY	18,620.92	0.07%	2.87%	6.89%	9.85%	0.0071%
Becton Dickinson and Co	BDX	67,975.14	0.26%	1.28%	11.35%	12.71%	0.0335%
Franklin Resources Inc	BEN	17,663.08	0.07%	2.98%	10.00%	13.13%	0.0090%
Brown-Forman Corp	BF/B	26,396.71	0.10%	1.25%	8.41%	9.71%	0.0099%
Baker Hughes a GE Co	BHGE	25,543.81	0.10%	2.67%	41.88%	45.10%	0.0446%
Biogen Inc	BIIB	45,345.85	0.18%	0.00%	5.87%	5.87%	0.0103%
Bank of New York Mellon Corp/The	BK	42,274.39	0.16%	2.70%	6.77%	9.56%	0.0156%
Booking Holdings Inc	BKNG	81,158.72	0.31%	0.00%	16.99%	16.99%	0.0534%
BlackRock Inc	BLK	72,970.71	0.28%	2.84%	9.00%	11.96%	0.0338%
Ball Corp	BLL	23,428.83	0.09%	0.71%	6.77%	7.51%	0.0068%
Bristol-Myers Squibb Co	BMJ	74,180.11	0.29%	3.63%	8.63%	12.42%	0.0357%
Broadridge Financial Solutions Inc	BR	14,828.62	N/A	1.51%	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
Berkshire Hathaway Inc	BRK/B	521,871.81	2.02%	0.00%	60.60%	60.60%	1.2250%
Boston Scientific Corp	BSX	59,770.24	0.23%	0.00%	8.88%	8.88%	0.0206%
BorgWarner Inc	BWA	8,701.05	0.03%	1.62%	4.37%	6.02%	0.0020%
Boston Properties Inc	BXP	19,933.06	0.08%	3.00%	4.91%	7.97%	0.0062%
Citigroup Inc	C	161,942.11	0.63%	2.80%	12.72%	15.69%	0.0984%
Conagra Brands Inc	CAG	12,886.46	0.05%	3.21%	7.17%	10.49%	0.0052%
Cardinal Health Inc	CAH	14,038.62	0.05%	4.16%	14.02%	18.47%	0.0100%
Caterpillar Inc	CAT	77,940.92	0.30%	2.65%	13.23%	16.05%	0.0485%
Chubb Ltd	CB	67,439.78	0.26%	2.06%	10.60%	12.77%	0.0333%
Cboe Global Markets Inc	CBOE	11,568.53	0.04%	1.26%	5.35%	6.64%	0.0030%
CBRE Group Inc	CBRE	17,251.04	0.07%	0.00%	7.30%	7.30%	0.0049%
CBS Corp	CBS	18,706.34	0.07%	1.53%	20.13%	21.81%	0.0158%
Crown Castle International Corp	CCI	54,191.87	0.21%	3.52%	16.33%	20.14%	0.0423%
Carnival Corp	CCL	31,749.45	0.12%	4.34%	8.47%	12.99%	0.0160%
Cadence Design Systems Inc	CDNS	19,899.73	0.08%	0.00%	10.03%	10.03%	0.0077%
Celanese Corp	CE	13,648.83	0.05%	2.24%	7.95%	10.28%	0.0054%
Celgene Corp	CELG	65,194.19	0.25%	0.00%	18.42%	18.42%	0.0465%
Cerner Corp	CERN	23,853.33	0.09%	0.33%	13.65%	14.00%	0.0129%
CF Industries Holdings Inc	CF	10,326.54	0.04%	2.58%	20.27%	23.11%	0.0092%
Citizens Financial Group Inc	CFG	16,207.45	0.06%	3.77%	8.04%	11.96%	0.0075%
Church & Dwight Co Inc	CHD	17,988.77	0.07%	1.26%	7.96%	9.27%	0.0065%
CH Robinson Worldwide Inc	CHRW	11,519.05	0.04%	2.40%	8.93%	11.44%	0.0051%
Charter Communications Inc	CHTR	98,485.91	0.38%	0.00%	44.24%	44.24%	0.1688%
Cigna Corp	CI	59,817.37	0.23%	0.06%	12.74%	12.81%	0.0297%
Cincinnati Financial Corp	CINF	16,922.04	N/A	2.31%	N/A	N/A	N/A
Colgate-Palmolive Co	CL	61,529.76	0.24%	2.40%	4.08%	6.53%	0.0156%
Clorox Co/The	CLX	19,501.29	0.08%	2.52%	4.43%	7.00%	0.0053%
Comerica Inc	CMA	11,198.24	0.04%	3.79%	12.60%	16.62%	0.0072%
Comcast Corp	CMCSA	191,900.08	0.74%	1.97%	11.42%	13.50%	0.1003%
CME Group Inc	CME	69,486.54	0.27%	2.74%	7.90%	10.75%	0.0289%
Chipotle Mexican Grill Inc	CMG	20,310.71	0.08%	0.00%	20.24%	20.24%	0.0159%
Cummins Inc	CMI	26,984.73	0.10%	2.72%	7.15%	9.96%	0.0104%
CMS Energy Corp	CMS	16,432.19	0.06%	2.64%	7.32%	10.06%	0.0064%
Centene Corp	CNC	21,676.96	0.08%	0.00%	13.90%	13.90%	0.0117%
CenterPoint Energy Inc	CNP	14,356.24	0.06%	4.07%	5.92%	10.11%	0.0056%
Capital One Financial Corp	COF	42,611.19	0.17%	1.79%	5.20%	7.04%	0.0116%
Cabot Oil & Gas Corp	COG	9,718.65	0.04%	1.46%	35.02%	36.74%	0.0138%
Cooper Cos Inc/The	COO	16,671.93	0.06%	0.02%	6.18%	6.20%	0.0040%
ConocoPhillips	COP	68,940.73	0.27%	2.04%	5.00%	7.09%	0.0189%
Costco Wholesale Corp	COST	116,218.69	0.45%	0.91%	10.51%	11.47%	0.0516%
Coty Inc	COTY	10,068.73	0.04%	3.69%	8.05%	11.89%	0.0046%
Campbell Soup Co	CPB	12,067.08	0.05%	3.51%	2.74%	6.31%	0.0029%
Capri Holdings Ltd	CPRI	5,234.57	0.02%	0.00%	7.32%	7.32%	0.0015%
Copart Inc	CPRT	17,123.90	0.07%	0.00%	20.00%	20.00%	0.0133%
salesforce.com Inc	CRM	117,557.86	0.46%	0.00%	23.01%	23.01%	0.1048%
Cisco Systems Inc	CSCO	234,284.52	0.91%	2.49%	6.96%	9.54%	0.0866%
CSX Corp	CSX	62,604.99	0.24%	1.21%	11.15%	12.42%	0.0301%
Cintas Corp	CTAS	24,813.62	0.10%	0.86%	12.02%	12.94%	0.0124%
CenturyLink Inc	CTL	12,822.09	0.05%	8.50%	1.78%	10.36%	0.0051%
Cognizant Technology Solutions Corp	CTSH	36,086.85	0.14%	1.27%	11.05%	12.39%	0.0173%
Corteva Inc	CTVA	22,142.46	N/A	1.65%	N/A	N/A	N/A
Citrix Systems Inc	CTXS	12,920.31	0.05%	1.43%	37.42%	39.11%	0.0196%
CVS Health Corp	CVS	70,787.53	0.27%	3.65%	6.04%	9.81%	0.0269%
Chevron Corp	CVX	237,025.56	0.92%	3.81%	1.32%	5.15%	0.0473%
Concho Resources Inc	CXO	20,697.29	0.08%	0.40%	11.70%	12.13%	0.0097%
Dominion Energy Inc	D	62,038.81	0.24%	4.73%	4.89%	9.74%	0.0234%
Delta Air Lines Inc	DAL	37,151.18	0.14%	2.60%	12.72%	15.48%	0.0223%
DuPont de Nemours Inc	DD	56,212.11	0.22%	1.36%	65.59%	67.39%	0.1467%
Deere & Co	DE	52,529.33	0.20%	1.83%	9.45%	11.37%	0.0231%
Discover Financial Services	DFS	25,118.12	0.10%	2.12%	7.79%	10.00%	0.0097%
Dollar General Corp	DG	34,914.91	0.14%	0.95%	10.60%	11.59%	0.0157%
Quest Diagnostics Inc	DGX	13,680.73	0.05%	2.06%	7.13%	9.27%	0.0049%
DR Horton Inc	DHI	16,095.12	0.06%	1.39%	12.47%	13.95%	0.0087%
Danaher Corp	DHR	102,321.24	0.40%	0.47%	8.44%	8.93%	0.0354%
Walt Disney Co/The	DIS	251,309.96	0.97%	1.27%	2.08%	3.36%	0.0327%
Discovery Inc	DISCA	21,138.39	0.08%	0.00%	13.35%	13.35%	0.0109%
DISH Network Corp	DISH	18,020.72	0.07%	0.00%	-21.96%	-21.96%	-0.0153%
Digital Realty Trust Inc	DLR	25,649.53	0.10%	3.66%	7.30%	11.09%	0.0110%
Dollar Tree Inc	DLTR	25,513.61	0.10%	0.00%	8.52%	8.52%	0.0084%
Dover Corp	DOV	14,562.01	0.06%	1.99%	11.50%	13.60%	0.0077%
Dow Inc	DOW	36,924.52	0.14%	5.68%	7.15%	13.03%	0.0186%
Duke Realty Corp	DRE	11,361.52	0.04%	2.76%	4.62%	7.45%	0.0033%
Darden Restaurants Inc	DRI	14,969.84	0.06%	2.90%	10.75%	13.80%	0.0080%
DTE Energy Co	DTE	23,429.21	0.09%	2.98%	7.43%	10.52%	0.0095%
Duke Energy Corp	DUK	64,238.72	0.25%	4.29%	5.03%	9.43%	0.0235%
DaVita Inc	DVA	9,361.66	0.04%	0.00%	18.83%	18.83%	0.0068%
Devon Energy Corp	DVN	11,841.50	0.05%	1.19%	5.34%	6.56%	0.0030%
DXC Technology Co	DXC	14,813.14	0.06%	1.48%	5.28%	6.80%	0.0039%
Electronic Arts Inc	EA	30,009.29	0.12%	0.00%	13.20%	13.20%	0.0153%
eBay Inc	EBAY	34,425.33	0.13%	1.42%	10.66%	12.15%	0.0162%
Ecolab Inc	ECL	56,910.53	0.22%	0.94%	13.13%	14.13%	0.0312%
Consolidated Edison Inc	ED	29,188.83	0.11%	3.37%	4.18%	7.62%	0.0086%
Equifax Inc	EFX	16,340.24	0.06%	1.16%	11.63%	12.86%	0.0081%
Edison International	EIX	21,962.93	0.09%	3.64%	5.52%	9.26%	0.0079%
Estee Lauder Cos Inc/The	EL	66,262.49	0.26%	0.90%	11.84%	12.80%	0.0328%
Eastman Chemical Co	EMN	10,801.71	0.04%	3.15%	6.50%	9.75%	0.0041%
Emerson Electric Co	EMR	41,034.57	0.16%	2.94%	8.84%	11.91%	0.0189%
EOG Resources Inc	EOG	54,063.04	0.21%	1.02%	7.79%	8.85%	0.0185%

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
Equinix Inc	EQIX	42,395.68	0.16%	3.56%	1.95%	18.37%	20.50%
Equity Residential	EQR	28,131.07	0.11%	2.98%	6.73%	9.80%	0.0107%
Eversource Energy	ES	24,503.90	0.09%	2.83%	5.94%	8.85%	0.0084%
Essex Property Trust Inc	ESS	19,184.63	0.07%	2.67%	5.26%	8.00%	0.0059%
E*TRADE Financial Corp	ETFC	10,912.31	0.04%	1.10%	12.73%	13.90%	0.0059%
Eaton Corp PLC	ETN	35,235.77	0.14%	3.42%	8.95%	12.52%	0.0171%
Entergy Corp	ETR	19,549.13	0.08%	3.58%	0.38%	3.96%	0.0030%
Evergy Inc	EVRG	14,682.52	0.06%	3.19%	8.85%	12.18%	0.0069%
Edwards Lifesciences Corp	EW	38,518.59	0.15%	0.00%	14.75%	14.75%	0.0220%
Exelon Corp	EXC	46,499.51	0.18%	3.02%	2.35%	5.41%	0.0097%
Expeditors International of Washington I	EXPD	13,047.61	0.05%	1.27%	9.80%	11.14%	0.0056%
Expedia Group Inc	EXPE	19,808.50	0.08%	0.95%	21.84%	22.90%	0.0176%
Extra Space Storage Inc	EXR	13,522.83	0.05%	3.34%	5.43%	8.86%	0.0046%
Ford Motor Co	F	40,813.05	0.16%	5.87%	-4.77%	0.96%	0.0015%
Diamondback Energy Inc	FANG	17,944.33	0.07%	0.61%	14.55%	15.20%	0.0106%
Fastenal Co	FAST	18,662.00	0.07%	2.94%	7.55%	10.60%	0.0077%
Facebook Inc	FB	550,957.10	2.13%	0.00%	19.22%	19.22%	0.4101%
Fortune Brands Home & Security Inc	FBHS	7,991.39	0.03%	1.53%	9.47%	11.07%	0.0034%
Freepoint-McMoRan Inc	FCX	16,841.87	0.07%	1.72%	-7.91%	-6.26%	-0.0041%
FedEx Corp	FDX	42,783.75	0.17%	1.63%	14.40%	16.15%	0.0268%
FirstEnergy Corp	FE	22,751.05	0.09%	3.56%	3.80%	7.42%	0.0065%
F5 Networks Inc	FFIV	8,693.42	0.03%	0.00%	9.95%	9.95%	0.0034%
Fidelity National Information Services I	FIS	39,728.44	0.15%	1.14%	10.92%	12.12%	0.0186%
Fiserv Inc	FISV	35,774.82	0.14%	0.00%	13.00%	13.00%	0.0180%
Fifth Third Bancorp	FITB	20,489.37	0.08%	3.45%	3.95%	7.47%	0.0059%
Foot Locker Inc	FL	4,598.67	0.02%	3.61%	6.55%	10.28%	0.0018%
FLIR Systems Inc	FLIR	7,326.28	N/A	1.26%	N/A	N/A	N/A
Flowserve Corp	FLS	6,909.68	0.03%	1.48%	19.15%	20.77%	0.0056%
FleetCor Technologies Inc	FLT	24,207.42	0.09%	0.00%	19.67%	19.67%	0.0184%
FMC Corp	FMC	10,921.01	0.04%	1.82%	9.33%	11.23%	0.0048%
Fox Corp	FOXA	22,706.76	0.09%	0.22%	1.67%	1.89%	0.0017%
First Republic Bank/CA	FRC	16,273.49	0.06%	0.77%	12.14%	12.95%	0.0082%
Federal Realty Investment Trust	FRT	9,644.90	0.04%	3.23%	5.61%	8.94%	0.0033%
TechnipFMC PLC	FTI	11,622.76	0.05%	2.00%	17.52%	19.69%	0.0089%
Fortinet Inc	FTNT	13,119.54	0.05%	0.00%	24.04%	24.04%	0.0122%
Fortive Corp	FTV	27,317.30	0.11%	0.38%	11.52%	11.92%	0.0126%
General Dynamics Corp	GD	52,522.71	0.20%	2.20%	8.76%	11.05%	0.0225%
General Electric Co	GE	91,568.48	0.35%	0.38%	8.87%	9.26%	0.0329%
Gilead Sciences Inc	GILD	85,906.23	0.33%	3.71%	8.62%	12.49%	0.0416%
General Mills Inc	GIS	31,614.92	0.12%	3.79%	5.53%	9.42%	0.0115%
Corning Inc	GLW	26,077.38	0.10%	2.43%	11.04%	13.60%	0.0137%
General Motors Co	GM	54,650.68	0.21%	3.99%	11.70%	15.92%	0.0337%
Alphabet Inc	GOOGL	751,025.00	2.91%	0.00%	12.45%	12.45%	0.3622%
Genuine Parts Co	GPC	15,129.30	0.06%	2.95%	5.84%	8.87%	0.0052%
Global Payments Inc	GPN	25,090.58	0.10%	0.02%	16.73%	16.76%	0.0163%
Gap Inc/The	GPS	6,792.15	0.03%	5.44%	5.24%	10.82%	0.0028%
Garmin Ltd	GRMN	15,149.80	0.06%	2.91%	7.00%	10.01%	0.0059%
Goldman Sachs Group Inc/The	GS	77,838.06	0.30%	1.67%	1.14%	2.81%	0.0085%
WW Grainger Inc	GWV	14,871.63	0.06%	2.09%	12.47%	14.68%	0.0085%
Halliburton Co	HAL	19,874.27	0.08%	3.20%	8.84%	12.19%	0.0094%
Hasbro Inc	HAS	13,300.26	0.05%	2.57%	9.47%	12.16%	0.0063%
Huntington Bancshares Inc/OH	HBAN	14,461.80	0.06%	4.23%	8.24%	12.64%	0.0071%
Hanesbrands Inc	HBI	6,224.53	0.02%	3.62%	3.25%	6.93%	0.0017%
HCA Healthcare Inc	HCA	46,269.69	0.18%	0.91%	11.62%	12.59%	0.0226%
HCP Inc	HCP	15,285.90	0.06%	4.63%	2.68%	7.37%	0.0044%
Home Depot Inc/The	HD	228,826.50	0.89%	2.60%	9.37%	12.10%	0.1072%
Hess Corp	HES	19,289.60	0.07%	1.66%	-23.46%	-21.99%	-0.0164%
HollyFrontier Corp	HFC	7,903.02	0.03%	2.89%	1.05%	3.96%	0.0012%
Hartford Financial Services Group Inc/Th	HIG	20,142.73	0.08%	2.23%	9.50%	11.83%	0.0092%
Huntington Ingalls Industries Inc	HII	9,338.45	0.04%	1.53%	40.00%	41.84%	0.0151%
Hilton Worldwide Holdings Inc	HLT	28,448.46	0.11%	0.62%	13.10%	13.76%	0.0152%
Harley-Davidson Inc	HOG	5,699.58	0.02%	4.31%	8.60%	13.10%	0.0029%
Hologic Inc	HOLX	12,871.77	0.05%	0.00%	8.39%	8.39%	0.0042%
Honeywell International Inc	HON	127,056.48	0.49%	1.90%	8.18%	10.16%	0.0500%
Helmerich & Payne Inc	HP	5,538.57	0.02%	5.63%	25.62%	31.97%	0.0069%
Hewlett Packard Enterprise Co	HPE	20,020.27	0.08%	3.06%	5.79%	8.94%	0.0069%
HP Inc	HPQ	31,315.81	0.12%	3.05%	3.11%	6.21%	0.0075%
H&R Block Inc	HRB	5,917.44	0.02%	3.47%	10.00%	13.64%	0.0031%
Hormel Foods Corp	HRL	21,642.06	0.08%	2.07%	5.70%	7.83%	0.0066%
Harris Corp	HRS	22,341.09	N/A	1.45%	N/A	N/A	N/A
Henry Schein Inc	HSIC	10,420.31	0.04%	0.00%	3.25%	3.25%	0.0013%
Host Hotels & Resorts Inc	HST	13,499.08	0.05%	4.62%	15.05%	20.01%	0.0105%
Hershey Co/The	HSY	27,985.40	0.11%	2.24%	7.07%	9.38%	0.0102%
Humana Inc	HUM	35,824.79	0.14%	0.79%	13.47%	14.31%	0.0199%
International Business Machines Corp	IBM	122,268.05	0.47%	4.69%	1.92%	6.65%	0.0315%
Intercontinental Exchange Inc	ICE	48,458.56	0.19%	1.27%	9.35%	10.68%	0.0200%
IDEXX Laboratories Inc	IDXX	23,680.12	0.09%	0.00%	18.30%	18.30%	0.0168%
International Flavors & Fragrances Inc	IFF	15,479.82	0.06%	1.97%	7.80%	9.85%	0.0059%
Illumina Inc	ILMN	54,118.05	0.21%	0.00%	27.09%	27.09%	0.0568%
Incyte Corp	INCY	18,218.70	0.07%	0.00%	43.10%	43.10%	0.0304%
IHS Markit Ltd	INFO	25,555.18	0.10%	0.00%	11.15%	11.15%	0.0110%
Intel Corp	INTC	214,313.99	0.83%	2.60%	8.88%	11.59%	0.0962%
Intuit Inc	INTU	67,748.07	0.26%	0.71%	16.16%	16.93%	0.0444%
International Paper Co	IP	17,212.51	0.07%	4.65%	4.77%	9.53%	0.0064%
Interpublic Group of Cos Inc/The	IPG	8,743.21	0.03%	4.16%	11.75%	16.15%	0.0055%
IPG Photonics Corp	IPGP	8,197.44	0.03%	0.00%	10.49%	10.49%	0.0033%
IQVIA Holdings Inc	IQV	31,736.03	0.12%	0.00%	15.96%	15.96%	0.0196%
Ingersoll-Rand PLC	IR	30,547.51	0.12%	1.71%	9.16%	10.94%	0.0130%

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
Iron Mountain Inc	IRM	8,979.36	0.03%	7.84%	7.32%	15.45%	0.0054%
Intuitive Surgical Inc	ISRG	60,558.59	0.23%	0.00%	12.30%	12.30%	0.0289%
Gartner Inc	IT	14,499.15	0.06%	0.00%	14.00%	14.00%	0.0079%
Illinois Tool Works Inc	ITW	49,130.14	0.19%	2.66%	7.27%	10.02%	0.0191%
Invesco Ltd	IVZ	9,750.71	0.04%	6.06%	7.12%	13.40%	0.0051%
JB Hunt Transport Services Inc	JBHT	9,939.82	0.04%	1.12%	13.13%	14.32%	0.0055%
Johnson Controls International plc	JCI	37,099.22	0.14%	2.59%	7.80%	10.49%	0.0151%
Jacobs Engineering Group Inc	JEC	11,528.42	0.04%	0.69%	13.10%	13.84%	0.0062%
Jefferies Financial Group Inc	JEF	5,589.91	N/A	2.60%	N/A	N/A	N/A
Jack Henry & Associates Inc	JKHY	10,339.11	0.04%	1.14%	9.03%	10.22%	0.0041%
Johnson & Johnson	JNJ	369,796.20	1.43%	2.70%	5.98%	8.76%	0.1255%
Juniper Networks Inc	JNPR	9,169.39	0.04%	2.84%	7.92%	10.87%	0.0039%
JPMorgan Chase & Co	JPM	362,676.18	1.40%	3.04%	6.80%	9.95%	0.1398%
Nordstrom Inc	JWN	4,927.21	0.02%	4.78%	5.97%	10.89%	0.0021%
Kellogg Co	K	18,240.42	0.07%	4.25%	2.29%	6.58%	0.0046%
KeyCorp	KEY	17,897.12	0.07%	4.01%	6.26%	10.40%	0.0072%
Keysight Technologies Inc	KEYS	16,899.63	N/A	0.00%	N/A	N/A	N/A
Kraft Heinz Co/The	KHC	37,866.90	0.15%	5.15%	0.45%	5.62%	0.0082%
Kimco Realty Corp	KIM	7,799.31	0.03%	6.13%	3.83%	10.08%	0.0030%
KLA-Tencor Corp	KLAC	19,103.51	0.07%	2.52%	9.44%	12.07%	0.0089%
Kimberly-Clark Corp	KMB	45,821.04	0.18%	3.08%	4.17%	7.31%	0.0130%
Kinder Morgan Inc/DE	KMI	47,266.94	0.18%	4.76%	13.90%	18.99%	0.0348%
CarMax Inc	KMX	14,361.26	0.06%	0.00%	10.61%	10.61%	0.0059%
Coca-Cola Co/The	KO	217,230.58	0.84%	3.11%	6.30%	9.51%	0.0800%
Kroger Co/The	KR	17,341.92	0.07%	2.69%	6.00%	8.77%	0.0059%
Kohl's Corp	KSS	7,704.33	0.03%	5.64%	5.55%	11.34%	0.0034%
Kansas City Southern	KSU	12,253.51	0.05%	1.24%	12.50%	13.82%	0.0066%
Loews Corp	L	16,668.23	N/A	0.46%	N/A	N/A	N/A
L Brands Inc	LB	7,212.49	0.03%	4.65%	9.38%	14.25%	0.0040%
Leggett & Platt Inc	LEG	5,036.78	0.02%	4.07%	10.00%	14.27%	0.0028%
Lennar Corp	LEN	15,285.48	0.06%	0.33%	10.09%	10.43%	0.0062%
Laboratory Corp of America Holdings	LH	17,061.46	0.07%	0.00%	7.28%	7.28%	0.0048%
Linde PLC	LIN	108,987.46	0.42%	1.75%	15.05%	16.93%	0.0715%
LKQ Corp	LKQ	8,355.38	0.03%	0.00%	13.30%	13.30%	0.0043%
L3 Technologies Inc	LLL	19,479.04	0.08%	1.42%	5.00%	6.45%	0.0049%
Eli Lilly & Co	LLY	107,558.35	0.42%	2.24%	9.32%	11.66%	0.0486%
Lockheed Martin Corp	LMT	102,714.16	0.40%	2.46%	7.82%	10.38%	0.0413%
Lincoln National Corp	LNC	13,041.02	0.05%	2.34%	9.00%	11.45%	0.0058%
Alliant Energy Corp	LNT	11,651.32	0.05%	2.90%	5.56%	8.54%	0.0039%
Lowe's Cos Inc	LOW	79,004.10	0.31%	2.09%	14.66%	16.90%	0.0517%
Lam Research Corp	LRCX	28,162.20	0.11%	2.22%	9.10%	11.42%	0.0125%
Southwest Airlines Co	LUV	27,576.83	0.11%	1.39%	5.01%	6.44%	0.0069%
Lamb Weston Holdings Inc	LW	9,267.91	0.04%	1.24%	11.83%	13.14%	0.0047%
LyondellBasell Industries NV	LYB	31,896.28	0.12%	4.94%	6.20%	11.29%	0.0139%
Macy's Inc	M	6,628.38	0.03%	7.03%	1.83%	8.92%	0.0023%
Mastercard Inc	MA	270,196.19	1.05%	0.47%	17.28%	17.78%	0.1861%
Mid-America Apartment Communities Inc	MAA	13,424.12	0.05%	3.28%	7.00%	10.39%	0.0054%
Macerich Co/The	MAC	4,730.08	0.02%	8.98%	0.13%	9.12%	0.0017%
Marriott International Inc/MD	MAR	46,715.00	0.18%	1.29%	8.26%	9.61%	0.0174%
Masco Corp	MAS	11,518.86	0.04%	1.21%	11.10%	12.37%	0.0055%
McDonald's Corp	MCD	158,560.12	0.61%	2.26%	8.69%	11.05%	0.0679%
Microchip Technology Inc	MCHP	20,628.23	0.08%	1.69%	10.87%	12.65%	0.0101%
McKesson Corp	MCK	25,047.22	0.10%	1.20%	4.01%	5.23%	0.0051%
Moody's Corp	MCO	37,030.78	0.14%	0.98%	7.05%	8.06%	0.0116%
Mondelez International Inc	MDLZ	77,639.49	0.30%	1.98%	6.94%	8.99%	0.0270%
Medtronic PLC	MDT	130,615.25	0.51%	2.17%	7.34%	9.59%	0.0485%
MetLife Inc	MET	47,204.85	0.18%	3.50%	8.46%	12.11%	0.0221%
MGM Resorts International	MGM	15,347.84	0.06%	1.82%	12.35%	14.28%	0.0085%
Mohawk Industries Inc	MHK	10,679.96	0.04%	0.00%	6.82%	6.82%	0.0028%
McCormick & Co Inc/MD	MKC	20,542.51	0.08%	1.44%	6.20%	7.68%	0.0061%
Martin Marietta Materials Inc	MLM	14,377.15	0.06%	0.86%	13.90%	14.81%	0.0083%
Marsh & McLennan Cos Inc	MMC	51,006.58	0.20%	1.75%	11.73%	13.58%	0.0268%
3M Co	MMM	99,917.81	0.39%	3.27%	7.10%	10.49%	0.0406%
Monster Beverage Corp	MNST	34,696.47	0.13%	0.00%	14.45%	14.45%	0.0194%
Altria Group Inc	MO	88,588.06	0.34%	6.96%	6.53%	13.71%	0.0471%
Mosaic Co/The	MOS	9,656.28	0.04%	0.76%	14.00%	14.82%	0.0055%
Marathon Petroleum Corp	MPC	37,027.09	0.14%	3.83%	9.33%	13.34%	0.0191%
Merck & Co Inc	MRK	215,883.93	0.84%	2.62%	11.17%	13.94%	0.1166%
Marathon Oil Corp	MRO	11,622.59	0.05%	1.41%	-2.65%	-1.26%	-0.0006%
Morgan Stanley	MS	73,698.70	0.29%	2.97%	9.49%	12.60%	0.0360%
MSCI Inc	MSCI	20,220.42	0.08%	0.97%	10.00%	11.02%	0.0086%
Microsoft Corp	MSFT	1,026,511.09	3.98%	1.35%	11.85%	13.28%	0.5282%
Motorola Solutions Inc	MSI	27,474.82	0.11%	1.38%	9.00%	10.44%	0.0111%
M&T Bank Corp	MTB	23,235.33	0.09%	2.52%	7.28%	9.89%	0.0089%
Mettler-Toledo International Inc	MTD	20,834.76	0.08%	0.00%	12.97%	12.97%	0.0105%
Micron Technology Inc	MU	42,595.77	0.16%	0.00%	-1.90%	-1.90%	-0.0031%
Maxim Integrated Products Inc	MXIM	16,296.47	0.06%	3.08%	8.97%	12.18%	0.0077%
Mylan NV	MYL	9,814.51	0.04%	0.00%	4.71%	4.71%	0.0018%
Noble Energy Inc	NBL	10,712.39	0.04%	2.02%	6.31%	8.39%	0.0035%
Norwegian Cruise Line Holdings Ltd	NCLH	11,551.66	0.04%	0.36%	10.18%	10.56%	0.0047%
Nasdaq Inc	NDAQ	15,935.80	0.06%	1.92%	7.09%	9.08%	0.0056%
NextEra Energy Inc	NEE	98,114.69	0.38%	2.43%	5.31%	7.81%	0.0297%
Newmont Goldcorp Corp	NEM	31,531.30	0.12%	1.46%	5.10%	6.60%	0.0081%
Netflix Inc	NFLX	160,599.63	0.62%	0.00%	43.23%	43.23%	0.2689%
NISource Inc	NI	10,745.37	0.04%	2.79%	5.51%	8.37%	0.0035%
NIKE Inc	NKE	131,948.38	0.51%	1.10%	17.48%	18.67%	0.0954%
Nektar Therapeutics	NKTR	6,201.84	0.02%	0.00%	-2.40%	-2.40%	-0.0006%
Nielsen Holdings PLC	NLSN	8,034.16	0.03%	6.33%	12.00%	18.71%	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
Northrop Grumman Corp	NOC	54,863.97	0.21%	1.62%	5.95%	7.62%	0.0162%
National Oilwell Varco Inc	NOV	8,579.01	0.03%	0.90%	24.00%	25.01%	0.0083%
NRG Energy Inc	NRG	9,382.42	0.04%	0.34%	32.57%	32.97%	0.0120%
Norfolk Southern Corp	NSC	53,015.21	0.21%	1.73%	13.37%	15.21%	0.0312%
NetApp Inc	NTAP	14,809.37	0.06%	3.11%	9.73%	12.99%	0.0075%
Northern Trust Corp	NTRS	19,590.89	0.08%	2.74%	8.75%	11.62%	0.0088%
Nucor Corp	NUE	16,793.69	0.07%	2.91%	0.65%	3.57%	0.0023%
NVIDIA Corp	NVDA	100,016.07	0.39%	0.39%	9.76%	10.17%	0.0394%
Newell Brands Inc	NWL	6,524.20	0.03%	5.96%	-4.75%	1.07%	0.0003%
News Corp	NWSA	7,987.66	0.03%	1.53%	-10.26%	-8.81%	-0.0027%
Realty Income Corp	O	21,826.72	0.08%	3.95%	4.69%	8.73%	0.0074%
ONEOK Inc	OKE	28,401.76	0.11%	5.16%	11.96%	17.42%	0.0192%
Omnicom Group Inc	OMC	18,042.74	0.07%	3.17%	4.06%	7.29%	0.0051%
Oracle Corp	ORCL	190,041.61	0.74%	1.60%	7.63%	9.30%	0.0684%
O'Reilly Automotive Inc	ORLY	28,909.16	0.11%	0.00%	15.22%	15.22%	0.0170%
Occidental Petroleum Corp	OXY	37,610.46	0.15%	6.21%	12.23%	18.82%	0.0274%
Paychex Inc	PAYX	29,566.80	0.11%	3.01%	7.15%	10.27%	0.0118%
People's United Financial Inc	PBCT	6,684.49	0.03%	4.22%	2.00%	6.26%	0.0016%
PACCAR Inc	PCAR	24,826.13	0.10%	4.67%	5.00%	9.79%	0.0094%
Public Service Enterprise Group Inc	PEG	29,729.42	0.12%	3.20%	6.14%	9.43%	0.0109%
PepsiCo Inc	PEP	183,820.87	0.71%	2.89%	5.45%	8.42%	0.0600%
Pfizer Inc	PFE	240,856.13	0.93%	3.31%	5.09%	8.48%	0.0791%
Principal Financial Group Inc	PFJ	16,133.51	0.06%	3.81%	4.60%	8.50%	0.0053%
Procter & Gamble Co/The	PG	275,038.36	1.07%	2.65%	7.15%	9.89%	0.1054%
Progressive Corp/The	PGR	46,687.11	0.18%	3.45%	6.23%	9.79%	0.0177%
Parker-Hannifin Corp	PH	21,809.80	0.08%	1.82%	9.02%	10.91%	0.0092%
PulteGroup Inc	PHM	8,763.08	0.03%	1.39%	8.15%	9.59%	0.0033%
Packaging Corp of America	PKG	9,007.17	0.03%	3.35%	8.33%	11.83%	0.0041%
PerkinElmer Inc	PKI	10,685.89	0.04%	0.29%	16.09%	16.41%	0.0068%
Prologis Inc	PLD	50,519.09	0.20%	2.64%	7.04%	9.77%	0.0191%
Philip Morris International Inc	PM	122,177.19	0.47%	5.99%	6.78%	12.97%	0.0614%
PNC Financial Services Group Inc/The	PNC	61,973.40	0.24%	3.00%	7.48%	10.59%	0.0254%
Pentair PLC	PNR	6,394.38	0.02%	1.99%	7.24%	9.30%	0.0023%
Pinnacle West Capital Corp	PNW	10,564.18	0.04%	3.20%	5.29%	8.58%	0.0035%
PPG Industries Inc	PPG	27,550.56	0.11%	1.68%	8.62%	10.36%	0.0111%
PPL Corp	PPL	22,369.71	N/A	5.35%	N/A	N/A	N/A
Perrigo Co PLC	PRGO	6,475.91	0.03%	1.59%	-0.80%	0.78%	0.0002%
Prudential Financial Inc	PRU	41,006.00	0.16%	3.99%	9.00%	13.16%	0.0209%
Public Storage	PSA	41,565.89	0.16%	3.39%	5.23%	8.71%	0.0140%
Phillips 66	PSX	42,425.18	0.16%	3.69%	2.05%	5.78%	0.0095%
PVH Corp	PVH	7,089.78	0.03%	0.16%	8.12%	8.29%	0.0023%
Quanta Services Inc	PWR	5,444.66	0.02%	0.42%	22.00%	22.47%	0.0047%
Pioneer Natural Resources Co	PXD	25,913.68	0.10%	0.51%	24.90%	25.48%	0.0256%
PayPal Holdings Inc	PYPL	134,482.83	0.52%	0.00%	19.06%	19.06%	0.0993%
QUALCOMM Inc	QCOM	92,478.22	0.36%	3.32%	15.42%	18.99%	0.0680%
Qorvo Inc	QRVO	7,863.51	0.03%	0.25%	9.62%	9.88%	0.0030%
Royal Caribbean Cruises Ltd	RCL	25,411.42	0.10%	2.35%	11.71%	14.19%	0.0140%
Everest Re Group Ltd	RE	10,068.54	0.04%	2.28%	10.00%	12.39%	0.0048%
Regency Centers Corp	REG	11,191.26	0.04%	3.47%	4.32%	7.86%	0.0034%
Regeneron Pharmaceuticals Inc	REGN	34,316.94	0.13%	0.00%	11.92%	11.92%	0.0158%
Regions Financial Corp	RF	15,137.58	0.06%	4.05%	9.22%	13.46%	0.0079%
Robert Half International Inc	RHI	6,758.97	0.03%	2.19%	9.05%	11.34%	0.0030%
Red Hat Inc	RHT	33,438.74	0.13%	0.00%	20.30%	20.30%	0.0263%
Raymond James Financial Inc	RJF	11,905.09	0.05%	1.57%	11.10%	12.75%	0.0059%
Ralph Lauren Corp	RL	8,778.26	0.03%	2.42%	7.84%	10.35%	0.0035%
ResMed Inc	RMD	17,498.20	0.07%	1.33%	11.05%	12.45%	0.0084%
Rockwell Automation Inc	ROK	19,391.25	0.08%	2.34%	11.48%	13.96%	0.0105%
Rollins Inc	ROL	11,748.49	0.05%	1.55%	10.00%	11.63%	0.0053%
Roper Technologies Inc	ROP	38,032.81	0.15%	0.53%	12.93%	13.49%	0.0199%
Ross Stores Inc	ROST	36,148.63	0.14%	1.03%	9.40%	10.48%	0.0147%
Republic Services Inc	RSG	27,862.22	0.11%	1.76%	13.26%	15.13%	0.0163%
Raytheon Co	RTN	48,432.73	0.19%	2.16%	9.31%	11.56%	0.0217%
SBA Communications Corp	SBAC	25,463.38	0.10%	0.00%	42.50%	42.50%	0.0419%
Starbucks Corp	SBUX	101,534.90	0.39%	1.78%	12.72%	14.60%	0.0574%
Charles Schwab Corp/The	SCHW	53,654.03	0.21%	1.69%	11.14%	12.93%	0.0269%
Sealed Air Corp	SEE	6,661.00	0.03%	1.54%	5.73%	7.32%	0.0019%
Sherwin-Williams Co/The	SHW	42,307.59	0.16%	0.94%	9.46%	10.44%	0.0171%
SVB Financial Group	SIVB	11,684.79	0.05%	0.00%	11.00%	11.00%	0.0050%
JM Smucker Co/The	SJM	13,136.20	0.05%	3.06%	4.03%	7.15%	0.0036%
Schlumberger Ltd	SLB	55,044.76	0.21%	5.03%	31.36%	37.18%	0.0793%
SL Green Realty Corp	SLG	6,859.57	0.03%	4.25%	-0.84%	3.39%	0.0009%
Snap-on Inc	SNA	9,177.19	0.04%	2.30%	7.35%	9.73%	0.0035%
Synopsys Inc	SNPS	19,290.52	0.07%	0.00%	13.60%	13.60%	0.0102%
Southern Co/The	SO	57,537.25	0.22%	4.46%	3.75%	8.29%	0.0185%
Simon Property Group Inc	SPG	49,364.82	0.19%	5.17%	4.87%	10.17%	0.0194%
S&P Global Inc	SPGI	56,081.90	0.22%	0.99%	9.20%	10.24%	0.0222%
Sempra Energy	SRE	37,715.37	0.15%	2.82%	8.74%	11.69%	0.0171%
SunTrust Banks Inc	STI	27,895.49	0.11%	3.36%	6.22%	9.68%	0.0105%
State Street Corp	STT	20,919.57	0.08%	3.55%	7.27%	10.94%	0.0089%
Seagate Technology PLC	STX	13,044.83	0.05%	5.34%	4.60%	10.07%	0.0051%
Constellation Brands Inc	STZ	37,804.60	0.15%	1.51%	8.09%	9.66%	0.0142%
Stanley Black & Decker Inc	SWK	21,913.10	0.08%	1.86%	9.10%	11.05%	0.0094%
Skyworks Solutions Inc	SWKS	13,344.03	0.05%	2.00%	10.57%	12.67%	0.0065%
Synchrony Financial	SYF	23,898.60	0.09%	2.61%	4.03%	6.69%	0.0062%
Stryker Corp	SYK	76,847.88	0.30%	1.11%	8.10%	9.26%	0.0276%
Symantec Corp	SYMC	13,451.90	0.05%	1.44%	7.26%	8.76%	0.0046%
Sysco Corp	SY	36,348.34	0.14%	2.17%	12.13%	14.44%	0.0203%
AT&T Inc	T	244,555.98	0.95%	6.11%	5.54%	11.82%	0.1119%

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	12,128.28	0.05%	3.69%	-0.23%	3.45%	0.0016%
TransDigm Group Inc	TDG	25,728.44	0.10%	0.00%	13.09%	13.09%	0.0130%
TE Connectivity Ltd	TEL	32,265.04	0.12%	1.86%	9.93%	11.89%	0.0149%
Teleflex Inc	TFX	15,283.93	0.06%	0.41%	12.97%	13.40%	0.0079%
Target Corp	TGT	44,373.29	0.17%	3.04%	6.75%	9.89%	0.0170%
Tiffany & Co	TIF	11,368.59	0.04%	2.48%	9.25%	11.84%	0.0052%
TJX Cos Inc/The	TJX	64,125.86	0.25%	1.72%	10.05%	11.86%	0.0295%
Torchmark Corp	TMK	9,835.28	0.04%	0.75%	7.91%	8.69%	0.0033%
Thermo Fisher Scientific Inc	TMO	117,466.46	0.46%	0.25%	10.83%	11.09%	0.0505%
Tapestry Inc	TPR	9,206.01	0.04%	4.25%	10.20%	14.67%	0.0052%
TripAdvisor Inc	TRIP	6,435.65	0.02%	0.00%	9.34%	9.34%	0.0023%
T Rowe Price Group Inc	TROW	25,943.72	0.10%	2.72%	7.10%	9.92%	0.0100%
Travelers Cos Inc/The	TRV	39,160.52	0.15%	2.16%	13.06%	15.36%	0.0233%
Tractor Supply Co	TSCO	13,125.83	0.05%	1.23%	11.00%	12.29%	0.0062%
Tyson Foods Inc	TSN	29,455.12	0.11%	1.86%	3.10%	4.98%	0.0057%
Total System Services Inc	TSS	22,699.58	0.09%	0.42%	12.14%	12.58%	0.0111%
Take-Two Interactive Software Inc	TTWO	12,776.84	0.05%	0.00%	8.80%	8.80%	0.0044%
Twitter Inc	TWTR	26,825.23	0.10%	0.00%	31.76%	31.76%	0.0330%
Texas Instruments Inc	TXN	107,668.54	0.42%	2.73%	9.87%	12.73%	0.0531%
Textron Inc	TXT	12,345.71	0.05%	0.15%	12.06%	12.21%	0.0058%
Under Armour Inc	UAA	10,658.97	0.04%	0.00%	31.19%	31.19%	0.0129%
United Continental Holdings Inc	UAL	23,136.94	0.09%	0.00%	13.81%	13.81%	0.0124%
UDR Inc	UDR	12,649.77	0.05%	3.05%	5.49%	8.62%	0.0042%
Universal Health Services Inc	UHS	11,753.36	0.05%	0.31%	9.38%	9.71%	0.0044%
Ulta Beauty Inc	ULTA	20,278.41	0.08%	0.00%	21.00%	21.00%	0.0165%
UnitedHealth Group Inc	UNH	231,893.22	0.90%	1.59%	13.74%	15.44%	0.1387%
Unum Group	UNM	7,108.60	0.03%	3.18%	9.00%	12.33%	0.0034%
Union Pacific Corp	UNP	119,702.51	0.46%	2.12%	13.02%	15.28%	0.0708%
United Parcel Service Inc	UPS	88,890.23	0.34%	3.70%	8.79%	12.65%	0.0436%
United Rentals Inc	URI	10,427.91	0.04%	0.00%	12.00%	12.00%	0.0048%
US Bancorp	USB	83,424.07	0.32%	3.02%	6.70%	9.82%	0.0317%
United Technologies Corp	UTX	112,350.33	0.44%	2.28%	8.87%	11.25%	0.0489%
Visa Inc	V	346,417.34	1.34%	0.58%	15.54%	16.17%	0.2169%
Varian Medical Systems Inc	VAR	12,380.44	0.05%	0.00%	8.55%	8.55%	0.0041%
VF Corp	VFC	34,691.72	0.13%	2.22%	-19.07%	-17.05%	-0.0229%
Viacom Inc	VIAB	12,248.94	0.05%	2.70%	3.51%	6.25%	0.0030%
Valero Energy Corp	VLO	35,720.04	0.14%	4.20%	13.02%	17.49%	0.0242%
Vulcan Materials Co	VMC	18,137.57	0.07%	0.88%	16.30%	17.25%	0.0121%
Vornado Realty Trust	VNO	12,231.09	0.05%	4.32%	4.23%	8.63%	0.0041%
Verisk Analytics Inc	VRSK	23,970.47	0.09%	0.51%	9.46%	9.99%	0.0093%
VeriSign Inc	VRSN	24,928.39	0.10%	0.00%	8.80%	8.80%	0.0085%
Vertex Pharmaceuticals Inc	VRTX	46,967.53	0.18%	0.00%	51.00%	51.00%	0.0928%
Ventas Inc	VTR	25,249.30	0.10%	4.65%	4.34%	9.09%	0.0089%
Verizon Communications Inc	VZ	236,272.92	0.92%	4.25%	2.34%	6.64%	0.0608%
Wabtec Corp	WAB	13,499.32	0.05%	0.00%	15.00%	15.00%	0.0078%
Waters Corp	WAT	14,953.85	0.06%	0.00%	9.90%	9.90%	0.0057%
Walgreens Boots Alliance Inc	WBA	49,374.85	0.19%	3.31%	5.36%	8.75%	0.0167%
WellCare Health Plans Inc	WCG	14,342.40	0.06%	0.00%	17.22%	17.22%	0.0096%
Western Digital Corp	WDC	13,932.04	0.05%	4.21%	-5.24%	-1.14%	-0.0006%
WEC Energy Group Inc	WEC	26,298.10	0.10%	2.83%	6.13%	9.05%	0.0092%
Welltower Inc	WELL	33,014.81	0.13%	4.27%	6.11%	10.51%	0.0134%
Wells Fargo & Co	WFC	212,672.31	0.82%	3.91%	10.36%	14.47%	0.1192%
Whirlpool Corp	WHR	9,016.98	0.03%	3.33%	4.97%	8.38%	0.0029%
Willis Towers Watson PLC	WLTV	24,753.90	0.10%	1.32%	13.97%	15.38%	0.0147%
Waste Management Inc	WM	49,004.50	0.19%	1.76%	7.51%	9.34%	0.0177%
Williams Cos Inc/The	WMB	33,978.04	0.13%	5.40%	3.90%	9.40%	0.0124%
Walmart Inc	WMT	315,418.25	1.22%	1.92%	3.56%	5.52%	0.0674%
Westrock Co	WRK	9,374.35	0.04%	4.97%	3.17%	8.21%	0.0030%
Western Union Co/The	WU	8,566.79	0.03%	3.91%	3.36%	7.34%	0.0024%
Weyerhaeuser Co	WY	19,617.67	0.08%	5.17%	5.20%	10.51%	0.0080%
Wynn Resorts Ltd	WYNN	13,348.98	0.05%	2.98%	23.23%	26.56%	0.0137%
Cimarex Energy Co	XEC	6,018.03	0.02%	1.21%	29.26%	30.64%	0.0071%
Xcel Energy Inc	XEL	30,617.91	0.12%	2.71%	5.42%	8.20%	0.0097%
Xilinx Inc	XLNX	29,599.38	0.11%	1.26%	9.60%	10.92%	0.0125%
Exxon Mobil Corp	XOM	324,228.73	1.26%	4.45%	15.93%	20.73%	0.2604%
DENTSPLY SIRONA Inc	XRAY	13,654.93	0.05%	0.59%	12.57%	13.20%	0.0070%
Xerox Corp	XRX	7,954.03	0.03%	2.86%	6.50%	9.45%	0.0029%
Xylem Inc/NY	XYL	15,049.60	0.06%	1.15%	13.97%	15.20%	0.0089%
Yum! Brands Inc	YUM	33,862.27	0.13%	1.52%	12.43%	14.05%	0.0184%
Zimmer Biomet Holdings Inc	ZBH	24,112.95	0.09%	0.84%	5.66%	6.52%	0.0061%
Zions Bancorp NA	ZION	8,394.35	0.03%	2.83%	7.60%	10.54%	0.0034%
Zoetis Inc	ZTS	54,322.69	0.21%	0.55%	10.81%	11.39%	0.0240%
Total Market Capitalization:		25,816,650.84					14.88%

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
14.78%	2.63%	12.15%

[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
Agilent Technologies Inc	A	23,262.68	0.10%	0.90%	9.50%	10.44%	0.0101%
American Airlines Group Inc	AAL	14,281.54	0.06%	1.24%	6.50%	7.78%	0.0046%
Advance Auto Parts Inc	AAP	10,995.13	0.05%	0.16%	14.00%	14.17%	0.0065%
Apple Inc	AAPL	918,968.80	3.81%	1.57%	12.50%	14.17%	0.5396%
AbbVie Inc	ABBV	123,639.20	0.51%	5.46%	12.50%	18.30%	0.0938%
AmerisourceBergen Corp	ABC	17,981.89	0.07%	1.92%	8.00%	10.00%	0.0074%
ABIOMED Inc	ABMD	11,746.87	0.05%	0.00%	24.50%	24.50%	0.0119%
Abbott Laboratories	ABT	149,849.50	0.62%	1.51%	10.00%	11.59%	0.0719%
Accenture PLC	ACN	119,105.00	0.49%	1.64%	9.00%	10.71%	0.0529%
Adobe Inc	ADBE	147,581.90	0.61%	0.00%	19.50%	19.50%	0.1193%
Analog Devices Inc	ADI	41,620.30	0.17%	1.92%	10.00%	12.02%	0.0207%
Archer-Daniels-Midland Co	ADM	23,128.00	0.10%	3.39%	9.50%	13.05%	0.0125%
Automatic Data Processing Inc	ADP	73,865.15	0.31%	2.04%	13.50%	15.68%	0.0480%
Alliance Data Systems Corp	ADS	7,227.34	0.03%	1.82%	12.00%	13.93%	0.0042%
Autodesk Inc	ADSK	37,214.61	N/A	0.00%	N/A	N/A	N/A
Ameren Corp	AEE	18,999.62	0.08%	2.57%	6.50%	9.15%	0.0072%
American Electric Power Co Inc	AEP	44,837.80	0.19%	3.08%	4.00%	7.14%	0.0133%
AES Corp/VA	AES	11,236.36	N/A	3.25%	N/A	N/A	N/A
Aflac Inc	AFL	41,310.59	0.17%	1.97%	7.50%	9.54%	0.0163%
Allergan PLC	AGN	42,882.80	0.18%	2.26%	4.00%	6.31%	0.0112%
American International Group Inc	AIG	47,183.23	N/A	2.36%	N/A	N/A	N/A
Apartment Investment & Management Co	AIV	7,887.84	0.03%	3.02%	-3.00%	-0.03%	0.0000%
Assurant Inc	AIZ	6,643.45	0.03%	2.23%	6.50%	8.80%	0.0024%
Arthur J Gallagher & Co	AJG	16,213.75	0.07%	1.97%	15.50%	17.62%	0.0118%
Akamai Technologies Inc	AKAM	13,060.62	0.05%	0.00%	18.00%	18.00%	0.0097%
Albemarle Corp	ALB	7,362.47	0.03%	2.12%	5.50%	7.68%	0.0023%
Align Technology Inc	ALGN	23,653.60	0.10%	0.00%	27.00%	27.00%	0.0265%
Alaska Air Group Inc	ALK	7,499.16	0.03%	2.31%	5.50%	7.87%	0.0024%
Allstate Corp/The	ALL	34,482.15	0.14%	1.93%	10.50%	12.53%	0.0179%
Allegion PLC	ALLE	10,186.40	0.04%	1.00%	8.50%	9.54%	0.0040%
Alexion Pharmaceuticals Inc	ALXN	28,883.68	0.12%	0.00%	21.00%	21.00%	0.0251%
Applied Materials Inc	AMAT	40,444.56	0.17%	1.97%	8.50%	10.55%	0.0177%
Amcort PLC	AMCR	N/A	N/A	0.00%	N/A	N/A	N/A
Advanced Micro Devices Inc	AMD	32,470.82	0.13%	0.00%	27.50%	27.50%	0.0370%
AMETEK Inc	AME	20,182.16	0.08%	0.63%	10.50%	11.16%	0.0093%
Affiliated Managers Group Inc	AMG	5,183.10	0.02%	1.48%	10.00%	11.55%	0.0025%
Amgen Inc	AMGN	113,098.70	0.47%	3.21%	7.00%	10.32%	0.0484%
Ameriprise Financial Inc	AMP	20,032.33	0.08%	2.60%	13.00%	15.77%	0.0131%
American Tower Corp	AMT	96,136.88	0.40%	1.88%	9.50%	11.47%	0.0457%
Amazon.com Inc	AMZN	943,749.40	3.91%	0.00%	39.00%	39.00%	1.5253%
Arista Networks Inc	ANET	19,016.16	0.08%	0.00%	11.00%	11.00%	0.0087%
ANSYS Inc	ANSS	17,085.95	0.07%	0.00%	11.00%	11.00%	0.0078%
Anthem Inc	ANTM	74,949.20	0.31%	1.10%	19.00%	20.20%	0.0628%
Aon PLC	AOA	46,618.96	0.19%	0.91%	10.00%	10.96%	0.0212%
AO Smith Corp	AOS	7,660.92	0.03%	1.92%	9.50%	11.51%	0.0037%
Apache Corp	APA	11,093.10	0.05%	3.39%	50.00%	54.24%	0.0249%
Anadarko Petroleum Corp	APC	34,556.34	N/A	1.70%	N/A	N/A	N/A
Air Products & Chemicals Inc	APD	48,880.53	0.20%	2.09%	9.00%	11.18%	0.0227%
Amphenol Corp	APH	28,572.24	0.12%	0.96%	9.50%	10.51%	0.0124%
Aptiv PLC	APTIV	20,232.71	0.08%	1.12%	11.00%	12.18%	0.0102%
Alexandria Real Estate Equities Inc	ARE	16,644.03	N/A	2.67%	N/A	N/A	N/A
Arconic Inc	ARNC	10,834.39	N/A	0.33%	N/A	N/A	N/A
Atmos Energy Corp	ATO	12,388.50	0.05%	2.09%	7.50%	9.67%	0.0050%
Activision Blizzard Inc	ATVI	34,979.75	0.14%	0.81%	9.50%	10.35%	0.0150%
AvalonBay Communities Inc	AVB	29,151.78	0.12%	2.93%	4.00%	6.99%	0.0084%
Broadcom Inc	AVGO	111,340.90	0.46%	3.80%	33.50%	37.94%	0.1750%
Avery Dennison Corp	AVY	9,523.58	0.04%	2.11%	11.00%	13.23%	0.0052%
American Water Works Co Inc	AWK	21,334.83	0.09%	1.69%	9.50%	11.27%	0.0100%
American Express Co	AXP	104,558.00	0.43%	1.37%	10.00%	11.44%	0.0496%
AutoZone Inc	AZO	27,766.13	0.12%	0.00%	13.50%	13.50%	0.0155%
Boeing Co/The	BA	211,211.50	0.88%	2.33%	15.50%	18.01%	0.1576%
Bank of America Corp	BAC	270,498.40	1.12%	2.34%	10.50%	12.96%	0.1453%
Baxter International Inc	BAX	41,844.34	0.17%	1.07%	10.50%	11.63%	0.0202%
BB&T Corp	BBT	37,307.96	0.15%	3.61%	8.00%	11.75%	0.0182%
Best Buy Co Inc	BBY	18,260.13	0.08%	2.92%	10.50%	13.57%	0.0103%
Becton Dickinson and Co	BDX	66,116.70	0.27%	1.27%	10.00%	11.33%	0.0311%
Franklin Resources Inc	BEN	17,536.44	0.07%	3.19%	7.50%	10.81%	0.0079%
Brown-Forman Corp	BF/B	26,444.87	0.11%	1.21%	13.50%	14.79%	0.0162%
Baker Hughes a GE Co	BHGE	12,545.40	N/A	2.96%	N/A	N/A	N/A
Biogen Inc	BIIB	45,559.04	0.19%	0.00%	5.50%	5.50%	0.0104%
Bank of New York Mellon Corp/The	BK	41,288.14	0.17%	2.60%	8.50%	11.21%	0.0192%
Booking Holdings Inc	BKNG	82,243.84	0.34%	0.00%	11.50%	11.50%	0.0392%
BlackRock Inc	BLK	71,932.11	0.30%	2.84%	9.50%	12.47%	0.0372%
Ball Corp	BLL	22,493.04	0.09%	0.89%	23.00%	23.99%	0.0224%
Bristol-Myers Squibb Co	BMJ	79,969.66	0.33%	3.35%	11.50%	15.04%	0.0499%
Broadridge Financial Solutions Inc	BR	15,117.69	0.06%	1.65%	11.00%	12.74%	0.0080%

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
Berkshire Hathaway Inc	BRK/B	-	N/A	0.00%	N/A	N/A	N/A
Boston Scientific Corp	BSX	58,209.80	0.24%	0.00%	16.00%	16.00%	0.0386%
BorgWarner Inc	BWA	8,750.77	0.04%	1.61%	7.00%	8.67%	0.0031%
Boston Properties Inc	BXP	21,434.14	0.09%	2.77%	4.50%	7.33%	0.0065%
Citigroup Inc	C	157,479.10	0.65%	2.91%	10.00%	13.06%	0.0852%
Conagra Brands Inc	CAG	14,188.72	0.06%	3.01%	5.50%	8.59%	0.0051%
Cardinal Health Inc	CAH	13,341.46	0.06%	4.29%	17.00%	21.65%	0.0120%
Caterpillar Inc	CAT	76,396.54	0.32%	3.08%	13.00%	16.28%	0.0515%
Chubb Ltd	CB	68,433.61	0.28%	2.01%	10.00%	12.11%	0.0343%
Cboe Global Markets Inc	CBOE	11,953.45	0.05%	1.16%	14.50%	15.74%	0.0078%
CBRE Group Inc	CBRE	16,998.25	0.07%	0.00%	10.50%	10.50%	0.0074%
CBS Corp	CBS	18,987.98	0.08%	1.42%	9.50%	10.99%	0.0086%
Crown Castle International Corp	CCI	56,958.73	0.24%	3.51%	10.50%	14.19%	0.0335%
Carnival Corp	CCL	25,717.60	0.11%	4.10%	10.00%	14.31%	0.0152%
Cadence Design Systems Inc	CDNS	20,422.45	0.08%	0.00%	12.50%	12.50%	0.0106%
Celanese Corp	CE	13,308.19	0.06%	2.36%	11.00%	13.49%	0.0074%
Celgene Corp	CELG	69,162.02	0.29%	0.00%	13.50%	13.50%	0.0387%
Cerner Corp	CERN	23,319.76	0.10%	1.00%	9.00%	10.05%	0.0097%
CF Industries Holdings Inc	CF	10,380.62	N/A	2.60%	N/A	N/A	N/A
Citizens Financial Group Inc	CFG	16,120.65	0.07%	3.72%	12.00%	15.94%	0.0107%
Church & Dwight Co Inc	CHD	18,789.60	0.08%	1.19%	9.00%	10.24%	0.0080%
CH Robinson Worldwide Inc	CHRW	11,498.68	0.05%	2.38%	9.00%	11.49%	0.0055%
Charter Communications Inc	CHTR	89,088.41	0.37%	0.00%	16.00%	16.00%	0.0591%
Cigna Corp	CI	60,618.26	0.25%	0.03%	14.50%	14.53%	0.0365%
Cincinnati Financial Corp	CINF	17,289.41	0.07%	2.11%	8.50%	10.70%	0.0077%
Colgate-Palmolive Co	CL	63,186.71	0.26%	2.34%	6.00%	8.41%	0.0220%
Clorox Co/The	CLX	19,768.93	0.08%	2.74%	6.50%	9.33%	0.0076%
Comerica Inc	CMA	10,882.37	0.05%	3.83%	12.00%	16.06%	0.0072%
Comcast Corp	CMCSA	198,242.30	0.82%	1.92%	13.50%	15.55%	0.1277%
CME Group Inc	CME	70,981.92	0.29%	1.51%	3.00%	4.53%	0.0133%
Chipotle Mexican Grill Inc	CMG	20,481.02	0.08%	0.00%	26.00%	26.00%	0.0221%
Cummins Inc	CM	27,027.00	0.11%	2.66%	8.00%	10.77%	0.0121%
CMS Energy Corp	CMS	16,766.67	0.07%	2.69%	7.00%	9.78%	0.0068%
Centene Corp	CNC	22,888.83	0.09%	0.00%	15.50%	15.50%	0.0147%
CenterPoint Energy Inc	CNP	15,085.13	0.06%	3.90%	12.50%	16.64%	0.0104%
Capital One Financial Corp	COF	43,029.18	0.18%	1.75%	6.00%	7.80%	0.0139%
Cabot Oil & Gas Corp	COG	9,987.23	0.04%	1.53%	50.00%	51.91%	0.0215%
Cooper Cos Inc/The	COO	16,208.28	0.07%	0.02%	14.50%	14.52%	0.0098%
ConocoPhillips	COP	68,601.68	0.28%	2.01%	37.00%	39.38%	0.1120%
Costco Wholesale Corp	COST	117,583.50	0.49%	0.97%	8.50%	9.51%	0.0463%
Coty Inc	COTY	10,136.39	0.04%	3.71%	9.00%	12.88%	0.0054%
Campbell Soup Co	CPB	12,350.03	0.05%	3.41%	1.00%	4.43%	0.0023%
Capri Holdings Ltd	CPRI	5,275.07	0.02%	0.00%	7.50%	7.50%	0.0016%
Copart Inc	CPRT	17,103.85	0.07%	0.00%	12.50%	12.50%	0.0089%
salesforce.com Inc	CRM	121,987.20	0.51%	0.00%	57.00%	57.00%	0.2881%
Cisco Systems Inc	CSCO	247,609.30	1.03%	2.44%	8.00%	10.54%	0.1081%
CSX Corp	CSX	69,196.73	0.29%	1.21%	14.50%	15.80%	0.0453%
Cintas Corp	CTAS	24,410.33	0.10%	0.97%	16.00%	17.05%	0.0172%
CenturyLink Inc	CTL	12,376.55	0.05%	8.81%	1.00%	9.85%	0.0051%
Cognizant Technology Solutions Corp	CTSH	36,512.73	0.15%	1.25%	5.00%	6.28%	0.0095%
Corteva Inc	CTVA	N/A	N/A	0.00%	N/A	N/A	N/A
Citrix Systems Inc	CTXS	13,108.22	0.05%	1.41%	7.00%	8.46%	0.0046%
CVS Health Corp	CVS	69,923.27	0.29%	3.71%	6.50%	10.33%	0.0299%
Chevron Corp	CVX	236,719.30	0.98%	3.83%	16.50%	20.65%	0.2055%
Concho Resources Inc	CXO	21,056.98	0.09%	0.48%	21.00%	21.53%	0.0188%
Dominion Energy Inc	D	62,082.82	0.26%	4.81%	6.50%	11.47%	0.0295%
Delta Air Lines Inc	DAL	36,660.13	0.15%	2.75%	9.50%	12.38%	0.0188%
DuPont de Nemours Inc	DD	N/A	N/A	0.00%	N/A	N/A	N/A
Deere & Co	DE	51,594.27	0.21%	1.87%	14.00%	16.00%	0.0342%
Discover Financial Services	DFS	25,507.01	0.11%	2.04%	7.50%	9.62%	0.0102%
Dollar General Corp	DG	35,857.82	0.15%	0.92%	12.50%	13.48%	0.0200%
Quest Diagnostics Inc	DGX	13,445.56	0.06%	2.11%	8.50%	10.70%	0.0060%
DR Horton Inc	DHI	17,048.45	0.07%	1.34%	6.50%	7.88%	0.0056%
Danaher Corp	DHR	102,824.70	0.43%	0.47%	12.50%	13.00%	0.0554%
Walt Disney Co/The	DIS	252,653.60	1.05%	1.24%	6.50%	7.78%	0.0815%
Discovery Inc	DISCA	16,235.62	0.07%	0.00%	15.00%	15.00%	0.0101%
DISH Network Corp	DISH	18,297.13	0.08%	0.00%	-2.00%	-2.00%	-0.0015%
Digital Realty Trust Inc	DLR	25,778.48	0.11%	3.46%	5.00%	8.55%	0.0091%
Dollar Tree Inc	DLTR	26,323.70	0.11%	0.00%	15.50%	15.50%	0.0169%
Dover Corp	DOV	14,249.51	0.06%	1.96%	11.00%	13.07%	0.0077%
Dow Inc	DOW	36,639.96	N/A	5.83%	N/A	N/A	N/A
Duke Realty Corp	DRE	11,637.54	0.05%	2.74%	7.00%	9.84%	0.0047%
Darden Restaurants Inc	DRI	14,593.56	0.06%	2.97%	12.00%	15.15%	0.0092%
DTE Energy Co	DTE	24,033.75	0.10%	3.02%	5.50%	8.60%	0.0086%
Duke Energy Corp	DUK	64,486.24	0.27%	4.28%	6.00%	10.41%	0.0278%
DaVita Inc	DVA	8,720.82	0.04%	0.00%	11.00%	11.00%	0.0040%
Devon Energy Corp	DVN	11,663.08	0.05%	1.28%	26.50%	27.95%	0.0135%
DXC Technology Co	DXC	14,684.01	0.06%	1.54%	14.50%	16.15%	0.0098%
Electronic Arts Inc	EA	27,780.59	0.12%	0.00%	10.00%	10.00%	0.0115%
eBay Inc	EBAY	34,969.92	0.14%	1.43%	10.00%	11.50%	0.0167%
Ecolab Inc	ECL	55,438.15	0.23%	0.96%	10.00%	11.01%	0.0253%
Consolidated Edison Inc	ED	29,063.76	0.12%	3.39%	3.00%	6.44%	0.0078%
Equifax Inc	EFX	16,305.58	0.07%	1.16%	8.00%	9.21%	0.0062%
Edison International	EIX	20,780.22	0.09%	3.84%	15.00%	19.13%	0.0165%
Estee Lauder Cos Inc/The	EL	66,189.98	0.27%	0.95%	12.50%	13.51%	0.0371%
Eastman Chemical Co	EMN	10,483.80	0.04%	3.28%	8.00%	11.41%	0.0050%
Emerson Electric Co	EMR	41,218.89	0.17%	3.01%	12.00%	15.19%	0.0259%
EOG Resources Inc	EOG	53,069.80	0.22%	1.26%	34.50%	35.98%	0.0791%

		[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
Equinix Inc	EQIX	42,738.66	0.18%	1.97%	25.00%	27.22%	0.0482%
Equity Residential	EQR	29,120.20	0.12%	2.91%	-12.00%	-9.26%	-0.0112%
Eversource Energy	ES	24,603.91	0.10%	2.80%	5.50%	8.38%	0.0085%
Essex Property Trust Inc	ESS	19,958.74	0.08%	2.61%	2.00%	4.64%	0.0038%
E*TRADE Financial Corp	ETFC	11,119.21	0.05%	1.23%	17.50%	18.84%	0.0087%
Eaton Corp PLC	ETN	34,964.98	0.14%	3.44%	9.00%	12.59%	0.0182%
Entergy Corp	ETR	19,644.91	0.08%	3.58%	0.50%	4.09%	0.0033%
Evergy Inc	EVRG	15,011.08	N/A	3.28%	N/A	N/A	N/A
Edwards Lifesciences Corp	EW	40,194.11	0.17%	0.00%	15.00%	15.00%	0.0250%
Exelon Corp	EXC	48,783.04	0.20%	2.93%	10.50%	13.58%	0.0275%
Expeditors International of Washington I	EXPD	13,101.89	0.05%	1.31%	7.50%	8.86%	0.0048%
Expedia Group Inc	EXPE	19,276.45	0.08%	0.99%	24.00%	25.11%	0.0201%
Extra Space Storage Inc	EXR	13,864.50	0.06%	3.35%	6.00%	9.45%	0.0054%
Ford Motor Co	F	39,343.69	0.16%	5.98%	3.50%	9.58%	0.0156%
Diamondback Energy Inc	FANG	17,709.28	0.07%	0.70%	17.00%	17.76%	0.0130%
Fastenal Co	FAST	19,030.96	0.08%	2.59%	8.50%	11.20%	0.0088%
Facebook Inc	FB	541,011.10	2.24%	0.00%	16.50%	16.50%	0.3699%
Fortune Brands Home & Security Inc	FBHS	7,788.52	0.03%	1.58%	10.50%	12.16%	0.0039%
Freight-McMora Inc	FCX	16,512.38	0.07%	1.76%	22.50%	24.46%	0.0167%
FedEx Corp	FDX	43,906.89	0.18%	1.69%	7.50%	9.25%	0.0168%
FirstEnergy Corp	FE	23,208.07	0.10%	3.57%	8.00%	11.71%	0.0113%
F5 Networks Inc	FFIV	8,494.00	0.04%	0.00%	12.00%	12.00%	0.0042%
Fidelity National Information Services I	FIS	40,013.24	0.17%	1.13%	18.00%	19.23%	0.0319%
Fiserv Inc	FISV	35,969.99	0.15%	0.00%	10.50%	10.50%	0.0157%
Fifth Third Bancorp	FITB	20,185.78	0.08%	3.52%	7.00%	10.64%	0.0089%
Foot Locker Inc	FL	4,694.41	0.02%	3.64%	12.00%	15.86%	0.0031%
FLIR Systems Inc	FLIR	7,305.11	0.03%	1.30%	12.00%	13.38%	0.0040%
Flowserve Corp	FLS	6,685.11	0.03%	1.49%	13.50%	15.09%	0.0042%
FleetCor Technologies Inc	FLT	23,940.72	0.10%	0.00%	12.50%	12.50%	0.0124%
FMC Corp	FMC	10,803.86	0.04%	2.01%	15.00%	17.16%	0.0077%
Fox Corp	FOXA	N/A	N/A	0.00%	N/A	N/A	N/A
First Republic Bank/CA	FRC	16,063.03	0.07%	0.79%	10.50%	11.33%	0.0075%
Federal Realty Investment Trust	FRT	9,976.97	0.04%	3.07%	4.00%	7.13%	0.0029%
TechnipFMC PLC	FTI	N/A	N/A	0.00%	N/A	N/A	N/A
Fortinet Inc	FTNT	13,133.66	0.05%	0.00%	25.00%	25.00%	0.0136%
Fortive Corp	FTV	27,074.70	N/A	0.35%	N/A	N/A	N/A
General Dynamics Corp	GD	51,407.66	0.21%	2.29%	6.00%	8.36%	0.0178%
General Electric Co	GE	92,702.18	0.38%	0.38%	3.50%	3.89%	0.0149%
Gilead Sciences Inc	GILD	87,358.19	0.36%	3.68%	-5.50%	-1.92%	-0.0070%
General Mills Inc	GIS	32,336.37	0.13%	3.67%	4.00%	7.74%	0.0104%
Corning Inc	GLW	25,899.84	0.11%	2.42%	15.00%	17.60%	0.0189%
General Motors Co	GM	52,423.80	0.22%	4.22%	2.50%	6.77%	0.0147%
Alphabet Inc	GOOGL	N/A	N/A	0.00%	N/A	N/A	N/A
Genuine Parts Co	GPC	15,159.98	0.06%	2.94%	8.50%	11.56%	0.0073%
Global Payments Inc	GPN	25,417.35	0.11%	0.03%	17.50%	17.53%	0.0185%
Gap Inc/The	GPS	6,841.80	0.03%	5.36%	6.00%	11.52%	0.0033%
Garmin Ltd	GRMN	15,518.09	0.06%	2.79%	10.00%	12.93%	0.0083%
Goldman Sachs Group Inc/The	GS	71,777.09	0.30%	1.74%	8.50%	10.31%	0.0307%
WW Grainger Inc	GWV	15,346.90	0.06%	2.08%	8.50%	10.67%	0.0068%
Halliburton Co	HAL	19,951.36	0.08%	3.15%	24.50%	28.04%	0.0232%
Hasbro Inc	HAS	13,580.72	0.06%	2.52%	7.50%	10.11%	0.0057%
Huntington Bancshares Inc/OH	HBAN	13,875.79	0.06%	4.53%	11.50%	16.29%	0.0094%
Hanesbrands Inc	HBI	6,343.82	0.03%	3.42%	4.00%	7.49%	0.0020%
HCA Healthcare Inc	HCA	43,935.41	0.18%	1.25%	12.50%	13.83%	0.0252%
HCP Inc	HCP	15,895.84	0.07%	4.45%	32.50%	37.67%	0.0248%
Home Depot Inc/The	HD	232,586.30	0.96%	2.58%	9.00%	11.70%	0.1127%
Hess Corp	HES	18,658.51	N/A	1.63%	N/A	N/A	N/A
HollyFrontier Corp	HFC	7,453.89	0.03%	3.14%	18.50%	21.93%	0.0068%
Hartford Financial Services Group Inc/Th	HIG	20,074.92	0.08%	2.16%	11.00%	13.28%	0.0110%
Huntington Ingalls Industries Inc	HII	9,350.02	0.04%	1.53%	7.00%	8.58%	0.0033%
Hilton Worldwide Holdings Inc	HLT	28,258.91	0.12%	0.62%	17.00%	17.67%	0.0207%
Harley-Davidson Inc	HOG	5,728.22	0.02%	4.17%	8.50%	12.85%	0.0030%
Hologic Inc	HOLX	13,190.10	0.05%	0.00%	18.50%	18.50%	0.0101%
Honeywell International Inc	HON	128,293.60	0.53%	1.86%	8.00%	9.93%	0.0528%
Helmerich & Payne Inc	HP	5,587.67	N/A	5.56%	N/A	N/A	N/A
Hewlett Packard Enterprise Co	HPE	20,193.48	0.08%	3.27%	6.50%	9.88%	0.0083%
HP Inc	HPQ	31,415.16	0.13%	3.21%	8.50%	11.85%	0.0154%
H&R Block Inc	HRB	5,749.35	0.02%	3.71%	7.00%	10.84%	0.0026%
Hormel Foods Corp	HRL	22,280.02	0.09%	2.07%	9.00%	11.16%	0.0103%
Harris Corp	HRS	23,543.56	0.10%	1.39%	12.00%	13.47%	0.0131%
Henry Schein Inc	HSIC	10,569.78	0.04%	0.00%	7.00%	7.00%	0.0031%
Host Hotels & Resorts Inc	HST	13,808.46	0.06%	4.29%	4.00%	8.38%	0.0048%
Hershey Co/The	HSY	28,715.29	0.12%	2.10%	6.00%	8.16%	0.0097%
Humana Inc	HUM	34,951.11	0.14%	0.85%	11.50%	12.40%	0.0180%
International Business Machines Corp	IBM	123,110.40	0.51%	4.69%	2.00%	6.74%	0.0344%
Intercontinental Exchange Inc	ICE	48,832.95	0.20%	1.27%	10.50%	11.84%	0.0240%
IDEXX Laboratories Inc	IDXX	23,482.69	0.10%	0.00%	13.00%	13.00%	0.0127%
International Flavors & Fragrances Inc	IFF	16,073.84	0.07%	2.04%	8.50%	10.63%	0.0071%
Illumina Inc	ILMN	52,709.79	0.22%	0.00%	14.00%	14.00%	0.0306%
Incyte Corp	INCY	18,553.77	N/A	0.00%	N/A	N/A	N/A
IHS Markit Ltd	INFO	23,938.03	0.10%	0.00%	17.00%	17.00%	0.0169%
Intel Corp	INTC	211,269.60	0.88%	2.67%	10.50%	13.31%	0.1165%
Intuit Inc	INTU	69,154.00	0.29%	0.71%	13.00%	13.76%	0.0394%
International Paper Co	IP	17,384.43	0.07%	4.59%	11.50%	16.35%	0.0118%
Interpublic Group of Cos Inc/The	IPG	8,700.64	0.04%	4.32%	11.00%	15.56%	0.0056%
IPG Photonics Corp	IPGP	7,679.95	0.03%	0.00%	10.50%	10.50%	0.0033%
IQVIA Holdings Inc	IQV	30,471.34	0.13%	0.00%	12.50%	12.50%	0.0158%
Ingersoll-Rand PLC	IR	30,412.44	0.13%	1.68%	12.00%	13.78%	0.0174%

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
Iron Mountain Inc	IRM	9,336.32	0.04%	7.50%	8.50%	16.32%	0.0063%
Intuitive Surgical Inc	ISRG	61,513.98	0.25%	0.00%	14.00%	14.00%	0.0357%
Gartner Inc	IT	14,451.12	0.06%	0.00%	14.00%	14.00%	0.0084%
Illinois Tool Works Inc	ITW	49,580.24	0.21%	2.63%	9.00%	11.75%	0.0241%
Invesco Ltd	IVZ	8,313.80	0.03%	5.98%	7.00%	13.19%	0.0045%
JB Hunt Transport Services Inc	JBHT	9,881.11	0.04%	1.17%	10.00%	11.23%	0.0046%
Johnson Controls International plc	JCI	35,653.34	0.15%	2.62%	2.00%	4.65%	0.0069%
Jacobs Engineering Group Inc	JEC	11,173.78	0.05%	0.83%	12.50%	13.38%	0.0062%
Jefferies Financial Group Inc	JEF	5,491.94	0.02%	2.72%	18.50%	21.47%	0.0049%
Jack Henry & Associates Inc	JKHY	10,676.65	0.04%	1.15%	10.50%	11.71%	0.0052%
Johnson & Johnson	JNJ	377,658.00	1.57%	2.71%	12.00%	14.87%	0.2328%
Juniper Networks Inc	JNPR	9,482.88	0.04%	2.82%	6.00%	8.90%	0.0035%
JPMorgan Chase & Co	JPM	357,453.40	1.48%	2.96%	8.50%	11.59%	0.1716%
Nordstrom Inc	JWN	5,134.27	0.02%	4.46%	6.50%	11.10%	0.0024%
Kellogg Co	K	18,764.60	0.08%	4.13%	4.50%	8.72%	0.0068%
KeyCorp	KEY	17,102.58	0.07%	4.33%	10.50%	15.06%	0.0107%
Keysight Technologies Inc	KEYS	16,583.84	0.07%	0.00%	16.00%	16.00%	0.0110%
Kraft Heinz Co/The	KHC	37,947.47	0.16%	5.20%	3.50%	8.79%	0.0138%
Kimco Realty Corp	KIM	8,061.17	0.03%	5.96%	5.00%	11.11%	0.0037%
KLA-Tencor Corp	KLAC	18,390.74	0.08%	2.64%	11.50%	14.29%	0.0109%
Kimberly-Clark Corp	KMB	46,862.70	0.19%	3.02%	7.00%	10.13%	0.0197%
Kinder Morgan Inc/DE	KMI	47,737.14	0.20%	4.74%	35.50%	41.08%	0.0813%
CarMax Inc	KMX	14,258.16	0.06%	0.00%	11.50%	11.50%	0.0068%
Coca-Cola Co/The	KO	220,484.90	0.91%	3.10%	6.50%	9.70%	0.0886%
Kroger Co/The	KR	18,457.74	0.08%	2.68%	4.50%	7.24%	0.0055%
Kohl's Corp	KSS	7,594.56	0.03%	5.72%	11.00%	17.03%	0.0054%
Kansas City Southern	KSU	11,872.58	0.05%	1.22%	12.00%	13.29%	0.0065%
Loews Corp	L	16,515.60	0.07%	0.46%	12.00%	12.49%	0.0085%
L Brands Inc	LB	6,601.92	0.03%	5.02%	-4.00%	0.92%	0.0003%
Leggett & Platt Inc	LEG	5,031.54	0.02%	4.17%	9.00%	13.36%	0.0028%
Lennar Corp	LEN	17,040.97	0.07%	0.30%	8.50%	8.81%	0.0062%
Laboratory Corp of America Holdings	LH	16,580.61	0.07%	0.00%	8.00%	8.00%	0.0055%
Linde PLC	LIN	110,009.40	N/A	1.85%	N/A	N/A	N/A
LKQ Corp	LKQ	8,373.69	0.03%	0.00%	10.00%	10.00%	0.0035%
L3 Technologies Inc	LLL	20,547.94	0.09%	1.31%	7.00%	8.36%	0.0071%
Eli Lilly & Co	LLY	112,189.20	0.46%	2.23%	11.50%	13.86%	0.0644%
Lockheed Martin Corp	LMT	102,505.10	0.42%	2.54%	11.50%	14.19%	0.0603%
Lincoln National Corp	LNC	12,976.96	0.05%	2.38%	9.00%	11.49%	0.0062%
Alliant Energy Corp	LNT	11,864.95	0.05%	2.84%	6.50%	9.43%	0.0046%
Lowe's Cos Inc	LOW	80,644.80	0.33%	2.17%	11.50%	13.79%	0.0461%
Lam Research Corp	LRCX	27,573.03	0.11%	2.39%	11.00%	13.52%	0.0155%
Southwest Airlines Co	LUV	27,978.71	0.12%	1.40%	11.00%	12.48%	0.0145%
Lamb Weston Holdings Inc	LW	8,979.13	N/A	1.30%	N/A	N/A	N/A
LyondellBasell Industries NV	LYB	32,066.53	0.13%	4.85%	5.50%	10.48%	0.0139%
Macy's Inc	M	6,770.47	0.03%	6.89%	3.50%	10.51%	0.0029%
Mastercard Inc	MA	273,192.90	1.13%	0.50%	16.00%	16.54%	0.1873%
Mid-America Apartment Communities Inc	MAA	13,659.00	0.06%	3.20%	-3.00%	0.15%	0.0001%
Macerich Co/The	MAC	4,815.67	0.02%	8.92%	3.00%	12.05%	0.0024%
Marriott International Inc/MD	MAR	45,682.76	0.19%	1.40%	12.50%	13.99%	0.0265%
Masco Corp	MAS	11,348.61	0.05%	1.29%	10.50%	11.86%	0.0056%
McDonald's Corp	MCD	156,620.60	0.65%	2.34%	8.50%	10.94%	0.0710%
Microchip Technology Inc	MCHP	20,332.95	0.08%	1.76%	10.50%	12.35%	0.0104%
McKesson Corp	MCK	25,814.40	0.11%	1.16%	9.00%	10.21%	0.0109%
Moody's Corp	MCO	38,799.60	0.16%	1.01%	11.00%	12.07%	0.0194%
Mondelez International Inc	MDLZ	80,076.86	0.33%	1.98%	8.50%	10.56%	0.0351%
Medtronic PLC	MDT	133,067.30	0.55%	2.11%	7.50%	9.69%	0.0534%
MetLife Inc	MET	46,900.93	0.19%	3.57%	7.50%	11.20%	0.0218%
MGM Resorts International	MGM	15,045.74	0.06%	1.86%	22.50%	24.57%	0.0153%
Mohawk Industries Inc	MHK	10,751.05	0.04%	0.00%	3.50%	3.50%	0.0016%
McCormick & Co Inc/MD	MKC	20,589.29	0.09%	1.48%	8.50%	10.04%	0.0086%
Martin Marietta Materials Inc	MLM	14,021.68	0.06%	0.88%	9.00%	9.92%	0.0058%
Marsh & McLennan Cos Inc	MMC	49,419.05	0.20%	1.87%	9.50%	11.46%	0.0235%
3M Co	MMM	100,263.70	0.42%	3.31%	8.50%	11.95%	0.0497%
Monster Beverage Corp	MNST	34,526.11	0.14%	0.00%	13.50%	13.50%	0.0193%
Altria Group Inc	MO	94,074.36	0.39%	6.37%	8.50%	15.14%	0.0590%
Mosaic Co/The	MOS	9,116.17	0.04%	0.89%	22.00%	22.99%	0.0087%
Marathon Petroleum Corp	MPC	34,650.65	0.14%	4.08%	11.50%	15.81%	0.0227%
Merck & Co Inc	MRK	218,527.80	0.91%	2.60%	8.50%	11.21%	0.1015%
Marathon Oil Corp	MRO	11,570.20	N/A	1.84%	N/A	N/A	N/A
Morgan Stanley	MS	73,273.38	0.30%	2.76%	10.00%	12.90%	0.0392%
MSCI Inc	MSCI	20,105.23	0.08%	1.06%	18.50%	19.66%	0.0164%
Microsoft Corp	MSFT	1,049,859.00	4.35%	1.34%	13.50%	14.93%	0.6496%
Motorola Solutions Inc	MSI	27,498.53	0.11%	1.37%	10.50%	11.94%	0.0136%
M&T Bank Corp	MTB	22,654.86	0.09%	2.41%	9.50%	12.02%	0.0113%
Mettler-Toledo International Inc	MTD	20,372.94	0.08%	0.00%	10.00%	10.00%	0.0084%
Micron Technology Inc	MU	40,228.70	0.17%	0.00%	11.50%	11.50%	0.0192%
Maxim Integrated Products Inc	MXIM	15,893.27	0.07%	3.15%	8.00%	11.28%	0.0074%
Mylan NV	MYL	9,404.59	0.04%	0.00%	6.50%	6.50%	0.0025%
Noble Energy Inc	NBL	10,505.25	N/A	2.21%	N/A	N/A	N/A
Norwegian Cruise Line Holdings Ltd	NCLH	11,320.69	0.05%	0.00%	16.00%	16.00%	0.0075%
Nasdaq Inc	NDAQ	16,195.62	0.07%	1.92%	8.00%	10.00%	0.0067%
NextEra Energy Inc	NEE	98,856.02	0.41%	2.50%	10.00%	12.63%	0.0517%
Newmont Goldcorp Corp	NEM	20,180.46	0.08%	1.49%	2.50%	4.01%	0.0034%
Netflix Inc	NFLX	159,666.90	0.66%	0.00%	32.00%	32.00%	0.2117%
NISource Inc	NI	10,973.75	0.05%	2.72%	12.50%	15.39%	0.0070%
NIKE Inc	NKE	134,082.50	0.56%	1.03%	14.50%	15.60%	0.0867%
Nektar Therapeutics	NKTR	6,165.93	N/A	0.00%	N/A	N/A	N/A
Nielsen Holdings PLC	NLSN	8,336.34	0.03%	5.97%	45.50%	52.83%	0.0183%

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
Northrop Grumman Corp	NOC	55,008.60	0.23%	1.63%	9.50%	11.21%	0.0255%
National Oilwell Varco Inc	NOV	8,382.44	N/A	0.92%	N/A	N/A	N/A
NRG Energy Inc	NRG	9,374.53	N/A	0.34%	N/A	N/A	N/A
Norfolk Southern Corp	NSC	52,211.98	0.22%	1.75%	15.00%	16.88%	0.0365%
NetApp Inc	NTAP	15,479.49	0.06%	3.06%	18.50%	21.84%	0.0140%
Northern Trust Corp	NTRS	18,663.63	0.08%	2.80%	8.50%	11.42%	0.0088%
Nucor Corp	NUE	16,400.53	0.07%	2.97%	13.00%	16.16%	0.0110%
NVIDIA Corp	NVDA	93,846.91	0.39%	0.42%	11.50%	11.94%	0.0465%
Newell Brands Inc	NWL	6,376.12	0.03%	6.11%	4.50%	10.75%	0.0028%
News Corp	NWSA	7,933.62	N/A	1.48%	N/A	N/A	N/A
Realty Income Corp	O	22,261.25	0.09%	3.75%	4.50%	8.33%	0.0077%
ONEOK Inc	OKE	27,968.14	0.12%	5.42%	16.00%	21.85%	0.0253%
Omnicom Group Inc	OMC	17,774.16	0.07%	3.28%	6.50%	9.89%	0.0073%
Oracle Corp	ORCL	196,216.60	0.81%	1.69%	10.00%	11.77%	0.0957%
O'Reilly Automotive Inc	ORLY	29,416.34	0.12%	0.00%	12.00%	12.00%	0.0146%
Occidental Petroleum Corp	OXY	38,366.14	0.16%	6.14%	27.50%	34.48%	0.0548%
Paychex Inc	PAYX	31,469.06	0.13%	2.83%	10.50%	13.48%	0.0176%
People's United Financial Inc	PBCT	6,525.14	0.03%	4.34%	9.00%	13.54%	0.0037%
PACCAR Inc	PCAR	25,027.69	0.10%	4.57%	7.50%	12.24%	0.0127%
Public Service Enterprise Group Inc	PEG	30,809.52	0.13%	3.11%	6.00%	9.20%	0.0118%
PepsiCo Inc	PEP	188,068.30	0.78%	2.85%	6.50%	9.44%	0.0736%
Pfizer Inc	PFE	242,285.20	1.00%	3.30%	11.00%	14.48%	0.1454%
Principal Financial Group Inc	PFJ	16,057.70	0.07%	3.74%	5.50%	9.34%	0.0062%
Procter & Gamble Co/The	PG	280,280.80	1.16%	2.67%	8.50%	11.28%	0.1311%
Progressive Corp/The	PGR	47,812.08	0.20%	0.49%	15.50%	16.03%	0.0318%
Parker-Hannifin Corp	PH	22,075.28	0.09%	2.05%	11.50%	13.67%	0.0125%
PulteGroup Inc	PHM	9,074.59	0.04%	1.38%	8.00%	9.44%	0.0035%
Packaging Corp of America	PKG	8,939.70	0.04%	3.34%	6.00%	9.44%	0.0035%
PerkinElmer Inc	PKI	10,652.19	0.04%	0.29%	11.00%	11.31%	0.0050%
Prologis Inc	PLD	51,930.72	0.22%	2.62%	6.50%	9.21%	0.0198%
Philip Morris International Inc	PM	120,153.50	0.50%	5.91%	7.00%	13.12%	0.0653%
PNC Financial Services Group Inc/The	PNC	60,070.80	0.25%	2.86%	8.00%	10.97%	0.0273%
Pentair PLC	PNR	6,390.95	0.03%	1.94%	6.50%	8.50%	0.0023%
Pinnacle West Capital Corp	PNW	11,066.02	0.05%	3.08%	5.00%	8.16%	0.0037%
PPG Industries Inc	PPG	27,191.75	0.11%	1.67%	7.50%	9.23%	0.0104%
PPL Corp	PPL	22,752.04	0.09%	5.23%	1.50%	6.77%	0.0064%
Perrigo Co PLC	PRGO	5,913.28	0.02%	1.93%	2.50%	4.45%	0.0011%
Prudential Financial Inc	PRU	40,787.96	0.17%	4.00%	7.00%	11.14%	0.0188%
Public Storage	PSA	42,223.29	0.17%	3.46%	5.50%	9.06%	0.0158%
Phillips 66	PSX	41,196.04	0.17%	4.07%	10.00%	14.27%	0.0244%
PVH Corp	PVH	6,792.65	0.03%	0.17%	9.50%	9.68%	0.0027%
Quanta Services Inc	PWR	5,578.10	0.02%	0.41%	15.50%	15.94%	0.0037%
Pioneer Natural Resources Co	PXD	25,994.25	0.11%	0.42%	37.50%	38.00%	0.0409%
PayPal Holdings Inc	PYPL	139,221.90	0.58%	0.00%	19.00%	19.00%	0.1096%
QUALCOMM Inc	QCOM	88,306.37	0.37%	3.41%	10.50%	14.09%	0.0516%
Qorvo Inc	QRVO	7,975.38	N/A	0.00%	N/A	N/A	N/A
Royal Caribbean Cruises Ltd	RCL	24,881.97	0.10%	2.36%	12.50%	15.01%	0.0155%
Everest Re Group Ltd	RE	10,297.12	0.04%	2.30%	9.00%	11.40%	0.0049%
Regency Centers Corp	REG	11,736.56	0.05%	3.35%	16.00%	19.62%	0.0095%
Regeneron Pharmaceuticals Inc	REGN	34,506.72	0.14%	0.00%	10.00%	10.00%	0.0143%
Regions Financial Corp	RF	14,788.84	0.06%	3.97%	10.50%	14.68%	0.0090%
Robert Half International Inc	RHI	6,782.16	0.03%	2.20%	9.50%	11.80%	0.0033%
Red Hat Inc	RHT	33,282.79	0.14%	0.00%	15.50%	15.50%	0.0214%
Raymond James Financial Inc	RJF	11,332.02	0.05%	1.74%	10.00%	11.83%	0.0056%
Ralph Lauren Corp	RL	8,974.47	0.04%	2.39%	7.50%	9.98%	0.0037%
ResMed Inc	RMD	17,670.26	0.07%	1.20%	14.50%	15.79%	0.0116%
Rockwell Automation Inc	ROK	19,298.92	0.08%	2.40%	9.50%	12.01%	0.0096%
Rollins Inc	ROL	12,436.31	0.05%	1.11%	13.00%	14.18%	0.0073%
Roper Technologies Inc	ROP	38,172.99	0.16%	0.50%	11.50%	12.03%	0.0190%
Ross Stores Inc	ROST	38,195.24	0.16%	1.00%	11.00%	12.06%	0.0191%
Republic Services Inc	RSG	30,799.44	0.13%	1.81%	11.50%	13.41%	0.0171%
Raytheon Co	RTN	50,999.20	0.21%	2.07%	10.00%	12.17%	0.0257%
SBA Communications Corp	SBAC	26,453.74	0.11%	0.00%	28.50%	28.50%	0.0312%
Starbucks Corp	SBUX	102,474.90	0.42%	1.89%	13.50%	15.52%	0.0659%
Charles Schwab Corp/The	SCHW	53,416.07	0.22%	1.70%	12.00%	13.80%	0.0306%
Sealed Air Corp	SEE	6,801.73	0.03%	1.47%	22.50%	24.14%	0.0068%
Sherwin-Williams Co/The	SHW	43,541.76	0.18%	0.96%	10.50%	11.51%	0.0208%
SVB Financial Group	SIVB	11,214.70	0.05%	0.00%	19.50%	19.50%	0.0091%
JM Smucker Co/The	SJM	13,781.18	0.06%	2.86%	5.50%	8.44%	0.0048%
Schlumberger Ltd	SLB	52,980.92	0.22%	5.23%	24.00%	29.86%	0.0656%
SL Green Realty Corp	SLG	7,292.64	0.03%	4.04%	4.00%	8.12%	0.0025%
Snap-on Inc	SNA	9,307.15	0.04%	2.34%	7.00%	9.42%	0.0036%
Synopsys Inc	SNPS	18,552.95	0.08%	0.00%	10.00%	10.00%	0.0077%
Southern Co/The	SO	58,277.38	0.24%	4.46%	3.50%	8.04%	0.0194%
Simon Property Group Inc	SPG	50,940.13	0.21%	5.28%	5.50%	10.93%	0.0231%
S&P Global Inc	SPGI	56,918.01	0.24%	0.99%	13.00%	14.05%	0.0332%
Sempra Energy	SRE	38,447.68	0.16%	2.82%	11.00%	13.98%	0.0223%
SunTrust Banks Inc	STI	27,763.12	0.12%	3.20%	10.00%	13.36%	0.0154%
State Street Corp	STT	20,874.11	0.09%	3.50%	6.00%	9.61%	0.0083%
Seagate Technology PLC	STX	12,794.63	0.05%	5.46%	6.00%	11.62%	0.0062%
Constellation Brands Inc	STZ	35,264.59	0.15%	1.64%	9.50%	11.22%	0.0164%
Stanley Black & Decker Inc	SWK	22,178.22	0.09%	1.85%	9.50%	11.44%	0.0105%
Skyworks Solutions Inc	SWKS	13,097.57	0.05%	2.00%	7.50%	9.58%	0.0052%
Synchrony Financial	SYF	23,585.81	0.10%	2.57%	10.00%	12.70%	0.0124%
Stryker Corp	SYK	75,988.09	0.31%	1.02%	15.00%	16.10%	0.0507%
Symantec Corp	SYMC	13,137.84	0.05%	1.46%	9.00%	10.53%	0.0057%
Sysco Corp	SY	36,086.83	0.15%	2.20%	12.00%	14.33%	0.0214%
AT&T Inc	T	237,451.70	0.98%	6.33%	5.50%	12.00%	0.1181%

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	11,897.67	0.05%	3.18%	5.50%	8.77%	0.0043%
TransDigm Group Inc	TDG	26,396.66	0.11%	0.00%	11.00%	11.00%	0.0120%
TE Connectivity Ltd	TEL	32,361.33	0.13%	1.92%	8.50%	10.50%	0.0141%
Teleflex Inc	TFX	15,845.63	0.07%	0.41%	15.00%	15.44%	0.0101%
Target Corp	TGT	44,166.42	0.18%	3.06%	8.00%	11.18%	0.0205%
Tiffany & Co	TIF	11,668.97	0.05%	2.50%	10.50%	13.13%	0.0063%
TJX Cos Inc/The	TJX	65,277.92	0.27%	1.71%	13.50%	15.33%	0.0415%
Torchmark Corp	TMK	9,824.09	0.04%	0.77%	10.00%	10.81%	0.0044%
Thermo Fisher Scientific Inc	TMO	117,330.40	0.49%	0.26%	10.00%	10.27%	0.0499%
Tapestry Inc	TPR	8,958.29	0.04%	4.37%	12.00%	16.63%	0.0062%
TripAdvisor Inc	TRIP	6,498.25	0.03%	0.00%	18.00%	18.00%	0.0048%
T Rowe Price Group Inc	TROW	25,910.58	0.11%	2.81%	10.00%	12.95%	0.0139%
Travelers Cos Inc/The	TRV	39,858.56	0.17%	2.16%	9.00%	11.26%	0.0186%
Tractor Supply Co	TSCO	12,884.36	0.05%	1.31%	11.50%	12.89%	0.0069%
Tyson Foods Inc	TSN	28,699.95	0.12%	1.97%	6.50%	8.53%	0.0101%
Total System Services Inc	TSS	22,951.28	0.10%	0.40%	10.00%	10.42%	0.0099%
Take-Two Interactive Software Inc	TTWO	12,512.67	0.05%	0.00%	28.00%	28.00%	0.0145%
Twitter Inc	TWTR	27,214.84	N/A	0.00%	N/A	N/A	N/A
Texas Instruments Inc	TXN	105,812.00	0.44%	2.73%	6.00%	8.81%	0.0386%
Textron Inc	TXT	12,213.02	0.05%	0.15%	13.00%	13.16%	0.0067%
Under Armour Inc	UAA	11,985.43	0.05%	0.00%	12.00%	12.00%	0.0060%
United Continental Holdings Inc	UAL	23,028.57	0.10%	0.00%	8.50%	8.50%	0.0081%
UDR Inc	UDR	12,829.42	0.05%	2.94%	1.50%	4.46%	0.0024%
Universal Health Services Inc	UHS	11,209.81	0.05%	0.32%	11.00%	11.34%	0.0053%
Ultra Beauty Inc	ULTA	20,994.07	0.09%	0.00%	19.00%	19.00%	0.0165%
UnitedHealth Group Inc	UNH	236,115.30	0.98%	1.74%	13.50%	15.36%	0.1503%
Unum Group	UNM	6,960.99	0.03%	3.48%	9.00%	12.64%	0.0036%
Union Pacific Corp	UNP	118,616.80	0.49%	2.10%	14.50%	16.75%	0.0823%
United Parcel Service Inc	UPS	89,027.40	0.37%	3.71%	8.50%	12.37%	0.0456%
United Rentals Inc	URI	10,304.80	0.04%	0.00%	14.50%	14.50%	0.0062%
US Bancorp	USB	83,405.77	0.35%	3.01%	6.00%	9.10%	0.0315%
United Technologies Corp	UTX	112,123.70	0.46%	2.26%	9.00%	11.36%	0.0528%
Visa Inc	V	347,132.50	1.44%	0.62%	15.00%	15.67%	0.2254%
Varian Medical Systems Inc	VAR	12,436.03	0.05%	0.00%	10.00%	10.00%	0.0052%
VF Corp	VFC	35,042.77	0.15%	2.30%	10.00%	12.42%	0.0180%
Viacom Inc	VIAB	12,385.34	0.05%	2.61%	6.00%	8.69%	0.0045%
Valero Energy Corp	VLO	33,273.93	0.14%	4.51%	11.50%	16.27%	0.0224%
Vulcan Materials Co	VMC	17,658.95	0.07%	0.93%	14.00%	15.00%	0.0110%
Vornado Realty Trust	VNO	12,880.18	0.05%	3.91%	-3.50%	0.34%	0.0002%
Verisk Analytics Inc	VRSK	23,894.98	0.10%	0.69%	9.50%	10.22%	0.0101%
VeriSign Inc	VRSN	25,193.89	0.10%	0.00%	10.50%	10.50%	0.0110%
Vertex Pharmaceuticals Inc	VRTX	46,699.46	0.19%	0.00%	50.00%	50.00%	0.0968%
Ventas Inc	VTR	25,587.61	0.11%	4.50%	3.00%	7.57%	0.0080%
Verizon Communications Inc	VZ	237,141.40	0.98%	4.27%	4.00%	8.36%	0.0821%
Wabtec Corp	WAB	11,770.11	0.05%	0.66%	13.50%	14.20%	0.0069%
Waters Corp	WAT	14,856.91	0.06%	0.00%	10.50%	10.50%	0.0065%
Walgreens Boots Alliance Inc	WBA	52,439.30	0.22%	3.33%	9.50%	12.99%	0.0282%
WellCare Health Plans Inc	WCG	14,852.17	0.06%	0.00%	21.50%	21.50%	0.0132%
Western Digital Corp	WDC	11,614.52	0.05%	5.05%	0.50%	5.56%	0.0027%
WEC Energy Group Inc	WEC	26,935.25	0.11%	2.85%	6.00%	8.94%	0.0100%
Welltower Inc	WELL	30,687.01	0.13%	4.15%	8.00%	12.32%	0.0157%
Wells Fargo & Co	WFC	206,917.90	0.86%	4.01%	5.00%	9.11%	0.0781%
Whirlpool Corp	WHR	8,898.12	0.04%	3.40%	6.50%	10.01%	0.0037%
Willis Towers Watson PLC	WLTW	24,759.41	0.10%	1.36%	16.50%	17.97%	0.0184%
Waste Management Inc	WM	49,293.82	0.20%	1.77%	8.00%	9.84%	0.0201%
Williams Cos Inc/The	WMB	34,053.18	0.14%	5.56%	20.00%	26.12%	0.0369%
Walmart Inc	WMT	315,735.90	1.31%	1.94%	7.00%	9.01%	0.1179%
Westrock Co	WRK	9,376.85	0.04%	4.99%	9.50%	14.73%	0.0057%
Western Union Co/The	WU	8,610.38	0.04%	4.02%	6.00%	10.14%	0.0036%
Weyerhaeuser Co	WY	19,781.01	0.08%	5.12%	17.50%	23.07%	0.0189%
Wynn Resorts Ltd	WYNN	13,182.97	0.05%	3.27%	18.00%	21.56%	0.0118%
Cimarex Energy Co	XEC	5,770.12	0.02%	1.41%	18.00%	19.54%	0.0047%
Xcel Energy Inc	XEL	31,554.29	0.13%	2.69%	5.50%	8.26%	0.0108%
Xilinx Inc	XLNX	29,053.10	0.12%	1.29%	11.50%	12.86%	0.0155%
Exxon Mobil Corp	XOM	324,144.10	1.34%	4.54%	14.50%	19.37%	0.2602%
DENTSPLY SIRONA Inc	XRAY	12,852.83	0.05%	0.61%	3.00%	3.62%	0.0019%
Xerox Corp	XRX	8,026.27	0.03%	2.82%	10.50%	13.47%	0.0045%
Xylem Inc/NY	XYL	14,985.67	0.06%	1.15%	14.00%	15.23%	0.0095%
Yum! Brands Inc	YUM	33,849.72	0.14%	1.57%	12.00%	13.66%	0.0192%
Zimmer Biomet Holdings Inc	ZBH	24,516.61	0.10%	0.82%	4.50%	5.34%	0.0054%
Zions Bancorp NA	ZION	8,103.58	0.03%	2.84%	10.00%	12.98%	0.0044%
Zoetis Inc	ZTS	54,115.57	0.22%	0.58%	13.00%	13.62%	0.0305%
Total Market Capitalization:		24,130,896.91					14.78%

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	0.461	0.65
Alliant Energy Corporation	LNT	0.537	0.60
Ameren Corporation	AEE	0.465	0.60
American Electric Power Company, Inc.	AEP	0.511	0.55
Avangrid, Inc.	AGR	0.491	0.40
CMS Energy Corporation	CMS	0.479	0.55
DTE Energy Company	DTE	0.505	0.55
Duke Energy Corporation	DUK	0.462	0.50
Evergy, Inc	EVRG	0.440	0.52
Hawaiian Electric Industries, Inc.	HE	0.488	0.60
NextEra Energy, Inc.	NEE	0.553	0.60
NorthWestern Corporation	NWE	0.494	0.60
OGE Energy Corp.	OGE	0.568	0.80
Otter Tail Corporation	OTTR	0.558	0.70
Pinnacle West Capital Corporation	PNW	0.447	0.55
PNM Resources, Inc.	PNM	0.521	0.65
Portland General Electric Company	POR	0.481	0.60
Southern Company	SO	0.479	0.50
WEC Energy Group, Inc.	WEC	0.483	0.50
Xcel Energy Inc.	XEL	0.497	0.50
Mean		0.496	0.576

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]	2.63%	0.496	12.25%	12.15%	8.71%	8.66%	10.25%	10.19%
Near-Term Projected 30-Year Treasury [10]	2.70%	0.496	12.25%	12.15%	8.78%	8.73%	10.32%	10.26%
Mean					8.74%	8.69%	10.28%	10.22%
	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]	2.63%	0.576	12.25%	12.15%	9.69%	9.63%	10.98%	10.92%
Near-Term Projected 30-Year Treasury [10]	2.70%	0.576	12.25%	12.15%	9.76%	9.70%	11.05%	10.99%
Mean					9.72%	9.67%	11.02%	10.95%

Notes:

[1] See Notes 9 and 10

[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]

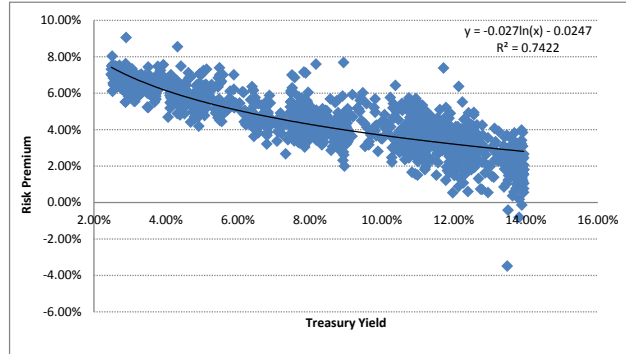
[8] Equals Col. [1] + 0.25 x Col. [4] + 0.75 x Col. [2] x Col. [4]

[9] Source: Bloomberg Professional

[10] Source: Blue Chip Financial Forecasts, Vol. 38, No. 7, July 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			2.63%	7.27%	9.90%
Near-Term Projected 30-Year Treasury			2.70%	7.20%	9.90%
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. 7, July 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]	[7]	[8]	[9]
Date of	Return on	30-Year	Risk
Electric	Equity	Treasury	Premium
Rate Case		Yield	
1/1/1980	14.50%	9.36%	5.14%
1/7/1980	14.39%	9.38%	5.01%
1/9/1980	15.00%	9.40%	5.60%
1/14/1980	15.17%	9.42%	5.75%
1/17/1980	13.93%	9.44%	4.49%
1/23/1980	15.50%	9.47%	6.03%
1/30/1980	13.86%	9.52%	4.34%
1/31/1980	12.61%	9.53%	3.08%
2/6/1980	13.71%	9.58%	4.13%
2/13/1980	12.80%	9.63%	3.17%
2/14/1980	13.00%	9.65%	3.35%
2/19/1980	13.50%	9.68%	3.82%
2/27/1980	13.75%	9.78%	3.97%
2/29/1980	13.75%	9.81%	3.94%
2/29/1980	14.00%	9.81%	4.19%
2/29/1980	14.77%	9.81%	4.96%
3/7/1980	12.70%	9.89%	2.81%
3/14/1980	13.50%	9.97%	3.53%
3/26/1980	14.16%	10.10%	4.06%
3/27/1980	14.24%	10.12%	4.12%
3/28/1980	14.50%	10.13%	4.37%
4/11/1980	12.75%	10.27%	2.48%
4/14/1980	13.85%	10.29%	3.56%
4/16/1980	15.50%	10.31%	5.19%
4/22/1980	13.25%	10.35%	2.90%
4/22/1980	13.90%	10.35%	3.55%
4/24/1980	16.80%	10.38%	6.43%
4/29/1980	15.50%	10.41%	5.09%
5/6/1980	13.70%	10.45%	3.25%
5/7/1980	15.00%	10.45%	4.55%
5/8/1980	13.75%	10.46%	3.29%
5/9/1980	14.35%	10.47%	3.88%
5/13/1980	13.60%	10.48%	3.12%
5/15/1980	13.25%	10.49%	2.76%
5/19/1980	13.75%	10.51%	3.24%
5/27/1980	13.62%	10.54%	3.08%
5/27/1980	14.60%	10.54%	4.06%
5/29/1980	16.00%	10.56%	5.44%
5/30/1980	13.80%	10.56%	3.24%
6/2/1980	15.63%	10.57%	5.06%
6/9/1980	15.90%	10.60%	5.30%
6/10/1980	13.78%	10.60%	3.18%
6/12/1980	14.25%	10.61%	3.64%
6/19/1980	13.40%	10.62%	2.78%
6/30/1980	13.00%	10.65%	2.35%
6/30/1980	13.40%	10.65%	2.75%
7/9/1980	14.75%	10.67%	4.08%
7/10/1980	15.00%	10.68%	4.32%
7/15/1980	15.80%	10.70%	5.10%
7/18/1980	13.80%	10.71%	3.09%
7/22/1980	14.10%	10.72%	3.38%
7/24/1980	15.00%	10.73%	4.27%
7/25/1980	13.48%	10.73%	2.75%
7/31/1980	14.58%	10.75%	3.83%
8/8/1980	13.50%	10.78%	2.72%
8/8/1980	14.00%	10.78%	3.22%
8/8/1980	15.45%	10.78%	4.67%
8/11/1980	14.85%	10.78%	4.07%
8/14/1980	14.00%	10.79%	3.21%
8/14/1980	16.25%	10.79%	5.46%
8/25/1980	13.75%	10.82%	2.93%
8/27/1980	13.80%	10.83%	2.97%
8/29/1980	12.50%	10.84%	1.66%
9/15/1980	13.50%	10.88%	2.62%
9/15/1980	13.93%	10.88%	3.05%
9/15/1980	15.80%	10.88%	4.92%
9/24/1980	12.50%	10.93%	1.57%
9/24/1980	15.00%	10.93%	4.07%
9/26/1980	13.75%	10.94%	2.81%
9/30/1980	14.10%	10.96%	3.14%
9/30/1980	14.20%	10.96%	3.24%
10/1/1980	13.90%	10.97%	2.93%
10/3/1980	15.50%	10.98%	4.52%
10/7/1980	12.50%	10.99%	1.51%
10/9/1980	13.25%	11.00%	2.25%
10/9/1980	14.50%	11.00%	3.50%
10/9/1980	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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
11/4/1980	15.00%	11.12%	3.88%
11/5/1980	13.75%	11.12%	2.63%
11/5/1980	14.00%	11.12%	2.88%
11/8/1980	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%
12/8/1980	14.15%	11.22%	2.93%
12/8/1980	15.10%	11.22%	3.88%
12/9/1980	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%
1/2/1981	15.25%	11.22%	4.03%
1/7/1981	14.30%	11.21%	3.09%
1/19/1981	15.25%	11.20%	4.05%
1/23/1981	13.10%	11.20%	1.90%
1/23/1981	14.40%	11.20%	3.20%
1/26/1981	15.25%	11.20%	4.05%
1/27/1981	15.00%	11.21%	3.79%
1/31/1981	13.47%	11.22%	2.25%
2/3/1981	15.25%	11.23%	4.02%
2/5/1981	15.75%	11.25%	4.50%
2/11/1981	15.60%	11.28%	4.32%
2/20/1981	15.25%	11.33%	3.92%
3/11/1981	15.40%	11.49%	3.91%
3/12/1981	14.51%	11.50%	3.01%
3/12/1981	16.00%	11.50%	4.50%
3/13/1981	13.02%	11.52%	1.50%
3/18/1981	16.19%	11.55%	4.64%
3/19/1981	13.75%	11.56%	2.19%
3/23/1981	14.30%	11.58%	2.72%
3/25/1981	15.30%	11.60%	3.70%
4/1/1981	14.53%	11.68%	2.85%
4/3/1981	19.10%	11.71%	7.39%
4/9/1981	15.00%	11.78%	3.22%
4/9/1981	15.30%	11.78%	3.52%
4/9/1981	16.50%	11.78%	4.72%
4/9/1981	17.00%	11.78%	5.22%
4/10/1981	13.75%	11.80%	1.95%
4/13/1981	13.57%	11.82%	1.75%
4/15/1981	15.30%	11.85%	3.45%
4/16/1981	13.50%	11.87%	1.63%
4/17/1981	14.10%	11.87%	2.23%
4/21/1981	14.00%	11.90%	2.10%
4/21/1981	16.80%	11.90%	4.90%
4/24/1981	16.00%	11.95%	4.05%
4/27/1981	12.50%	11.97%	0.53%
4/27/1981	13.61%	11.97%	1.64%
4/29/1981	13.65%	12.00%	1.65%
4/30/1981	13.50%	12.02%	1.48%
5/4/1981	16.22%	12.05%	4.17%
5/5/1981	14.40%	12.07%	2.33%
5/7/1981	16.25%	12.11%	4.14%
5/7/1981	16.27%	12.11%	4.16%
5/8/1981	13.00%	12.13%	0.87%
5/8/1981	16.00%	12.13%	3.87%
5/12/1981	13.50%	12.16%	1.34%
5/15/1981	15.75%	12.22%	3.53%
5/18/1981	14.88%	12.23%	2.65%
5/20/1981	16.00%	12.26%	3.74%
5/21/1981	14.00%	12.27%	1.73%
5/26/1981	14.90%	12.30%	2.60%
5/27/1981	15.00%	12.31%	2.69%
5/29/1981	15.50%	12.34%	3.16%
6/1/1981	16.50%	12.35%	4.15%
6/3/1981	14.67%	12.37%	2.30%
6/5/1981	13.00%	12.39%	0.61%
6/10/1981	16.75%	12.42%	4.33%
6/17/1981	14.40%	12.46%	1.94%
6/18/1981	16.33%	12.47%	3.86%
6/25/1981	14.75%	12.51%	2.24%
6/26/1981	16.00%	12.52%	3.48%
6/30/1981	15.25%	12.54%	2.71%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
7/1/1981	15.50%	12.56%	2.94%
7/1/1981	17.50%	12.56%	4.94%
7/10/1981	16.00%	12.62%	3.38%
7/14/1981	16.90%	12.64%	4.26%
7/15/1981	16.00%	12.65%	3.35%
7/17/1981	15.00%	12.67%	2.33%
7/20/1981	15.00%	12.68%	2.32%
7/21/1981	14.00%	12.69%	1.31%
7/28/1981	13.48%	12.74%	0.74%
7/31/1981	13.50%	12.78%	0.72%
7/31/1981	15.00%	12.78%	2.22%
7/31/1981	16.00%	12.78%	3.22%
8/5/1981	15.71%	12.83%	2.88%
8/10/1981	14.50%	12.87%	1.63%
8/11/1981	15.00%	12.88%	2.12%
8/20/1981	13.50%	12.95%	0.55%
8/20/1981	16.50%	12.95%	3.55%
8/24/1981	15.00%	12.97%	2.03%
8/28/1981	15.00%	13.01%	1.99%
9/3/1981	14.50%	13.05%	1.45%
9/10/1981	14.50%	13.11%	1.39%
9/11/1981	16.00%	13.12%	2.88%
9/16/1981	16.00%	13.15%	2.85%
9/17/1981	16.50%	13.16%	3.34%
9/23/1981	15.85%	13.20%	2.65%
9/28/1981	15.50%	13.23%	2.27%
10/9/1981	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%
11/3/1981	15.17%	13.53%	1.64%
11/5/1981	16.60%	13.55%	3.05%
11/6/1981	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%
12/1/1981	15.70%	13.61%	2.09%
12/1/1981	16.00%	13.61%	2.39%
12/1/1981	16.49%	13.61%	2.88%
12/1/1981	16.50%	13.61%	2.89%
12/4/1981	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%
1/4/1982	15.50%	13.67%	1.83%
1/11/1982	14.50%	13.72%	0.78%
1/11/1982	17.00%	13.72%	3.28%
1/13/1982	14.75%	13.74%	1.01%
1/14/1982	15.75%	13.75%	2.00%
1/15/1982	15.00%	13.76%	1.24%
1/15/1982	16.50%	13.76%	2.74%
1/22/1982	16.25%	13.79%	2.46%
1/27/1982	16.84%	13.81%	3.03%
1/28/1982	13.00%	13.81%	-0.81%
1/29/1982	15.50%	13.82%	1.68%
2/1/1982	15.85%	13.82%	2.03%
2/3/1982	16.44%	13.84%	2.60%
2/8/1982	15.50%	13.86%	1.64%
2/11/1982	16.00%	13.88%	2.12%
2/11/1982	16.20%	13.88%	2.32%
2/17/1982	15.00%	13.89%	1.11%
2/19/1982	15.17%	13.89%	1.28%
2/26/1982	15.25%	13.89%	1.36%
3/1/1982	15.03%	13.89%	1.14%
3/1/1982	16.00%	13.89%	2.11%
3/3/1982	15.00%	13.88%	1.12%
3/8/1982	17.10%	13.88%	3.22%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
3/12/1982	16.25%	13.88%	2.37%
3/17/1982	17.30%	13.88%	3.42%
3/22/1982	15.10%	13.89%	1.21%
3/27/1982	15.40%	13.89%	1.51%
3/30/1982	15.50%	13.90%	1.60%
3/31/1982	17.00%	13.91%	3.09%
4/1/1982	14.70%	13.91%	0.79%
4/1/1982	16.50%	13.91%	2.59%
4/2/1982	15.50%	13.91%	1.59%
4/5/1982	15.50%	13.92%	1.58%
4/8/1982	16.40%	13.93%	2.47%
4/13/1982	14.50%	13.94%	0.56%
4/23/1982	15.75%	13.94%	1.81%
4/27/1982	15.00%	13.94%	1.06%
4/28/1982	15.75%	13.94%	1.81%
4/30/1982	14.70%	13.94%	0.76%
4/30/1982	15.50%	13.94%	1.56%
5/3/1982	16.60%	13.94%	2.66%
5/4/1982	16.00%	13.94%	2.06%
5/14/1982	15.50%	13.92%	1.58%
5/18/1982	15.42%	13.92%	1.50%
5/19/1982	14.69%	13.92%	0.77%
5/20/1982	15.00%	13.91%	1.09%
5/20/1982	15.10%	13.91%	1.19%
5/20/1982	15.50%	13.91%	1.59%
5/20/1982	16.30%	13.91%	2.39%
5/21/1982	17.75%	13.91%	3.84%
5/27/1982	15.00%	13.89%	1.11%
5/28/1982	15.50%	13.89%	1.61%
5/28/1982	17.00%	13.89%	3.11%
6/1/1982	13.75%	13.89%	-0.14%
6/1/1982	16.60%	13.89%	2.71%
6/9/1982	17.86%	13.88%	3.98%
6/14/1982	15.75%	13.88%	1.87%
6/15/1982	14.85%	13.88%	0.97%
6/18/1982	15.50%	13.87%	1.63%
6/21/1982	14.90%	13.87%	1.03%
6/23/1982	16.00%	13.86%	2.14%
6/23/1982	16.17%	13.86%	2.31%
6/24/1982	14.85%	13.86%	0.99%
6/25/1982	14.70%	13.86%	0.84%
7/1/1982	16.00%	13.84%	2.16%
7/2/1982	15.62%	13.84%	1.78%
7/2/1982	17.00%	13.84%	3.16%
7/13/1982	14.00%	13.82%	0.18%
7/13/1982	16.80%	13.82%	2.98%
7/14/1982	15.76%	13.82%	1.94%
7/14/1982	16.02%	13.82%	2.20%
7/19/1982	16.50%	13.80%	2.70%
7/22/1982	14.50%	13.77%	0.73%
7/22/1982	17.00%	13.77%	3.23%
7/27/1982	16.75%	13.75%	3.00%
7/29/1982	16.50%	13.74%	2.76%
8/11/1982	17.50%	13.68%	3.82%
8/18/1982	17.07%	13.63%	3.44%
8/20/1982	15.73%	13.60%	2.13%
8/25/1982	16.00%	13.57%	2.43%
8/26/1982	15.50%	13.56%	1.94%
8/30/1982	15.00%	13.55%	1.45%
9/3/1982	16.20%	13.53%	2.67%
9/8/1982	15.00%	13.52%	1.48%
9/15/1982	13.08%	13.50%	-0.42%
9/15/1982	16.25%	13.50%	2.75%
9/16/1982	16.00%	13.50%	2.50%
9/17/1982	15.25%	13.50%	1.75%
9/23/1982	17.17%	13.47%	3.70%
9/24/1982	14.50%	13.46%	1.04%
9/27/1982	15.25%	13.46%	1.79%
10/1/1982	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%
11/1/1982	15.50%	13.15%	2.35%
11/3/1982	17.20%	13.13%	4.07%
11/4/1982	16.25%	13.11%	3.14%
11/5/1982	16.20%	13.09%	3.11%
11/9/1982	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%
12/1/1982	17.04%	12.79%	4.25%
12/6/1982	15.00%	12.73%	2.27%
12/6/1982	16.35%	12.73%	3.62%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
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%
1/5/1983	17.33%	12.40%	4.93%
1/11/1983	15.90%	12.34%	3.56%
1/12/1983	14.63%	12.33%	2.30%
1/12/1983	15.50%	12.33%	3.17%
1/20/1983	17.75%	12.24%	5.51%
1/21/1983	15.00%	12.22%	2.78%
1/24/1983	14.50%	12.21%	2.29%
1/24/1983	15.50%	12.21%	3.29%
1/25/1983	15.85%	12.19%	3.66%
1/27/1983	16.14%	12.17%	3.97%
2/1/1983	18.50%	12.13%	6.37%
2/4/1983	14.00%	12.10%	1.90%
2/10/1983	15.00%	12.06%	2.94%
2/21/1983	15.50%	11.98%	3.52%
2/22/1983	15.50%	11.97%	3.53%
2/23/1983	15.10%	11.96%	3.14%
2/23/1983	16.00%	11.96%	4.04%
3/2/1983	15.25%	11.89%	3.36%
3/9/1983	15.20%	11.82%	3.38%
3/15/1983	13.00%	11.77%	1.23%
3/18/1983	15.25%	11.73%	3.52%
3/23/1983	15.40%	11.69%	3.71%
3/24/1983	15.00%	11.67%	3.33%
3/29/1983	15.50%	11.63%	3.87%
3/30/1983	16.71%	11.61%	5.10%
3/31/1983	15.00%	11.59%	3.41%
4/4/1983	15.20%	11.58%	3.62%
4/8/1983	15.50%	11.51%	3.99%
4/11/1983	14.81%	11.49%	3.32%
4/19/1983	14.50%	11.38%	3.12%
4/20/1983	16.00%	11.36%	4.64%
4/29/1983	16.00%	11.24%	4.76%
5/1/1983	14.50%	11.24%	3.26%
5/9/1983	15.50%	11.15%	4.35%
5/11/1983	16.46%	11.12%	5.34%
5/12/1983	14.14%	11.11%	3.03%
5/18/1983	15.00%	11.05%	3.95%
5/23/1983	14.90%	11.01%	3.89%
5/23/1983	15.50%	11.01%	4.49%
5/25/1983	15.50%	10.98%	4.52%
5/27/1983	15.00%	10.96%	4.04%
5/31/1983	14.00%	10.95%	3.05%
5/31/1983	15.50%	10.95%	4.55%
6/2/1983	14.50%	10.93%	3.57%
6/17/1983	15.03%	10.84%	4.19%
7/1/1983	14.80%	10.78%	4.02%
7/1/1983	14.90%	10.78%	4.12%
7/8/1983	16.25%	10.76%	5.49%
7/13/1983	13.20%	10.75%	2.45%
7/19/1983	15.00%	10.74%	4.26%
7/19/1983	15.10%	10.74%	4.36%
7/25/1983	16.25%	10.73%	5.52%
7/28/1983	15.90%	10.74%	5.16%
8/3/1983	16.34%	10.75%	5.59%
8/3/1983	16.50%	10.75%	5.75%
8/19/1983	15.00%	10.80%	4.20%
8/22/1983	15.50%	10.80%	4.70%
8/22/1983	16.40%	10.80%	5.60%
8/31/1983	14.75%	10.84%	3.91%
9/7/1983	15.00%	10.86%	4.14%
9/14/1983	15.78%	10.89%	4.89%
9/16/1983	15.00%	10.90%	4.10%
9/19/1983	14.50%	10.91%	3.59%
9/20/1983	16.50%	10.91%	5.59%
9/28/1983	14.50%	10.94%	3.56%
9/29/1983	15.50%	10.95%	4.55%
9/30/1983	15.25%	10.95%	4.30%
9/30/1983	16.15%	10.95%	5.20%
10/4/1983	14.80%	10.96%	3.84%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
10/7/1983	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%
11/1/1983	16.00%	11.06%	4.94%
11/9/1983	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%
12/5/1983	15.25%	11.15%	4.10%
12/6/1983	15.07%	11.15%	3.92%
12/8/1983	15.90%	11.16%	4.74%
12/9/1983	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%
1/3/1984	14.75%	11.27%	3.48%
1/10/1984	15.90%	11.30%	4.60%
1/12/1984	15.60%	11.31%	4.29%
1/18/1984	13.75%	11.33%	2.42%
1/19/1984	15.90%	11.33%	4.57%
1/30/1984	16.10%	11.37%	4.73%
1/31/1984	15.25%	11.37%	3.88%
2/1/1984	14.80%	11.38%	3.42%
2/6/1984	13.75%	11.40%	2.35%
2/6/1984	14.75%	11.40%	3.35%
2/9/1984	15.25%	11.42%	3.83%
2/15/1984	15.70%	11.44%	4.26%
2/20/1984	15.00%	11.46%	3.54%
2/20/1984	15.00%	11.46%	3.54%
2/22/1984	14.75%	11.47%	3.28%
2/28/1984	14.50%	11.51%	2.99%
3/2/1984	14.25%	11.54%	2.71%
3/20/1984	16.00%	11.64%	4.36%
3/23/1984	15.50%	11.67%	3.83%
3/26/1984	14.71%	11.68%	3.03%
4/2/1984	15.50%	11.71%	3.79%
4/6/1984	14.74%	11.75%	2.99%
4/11/1984	15.72%	11.78%	3.94%
4/17/1984	15.00%	11.81%	3.19%
4/18/1984	16.20%	11.82%	4.38%
4/25/1984	14.64%	11.85%	2.79%
4/30/1984	14.40%	11.87%	2.53%
5/16/1984	14.69%	11.98%	2.71%
5/16/1984	15.00%	11.98%	3.02%
5/22/1984	14.40%	12.02%	2.38%
5/29/1984	15.10%	12.06%	3.04%
6/13/1984	15.25%	12.15%	3.10%
6/15/1984	15.60%	12.17%	3.43%
6/22/1984	16.25%	12.21%	4.04%
6/29/1984	15.25%	12.26%	2.99%
7/2/1984	13.35%	12.27%	1.08%
7/10/1984	16.00%	12.31%	3.69%
7/12/1984	16.50%	12.32%	4.18%
7/13/1984	16.25%	12.33%	3.92%
7/17/1984	14.14%	12.35%	1.79%
7/18/1984	15.30%	12.36%	2.94%
7/18/1984	15.50%	12.36%	3.14%
7/19/1984	14.30%	12.37%	1.93%
7/24/1984	16.79%	12.39%	4.40%
7/31/1984	16.00%	12.43%	3.57%
8/3/1984	14.25%	12.44%	1.81%
8/17/1984	14.30%	12.49%	1.81%
8/20/1984	15.00%	12.49%	2.51%
8/27/1984	16.30%	12.51%	3.79%
8/31/1984	15.55%	12.52%	3.03%
9/6/1984	16.00%	12.53%	3.47%
9/10/1984	14.75%	12.54%	2.21%
9/13/1984	15.00%	12.55%	2.45%
9/17/1984	17.38%	12.56%	4.82%
9/26/1984	14.50%	12.57%	1.93%
9/28/1984	15.00%	12.57%	2.43%
9/28/1984	16.25%	12.57%	3.68%
10/9/1984	14.75%	12.58%	2.17%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
11/7/1984	15.60%	12.58%	3.02%
11/9/1984	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%
12/3/1984	15.80%	12.56%	3.24%
12/4/1984	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%
1/3/1985	14.75%	12.49%	2.26%
1/10/1985	15.75%	12.47%	3.28%
1/11/1985	16.30%	12.46%	3.84%
1/23/1985	15.80%	12.43%	3.37%
1/24/1985	15.82%	12.43%	3.39%
1/25/1985	16.75%	12.42%	4.33%
1/30/1985	14.90%	12.40%	2.50%
1/31/1985	14.75%	12.39%	2.36%
2/8/1985	14.47%	12.35%	2.12%
3/1/1985	13.84%	12.31%	1.53%
3/8/1985	16.85%	12.28%	4.57%
3/14/1985	15.50%	12.25%	3.25%
3/15/1985	15.62%	12.25%	3.37%
3/29/1985	15.62%	12.17%	3.45%
4/3/1985	14.60%	12.14%	2.46%
4/9/1985	15.50%	12.11%	3.39%
4/16/1985	15.70%	12.06%	3.64%
4/22/1985	14.00%	12.02%	1.98%
4/26/1985	15.50%	11.98%	3.52%
4/29/1985	15.00%	11.97%	3.03%
5/2/1985	14.68%	11.94%	2.74%
5/8/1985	15.62%	11.89%	3.73%
5/10/1985	16.50%	11.87%	4.63%
5/29/1985	14.61%	11.73%	2.88%
5/31/1985	16.00%	11.71%	4.29%
6/14/1985	15.50%	11.61%	3.89%
7/9/1985	15.00%	11.45%	3.55%
7/16/1985	14.50%	11.39%	3.11%
7/26/1985	14.50%	11.33%	3.17%
8/2/1985	14.80%	11.29%	3.51%
8/7/1985	15.00%	11.27%	3.73%
8/28/1985	14.25%	11.15%	3.10%
8/28/1985	15.50%	11.15%	4.35%
8/29/1985	14.50%	11.15%	3.35%
9/9/1985	14.60%	11.11%	3.49%
9/9/1985	14.90%	11.11%	3.79%
9/17/1985	14.90%	11.08%	3.82%
9/23/1985	15.00%	11.06%	3.94%
9/27/1985	15.50%	11.05%	4.45%
9/27/1985	15.80%	11.05%	4.75%
10/2/1985	14.00%	11.03%	2.97%
10/2/1985	14.75%	11.03%	3.72%
10/3/1985	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%
11/4/1985	14.50%	10.92%	3.58%
11/7/1985	15.50%	10.90%	4.60%
11/8/1985	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%
1/24/1986	15.40%	10.41%	4.99%
1/31/1986	15.00%	10.35%	4.65%
2/5/1986	15.00%	10.32%	4.68%
2/5/1986	15.75%	10.32%	5.43%
2/10/1986	13.30%	10.29%	3.01%
2/11/1986	12.50%	10.28%	2.22%
2/14/1986	14.40%	10.24%	4.16%
2/18/1986	16.00%	10.23%	5.77%
2/24/1986	14.50%	10.18%	4.32%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
2/26/1986	14.00%	10.15%	3.85%
3/5/1986	14.90%	10.08%	4.82%
3/11/1986	14.50%	10.02%	4.48%
3/12/1986	13.50%	10.00%	3.50%
3/27/1986	14.10%	9.86%	4.24%
3/31/1986	13.50%	9.84%	3.66%
4/1/1986	14.00%	9.83%	4.17%
4/2/1986	15.50%	9.81%	5.69%
4/4/1986	15.00%	9.78%	5.22%
4/14/1986	13.40%	9.69%	3.71%
4/23/1986	15.00%	9.57%	5.43%
5/16/1986	14.50%	9.32%	5.18%
5/16/1986	14.50%	9.32%	5.18%
5/29/1986	13.90%	9.19%	4.71%
5/30/1986	15.10%	9.18%	5.92%
6/2/1986	12.81%	9.17%	3.64%
6/11/1986	14.00%	9.07%	4.93%
6/24/1986	16.63%	8.94%	7.69%
6/26/1986	12.00%	8.91%	3.09%
6/26/1986	14.75%	8.91%	5.84%
6/30/1986	13.00%	8.87%	4.13%
7/10/1986	14.34%	8.75%	5.59%
7/11/1986	12.75%	8.73%	4.02%
7/14/1986	12.60%	8.71%	3.89%
7/17/1986	12.40%	8.66%	3.74%
7/25/1986	14.25%	8.57%	5.68%
8/6/1986	13.50%	8.44%	5.06%
8/14/1986	13.50%	8.35%	5.15%
9/16/1986	12.75%	8.06%	4.69%
9/19/1986	13.25%	8.03%	5.22%
10/1/1986	14.00%	7.95%	6.05%
10/3/1986	13.40%	7.93%	5.47%
10/31/1986	13.50%	7.77%	5.73%
11/5/1986	13.00%	7.75%	5.25%
12/3/1986	12.90%	7.58%	5.32%
12/4/1986	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%
1/2/1987	13.00%	7.49%	5.51%
1/12/1987	12.40%	7.47%	4.93%
1/27/1987	12.71%	7.46%	5.25%
3/2/1987	12.47%	7.47%	5.00%
3/3/1987	13.60%	7.47%	6.13%
3/4/1987	12.38%	7.47%	4.91%
3/10/1987	13.50%	7.47%	6.03%
3/13/1987	13.00%	7.47%	5.53%
3/31/1987	13.00%	7.46%	5.54%
4/6/1987	13.00%	7.47%	5.53%
4/14/1987	12.50%	7.49%	5.01%
4/16/1987	14.50%	7.50%	7.00%
4/27/1987	12.00%	7.54%	4.46%
5/5/1987	12.85%	7.58%	5.27%
5/12/1987	12.65%	7.62%	5.03%
5/28/1987	13.50%	7.70%	5.80%
6/15/1987	13.20%	7.78%	5.42%
6/29/1987	15.00%	7.83%	7.17%
6/30/1987	12.50%	7.84%	4.66%
7/8/1987	12.00%	7.86%	4.14%
7/10/1987	12.90%	7.86%	5.04%
7/15/1987	13.50%	7.88%	5.62%
7/16/1987	13.50%	7.88%	5.62%
7/16/1987	15.00%	7.88%	7.12%
7/27/1987	13.00%	7.92%	5.08%
7/27/1987	13.40%	7.92%	5.48%
7/27/1987	13.50%	7.92%	5.58%
7/31/1987	12.98%	7.95%	5.03%
8/26/1987	12.63%	8.06%	4.57%
8/26/1987	12.75%	8.06%	4.69%
8/27/1987	13.25%	8.06%	5.19%
9/9/1987	13.00%	8.14%	4.86%
9/30/1987	12.75%	8.31%	4.44%
9/30/1987	13.00%	8.31%	4.69%
10/2/1987	11.50%	8.33%	3.17%
10/15/1987	13.00%	8.43%	4.57%
11/2/1987	13.00%	8.55%	4.45%
11/19/1987	13.00%	8.64%	4.36%
11/30/1987	12.00%	8.68%	3.32%
12/3/1987	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%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
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%
1/20/1988	13.80%	8.94%	4.86%
1/26/1988	13.90%	8.95%	4.95%
1/29/1988	13.20%	8.96%	4.24%
2/4/1988	12.60%	8.96%	3.64%
3/1/1988	11.56%	8.94%	2.62%
3/23/1988	12.87%	8.92%	3.95%
3/24/1988	11.24%	8.92%	2.32%
3/30/1988	12.72%	8.92%	3.80%
4/1/1988	12.50%	8.92%	3.58%
4/7/1988	13.25%	8.93%	4.32%
4/25/1988	10.96%	8.96%	2.00%
5/3/1988	12.91%	8.97%	3.94%
5/11/1988	13.50%	8.99%	4.51%
5/16/1988	13.00%	8.99%	4.01%
6/30/1988	12.75%	9.00%	3.75%
7/1/1988	12.75%	8.99%	3.76%
7/20/1988	13.40%	8.96%	4.44%
8/5/1988	12.75%	8.92%	3.83%
8/23/1988	11.70%	8.93%	2.77%
8/29/1988	12.75%	8.94%	3.81%
8/30/1988	13.50%	8.94%	4.56%
9/8/1988	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%
1/27/1989	13.00%	9.05%	3.95%
1/31/1989	13.00%	9.05%	3.95%
2/17/1989	13.00%	9.05%	3.95%
2/20/1989	12.40%	9.05%	3.35%
3/1/1989	12.76%	9.05%	3.71%
3/8/1989	13.00%	9.05%	3.95%
3/30/1989	14.00%	9.05%	4.95%
4/5/1989	14.20%	9.05%	5.15%
4/18/1989	13.00%	9.05%	3.95%
5/5/1989	12.40%	9.05%	3.35%
6/2/1989	13.20%	9.00%	4.20%
6/8/1989	13.50%	8.98%	4.52%
6/27/1989	13.25%	8.91%	4.34%
6/30/1989	13.00%	8.90%	4.10%
8/14/1989	12.50%	8.77%	3.73%
9/28/1989	12.25%	8.63%	3.62%
10/24/1989	12.50%	8.54%	3.96%
11/9/1989	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%
1/10/1990	12.80%	8.24%	4.56%
1/11/1990	12.90%	8.24%	4.66%
1/17/1990	12.80%	8.22%	4.58%
1/26/1990	12.00%	8.20%	3.80%
2/9/1990	12.10%	8.17%	3.93%
2/24/1990	12.86%	8.15%	4.71%
3/30/1990	12.90%	8.16%	4.74%
4/4/1990	15.76%	8.17%	7.59%
4/12/1990	12.52%	8.18%	4.34%
4/19/1990	12.75%	8.20%	4.55%
5/21/1990	12.10%	8.28%	3.82%
5/29/1990	12.40%	8.30%	4.10%
5/31/1990	12.00%	8.30%	3.70%
6/4/1990	12.90%	8.30%	4.60%
6/6/1990	12.25%	8.31%	3.94%
6/15/1990	13.20%	8.32%	4.88%
6/20/1990	12.92%	8.32%	4.60%
6/27/1990	12.90%	8.33%	4.57%
6/29/1990	12.50%	8.33%	4.17%
7/6/1990	12.10%	8.34%	3.76%
7/6/1990	12.35%	8.34%	4.01%
8/10/1990	12.55%	8.41%	4.14%
8/16/1990	13.21%	8.43%	4.78%
8/22/1990	13.10%	8.45%	4.65%
8/24/1990	13.00%	8.46%	4.54%
9/26/1990	11.45%	8.59%	2.86%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
10/2/1990	13.00%	8.61%	4.39%
10/5/1990	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%
1/2/1991	13.10%	8.65%	4.45%
1/4/1991	12.50%	8.65%	3.85%
1/15/1991	12.75%	8.64%	4.11%
1/25/1991	11.70%	8.63%	3.07%
2/4/1991	12.50%	8.60%	3.90%
2/7/1991	12.50%	8.59%	3.91%
2/12/1991	13.00%	8.58%	4.43%
2/14/1991	12.72%	8.57%	4.15%
2/22/1991	12.80%	8.55%	4.25%
3/6/1991	13.10%	8.53%	4.57%
3/8/1991	12.30%	8.52%	3.78%
3/8/1991	13.00%	8.52%	4.48%
4/22/1991	13.00%	8.49%	4.51%
5/7/1991	13.50%	8.47%	5.03%
5/13/1991	13.25%	8.47%	4.78%
5/30/1991	12.75%	8.44%	4.31%
6/12/1991	12.00%	8.41%	3.59%
6/25/1991	11.70%	8.39%	3.31%
6/28/1991	12.50%	8.38%	4.12%
7/1/1991	12.00%	8.38%	3.62%
7/3/1991	12.50%	8.37%	4.13%
7/19/1991	12.10%	8.34%	3.76%
8/1/1991	12.90%	8.32%	4.58%
8/16/1991	13.20%	8.29%	4.91%
9/27/1991	12.50%	8.23%	4.27%
9/30/1991	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%
11/1/1991	12.00%	8.19%	3.81%
11/5/1991	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%
1/9/1992	12.80%	8.09%	4.71%
1/16/1992	12.75%	8.07%	4.68%
1/21/1992	12.00%	8.06%	3.94%
1/22/1992	13.00%	8.06%	4.94%
1/27/1992	12.65%	8.05%	4.60%
1/31/1992	12.00%	8.04%	3.96%
2/11/1992	12.40%	8.03%	4.37%
2/25/1992	12.50%	8.01%	4.49%
3/16/1992	11.43%	7.98%	3.45%
3/18/1992	12.28%	7.98%	4.30%
4/2/1992	12.10%	7.95%	4.15%
4/9/1992	11.45%	7.94%	3.51%
4/10/1992	11.50%	7.93%	3.57%
4/14/1992	11.50%	7.93%	3.57%
5/5/1992	11.50%	7.89%	3.61%
5/12/1992	11.87%	7.88%	3.99%
5/12/1992	12.46%	7.88%	4.58%
6/1/1992	12.30%	7.87%	4.43%
6/12/1992	10.90%	7.86%	3.04%
6/26/1992	12.35%	7.85%	4.50%
6/29/1992	11.00%	7.85%	3.15%
6/30/1992	13.00%	7.85%	5.15%
7/13/1992	11.90%	7.84%	4.06%
7/13/1992	13.50%	7.84%	5.66%
7/22/1992	11.20%	7.83%	3.37%
8/3/1992	12.00%	7.81%	4.19%
8/6/1992	12.50%	7.80%	4.70%
9/22/1992	12.00%	7.71%	4.29%
9/28/1992	11.40%	7.71%	3.69%
9/30/1992	11.75%	7.70%	4.05%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
10/2/1992	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%
11/3/1992	12.00%	7.71%	4.29%
12/3/1992	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%
1/12/1993	12.00%	7.61%	4.39%
1/21/1993	11.25%	7.59%	3.66%
2/2/1993	11.40%	7.56%	3.84%
2/15/1993	12.30%	7.52%	4.78%
2/24/1993	11.90%	7.49%	4.41%
2/26/1993	11.80%	7.48%	4.32%
2/26/1993	12.20%	7.48%	4.72%
4/23/1993	11.75%	7.29%	4.46%
5/11/1993	11.75%	7.25%	4.50%
5/14/1993	11.50%	7.24%	4.26%
5/25/1993	11.50%	7.23%	4.27%
5/28/1993	11.00%	7.22%	3.78%
6/3/1993	12.00%	7.21%	4.79%
6/16/1993	11.50%	7.19%	4.31%
6/18/1993	12.10%	7.18%	4.92%
6/25/1993	11.67%	7.17%	4.50%
7/21/1993	11.38%	7.10%	4.28%
7/23/1993	10.46%	7.09%	3.37%
8/24/1993	11.50%	6.96%	4.54%
9/21/1993	10.50%	6.81%	3.69%
9/29/1993	11.47%	6.77%	4.70%
9/30/1993	11.60%	6.76%	4.84%
11/2/1993	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%
1/4/1994	10.07%	6.44%	3.63%
1/13/1994	11.00%	6.42%	4.58%
1/21/1994	11.00%	6.40%	4.60%
1/28/1994	11.35%	6.39%	4.96%
2/3/1994	11.40%	6.38%	5.02%
2/17/1994	10.60%	6.36%	4.24%
2/25/1994	11.25%	6.35%	4.90%
2/25/1994	12.00%	6.35%	5.65%
3/1/1994	11.00%	6.35%	4.65%
3/4/1994	11.00%	6.35%	4.65%
4/25/1994	11.00%	6.41%	4.59%
5/10/1994	11.75%	6.45%	5.30%
5/13/1994	10.50%	6.46%	4.04%
6/3/1994	11.00%	6.54%	4.46%
6/27/1994	11.40%	6.65%	4.75%
8/5/1994	12.75%	6.88%	5.87%
10/31/1994	10.00%	7.33%	2.67%
11/9/1994	10.85%	7.39%	3.46%
11/9/1994	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%
12/8/1994	11.50%	7.54%	3.96%
12/8/1994	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%
1/9/1995	12.28%	7.64%	4.64%
1/31/1995	11.00%	7.69%	3.31%
2/10/1995	12.60%	7.70%	4.90%
2/17/1995	11.90%	7.70%	4.20%
3/9/1995	11.50%	7.71%	3.79%
3/20/1995	12.00%	7.72%	4.28%
3/23/1995	12.81%	7.72%	5.09%
3/29/1995	11.60%	7.72%	3.88%
4/6/1995	11.10%	7.71%	3.39%
4/7/1995	11.00%	7.71%	3.29%
4/19/1995	11.00%	7.70%	3.30%
5/12/1995	11.63%	7.68%	3.95%
5/25/1995	11.20%	7.65%	3.55%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
6/9/1995	11.25%	7.60%	3.65%
6/21/1995	12.25%	7.56%	4.69%
6/30/1995	11.10%	7.52%	3.58%
9/11/1995	11.30%	7.20%	4.10%
9/27/1995	11.30%	7.12%	4.18%
9/27/1995	11.50%	7.12%	4.38%
9/27/1995	11.75%	7.12%	4.63%
9/29/1995	11.00%	7.11%	3.89%
11/9/1995	11.38%	6.90%	4.48%
11/9/1995	12.36%	6.90%	5.46%
11/17/1995	11.00%	6.86%	4.14%
12/4/1995	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%
2/5/1996	12.25%	6.48%	5.77%
3/29/1996	10.67%	6.42%	4.25%
4/8/1996	11.00%	6.42%	4.58%
4/11/1996	12.59%	6.43%	6.16%
4/11/1996	12.59%	6.43%	6.16%
4/24/1996	11.25%	6.43%	4.82%
4/30/1996	11.00%	6.43%	4.57%
5/13/1996	11.00%	6.44%	4.56%
5/23/1996	11.25%	6.43%	4.82%
6/25/1996	11.25%	6.48%	4.77%
6/27/1996	11.20%	6.48%	4.72%
8/12/1996	10.40%	6.57%	3.83%
9/27/1996	11.00%	6.71%	4.29%
10/16/1996	12.25%	6.76%	5.49%
11/5/1996	11.00%	6.81%	4.19%
11/26/1996	11.30%	6.83%	4.47%
12/18/1996	11.75%	6.83%	4.92%
12/31/1996	11.50%	6.83%	4.67%
1/3/1997	10.70%	6.83%	3.87%
2/13/1997	11.80%	6.82%	4.98%
2/20/1997	11.80%	6.82%	4.98%
3/31/1997	10.02%	6.80%	3.22%
4/2/1997	11.65%	6.80%	4.85%
4/28/1997	11.50%	6.81%	4.69%
4/29/1997	11.70%	6.81%	4.89%
7/17/1997	12.00%	6.77%	5.23%
12/12/1997	11.00%	6.60%	4.40%
12/23/1997	11.12%	6.57%	4.55%
2/2/1998	12.75%	6.39%	6.36%
3/2/1998	11.25%	6.29%	4.96%
3/6/1998	10.75%	6.27%	4.48%
3/20/1998	10.50%	6.22%	4.28%
4/30/1998	12.20%	6.12%	6.08%
7/10/1998	11.40%	5.94%	5.46%
9/15/1998	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%
2/5/1999	10.30%	5.38%	4.92%
3/4/1999	10.50%	5.34%	5.16%
4/6/1999	10.94%	5.32%	5.62%
7/29/1999	10.75%	5.52%	5.23%
9/23/1999	10.75%	5.70%	5.05%
11/17/1999	11.10%	5.90%	5.20%
1/7/2000	11.50%	6.05%	5.45%
1/7/2000	11.50%	6.05%	5.45%
2/17/2000	10.60%	6.17%	4.43%
3/28/2000	11.25%	6.20%	5.05%
5/24/2000	11.00%	6.18%	4.82%
7/18/2000	12.20%	6.16%	6.04%
9/29/2000	11.16%	6.03%	5.13%
11/28/2000	12.90%	5.89%	7.01%
11/30/2000	12.10%	5.88%	6.22%
1/23/2001	11.25%	5.79%	5.46%
2/8/2001	11.50%	5.77%	5.73%
5/8/2001	10.75%	5.62%	5.13%
6/26/2001	11.00%	5.62%	5.38%
7/25/2001	11.02%	5.60%	5.42%
7/25/2001	11.02%	5.60%	5.42%
7/31/2001	11.00%	5.59%	5.41%
8/31/2001	10.50%	5.56%	4.94%
9/7/2001	10.75%	5.55%	5.20%
9/10/2001	11.00%	5.55%	5.45%
9/20/2001	10.00%	5.55%	4.45%
10/24/2001	10.30%	5.54%	4.76%
11/28/2001	10.60%	5.49%	5.11%
12/3/2001	12.88%	5.49%	7.39%
12/20/2001	12.50%	5.50%	7.00%
1/22/2002	10.00%	5.50%	4.50%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
3/27/2002	10.10%	5.45%	4.65%
4/22/2002	11.80%	5.45%	6.35%
5/28/2002	10.17%	5.46%	4.71%
6/10/2002	12.00%	5.47%	6.53%
6/18/2002	11.16%	5.48%	5.68%
6/20/2002	11.00%	5.48%	5.52%
6/20/2002	12.30%	5.48%	6.82%
7/15/2002	11.00%	5.48%	5.52%
9/12/2002	12.30%	5.45%	6.85%
9/26/2002	10.45%	5.41%	5.04%
12/4/2002	11.55%	5.29%	6.26%
12/13/2002	11.75%	5.27%	6.48%
12/20/2002	11.40%	5.25%	6.15%
1/8/2003	11.10%	5.19%	5.91%
1/31/2003	12.45%	5.13%	7.32%
2/28/2003	12.30%	5.05%	7.25%
3/6/2003	10.75%	5.03%	5.72%
3/7/2003	9.96%	5.02%	4.94%
3/20/2003	12.00%	4.98%	7.02%
4/3/2003	12.00%	4.96%	7.04%
4/15/2003	11.15%	4.94%	6.21%
6/25/2003	10.75%	4.79%	5.96%
6/26/2003	10.75%	4.79%	5.96%
7/9/2003	9.75%	4.79%	4.96%
7/16/2003	9.75%	4.79%	4.96%
7/25/2003	9.50%	4.80%	4.70%
8/26/2003	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%
1/13/2004	12.00%	4.95%	7.05%
3/2/2004	10.75%	4.99%	5.76%
3/26/2004	10.25%	5.02%	5.23%
4/5/2004	11.25%	5.03%	6.22%
5/18/2004	10.50%	5.07%	5.43%
5/25/2004	10.25%	5.08%	5.17%
5/27/2004	10.25%	5.08%	5.17%
6/2/2004	11.22%	5.08%	6.14%
6/30/2004	10.50%	5.10%	5.40%
6/30/2004	10.50%	5.10%	5.40%
7/16/2004	11.60%	5.11%	6.49%
8/25/2004	10.25%	5.10%	5.15%
9/9/2004	10.40%	5.10%	5.30%
11/9/2004	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%
1/6/2005	10.70%	5.08%	5.62%
2/18/2005	10.30%	4.98%	5.32%
2/25/2005	10.50%	4.96%	5.54%
3/10/2005	11.00%	4.93%	6.07%
3/24/2005	10.30%	4.90%	5.40%
4/4/2005	10.00%	4.88%	5.12%
4/7/2005	10.25%	4.87%	5.38%
5/18/2005	10.25%	4.78%	5.47%
5/25/2005	10.75%	4.76%	5.99%
5/26/2005	9.75%	4.76%	4.99%
6/1/2005	9.75%	4.75%	5.00%
7/19/2005	11.50%	4.64%	6.86%
8/5/2005	11.75%	4.62%	7.13%
8/15/2005	10.13%	4.61%	5.52%
9/28/2005	10.00%	4.54%	5.46%
10/4/2005	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%
1/5/2006	11.00%	4.53%	6.47%
1/27/2006	9.75%	4.52%	5.23%
3/3/2006	10.39%	4.53%	5.86%
4/17/2006	10.20%	4.61%	5.59%
4/26/2006	10.60%	4.64%	5.96%
5/17/2006	11.60%	4.69%	6.91%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
6/6/2006	10.00%	4.74%	5.26%
6/27/2006	10.75%	4.80%	5.95%
7/6/2006	10.20%	4.83%	5.37%
7/24/2006	9.60%	4.86%	4.74%
7/26/2006	10.50%	4.86%	5.64%
7/28/2006	10.05%	4.86%	5.19%
8/23/2006	9.55%	4.89%	4.66%
9/1/2006	10.54%	4.90%	5.64%
9/14/2006	10.00%	4.91%	5.09%
10/6/2006	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%
12/1/2006	10.25%	4.95%	5.30%
12/1/2006	10.50%	4.95%	5.55%
12/7/2006	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%
1/5/2007	10.00%	4.95%	5.05%
1/11/2007	10.10%	4.95%	5.15%
1/11/2007	10.10%	4.95%	5.15%
1/11/2007	10.90%	4.95%	5.95%
1/12/2007	10.10%	4.95%	5.15%
1/13/2007	10.40%	4.95%	5.45%
1/19/2007	10.80%	4.94%	5.86%
3/21/2007	11.35%	4.87%	6.48%
3/22/2007	9.75%	4.86%	4.89%
5/15/2007	10.00%	4.81%	5.19%
5/17/2007	10.25%	4.81%	5.44%
5/17/2007	10.25%	4.81%	5.44%
5/22/2007	10.20%	4.80%	5.40%
5/22/2007	10.50%	4.80%	5.70%
5/23/2007	10.70%	4.80%	5.90%
5/25/2007	9.67%	4.80%	4.87%
6/15/2007	9.90%	4.82%	5.08%
6/21/2007	10.20%	4.83%	5.37%
6/22/2007	10.50%	4.83%	5.67%
6/28/2007	10.75%	4.84%	5.91%
7/12/2007	9.67%	4.86%	4.81%
7/19/2007	10.00%	4.87%	5.13%
7/19/2007	10.00%	4.87%	5.13%
8/15/2007	10.40%	4.88%	5.52%
10/9/2007	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%
12/6/2007	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%
1/8/2008	10.75%	4.83%	5.92%
1/17/2008	10.75%	4.81%	5.94%
1/28/2008	9.40%	4.80%	4.60%
1/30/2008	10.00%	4.79%	5.21%
1/31/2008	10.71%	4.79%	5.92%
2/29/2008	10.25%	4.75%	5.50%
3/12/2008	10.25%	4.73%	5.52%
3/25/2008	9.10%	4.68%	4.42%
4/22/2008	10.25%	4.60%	5.65%
4/24/2008	10.10%	4.60%	5.50%
5/1/2008	10.70%	4.59%	6.11%
5/19/2008	11.00%	4.56%	6.44%
5/27/2008	10.00%	4.55%	5.45%
6/10/2008	10.70%	4.54%	6.16%
6/27/2008	10.50%	4.54%	5.96%
6/27/2008	11.04%	4.54%	6.50%
7/10/2008	10.43%	4.52%	5.91%
7/16/2008	9.40%	4.52%	4.88%
7/30/2008	10.80%	4.51%	6.29%
7/31/2008	10.70%	4.51%	6.19%
8/11/2008	10.25%	4.51%	5.74%
8/26/2008	10.18%	4.50%	5.68%
9/10/2008	10.30%	4.50%	5.80%
9/24/2008	10.65%	4.48%	6.17%
9/24/2008	10.65%	4.48%	6.17%
9/24/2008	10.65%	4.48%	6.17%
9/30/2008	10.20%	4.48%	5.72%
10/8/2008	10.15%	4.46%	5.69%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
11/13/2008	10.55%	4.45%	6.10%
11/17/2008	10.20%	4.44%	5.76%
12/1/2008	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%
1/14/2009	10.50%	4.15%	6.35%
1/21/2009	10.50%	4.12%	6.38%
1/21/2009	10.50%	4.12%	6.38%
1/21/2009	10.50%	4.12%	6.38%
1/27/2009	10.76%	4.09%	6.67%
1/30/2009	10.50%	4.08%	6.42%
2/4/2009	8.75%	4.06%	4.69%
3/4/2009	10.50%	3.96%	6.54%
3/12/2009	11.50%	3.93%	7.57%
4/2/2009	11.10%	3.85%	7.25%
4/21/2009	10.61%	3.80%	6.81%
4/24/2009	10.00%	3.79%	6.21%
4/30/2009	11.25%	3.78%	7.47%
5/4/2009	10.74%	3.77%	6.97%
5/20/2009	10.25%	3.74%	6.51%
5/28/2009	10.50%	3.74%	6.76%
6/22/2009	10.00%	3.76%	6.24%
6/24/2009	10.80%	3.77%	7.03%
7/8/2009	10.63%	3.77%	6.86%
7/17/2009	10.50%	3.78%	6.72%
8/31/2009	10.25%	3.82%	6.43%
10/14/2009	10.70%	4.01%	6.69%
10/23/2009	10.88%	4.06%	6.82%
11/2/2009	10.70%	4.09%	6.61%
11/3/2009	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%
12/3/2009	10.50%	4.18%	6.32%
12/7/2009	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%
1/4/2010	10.80%	4.28%	6.52%
1/11/2010	11.00%	4.30%	6.70%
1/26/2010	10.13%	4.35%	5.78%
1/27/2010	10.40%	4.35%	6.05%
1/27/2010	10.40%	4.35%	6.05%
1/27/2010	10.70%	4.35%	6.35%
2/9/2010	9.80%	4.38%	5.42%
2/18/2010	10.60%	4.40%	6.20%
2/24/2010	10.18%	4.41%	5.77%
3/2/2010	9.63%	4.41%	5.22%
3/4/2010	10.50%	4.41%	6.09%
3/5/2010	10.50%	4.41%	6.09%
3/11/2010	11.90%	4.42%	7.48%
3/17/2010	10.00%	4.41%	5.59%
3/25/2010	10.15%	4.42%	5.73%
4/2/2010	10.10%	4.43%	5.67%
4/27/2010	10.00%	4.46%	5.54%
4/29/2010	9.90%	4.46%	5.44%
4/29/2010	10.06%	4.46%	5.60%
4/29/2010	10.26%	4.46%	5.80%
5/12/2010	10.30%	4.45%	5.85%
5/12/2010	10.30%	4.45%	5.85%
5/28/2010	10.10%	4.44%	5.66%
5/28/2010	10.20%	4.44%	5.76%
6/7/2010	10.30%	4.44%	5.86%
6/16/2010	10.00%	4.44%	5.56%
6/28/2010	9.67%	4.43%	5.24%
6/28/2010	10.50%	4.43%	6.07%
6/30/2010	9.40%	4.43%	4.97%
7/1/2010	10.25%	4.43%	5.82%
7/15/2010	10.53%	4.43%	6.10%
7/15/2010	10.70%	4.43%	6.27%
7/30/2010	10.70%	4.41%	6.29%
8/4/2010	10.50%	4.41%	6.09%
8/6/2010	9.83%	4.41%	5.42%
8/25/2010	9.90%	4.37%	5.53%
9/3/2010	10.60%	4.35%	6.25%
9/14/2010	10.70%	4.33%	6.37%
9/16/2010	10.00%	4.33%	5.67%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
9/16/2010	10.00%	4.33%	5.67%
9/30/2010	9.75%	4.29%	5.46%
10/14/2010	10.35%	4.24%	6.11%
10/28/2010	10.70%	4.21%	6.49%
11/2/2010	10.38%	4.20%	6.18%
11/4/2010	10.70%	4.20%	6.50%
11/19/2010	10.20%	4.18%	6.02%
11/22/2010	10.00%	4.18%	5.82%
12/1/2010	10.13%	4.16%	5.97%
12/6/2010	9.86%	4.15%	5.71%
12/9/2010	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%
1/5/2011	10.15%	4.13%	6.02%
1/12/2011	10.30%	4.12%	6.18%
1/13/2011	10.30%	4.12%	6.18%
1/18/2011	10.00%	4.12%	5.88%
1/20/2011	9.30%	4.12%	5.18%
1/20/2011	10.13%	4.12%	6.01%
1/31/2011	9.60%	4.12%	5.48%
2/3/2011	10.00%	4.12%	5.88%
2/25/2011	10.00%	4.14%	5.86%
3/25/2011	9.80%	4.18%	5.62%
3/30/2011	10.00%	4.18%	5.82%
4/12/2011	10.00%	4.21%	5.79%
4/25/2011	10.74%	4.23%	6.51%
4/26/2011	9.67%	4.23%	5.44%
4/27/2011	10.40%	4.24%	6.16%
5/4/2011	10.00%	4.24%	5.76%
5/4/2011	10.00%	4.24%	5.76%
5/24/2011	10.50%	4.27%	6.23%
6/8/2011	10.75%	4.30%	6.45%
6/16/2011	9.20%	4.32%	4.88%
6/17/2011	9.95%	4.32%	5.63%
7/13/2011	10.20%	4.36%	5.84%
8/1/2011	9.20%	4.39%	4.81%
8/8/2011	10.00%	4.38%	5.62%
8/11/2011	10.00%	4.38%	5.62%
8/12/2011	10.35%	4.37%	5.98%
8/19/2011	10.25%	4.36%	5.89%
9/2/2011	12.88%	4.32%	8.56%
9/22/2011	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%
1/25/2012	10.50%	3.57%	6.93%
1/27/2012	10.50%	3.56%	6.94%
2/15/2012	10.20%	3.47%	6.73%
2/23/2012	9.90%	3.44%	6.46%
2/27/2012	10.25%	3.43%	6.82%
2/29/2012	10.40%	3.41%	6.99%
3/29/2012	10.37%	3.32%	7.05%
4/4/2012	10.00%	3.30%	6.70%
4/26/2012	10.00%	3.21%	6.79%
5/2/2012	10.00%	3.18%	6.82%
5/7/2012	9.80%	3.17%	6.63%
5/15/2012	10.00%	3.14%	6.86%
5/29/2012	10.05%	3.11%	6.94%
6/7/2012	10.30%	3.08%	7.22%
6/14/2012	9.40%	3.06%	6.34%
6/15/2012	10.40%	3.06%	7.34%
6/18/2012	9.60%	3.06%	6.54%
6/19/2012	9.25%	3.05%	6.20%
6/26/2012	10.10%	3.04%	7.06%
6/29/2012	10.00%	3.04%	6.96%
7/9/2012	10.20%	3.03%	7.17%
7/16/2012	9.80%	3.02%	6.78%
7/20/2012	9.31%	3.01%	6.30%
7/20/2012	9.81%	3.01%	6.80%
9/13/2012	9.80%	2.94%	6.86%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
9/19/2012	9.80%	2.94%	6.86%
9/19/2012	10.05%	2.94%	7.11%
9/26/2012	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%
11/9/2012	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%
12/5/2012	9.71%	2.89%	6.82%
12/5/2012	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%
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%
1/9/2013	9.70%	2.85%	6.85%
1/9/2013	9.70%	2.85%	6.85%
1/9/2013	9.70%	2.85%	6.85%
1/16/2013	9.60%	2.84%	6.76%
1/16/2013	9.60%	2.84%	6.76%
2/13/2013	10.20%	2.84%	7.36%
2/22/2013	9.75%	2.85%	6.90%
2/27/2013	10.00%	2.86%	7.14%
3/14/2013	9.30%	2.88%	6.42%
3/27/2013	9.80%	2.90%	6.90%
5/1/2013	9.84%	2.94%	6.90%
5/15/2013	10.30%	2.96%	7.34%
5/30/2013	10.20%	2.98%	7.22%
5/31/2013	9.00%	2.98%	6.02%
6/11/2013	10.00%	3.00%	7.00%
6/21/2013	9.75%	3.02%	6.73%
6/25/2013	9.80%	3.03%	6.77%
7/12/2013	9.36%	3.07%	6.29%
8/8/2013	9.83%	3.14%	6.69%
8/14/2013	9.15%	3.16%	5.99%
9/11/2013	10.20%	3.26%	6.94%
9/11/2013	10.25%	3.26%	6.99%
9/24/2013	10.20%	3.31%	6.89%
10/3/2013	9.65%	3.33%	6.32%
11/6/2013	10.20%	3.41%	6.79%
11/21/2013	10.00%	3.44%	6.56%
11/26/2013	10.00%	3.45%	6.55%
12/3/2013	10.25%	3.47%	6.78%
12/4/2013	9.50%	3.47%	6.03%
12/5/2013	10.20%	3.48%	6.72%
12/9/2013	8.72%	3.48%	5.24%
12/9/2013	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%
2/20/2014	9.20%	3.68%	5.52%
2/26/2014	9.75%	3.69%	6.06%
3/17/2014	9.55%	3.72%	5.83%
3/26/2014	9.40%	3.73%	5.67%
3/26/2014	9.96%	3.73%	6.23%
4/2/2014	9.70%	3.73%	5.97%
5/16/2014	9.80%	3.70%	6.10%
5/30/2014	9.70%	3.68%	6.02%
6/6/2014	10.40%	3.67%	6.73%
6/30/2014	9.55%	3.64%	5.91%
7/2/2014	9.62%	3.64%	5.98%
7/10/2014	9.95%	3.63%	6.32%
7/23/2014	9.75%	3.61%	6.14%
7/29/2014	9.45%	3.60%	5.85%
7/31/2014	9.90%	3.60%	6.30%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
8/20/2014	9.75%	3.57%	6.18%
8/25/2014	9.60%	3.56%	6.04%
8/29/2014	9.80%	3.54%	6.26%
9/11/2014	9.60%	3.51%	6.09%
9/15/2014	10.25%	3.51%	6.74%
10/9/2014	9.80%	3.45%	6.35%
11/6/2014	9.56%	3.37%	6.19%
11/6/2014	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%
12/4/2014	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%
1/23/2015	9.50%	3.14%	6.36%
2/24/2015	9.83%	3.04%	6.79%
3/18/2015	9.75%	2.98%	6.77%
3/25/2015	9.50%	2.96%	6.54%
3/26/2015	9.72%	2.95%	6.77%
4/23/2015	10.20%	2.87%	7.33%
4/29/2015	9.53%	2.86%	6.67%
5/1/2015	9.60%	2.85%	6.75%
5/26/2015	9.75%	2.83%	6.92%
6/17/2015	9.00%	2.82%	6.18%
6/17/2015	9.00%	2.82%	6.18%
9/2/2015	9.50%	2.79%	6.71%
9/10/2015	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%
12/3/2015	10.00%	2.90%	7.10%
12/9/2015	9.14%	2.90%	6.24%
12/9/2015	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%
1/6/2016	9.50%	2.94%	6.56%
2/23/2016	9.75%	2.94%	6.81%
3/16/2016	9.85%	2.91%	6.94%
4/29/2016	9.80%	2.83%	6.97%
6/3/2016	9.75%	2.80%	6.95%
6/8/2016	9.48%	2.80%	6.68%
6/15/2016	9.00%	2.78%	6.22%
6/15/2016	9.00%	2.78%	6.22%
7/18/2016	9.98%	2.71%	7.27%
8/9/2016	9.85%	2.66%	7.19%
8/18/2016	9.50%	2.63%	6.87%
8/24/2016	9.75%	2.62%	7.13%
9/1/2016	9.50%	2.59%	6.91%
9/8/2016	10.00%	2.58%	7.42%
9/28/2016	9.58%	2.54%	7.04%
9/30/2016	9.90%	2.53%	7.37%
11/9/2016	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%
12/1/2016	10.00%	2.51%	7.49%
12/6/2016	8.64%	2.52%	6.12%
12/6/2016	8.64%	2.52%	6.12%
12/7/2016	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%
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%
1/18/2017	9.45%	2.58%	6.87%
1/24/2017	9.00%	2.59%	6.41%
1/31/2017	10.10%	2.60%	7.50%
2/15/2017	9.60%	2.62%	6.98%
2/22/2017	9.60%	2.64%	6.96%
2/24/2017	9.75%	2.64%	7.11%
2/28/2017	10.10%	2.64%	7.46%
3/2/2017	9.41%	2.65%	6.76%
3/20/2017	9.50%	2.68%	6.82%
4/4/2017	10.25%	2.71%	7.54%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
4/12/2017	9.40%	2.74%	6.66%
4/20/2017	9.50%	2.76%	6.74%
5/3/2017	9.50%	2.79%	6.71%
5/11/2017	9.20%	2.81%	6.39%
5/18/2017	9.50%	2.83%	6.67%
5/23/2017	9.70%	2.84%	6.86%
6/16/2017	9.65%	2.89%	6.76%
6/22/2017	9.70%	2.90%	6.80%
6/22/2017	9.70%	2.90%	6.80%
7/24/2017	9.50%	2.95%	6.55%
8/15/2017	10.00%	2.97%	7.03%
9/22/2017	9.60%	2.93%	6.67%
9/28/2017	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%
11/6/2017	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%
12/5/2017	9.50%	2.88%	6.62%
12/6/2017	8.40%	2.87%	5.53%
12/6/2017	8.40%	2.87%	5.53%
12/7/2017	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%
1/18/2018	9.70%	2.84%	6.86%
1/31/2018	9.30%	2.84%	6.46%
2/2/2018	9.98%	2.84%	7.14%
2/23/2018	9.90%	2.85%	7.05%
3/12/2018	9.25%	2.86%	6.39%
3/15/2018	9.00%	2.87%	6.13%
3/29/2018	10.00%	2.88%	7.12%
4/12/2018	9.90%	2.89%	7.01%
4/13/2018	9.73%	2.89%	6.84%
4/18/2018	9.25%	2.89%	6.36%
4/18/2018	10.00%	2.89%	7.11%
4/26/2018	9.50%	2.90%	6.60%
5/30/2018	9.95%	2.94%	7.01%
5/31/2018	9.50%	2.94%	6.56%
6/14/2018	8.80%	2.96%	5.84%
6/22/2018	9.50%	2.97%	6.53%
6/22/2018	9.90%	2.97%	6.93%
6/28/2018	9.35%	2.97%	6.38%
6/29/2018	9.50%	2.97%	6.53%
8/8/2018	9.53%	2.99%	6.54%
8/21/2018	9.70%	3.00%	6.70%
8/24/2018	9.28%	3.01%	6.27%
9/5/2018	9.56%	3.02%	6.54%
9/14/2018	10.00%	3.03%	6.97%
9/20/2018	9.80%	3.04%	6.76%
9/26/2018	9.77%	3.05%	6.72%
9/26/2018	10.00%	3.05%	6.95%
9/27/2018	9.30%	3.05%	6.25%
10/4/2018	9.85%	3.06%	6.79%
10/29/2018	9.60%	3.10%	6.50%
10/31/2018	9.99%	3.11%	6.88%
11/1/2018	8.69%	3.11%	5.58%
12/4/2018	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%
1/9/2019	10.00%	3.14%	6.86%
2/27/2019	9.75%	3.12%	6.63%
3/13/2019	9.60%	3.12%	6.48%
3/14/2019	9.00%	3.12%	5.88%
3/14/2019	9.40%	3.12%	6.28%
3/22/2019	9.65%	3.12%	6.53%
4/30/2019	9.73%	3.11%	6.62%
4/30/2019	9.73%	3.11%	6.62%
5/1/2019	9.50%	3.11%	6.39%
5/2/2019	10.00%	3.11%	6.89%
5/8/2019	9.50%	3.10%	6.40%
5/14/2019	8.75%	3.10%	5.65%
5/16/2019	9.50%	3.09%	6.41%
5/23/2019	9.90%	3.09%	6.81%

<u>Date of Electric Rate Case</u>	<u>Return on Equity</u>	<u>30-Year Treasury Yield</u>	<u>Risk Premium</u>
		Average:	4.68%
		No. of Cases:	1,593

Expected Earnings Analysis

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]
		Expected ROE 2022-24	Shares Outstanding 2019	Shares Outstanding 2022-24	% Increase	Adjustment Factor	Adjusted ROE
ALLETE, Inc.	ALE	9.0%	51.75	51.75	0.00%	1.000	9.00%
Alliant Energy Corporation	LNT	10.0%	240.00	250.00	0.82%	1.004	10.04%
Ameren Corporation	AEE	10.5%	246.50	255.00	0.68%	1.003	10.54%
American Electric Power Company, Inc.	AEP	10.5%	494.65	518.00	0.93%	1.005	10.55%
Avangrid, Inc.	AGR	6.0%	309.00	309.00	0.00%	1.000	6.00%
CMS Energy Corporation	CMS	14.0%	285.00	297.00	0.83%	1.004	14.06%
DTE Energy Company	DTE	10.5%	192.00	200.00	0.82%	1.004	10.54%
Duke Energy Corporation	DUK	8.5%	733.00	755.00	0.59%	1.003	8.53%
Evergy, Inc.	EVRG	8.5%	225.00	212.00	-1.18%	0.994	8.45%
Hawaiian Electric Industries, Inc.	HE	10.0%	109.00	113.00	0.72%	1.004	10.04%
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	0.24%	1.001	9.01%
OGE Energy Corp.	OGE	11.5%	200.00	200.00	0.00%	1.000	11.50%
Otter Tail Corporation	OTTR	10.5%	39.75	41.75	0.99%	1.005	10.55%
Pinnacle West Capital Corporation	PNW	10.5%	112.50	114.50	0.35%	1.002	10.52%
PNM Resources, Inc.	PNM	9.5%	79.65	84.00	1.07%	1.005	9.55%
Portland General Electric Company	POR	9.0%	89.40	90.00	0.13%	1.001	9.01%
Southern Company	SO	12.5%	1045.00	1085.00	0.75%	1.004	12.55%
Wisconsin Energy Corporation	WEC	12.0%	315.50	315.50	0.00%	1.000	12.00%
Xcel Energy Inc.	XEL	11.0%	515.50	521.50	0.23%	1.001	11.01%
						Median	10.53%
						Average	10.35%

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]

Small Size Premium

	[1]	[2]
	Customers (Mil)	(\$Mil)
Liberty-Empire Common Equity	0.155	\$750.00
Median Market to Book for Comp Group		2.19
Liberty-Empire Implied Market Cap		\$1,643.83

Company Name	Ticker	[3] Customers (Mil)	[4] Market Cap (\$Mil)	[5] Market to Book Ratio
ALLETE, Inc.	ALE	0.160	\$4,308.57	1.96
Alliant Energy Corporation	LNT	0.963	\$11,574.96	2.47
Ameren Corporation	AEE	2.400	\$18,528.01	2.40
American Electric Power Company, Inc.	AEP	5.400	\$43,679.74	2.28
Avangrid, Inc.	AGR	2.244	\$15,721.48	1.04
CMS Energy Corporation	CMS	1.831	\$16,321.96	3.36
DTE Energy Corporation	DTE	2.200	\$23,505.24	2.23
Duke Energy Corporation	DUK	7.709	\$63,672.32	1.45
Evergy, Inc.	EVRG	1.588	\$14,582.85	1.55
Hawaiian Electric Industries, Inc.	HE	0.463	\$4,648.23	2.13
NextEra Energy, Inc.	NEE	NA	\$97,341.85	2.84
NorthWestern Corporation	NWE	0.437	\$3,648.76	1.83
OGE Energy Corp.	OGE	0.849	\$8,566.74	2.15
Otter Tail Corporation	OTTR	0.132	\$2,045.44	2.76
Pinnacle West Capital Corporation	PNW	1.246	\$10,810.06	2.06
PNM Resources, Inc.	PNM	0.782	\$3,930.11	2.33
Portland General Electric Company	POR	0.885	\$4,842.14	1.90
Southern Company	SO	4.685	\$56,947.52	2.15
WEC Energy Group, Inc.	WEC	1.618	\$26,120.72	2.62
Xcel Energy Inc.	XEL	3.625	\$30,477.75	2.47
MEDIAN		1.588	\$15,152.16	2.19
MEAN		2.064	\$23,063.72	2.20

Market Capitalization (\$Mil) [6]				
Decile	Low	High	Size Premium	
2	\$ 13,512.960	\$ 29,022.867	0.52%	
3	\$ 7,275.967	\$ 13,455.802	0.81%	
4	\$ 4,504.066	\$ 7,524.230	0.85%	
5	\$ 2,996.003	\$ 4,503.549	1.28%	
6	\$ 1,961.831	\$ 2,992.251	1.50%	
7	\$ 1,292.791	\$ 1,960.201	1.58%	
8	\$ 730.047	\$ 1,292.224	1.80%	
9	\$ 325.360	\$ 727.843	2.46%	
10	\$ 2.455	\$ 321.578	5.22%	
Proxy Group Median	\$	15,152.165	0.52%	
7th Decile Size Premium	\$	1,643.830	1.58%	
Difference from Proxy Group Median			1.06%	

Notes:

[1] Company provided data.

[2] Proposed test year rate base multiplied by the proposed equity ratio, rounded.

[3] Source: S&P Global Market Intelligence.

[4] Source: S&P Global Market Intelligence, 30-day average as of June 28, 2017.

[4] Source: S&P Global Market Intelligence, 30-day average as of June 28, 2017.

[6] Source: Duff & Phelps, 2019 Cost of Capital Navigator.

Proxy Group Capital Structure

Company	Ticker	% Common Equity								Average
		2019Q1	2018Q4	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	
ALLETE, Inc.	ALE	59.53%	59.12%	58.50%	58.84%	63.09%	62.51%	61.03%	60.62%	60.40%
Alliant Energy Corporation	LNT	53.18%	53.11%	51.13%	51.00%	49.74%	49.77%	52.09%	51.23%	51.41%
Ameren Corporation	AEE	52.81%	52.69%	53.22%	52.01%	53.04%	52.65%	53.56%	53.11%	52.89%
American Electric Power Company, Inc.	AEP	49.62%	49.40%	48.68%	48.52%	48.60%	48.91%	48.46%	49.41%	48.95%
Avangrid, Inc.	AGR	56.51%	55.72%	56.13%	54.93%	56.55%	55.69%	53.88%	53.54%	55.37%
CMS Energy Corporation	CMS	52.52%	50.27%	53.01%	52.86%	53.13%	52.25%	53.25%	52.97%	52.53%
DTE Energy Company	DTE	48.69%	50.96%	49.97%	49.23%	51.12%	51.02%	50.50%	50.63%	50.26%
Duke Energy Corporation	DUK	53.14%	54.35%	55.03%	54.94%	54.46%	54.30%	53.78%	54.62%	54.33%
Eergy, Inc.	EVRG	58.16%	59.56%	59.86%	58.51%	58.73%	58.62%	59.41%	58.74%	58.95%
Hawaiian Electric Industries, Inc.	HE	58.06%	57.98%	56.09%	55.78%	57.44%	57.42%	58.11%	57.76%	57.33%
NextEra Energy, Inc.	NEE	61.05%	62.05%	60.06%	57.87%	57.75%	57.06%	58.99%	58.60%	59.18%
NorthWestern Corporation	NWE	48.74%	47.88%	48.36%	48.41%	47.48%	49.89%	48.86%	48.61%	48.53%
OGE Energy Corp.	OGE	55.38%	53.20%	53.05%	54.25%	53.59%	53.36%	53.05%	52.75%	53.58%
Otter Tail Corporation	OTTR	53.90%	53.58%	53.49%	53.11%	52.67%	57.34%	57.24%	55.31%	54.58%
Pinnacle West Capital Corporation	PNW	54.48%	54.36%	53.68%	53.71%	53.18%	53.14%	53.05%	53.32%	53.61%
PNM Resources, Inc.	PNM	43.45%	45.63%	48.01%	46.68%	46.20%	46.06%	47.58%	46.89%	46.31%
Portland General Electric Company	POR	50.60%	50.19%	50.51%	50.29%	50.14%	49.80%	50.17%	50.32%	50.25%
Southern Company	SO	52.80%	52.38%	50.22%	48.78%	48.55%	45.49%	48.53%	48.52%	49.41%
Wisconsin Energy Corporation	WEC	55.73%	53.46%	58.30%	57.72%	61.62%	54.62%	55.82%	55.48%	56.60%
Xcel Energy Inc.	XEL	NA	54.22%	53.37%	53.63%	54.15%	53.95%	53.93%	54.37%	53.94%
Mean		53.60%	53.51%	53.53%	53.05%	53.56%	53.19%	53.57%	53.34%	53.42%

Operating Company Capital Structure										
Operating Company	Parent	% Common Equity								
		2019Q1	2018Q4	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	Average
ALLETE (Minnesota Power)	ALE	60.87%	61.39%	60.43%	60.33%	60.38%	60.04%	59.73%	59.16%	60.29%
Superior Water, Light and Power Company	ALE	58.19%	56.86%	56.58%	57.34%	65.80%	64.99%	62.33%	62.08%	60.52%
Interstate Power and Light Company	LNT	53.33%	53.52%	49.64%	50.47%	49.92%	50.31%	51.79%	50.89%	51.23%
Wisconsin Power and Light Company	LNT	53.03%	52.69%	52.62%	51.52%	49.57%	49.23%	52.39%	51.56%	51.58%
Ameren Illinois Company	AEE	53.65%	52.86%	53.18%	52.74%	54.24%	53.38%	54.98%	54.55%	53.70%
Union Electric Company	AEE	51.96%	52.52%	53.26%	51.28%	51.84%	51.92%	52.14%	51.68%	52.08%
Appalachian Power Company	AEP	47.77%	49.51%	49.30%	48.93%	49.35%	48.72%	48.30%	47.85%	48.72%
Indiana Michigan Power Company	AEP	45.43%	44.62%	44.53%	44.15%	46.64%	46.33%	46.33%	46.27%	45.58%
Kentucky Power Company	AEP	46.42%	45.72%	45.28%	44.89%	44.40%	43.52%	43.22%	43.30%	44.59%
Kingsport Power Company	AEP	51.54%	50.79%	50.71%	47.69%	47.28%	46.53%	45.88%	50.58%	48.88%
Ohio Power Company	AEP	58.86%	57.80%	56.85%	57.11%	52.91%	58.63%	57.64%	56.72%	57.07%
Public Service Company of Oklahoma	AEP	47.19%	49.16%	49.55%	48.59%	48.10%	48.50%	48.85%	48.26%	48.52%
Southwestern Electric Power Company	AEP	47.59%	46.97%	43.43%	47.91%	47.72%	48.52%	48.65%	48.14%	47.37%
Wheeling Power Company	AEP	54.27%	54.62%	54.70%	54.19%	54.27%	54.26%	54.13%	54.10%	54.32%
AEP Texas, Inc.	AEP	47.54%	45.38%	43.80%	43.20%	46.75%	45.14%	42.81%	49.46%	45.51%
Central Maine Power Company	AGR	63.51%	63.21%	64.17%	63.53%	64.18%	63.82%	63.97%	63.27%	63.71%
New York State Electric & Gas Corporation	AGR	55.93%	54.30%	53.95%	50.99%	54.51%	53.30%	48.27%	50.24%	52.69%
Rochester Gas and Electric Corporation	AGR	49.96%	48.89%	48.16%	47.77%	50.80%	49.63%	48.94%	48.46%	49.08%
United Illuminating Company	AGR	56.65%	56.46%	58.23%	57.43%	56.70%	56.00%	54.35%	52.17%	56.00%
Consumers Energy Company	CMS	52.52%	50.27%	53.01%	52.86%	53.13%	52.25%	53.25%	52.97%	52.53%
DTE Electric Company	DTE	48.69%	50.96%	49.97%	49.23%	51.12%	51.02%	50.50%	50.63%	50.26%
Duke Energy Carolinas, LLC	DUK	52.32%	51.78%	52.64%	52.10%	51.70%	52.98%	53.98%	53.49%	52.62%
Duke Energy Florida, LLC	DUK	50.56%	50.04%	49.65%	48.79%	49.92%	49.25%	49.46%	47.74%	49.42%
Duke Energy Indiana, LLC	DUK	54.29%	53.26%	52.79%	52.64%	52.54%	51.94%	51.71%	51.89%	52.63%
Duke Energy Kentucky, Inc.	DUK	52.81%	51.95%	56.58%	55.79%	53.72%	53.11%	50.69%	55.74%	53.80%
Duke Energy Ohio, Inc.	DUK	59.29%	68.09%	67.73%	67.10%	66.06%	66.24%	65.79%	65.38%	65.71%
Duke Energy Progress, LLC	DUK	49.60%	51.00%	50.76%	53.22%	52.82%	52.27%	51.06%	53.51%	51.78%
Kansas City Power & Light Company	EVRG	46.04%	49.49%	49.50%	48.88%	49.25%	49.15%	49.42%	48.47%	48.78%
Kansas Gas and Electric Company	EVRG	75.13%	74.97%	74.91%	74.45%	74.29%	74.18%	74.21%	73.69%	74.48%
KCP&L Greater Missouri Operations Company	EVRG	52.68%	54.71%	55.70%	52.03%	52.63%	52.40%	55.14%	54.57%	53.73%
Westar Energy (KPL)	EVRG	58.80%	59.08%	59.34%	58.68%	58.75%	58.74%	58.87%	58.22%	58.81%
Hawaii Electric Light Company, Inc.	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hawaiian Electric Company, Inc.	HE	58.06%	57.98%	56.09%	55.78%	57.44%	57.42%	58.11%	57.76%	57.33%
Maui Electric Company, Limited	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida Power & Light Company	NEE	64.03%	64.37%	64.78%	60.84%	61.23%	59.93%	63.00%	62.78%	62.62%
Gulf Power Company	NEE	58.06%	59.73%	55.34%	54.90%	54.27%	54.19%	54.97%	54.41%	55.73%
NorthWestern Corporation	NWE	48.74%	47.88%	48.36%	48.41%	47.48%	49.89%	48.86%	48.61%	48.53%
Oklahoma Gas and Electric Company	OGE	55.38%	53.20%	53.05%	54.25%	53.59%	53.36%	53.05%	52.75%	53.58%
Otter Tail Power Company	OTTR	53.90%	53.58%	53.49%	53.11%	52.67%	57.34%	57.24%	55.31%	54.58%
Arizona Public Service Company	PNW	54.48%	54.36%	53.68%	53.71%	53.18%	53.14%	53.05%	53.32%	53.61%
Public Service Company of New Mexico	PNM	43.45%	45.63%	48.01%	46.68%	46.20%	46.06%	47.58%	46.89%	46.31%
Portland General Electric Company	POR	50.60%	50.19%	50.51%	50.29%	50.14%	49.80%	50.17%	50.32%	50.25%
Alabama Power Company	SO	52.23%	47.77%	48.13%	47.51%	48.86%	47.07%	47.93%	47.25%	48.34%
Georgia Power Company	SO	56.43%	59.02%	57.27%	54.97%	53.81%	50.06%	50.35%	51.55%	54.18%
Mississippi Power Company	SO	49.73%	50.35%	45.28%	43.87%	43.00%	39.34%	47.32%	46.76%	45.70%
Upper Michigan Energy Resources Corporation	WEC	52.54%	47.01%	55.08%	54.53%	70.04%	49.85%	NA	NA	54.84%
Wisconsin Electric Power Company	WEC	55.78%	56.03%	59.25%	59.09%	56.47%	55.94%	55.97%	55.76%	56.79%
Wisconsin Public Service Corporation	WEC	58.88%	57.33%	60.59%	59.53%	58.35%	58.06%	55.68%	55.21%	57.96%
Northern States Power Company - MN	XEL	NA	52.81%	52.64%	52.61%	52.59%	52.38%	52.22%	52.78%	52.57%
Northern States Power Company - WI	XEL	NA	53.60%	48.45%	53.85%	53.79%	53.36%	55.57%	55.22%	53.41%
Public Service Company of Colorado	XEL	NA	56.31%	56.08%	54.17%	56.67%	56.50%	55.64%	54.88%	55.75%
Southwestern Public Service Company	XEL	NA	54.17%	56.29%	53.88%	53.54%	53.55%	52.29%	54.61%	54.05%
Mean		53.67%	53.68%	53.67%	53.16%	53.69%	53.07%	53.23%	53.29%	53.44%

Source: S&P Global Market Intelligence

Proxy Group Capital Structure

Company	Ticker	% Long-Term Debt								
		2019Q1	2018Q4	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	Average
ALLETE, Inc.	ALE	40.47%	40.88%	41.50%	41.16%	36.91%	37.49%	38.97%	39.38%	39.60%
Alliant Energy Corporation	LNT	46.82%	46.89%	48.87%	49.00%	50.26%	50.23%	47.91%	48.77%	48.59%
Ameren Corporation	AEE	47.19%	47.31%	46.78%	47.99%	46.96%	47.35%	46.44%	46.89%	47.11%
American Electric Power Company, Inc.	AEP	50.38%	50.60%	51.32%	51.48%	51.40%	51.09%	51.54%	50.59%	51.05%
Avangrid, Inc.	AGR	43.49%	44.28%	43.87%	45.07%	43.45%	44.31%	46.12%	46.46%	44.63%
CMS Energy Corporation	CMS	47.48%	49.73%	46.99%	47.14%	46.87%	47.75%	46.75%	47.03%	47.47%
DTE Energy Company	DTE	51.31%	49.04%	50.03%	50.77%	48.88%	48.98%	49.50%	49.37%	49.74%
Duke Energy Corporation	DUK	46.86%	45.65%	44.97%	45.06%	45.54%	45.70%	46.22%	45.38%	45.67%
Energy, Inc.	EVRG	41.84%	40.44%	40.14%	41.49%	41.27%	41.38%	40.59%	41.26%	41.05%
Hawaiian Electric Industries, Inc.	HE	41.94%	42.02%	43.91%	44.22%	42.56%	42.58%	41.89%	42.24%	42.67%
NextEra Energy, Inc.	NEE	38.95%	37.95%	39.94%	42.13%	42.25%	42.94%	41.01%	41.40%	40.82%
NorthWestern Corporation	NWE	51.26%	52.12%	51.64%	51.59%	52.52%	50.11%	51.14%	51.39%	51.47%
OGE Energy Corp.	OGE	44.62%	46.80%	46.95%	45.75%	46.41%	46.64%	46.95%	47.25%	46.42%
Otter Tail Corporation	OTTR	46.10%	46.42%	46.51%	46.89%	47.33%	42.66%	42.76%	44.69%	45.42%
Pinnacle West Capital Corporation	PNW	45.52%	45.64%	46.32%	46.29%	46.82%	46.86%	46.95%	46.68%	46.39%
PNM Resources, Inc.	PNM	56.55%	54.37%	51.99%	53.32%	53.80%	53.94%	52.42%	53.11%	53.69%
Portland General Electric Company	POR	49.40%	49.81%	49.49%	49.71%	49.86%	50.20%	49.83%	49.68%	49.75%
Southern Company	SO	47.20%	47.62%	49.78%	51.22%	51.45%	54.51%	51.47%	51.48%	50.59%
Wisconsin Energy Corporation	WEC	44.27%	46.54%	41.70%	42.28%	38.38%	45.38%	44.18%	44.52%	43.40%
Xcel Energy Inc.	XEL	NA	45.78%	46.63%	46.37%	45.85%	46.05%	46.07%	45.63%	46.06%
Mean		46.40%	46.49%	46.47%	46.95%	46.44%	46.81%	46.43%	46.66%	46.58%

Operating Company Capital Structure

Operating Company	Parent	% Long-Term Debt								
		2019Q1	2018Q4	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	Average
ALLETE (Minnesota Power)	ALE	39.13%	38.61%	39.57%	39.67%	39.62%	39.96%	40.27%	40.84%	39.71%
Superior Water, Light and Power Company	ALE	41.81%	43.14%	43.42%	42.66%	34.20%	35.01%	37.67%	37.92%	39.48%
Interstate Power and Light Company	LNT	46.67%	46.48%	50.36%	49.53%	50.08%	49.69%	48.21%	49.11%	48.77%
Wisconsin Power and Light Company	LNT	46.97%	47.31%	47.38%	48.48%	50.43%	50.77%	47.61%	48.44%	48.42%
Ameren Illinois Company	AEE	46.35%	47.14%	46.82%	47.26%	45.76%	46.62%	45.02%	45.45%	46.30%
Union Electric Company	AEE	48.04%	47.48%	46.74%	48.72%	48.16%	48.08%	47.86%	48.32%	47.92%
Appalachian Power Company	AEP	52.23%	50.49%	50.70%	51.07%	50.65%	51.28%	51.70%	52.15%	51.28%
Indiana Michigan Power Company	AEP	54.57%	55.38%	55.47%	55.85%	53.36%	53.67%	53.35%	53.73%	54.42%
Kentucky Power Company	AEP	53.58%	54.28%	54.72%	55.11%	55.60%	56.48%	56.78%	56.70%	55.41%
Kingsport Power Company	AEP	48.46%	49.21%	49.29%	52.31%	52.72%	53.47%	54.12%	49.42%	51.12%
Ohio Power Company	AEP	41.14%	42.20%	43.15%	42.89%	47.09%	41.37%	42.36%	43.28%	42.93%
Public Service Company of Oklahoma	AEP	52.81%	50.84%	50.45%	51.41%	51.90%	51.50%	51.15%	51.74%	51.48%
Southwestern Electric Power Company	AEP	52.41%	53.03%	56.57%	52.09%	52.28%	51.48%	51.34%	51.86%	52.63%
Wheeling Power Company	AEP	45.73%	45.38%	45.30%	45.81%	45.73%	45.74%	45.87%	45.90%	45.68%
AEP Texas, Inc.	AEP	52.46%	54.62%	56.20%	56.80%	53.25%	54.86%	57.19%	50.54%	54.49%
Central Maine Power Company	AGR	36.49%	36.79%	35.83%	36.47%	35.82%	36.18%	36.03%	36.73%	36.29%
New York State Electric & Gas Corporation	AGR	44.07%	45.70%	46.05%	49.01%	45.49%	46.70%	51.73%	49.76%	47.31%
Rochester Gas and Electric Corporation	AGR	50.04%	51.11%	51.84%	52.23%	49.20%	50.37%	51.06%	51.54%	50.92%
United Illuminating Company	AGR	43.35%	43.54%	41.77%	42.57%	43.30%	44.00%	45.65%	47.83%	44.00%
Consumers Energy Company	CMS	47.48%	49.73%	46.99%	47.14%	46.87%	47.75%	46.75%	47.03%	47.47%
DTE Electric Company	DTE	51.31%	49.04%	50.03%	50.77%	48.88%	48.98%	49.50%	49.37%	49.74%
Duke Energy Carolinas, LLC	DUK	47.68%	48.22%	47.36%	47.90%	48.30%	47.02%	46.02%	46.51%	47.38%
Duke Energy Florida, LLC	DUK	49.44%	49.96%	50.35%	51.21%	50.08%	50.75%	50.54%	52.26%	50.58%
Duke Energy Indiana, LLC	DUK	45.71%	46.74%	47.21%	47.36%	47.46%	48.06%	48.29%	48.11%	47.37%
Duke Energy Kentucky, Inc.	DUK	47.19%	48.05%	43.42%	44.21%	46.28%	46.89%	49.31%	44.26%	46.20%
Duke Energy Ohio, Inc.	DUK	40.71%	31.91%	32.27%	32.90%	33.94%	33.76%	34.21%	34.62%	34.29%
Duke Energy Progress, LLC	DUK	50.40%	49.00%	49.24%	46.78%	47.18%	47.73%	48.94%	46.49%	48.22%
Kansas City Power & Light Company	EVRG	53.96%	50.51%	50.50%	51.12%	50.75%	50.85%	50.58%	51.53%	51.22%
Kansas Gas and Electric Company	EVRG	24.87%	25.03%	25.09%	25.55%	25.71%	25.82%	25.79%	26.31%	25.52%
KCP&L Greater Missouri Operations Company	EVRG	47.32%	45.29%	44.30%	47.97%	47.37%	47.60%	44.86%	45.43%	46.27%
Westar Energy (KPL)	EVRG	41.20%	40.92%	40.66%	41.32%	41.25%	41.26%	41.13%	41.78%	41.19%
Hawaii Electric Light Company, Inc.	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hawaiian Electric Company, Inc.	HE	41.94%	42.02%	43.91%	44.22%	42.56%	42.58%	41.89%	42.24%	42.67%
Maui Electric Company, Limited	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida Power & Light Company	NEE	35.97%	35.63%	35.22%	39.16%	38.77%	40.07%	37.00%	37.22%	37.38%
Gulf Power Company	NEE	41.94%	40.27%	44.66%	45.10%	45.73%	45.81%	45.03%	45.59%	44.27%
NorthWestern Corporation	NWE	51.26%	52.12%	51.64%	51.59%	52.52%	50.11%	51.14%	51.39%	51.47%
Oklahoma Gas and Electric Company	OGE	44.62%	46.80%	46.95%	45.75%	46.41%	46.64%	46.95%	47.25%	46.42%
Otter Tail Power Company	OTTR	46.10%	46.42%	46.51%	46.89%	47.33%	42.66%	42.76%	44.69%	45.42%
Arizona Public Service Company	PNW	45.52%	45.64%	46.32%	46.29%	46.82%	46.86%	46.95%	46.68%	46.39%
Public Service Company of New Mexico	PNM	56.55%	54.37%	51.99%	53.32%	53.80%	53.94%	52.42%	53.11%	53.69%
Portland General Electric Company	POR	49.40%	49.81%	49.49%	49.71%	49.86%	50.20%	49.83%	49.68%	49.75%
Alabama Power Company	SO	47.77%	52.23%	51.87%	52.49%	51.14%	52.93%	52.07%	52.75%	51.66%
Georgia Power Company	SO	43.57%	40.98%	42.73%	45.03%	46.19%	49.94%	49.65%	48.45%	45.82%
Mississippi Power Company	SO	50.27%	49.65%	54.72%	56.13%	57.00%	60.66%	52.68%	53.24%	54.30%
Upper Michigan Energy Resources Corporation	WEC	47.46%	52.99%	44.92%	45.47%	29.96%	50.15%	NA	NA	45.16%
Wisconsin Electric Power Company	WEC	44.22%	43.97%	40.75%	40.91%	43.53%	44.06%	44.03%	44.24%	43.21%
Wisconsin Public Service Corporation	WEC	41.12%	42.67%	39.41%	40.47%	41.65%	41.94%	44.32%	44.79%	42.04%
Northern States Power Company - MN	XEL	NA	47.19%	47.36%	47.39%	47.41%	47.62%	47.78%	47.22%	47.43%
Northern States Power Company - WI	XEL	NA	46.40%	51.55%	46.15%	46.21%	46.64%	44.43%	44.78%	46.59%
Public Service Company of Colorado	XEL	NA	43.69%	43.92%	45.83%	43.33%	43.50%	44.36%	45.12%	44.25%
Southwestern Public Service Company	XEL	NA	45.83%	43.71%	46.12%	46.46%	46.45%	47.71%	45.39%	45.95%
Mean		46.33%	46.32%	46.33%	46.84%	46.31%	46.93%	46.77%	46.71%	46.56%

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	2.63%	4.36%	1.73%	16.10
Near-Term Projected	2.70%	4.36%	1.66%	16.10
Long-Term Projected	3.70%	4.36%	0.66%	16.10

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.8385
R Square	0.7031
Adjusted R Square	0.7019
Standard Error	0.0053
Observations	744

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	3	0.04907633	0.01635878	584.2467784	1.2764E-194
Residual	740	0.020719831	2.8E-05		
Total	743	0.069796161			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.0260	0.0022	-11.7967	0.0000	-0.0303	-0.0217	-0.0303	-0.0217
LN (30-Year Treasury)	-0.0252	0.0007	-35.4927	0.0000	-0.0266	-0.0238	-0.0266	-0.0238
Moody's Utility Baa Credit Spread	0.0568	0.0763	0.7449	0.4566	-0.0929	0.2065	-0.0929	0.2065
VIX	0.0003	0.0001	3.9657	0.0001	0.0001	0.0004	0.0001	0.0004

	Risk Premium	Return on Equity
Regression Result - Credit Spread, VIX	7.07%	9.70%
Regression Result - Credit Spread, VIX	7.00%	9.70%
Regression Result - Credit Spread, VIX	6.15%	9.85%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional; 30-day average as of June 28, 2019

[3] Equals [2] - [1]

[4] Source: Bloomberg Professional; 30-day average as of June 28, 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 June 28, 2019

[8] Source: Bloomberg Professional, equals 200-trading day average (i.e. lag period) as of June 28, 2019

[9] Equals LN[8]

[10] Equals [8] - [7]

[11] Source: Bloomberg Professional, equals 200-trading day average (i.e. lag period) as of June 28, 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
1/1/1980	14.50%	9.36%		-2.37			5.14%
1/7/1980	14.39%	9.38%		-2.37			5.01%
1/9/1980	15.00%	9.40%		-2.36			5.60%
1/14/1980	15.17%	9.42%		-2.36			5.75%
1/17/1980	13.93%	9.44%		-2.36			4.49%
1/23/1980	15.50%	9.47%		-2.36			6.03%
1/30/1980	13.86%	9.52%		-2.35			4.34%
1/31/1980	12.61%	9.53%		-2.35			3.08%
2/6/1980	13.71%	9.58%		-2.35			4.13%
2/13/1980	12.80%	9.63%		-2.34			3.17%
2/14/1980	13.00%	9.65%		-2.34			3.35%
2/19/1980	13.50%	9.68%		-2.34			3.82%
2/27/1980	13.75%	9.78%		-2.32			3.97%
2/29/1980	13.75%	9.81%		-2.32			3.94%
2/29/1980	14.00%	9.81%		-2.32			4.19%
2/29/1980	14.77%	9.81%		-2.32			4.96%
3/7/1980	12.70%	9.89%		-2.31			2.81%
3/14/1980	13.50%	9.97%		-2.31			3.53%
3/26/1980	14.16%	10.10%		-2.29			4.06%
3/27/1980	14.24%	10.12%		-2.29			4.12%
3/28/1980	14.50%	10.13%		-2.29			4.37%
4/11/1980	12.75%	10.27%		-2.28			2.48%
4/14/1980	13.85%	10.29%		-2.27			3.56%
4/16/1980	15.50%	10.31%		-2.27			5.19%
4/22/1980	13.25%	10.35%		-2.27			2.90%
4/22/1980	13.90%	10.35%		-2.27			3.55%
4/24/1980	16.80%	10.38%		-2.27			6.43%
4/29/1980	15.50%	10.41%		-2.26			5.09%
5/6/1980	13.70%	10.45%		-2.26			3.25%
5/7/1980	15.00%	10.45%		-2.26			4.55%
5/8/1980	13.75%	10.46%		-2.26			3.29%
5/9/1980	14.35%	10.47%		-2.26			3.88%
5/13/1980	13.60%	10.48%		-2.26			3.12%
5/15/1980	13.25%	10.49%		-2.25			2.76%
5/19/1980	13.75%	10.51%		-2.25			3.24%
5/27/1980	13.62%	10.54%		-2.25			3.08%
5/27/1980	14.60%	10.54%		-2.25			4.06%
5/29/1980	16.00%	10.56%		-2.25			5.44%
5/30/1980	13.80%	10.56%		-2.25			3.24%
6/2/1980	15.63%	10.57%		-2.25			5.06%
6/9/1980	15.90%	10.60%		-2.24			5.30%
6/10/1980	13.78%	10.60%		-2.24			3.18%
6/12/1980	14.25%	10.61%		-2.24			3.64%
6/19/1980	13.40%	10.62%		-2.24			2.78%
6/30/1980	13.00%	10.65%		-2.24			2.35%
6/30/1980	13.40%	10.65%		-2.24			2.75%
7/9/1980	14.75%	10.67%		-2.24			4.08%
7/10/1980	15.00%	10.68%		-2.24			4.32%
7/15/1980	15.80%	10.70%		-2.24			5.10%
7/18/1980	13.80%	10.71%		-2.23			3.09%
7/22/1980	14.10%	10.72%		-2.23			3.38%
7/24/1980	15.00%	10.73%		-2.23			4.27%
7/25/1980	13.48%	10.73%		-2.23			2.75%
7/31/1980	14.58%	10.75%		-2.23			3.83%
8/8/1980	13.50%	10.78%		-2.23			2.72%
8/8/1980	14.00%	10.78%		-2.23			3.22%
8/8/1980	15.45%	10.78%		-2.23			4.67%
8/11/1980	14.85%	10.78%		-2.23			4.07%
8/14/1980	14.00%	10.79%		-2.23			3.21%
8/14/1980	16.25%	10.79%		-2.23			5.46%
8/25/1980	13.75%	10.82%		-2.22			2.93%
8/27/1980	13.80%	10.83%		-2.22			2.97%
8/29/1980	12.50%	10.84%		-2.22			1.66%
9/15/1980	13.50%	10.88%		-2.22			2.62%
9/15/1980	13.93%	10.88%		-2.22			3.05%
9/15/1980	15.80%	10.88%		-2.22			4.92%
9/24/1980	12.50%	10.93%		-2.21			1.57%
9/24/1980	15.00%	10.93%		-2.21			4.07%
9/26/1980	13.75%	10.94%		-2.21			2.81%
9/30/1980	14.10%	10.96%		-2.21			3.14%
9/30/1980	14.20%	10.96%		-2.21			3.24%
10/1/1980	13.90%	10.97%		-2.21			2.93%
10/3/1980	15.50%	10.98%		-2.21			4.52%
10/7/1980	12.50%	10.99%		-2.21			1.51%
10/9/1980	13.25%	11.00%		-2.21			2.25%
10/9/1980	14.50%	11.00%		-2.21			3.50%
10/9/1980	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%
11/4/1980	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
11/5/1980	13.75%	11.12%		-2.20			2.63%
11/5/1980	14.00%	11.12%		-2.20			2.88%
11/8/1980	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%
12/8/1980	14.15%	11.22%		-2.19			2.93%
12/8/1980	15.10%	11.22%		-2.19			3.88%
12/9/1980	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%
1/2/1981	15.25%	11.22%		-2.19			4.03%
1/7/1981	14.30%	11.21%		-2.19			3.09%
1/19/1981	15.25%	11.20%		-2.19			4.05%
1/23/1981	13.10%	11.20%		-2.19			1.90%
1/23/1981	14.40%	11.20%		-2.19			3.20%
1/26/1981	15.25%	11.20%		-2.19			4.05%
1/27/1981	15.00%	11.21%		-2.19			3.79%
1/31/1981	13.47%	11.22%		-2.19			2.25%
2/3/1981	15.25%	11.23%		-2.19			4.02%
2/5/1981	15.75%	11.25%		-2.19			4.50%
2/11/1981	15.60%	11.28%		-2.18			4.32%
2/20/1981	15.25%	11.33%		-2.18			3.92%
3/11/1981	15.40%	11.49%		-2.16			3.91%
3/12/1981	14.51%	11.50%		-2.16			3.01%
3/12/1981	16.00%	11.50%		-2.16			4.50%
3/13/1981	13.02%	11.52%		-2.16			1.50%
3/18/1981	16.19%	11.55%		-2.16			4.64%
3/19/1981	13.75%	11.56%		-2.16			2.19%
3/23/1981	14.30%	11.58%		-2.16			2.72%
3/25/1981	15.30%	11.60%		-2.15			3.70%
4/1/1981	14.53%	11.68%		-2.15			2.85%
4/3/1981	19.10%	11.71%		-2.14			7.39%
4/9/1981	15.00%	11.78%		-2.14			3.22%
4/9/1981	15.30%	11.78%		-2.14			3.52%
4/9/1981	16.50%	11.78%		-2.14			4.72%
4/9/1981	17.00%	11.78%		-2.14			5.22%
4/10/1981	13.75%	11.80%		-2.14			1.95%
4/13/1981	13.57%	11.82%		-2.14			1.75%
4/15/1981	15.30%	11.85%		-2.13			3.45%
4/16/1981	13.50%	11.87%		-2.13			1.63%
4/17/1981	14.10%	11.87%		-2.13			2.23%
4/21/1981	14.00%	11.90%		-2.13			2.10%
4/21/1981	16.80%	11.90%		-2.13			4.90%
4/24/1981	16.00%	11.95%		-2.12			4.05%
4/27/1981	12.50%	11.97%		-2.12			0.53%
4/27/1981	13.61%	11.97%		-2.12			1.64%
4/29/1981	13.65%	12.00%		-2.12			1.65%
4/30/1981	13.50%	12.02%		-2.12			1.48%
5/4/1981	16.22%	12.05%		-2.12			4.17%
5/5/1981	14.40%	12.07%		-2.11			2.33%
5/7/1981	16.25%	12.11%		-2.11			4.14%
5/7/1981	16.27%	12.11%		-2.11			4.16%
5/8/1981	13.00%	12.13%		-2.11			0.87%
5/8/1981	16.00%	12.13%		-2.11			3.87%
5/12/1981	13.50%	12.16%		-2.11			1.34%
5/15/1981	15.75%	12.22%		-2.10			3.53%
5/18/1981	14.88%	12.23%		-2.10			2.65%
5/20/1981	16.00%	12.26%		-2.10			3.74%
5/21/1981	14.00%	12.27%		-2.10			1.73%
5/26/1981	14.90%	12.30%		-2.10			2.60%
5/27/1981	15.00%	12.31%		-2.09			2.69%
5/29/1981	15.50%	12.34%		-2.09			3.16%
6/1/1981	16.50%	12.35%		-2.09			4.15%
6/3/1981	14.67%	12.37%		-2.09			2.30%
6/5/1981	13.00%	12.39%		-2.09			0.61%
6/10/1981	16.75%	12.42%		-2.09			4.33%
6/17/1981	14.40%	12.46%		-2.08			1.94%
6/18/1981	16.33%	12.47%		-2.08			3.86%
6/25/1981	14.75%	12.51%		-2.08			2.24%
6/26/1981	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
6/30/1981	15.25%	12.54%		-2.08			2.71%
7/1/1981	15.50%	12.56%		-2.07			2.94%
7/1/1981	17.50%	12.56%		-2.07			4.94%
7/10/1981	16.00%	12.62%		-2.07			3.38%
7/14/1981	16.90%	12.64%		-2.07			4.26%
7/15/1981	16.00%	12.65%		-2.07			3.35%
7/17/1981	15.00%	12.67%		-2.07			2.33%
7/20/1981	15.00%	12.68%		-2.07			2.32%
7/21/1981	14.00%	12.69%		-2.06			1.31%
7/28/1981	13.48%	12.74%		-2.06			0.74%
7/31/1981	13.50%	12.78%		-2.06			0.72%
7/31/1981	15.00%	12.78%		-2.06			2.22%
7/31/1981	16.00%	12.78%		-2.06			3.22%
8/5/1981	15.71%	12.83%		-2.05			2.88%
8/10/1981	14.50%	12.87%		-2.05			1.63%
8/11/1981	15.00%	12.88%		-2.05			2.12%
8/20/1981	13.50%	12.95%		-2.04			0.55%
8/20/1981	16.50%	12.95%		-2.04			3.55%
8/24/1981	15.00%	12.97%		-2.04			2.03%
8/28/1981	15.00%	13.01%		-2.04			1.99%
9/3/1981	14.50%	13.05%		-2.04			1.45%
9/10/1981	14.50%	13.11%		-2.03			1.39%
9/11/1981	16.00%	13.12%		-2.03			2.88%
9/16/1981	16.00%	13.15%		-2.03			2.85%
9/17/1981	16.50%	13.16%		-2.03			3.34%
9/23/1981	15.85%	13.20%		-2.03			2.65%
9/28/1981	15.50%	13.23%		-2.02			2.27%
10/9/1981	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%
11/3/1981	15.17%	13.53%		-2.00			1.64%
11/5/1981	16.60%	13.55%		-2.00			3.05%
11/6/1981	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%
12/1/1981	15.70%	13.61%		-1.99			2.09%
12/1/1981	16.00%	13.61%		-1.99			2.39%
12/1/1981	16.49%	13.61%		-1.99			2.88%
12/1/1981	16.50%	13.61%		-1.99			2.89%
12/4/1981	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%
1/4/1982	15.50%	13.67%		-1.99			1.83%
1/11/1982	14.50%	13.72%		-1.99			0.78%
1/11/1982	17.00%	13.72%		-1.99			3.28%
1/13/1982	14.75%	13.74%		-1.98			1.01%
1/14/1982	15.75%	13.75%		-1.98			2.00%
1/15/1982	15.00%	13.76%		-1.98			1.24%
1/15/1982	16.50%	13.76%		-1.98			2.74%
1/22/1982	16.25%	13.79%		-1.98			2.46%
1/27/1982	16.84%	13.81%		-1.98			3.03%
1/28/1982	13.00%	13.81%		-1.98			-0.81%
1/29/1982	15.50%	13.82%		-1.98			1.68%
2/1/1982	15.85%	13.82%		-1.98			2.03%
2/3/1982	16.44%	13.84%		-1.98			2.60%
2/8/1982	15.50%	13.86%		-1.98			1.64%
2/11/1982	16.00%	13.88%		-1.97			2.12%
2/11/1982	16.20%	13.88%		-1.97			2.32%
2/17/1982	15.00%	13.89%		-1.97			1.11%
2/19/1982	15.17%	13.89%		-1.97			1.28%
2/26/1982	15.25%	13.89%		-1.97			1.36%
3/1/1982	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
3/1/1982	16.00%	13.89%		-1.97			2.11%
3/3/1982	15.00%	13.88%		-1.97			1.12%
3/8/1982	17.10%	13.88%		-1.97			3.22%
3/12/1982	16.25%	13.88%		-1.97			2.37%
3/17/1982	17.30%	13.88%		-1.97			3.42%
3/22/1982	15.10%	13.89%		-1.97			1.21%
3/27/1982	15.40%	13.89%		-1.97			1.51%
3/30/1982	15.50%	13.90%		-1.97			1.60%
3/31/1982	17.00%	13.91%		-1.97			3.09%
4/1/1982	14.70%	13.91%		-1.97			0.79%
4/1/1982	16.50%	13.91%		-1.97			2.59%
4/2/1982	15.50%	13.91%		-1.97			1.59%
4/5/1982	15.50%	13.92%		-1.97			1.58%
4/8/1982	16.40%	13.93%		-1.97			2.47%
4/13/1982	14.50%	13.94%		-1.97			0.56%
4/23/1982	15.75%	13.94%		-1.97			1.81%
4/27/1982	15.00%	13.94%		-1.97			1.06%
4/28/1982	15.75%	13.94%		-1.97			1.81%
4/30/1982	14.70%	13.94%		-1.97			0.76%
4/30/1982	15.50%	13.94%		-1.97			1.56%
5/3/1982	16.60%	13.94%		-1.97			2.66%
5/4/1982	16.00%	13.94%		-1.97			2.06%
5/14/1982	15.50%	13.92%		-1.97			1.58%
5/18/1982	15.42%	13.92%		-1.97			1.50%
5/19/1982	14.69%	13.92%		-1.97			0.77%
5/20/1982	15.00%	13.91%		-1.97			1.09%
5/20/1982	15.10%	13.91%		-1.97			1.19%
5/20/1982	15.50%	13.91%		-1.97			1.59%
5/20/1982	16.30%	13.91%		-1.97			2.39%
5/21/1982	17.75%	13.91%		-1.97			3.84%
5/27/1982	15.00%	13.89%		-1.97			1.11%
5/28/1982	15.50%	13.89%		-1.97			1.61%
5/28/1982	17.00%	13.89%		-1.97			3.11%
6/1/1982	13.75%	13.89%		-1.97			-0.14%
6/1/1982	16.60%	13.89%		-1.97			2.71%
6/9/1982	17.86%	13.88%		-1.97			3.98%
6/14/1982	15.75%	13.88%		-1.97			1.87%
6/15/1982	14.85%	13.88%		-1.97			0.97%
6/18/1982	15.50%	13.87%		-1.98			1.63%
6/21/1982	14.90%	13.87%		-1.98			1.03%
6/23/1982	16.00%	13.86%		-1.98			2.14%
6/23/1982	16.17%	13.86%		-1.98			2.31%
6/24/1982	14.85%	13.86%		-1.98			0.99%
6/25/1982	14.70%	13.86%		-1.98			0.84%
7/1/1982	16.00%	13.84%		-1.98			2.16%
7/2/1982	15.62%	13.84%		-1.98			1.78%
7/2/1982	17.00%	13.84%		-1.98			3.16%
7/13/1982	14.00%	13.82%		-1.98			0.18%
7/13/1982	16.80%	13.82%		-1.98			2.98%
7/14/1982	15.76%	13.82%		-1.98			1.94%
7/14/1982	16.02%	13.82%		-1.98			2.20%
7/19/1982	16.50%	13.80%		-1.98			2.70%
7/22/1982	14.50%	13.77%		-1.98			0.73%
7/22/1982	17.00%	13.77%		-1.98			3.23%
7/27/1982	16.75%	13.75%		-1.98			3.00%
7/29/1982	16.50%	13.74%		-1.99			2.76%
8/11/1982	17.50%	13.68%		-1.99			3.82%
8/18/1982	17.07%	13.63%		-1.99			3.44%
8/20/1982	15.73%	13.60%		-1.99			2.13%
8/25/1982	16.00%	13.57%		-2.00			2.43%
8/26/1982	15.50%	13.56%		-2.00			1.94%
8/30/1982	15.00%	13.55%		-2.00			1.45%
9/3/1982	16.20%	13.53%		-2.00			2.67%
9/8/1982	15.00%	13.52%		-2.00			1.48%
9/15/1982	13.08%	13.50%		-2.00			-0.42%
9/15/1982	16.25%	13.50%		-2.00			2.75%
9/16/1982	16.00%	13.50%		-2.00			2.50%
9/17/1982	15.25%	13.50%		-2.00			1.75%
9/23/1982	17.17%	13.47%		-2.00			3.70%
9/24/1982	14.50%	13.46%		-2.01			1.04%
9/27/1982	15.25%	13.46%		-2.01			1.79%
10/1/1982	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%
11/1/1982	15.50%	13.15%		-2.03			2.35%
11/3/1982	17.20%	13.13%		-2.03			4.07%
11/4/1982	16.25%	13.11%		-2.03			3.14%
11/5/1982	16.20%	13.09%		-2.03			3.11%
11/9/1982	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%
12/1/1982	17.04%	12.79%		-2.06			4.25%
12/6/1982	15.00%	12.73%		-2.06			2.27%
12/6/1982	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%
1/5/1983	17.33%	12.40%		-2.09			4.93%
1/11/1983	15.90%	12.34%		-2.09			3.56%
1/12/1983	14.63%	12.33%		-2.09			2.30%
1/12/1983	15.50%	12.33%		-2.09			3.17%
1/20/1983	17.75%	12.24%		-2.10			5.51%
1/21/1983	15.00%	12.22%		-2.10			2.78%
1/24/1983	14.50%	12.21%		-2.10			2.29%
1/24/1983	15.50%	12.21%		-2.10			3.29%
1/25/1983	15.85%	12.19%		-2.10			3.66%
1/27/1983	16.14%	12.17%		-2.11			3.97%
2/1/1983	18.50%	12.13%		-2.11			6.37%
2/4/1983	14.00%	12.10%		-2.11			1.90%
2/10/1983	15.00%	12.06%		-2.12			2.94%
2/21/1983	15.50%	11.98%		-2.12			3.52%
2/22/1983	15.50%	11.97%		-2.12			3.53%
2/23/1983	15.10%	11.96%		-2.12			3.14%
2/23/1983	16.00%	11.96%		-2.12			4.04%
3/2/1983	15.25%	11.89%		-2.13			3.36%
3/9/1983	15.20%	11.82%		-2.13			3.38%
3/15/1983	13.00%	11.77%		-2.14			1.23%
3/18/1983	15.25%	11.73%		-2.14			3.52%
3/23/1983	15.40%	11.69%		-2.15			3.71%
3/24/1983	15.00%	11.67%		-2.15			3.33%
3/29/1983	15.50%	11.63%		-2.15			3.87%
3/30/1983	16.71%	11.61%		-2.15			5.10%
3/31/1983	15.00%	11.59%		-2.15			3.41%
4/4/1983	15.20%	11.58%		-2.16			3.62%
4/8/1983	15.50%	11.51%		-2.16			3.99%
4/11/1983	14.81%	11.49%		-2.16			3.32%
4/19/1983	14.50%	11.38%		-2.17			3.12%
4/20/1983	16.00%	11.36%		-2.18			4.64%
4/29/1983	16.00%	11.24%		-2.19			4.76%
5/1/1983	14.50%	11.24%		-2.19			3.26%
5/9/1983	15.50%	11.15%		-2.19			4.35%
5/11/1983	16.46%	11.12%		-2.20			5.34%
5/12/1983	14.14%	11.11%		-2.20			3.03%
5/18/1983	15.00%	11.05%		-2.20			3.95%
5/23/1983	14.90%	11.01%		-2.21			3.89%
5/23/1983	15.50%	11.01%		-2.21			4.49%
5/25/1983	15.50%	10.98%		-2.21			4.52%
5/27/1983	15.00%	10.96%		-2.21			4.04%
5/31/1983	14.00%	10.95%		-2.21			3.05%
5/31/1983	15.50%	10.95%		-2.21			4.55%
6/2/1983	14.50%	10.93%		-2.21			3.57%
6/17/1983	15.03%	10.84%		-2.22			4.19%
7/1/1983	14.80%	10.78%		-2.23			4.02%
7/1/1983	14.90%	10.78%		-2.23			4.12%
7/8/1983	16.25%	10.76%		-2.23			5.49%
7/13/1983	13.20%	10.75%		-2.23			2.45%
7/19/1983	15.00%	10.74%		-2.23			4.26%
7/19/1983	15.10%	10.74%		-2.23			4.36%
7/25/1983	16.25%	10.73%		-2.23			5.52%
7/28/1983	15.90%	10.74%		-2.23			5.16%
8/3/1983	16.34%	10.75%		-2.23			5.59%
8/3/1983	16.50%	10.75%		-2.23			5.75%
8/19/1983	15.00%	10.80%		-2.23			4.20%
8/22/1983	15.50%	10.80%		-2.23			4.70%
8/22/1983	16.40%	10.80%		-2.23			5.60%
8/31/1983	14.75%	10.84%		-2.22			3.91%
9/7/1983	15.00%	10.86%		-2.22			4.14%
9/14/1983	15.78%	10.89%		-2.22			4.89%
9/16/1983	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
9/19/1983	14.50%	10.91%		-2.22			3.59%
9/20/1983	16.50%	10.91%		-2.22			5.59%
9/28/1983	14.50%	10.94%		-2.21			3.56%
9/29/1983	15.50%	10.95%		-2.21			4.55%
9/30/1983	15.25%	10.95%		-2.21			4.30%
9/30/1983	16.15%	10.95%		-2.21			5.20%
10/4/1983	14.80%	10.96%		-2.21			3.84%
10/7/1983	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%
11/1/1983	16.00%	11.06%		-2.20			4.94%
11/9/1983	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%
12/5/1983	15.25%	11.15%		-2.19			4.10%
12/6/1983	15.07%	11.15%		-2.19			3.92%
12/8/1983	15.90%	11.16%		-2.19			4.74%
12/9/1983	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%
1/3/1984	14.75%	11.27%		-2.18			3.48%
1/10/1984	15.90%	11.30%		-2.18			4.60%
1/12/1984	15.60%	11.31%		-2.18			4.29%
1/18/1984	13.75%	11.33%		-2.18			2.42%
1/19/1984	15.90%	11.33%		-2.18			4.57%
1/30/1984	16.10%	11.37%		-2.17			4.73%
1/31/1984	15.25%	11.37%		-2.17			3.88%
2/1/1984	14.80%	11.38%		-2.17			3.42%
2/6/1984	13.75%	11.40%		-2.17			2.35%
2/6/1984	14.75%	11.40%		-2.17			3.35%
2/9/1984	15.25%	11.42%		-2.17			3.83%
2/15/1984	15.70%	11.44%		-2.17			4.26%
2/20/1984	15.00%	11.46%		-2.17			3.54%
2/20/1984	15.00%	11.46%		-2.17			3.54%
2/22/1984	14.75%	11.47%		-2.17			3.28%
2/28/1984	14.50%	11.51%		-2.16			2.99%
3/2/1984	14.25%	11.54%		-2.16			2.71%
3/20/1984	16.00%	11.64%		-2.15			4.36%
3/23/1984	15.50%	11.67%		-2.15			3.83%
3/26/1984	14.71%	11.68%		-2.15			3.03%
4/2/1984	15.50%	11.71%		-2.14			3.79%
4/6/1984	14.74%	11.75%		-2.14			2.99%
4/11/1984	15.72%	11.78%		-2.14			3.94%
4/17/1984	15.00%	11.81%		-2.14			3.19%
4/18/1984	16.20%	11.82%		-2.14			4.38%
4/25/1984	14.64%	11.85%		-2.13			2.79%
4/30/1984	14.40%	11.87%		-2.13			2.53%
5/16/1984	14.69%	11.98%		-2.12			2.71%
5/16/1984	15.00%	11.98%		-2.12			3.02%
5/22/1984	14.40%	12.02%		-2.12			2.38%
5/29/1984	15.10%	12.06%		-2.12			3.04%
6/13/1984	15.25%	12.15%		-2.11			3.10%
6/15/1984	15.60%	12.17%		-2.11			3.43%
6/22/1984	16.25%	12.21%		-2.10			4.04%
6/29/1984	15.25%	12.26%		-2.10			2.99%
7/2/1984	13.35%	12.27%		-2.10			1.08%
7/10/1984	16.00%	12.31%		-2.09			3.69%
7/12/1984	16.50%	12.32%		-2.09			4.18%
7/13/1984	16.25%	12.33%		-2.09			3.92%
7/17/1984	14.14%	12.35%		-2.09			1.79%
7/18/1984	15.30%	12.36%		-2.09			2.94%
7/18/1984	15.50%	12.36%		-2.09			3.14%
7/19/1984	14.30%	12.37%		-2.09			1.93%
7/24/1984	16.79%	12.39%		-2.09			4.40%
7/31/1984	16.00%	12.43%		-2.09			3.57%
8/3/1984	14.25%	12.44%		-2.08			1.81%
8/17/1984	14.30%	12.49%		-2.08			1.81%
8/20/1984	15.00%	12.49%		-2.08			2.51%
8/27/1984	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
8/31/1984	15.55%	12.52%		-2.08			3.03%
9/6/1984	16.00%	12.53%		-2.08			3.47%
9/10/1984	14.75%	12.54%		-2.08			2.21%
9/13/1984	15.00%	12.55%		-2.08			2.45%
9/17/1984	17.38%	12.56%		-2.08			4.82%
9/26/1984	14.50%	12.57%		-2.07			1.93%
9/28/1984	15.00%	12.57%		-2.07			2.43%
9/28/1984	16.25%	12.57%		-2.07			3.68%
10/9/1984	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%
11/7/1984	15.60%	12.58%		-2.07			3.02%
11/9/1984	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%
12/3/1984	15.80%	12.56%		-2.07			3.24%
12/4/1984	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%
1/3/1985	14.75%	12.49%		-2.08			2.26%
1/10/1985	15.75%	12.47%		-2.08			3.28%
1/11/1985	16.30%	12.46%		-2.08			3.84%
1/23/1985	15.80%	12.43%		-2.08			3.37%
1/24/1985	15.82%	12.43%		-2.09			3.39%
1/25/1985	16.75%	12.42%		-2.09			4.33%
1/30/1985	14.90%	12.40%		-2.09			2.50%
1/31/1985	14.75%	12.39%		-2.09			2.36%
2/8/1985	14.47%	12.35%		-2.09			2.12%
3/1/1985	13.84%	12.31%		-2.10			1.53%
3/8/1985	16.85%	12.28%		-2.10			4.57%
3/14/1985	15.50%	12.25%		-2.10			3.25%
3/15/1985	15.62%	12.25%		-2.10			3.37%
3/29/1985	15.62%	12.17%		-2.11			3.45%
4/3/1985	14.60%	12.14%		-2.11			2.46%
4/9/1985	15.50%	12.11%		-2.11			3.39%
4/16/1985	15.70%	12.06%		-2.12			3.64%
4/22/1985	14.00%	12.02%		-2.12			1.98%
4/26/1985	15.50%	11.98%		-2.12			3.52%
4/29/1985	15.00%	11.97%		-2.12			3.03%
5/2/1985	14.68%	11.94%		-2.13			2.74%
5/8/1985	15.62%	11.89%		-2.13			3.73%
5/10/1985	16.50%	11.87%		-2.13			4.63%
5/29/1985	14.61%	11.73%		-2.14			2.88%
5/31/1985	16.00%	11.71%		-2.14			4.29%
6/14/1985	15.50%	11.61%		-2.15			3.89%
7/9/1985	15.00%	11.45%		-2.17			3.55%
7/16/1985	14.50%	11.39%		-2.17			3.11%
7/26/1985	14.50%	11.33%		-2.18			3.17%
8/2/1985	14.80%	11.29%		-2.18			3.51%
8/7/1985	15.00%	11.27%		-2.18			3.73%
8/28/1985	14.25%	11.15%		-2.19			3.10%
8/28/1985	15.50%	11.15%		-2.19			4.35%
8/29/1985	14.50%	11.15%		-2.19			3.35%
9/9/1985	14.60%	11.11%		-2.20			3.49%
9/9/1985	14.90%	11.11%		-2.20			3.79%
9/17/1985	14.90%	11.08%		-2.20			3.82%
9/23/1985	15.00%	11.06%		-2.20			3.94%
9/27/1985	15.50%	11.05%		-2.20			4.45%
9/27/1985	15.80%	11.05%		-2.20			4.75%
10/2/1985	14.00%	11.03%		-2.20			2.97%
10/2/1985	14.75%	11.03%		-2.20			3.72%
10/3/1985	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%
11/4/1985	14.50%	10.92%		-2.21			3.58%
11/7/1985	15.50%	10.90%		-2.22			4.60%
11/8/1985	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%
1/24/1986	15.40%	10.41%		-2.26			4.99%
1/31/1986	15.00%	10.35%		-2.27			4.65%
2/5/1986	15.00%	10.32%		-2.27			4.68%
2/5/1986	15.75%	10.32%		-2.27			5.43%
2/10/1986	13.30%	10.29%		-2.27			3.01%
2/11/1986	12.50%	10.28%		-2.27			2.22%
2/14/1986	14.40%	10.24%		-2.28			4.16%
2/18/1986	16.00%	10.23%		-2.28			5.77%
2/24/1986	14.50%	10.18%		-2.28			4.32%
2/26/1986	14.00%	10.15%		-2.29			3.85%
3/5/1986	14.90%	10.08%		-2.29			4.82%
3/11/1986	14.50%	10.02%		-2.30			4.48%
3/12/1986	13.50%	10.00%		-2.30			3.50%
3/27/1986	14.10%	9.86%		-2.32			4.24%
3/31/1986	13.50%	9.84%		-2.32			3.66%
4/1/1986	14.00%	9.83%		-2.32			4.17%
4/2/1986	15.50%	9.81%		-2.32			5.69%
4/4/1986	15.00%	9.78%		-2.32			5.22%
4/14/1986	13.40%	9.69%		-2.33			3.71%
4/23/1986	15.00%	9.57%		-2.35			5.43%
5/16/1986	14.50%	9.32%		-2.37			5.18%
5/16/1986	14.50%	9.32%		-2.37			5.18%
5/29/1986	13.90%	9.19%		-2.39			4.71%
5/30/1986	15.10%	9.18%		-2.39			5.92%
6/2/1986	12.81%	9.17%		-2.39			3.64%
6/11/1986	14.00%	9.07%		-2.40			4.93%
6/24/1986	16.63%	8.94%		-2.41			7.69%
6/26/1986	12.00%	8.91%		-2.42			3.09%
6/26/1986	14.75%	8.91%		-2.42			5.84%
6/30/1986	13.00%	8.87%		-2.42			4.13%
7/10/1986	14.34%	8.75%		-2.44			5.59%
7/11/1986	12.75%	8.73%		-2.44			4.02%
7/14/1986	12.60%	8.71%		-2.44			3.89%
7/17/1986	12.40%	8.66%		-2.45			3.74%
7/25/1986	14.25%	8.57%		-2.46			5.68%
8/6/1986	13.50%	8.44%		-2.47			5.06%
8/14/1986	13.50%	8.35%		-2.48			5.15%
9/16/1986	12.75%	8.06%		-2.52			4.69%
9/19/1986	13.25%	8.03%		-2.52			5.22%
10/1/1986	14.00%	7.95%		-2.53			6.05%
10/3/1986	13.40%	7.93%		-2.53			5.47%
10/31/1986	13.50%	7.77%		-2.55			5.73%
11/5/1986	13.00%	7.75%		-2.56			5.25%
12/3/1986	12.90%	7.58%		-2.58			5.32%
12/4/1986	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%
1/2/1987	13.00%	7.49%		-2.59			5.51%
1/12/1987	12.40%	7.47%		-2.59			4.93%
1/27/1987	12.71%	7.46%		-2.60			5.25%
3/2/1987	12.47%	7.47%		-2.59			5.00%
3/3/1987	13.60%	7.47%		-2.59			6.13%
3/4/1987	12.38%	7.47%		-2.59			4.91%
3/10/1987	13.50%	7.47%		-2.59			6.03%
3/13/1987	13.00%	7.47%		-2.59			5.53%
3/31/1987	13.00%	7.46%		-2.59			5.54%
4/6/1987	13.00%	7.47%		-2.59			5.53%
4/14/1987	12.50%	7.49%		-2.59			5.01%
4/16/1987	14.50%	7.50%		-2.59			7.00%
4/27/1987	12.00%	7.54%		-2.59			4.46%
5/5/1987	12.85%	7.58%		-2.58			5.27%
5/12/1987	12.65%	7.62%		-2.57			5.03%
5/28/1987	13.50%	7.70%		-2.56			5.80%
6/15/1987	13.20%	7.78%		-2.55			5.42%
6/29/1987	15.00%	7.83%		-2.55			7.17%
6/30/1987	12.50%	7.84%		-2.55			4.66%
7/8/1987	12.00%	7.86%		-2.54			4.14%
7/10/1987	12.90%	7.86%		-2.54			5.04%
7/15/1987	13.50%	7.88%		-2.54			5.62%
7/16/1987	13.50%	7.88%		-2.54			5.62%
7/16/1987	15.00%	7.88%		-2.54			7.12%
7/27/1987	13.00%	7.92%		-2.54			5.08%
7/27/1987	13.40%	7.92%		-2.54			5.48%
7/27/1987	13.50%	7.92%		-2.54			5.58%
7/31/1987	12.98%	7.95%		-2.53			5.03%
8/26/1987	12.63%	8.06%		-2.52			4.57%
8/26/1987	12.75%	8.06%		-2.52			4.69%
8/27/1987	13.25%	8.06%		-2.52			5.19%
9/9/1987	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
9/30/1987	12.75%	8.31%		-2.49			4.44%
9/30/1987	13.00%	8.31%		-2.49			4.69%
10/2/1987	11.50%	8.33%		-2.49			3.17%
10/15/1987	13.00%	8.43%		-2.47			4.57%
11/2/1987	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%
12/3/1987	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%
1/20/1988	13.80%	8.94%		-2.42			4.86%
1/26/1988	13.90%	8.95%		-2.41			4.95%
1/29/1988	13.20%	8.96%		-2.41			4.24%
2/4/1988	12.60%	8.96%		-2.41			3.64%
3/1/1988	11.56%	8.94%		-2.41			2.62%
3/23/1988	12.87%	8.92%		-2.42			3.95%
3/24/1988	11.24%	8.92%		-2.42			2.32%
3/30/1988	12.72%	8.92%		-2.42			3.80%
4/1/1988	12.50%	8.92%		-2.42			3.58%
4/7/1988	13.25%	8.93%		-2.42			4.32%
4/25/1988	10.96%	8.96%		-2.41			2.00%
5/3/1988	12.91%	8.97%		-2.41			3.94%
5/11/1988	13.50%	8.99%		-2.41			4.51%
5/16/1988	13.00%	8.99%		-2.41			4.01%
6/30/1988	12.75%	9.00%		-2.41			3.75%
7/1/1988	12.75%	8.99%		-2.41			3.76%
7/20/1988	13.40%	8.96%		-2.41			4.44%
8/5/1988	12.75%	8.92%		-2.42			3.83%
8/23/1988	11.70%	8.93%		-2.42			2.77%
8/29/1988	12.75%	8.94%		-2.41			3.81%
8/30/1988	13.50%	8.94%		-2.41			4.56%
9/8/1988	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%
1/27/1989	13.00%	9.05%		-2.40			3.95%
1/31/1989	13.00%	9.05%		-2.40			3.95%
2/17/1989	13.00%	9.05%		-2.40			3.95%
2/20/1989	12.40%	9.05%		-2.40			3.35%
3/1/1989	12.76%	9.05%		-2.40			3.71%
3/8/1989	13.00%	9.05%		-2.40			3.95%
3/30/1989	14.00%	9.05%		-2.40			4.95%
4/5/1989	14.20%	9.05%		-2.40			5.15%
4/18/1989	13.00%	9.05%		-2.40			3.95%
5/5/1989	12.40%	9.05%		-2.40			3.35%
6/2/1989	13.20%	9.00%		-2.41			4.20%
6/8/1989	13.50%	8.98%		-2.41			4.52%
6/27/1989	13.25%	8.91%		-2.42			4.34%
6/30/1989	13.00%	8.90%		-2.42			4.10%
8/14/1989	12.50%	8.77%		-2.43			3.73%
9/28/1989	12.25%	8.63%		-2.45			3.62%
10/24/1989	12.50%	8.54%		-2.46			3.96%
11/9/1989	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%
1/10/1990	12.80%	8.24%		-2.50		19.95	4.56%
1/11/1990	12.90%	8.24%		-2.50		19.96	4.66%
1/17/1990	12.80%	8.22%		-2.50		21.59	4.58%
1/26/1990	12.00%	8.20%		-2.50		22.87	3.80%
2/9/1990	12.10%	8.17%		-2.50		23.58	3.93%
2/24/1990	12.86%	8.15%		-2.51		23.35	4.71%
3/30/1990	12.90%	8.16%		-2.51		22.17	4.74%
4/4/1990	15.76%	8.17%		-2.51		22.16	7.59%
4/12/1990	12.52%	8.18%		-2.50		22.04	4.34%
4/19/1990	12.75%	8.20%		-2.50		22.01	4.55%
5/21/1990	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
5/29/1990	12.40%	8.30%		-2.49		21.25	4.10%
5/31/1990	12.00%	8.30%		-2.49		21.17	3.70%
6/4/1990	12.90%	8.30%		-2.49		21.11	4.60%
6/6/1990	12.25%	8.31%		-2.49		21.06	3.94%
6/15/1990	13.20%	8.32%		-2.49		20.80	4.88%
6/20/1990	12.92%	8.32%		-2.49		20.68	4.60%
6/27/1990	12.90%	8.33%		-2.49		20.52	4.57%
6/29/1990	12.50%	8.33%		-2.48		20.45	4.17%
7/6/1990	12.10%	8.34%		-2.48		20.33	3.76%
7/6/1990	12.35%	8.34%		-2.48		20.33	4.01%
8/10/1990	12.55%	8.41%		-2.48		20.52	4.14%
8/16/1990	13.21%	8.43%		-2.47		20.64	4.78%
8/22/1990	13.10%	8.45%		-2.47		20.82	4.65%
8/24/1990	13.00%	8.46%		-2.47		21.00	4.54%
9/26/1990	11.45%	8.59%		-2.45		21.96	2.86%
10/2/1990	13.00%	8.61%		-2.45		22.09	4.39%
10/5/1990	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%
1/2/1991	13.10%	8.65%		-2.45		23.23	4.45%
1/4/1991	12.50%	8.65%		-2.45		23.31	3.85%
1/15/1991	12.75%	8.64%		-2.45		23.74	4.11%
1/25/1991	11.70%	8.63%		-2.45		23.92	3.07%
2/4/1991	12.50%	8.60%		-2.45		23.93	3.90%
2/7/1991	12.50%	8.59%		-2.45		23.93	3.91%
2/12/1991	13.00%	8.58%		-2.46		23.96	4.43%
2/14/1991	12.72%	8.57%		-2.46		23.98	4.15%
2/22/1991	12.80%	8.55%		-2.46		24.05	4.25%
3/6/1991	13.10%	8.53%		-2.46		24.14	4.57%
3/8/1991	12.30%	8.52%		-2.46		24.18	3.78%
3/8/1991	13.00%	8.52%		-2.46		24.18	4.48%
4/22/1991	13.00%	8.49%		-2.47		24.19	4.51%
5/7/1991	13.50%	8.47%		-2.47		24.21	5.03%
5/13/1991	13.25%	8.47%		-2.47		24.13	4.78%
5/30/1991	12.75%	8.44%		-2.47		23.59	4.31%
6/12/1991	12.00%	8.41%		-2.48		23.06	3.59%
6/25/1991	11.70%	8.39%		-2.48		22.50	3.31%
6/28/1991	12.50%	8.38%		-2.48		22.35	4.12%
7/1/1991	12.00%	8.38%		-2.48		22.30	3.62%
7/3/1991	12.50%	8.37%		-2.48		22.18	4.13%
7/19/1991	12.10%	8.34%		-2.48		21.59	3.76%
8/1/1991	12.90%	8.32%		-2.49		20.95	4.58%
8/16/1991	13.20%	8.29%		-2.49		20.17	4.91%
9/27/1991	12.50%	8.23%		-2.50		19.03	4.27%
9/30/1991	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%
11/1/1991	12.00%	8.19%		-2.50		17.67	3.81%
11/5/1991	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%
1/9/1992	12.80%	8.09%		-2.51		17.13	4.71%
1/16/1992	12.75%	8.07%		-2.52		17.14	4.68%
1/21/1992	12.00%	8.06%		-2.52		17.13	3.94%
1/22/1992	13.00%	8.06%		-2.52		17.12	4.94%
1/27/1992	12.65%	8.05%		-2.52		17.08	4.60%
1/31/1992	12.00%	8.04%		-2.52		17.12	3.96%
2/11/1992	12.40%	8.03%		-2.52		17.16	4.37%
2/25/1992	12.50%	8.01%		-2.52		17.14	4.49%
3/16/1992	11.43%	7.98%		-2.53		17.25	3.45%
3/18/1992	12.28%	7.98%		-2.53		17.25	4.30%
4/2/1992	12.10%	7.95%		-2.53		17.23	4.15%
4/9/1992	11.45%	7.94%		-2.53		17.25	3.51%
4/10/1992	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
4/14/1992	11.50%	7.93%		-2.53		17.22	3.57%
5/5/1992	11.50%	7.89%		-2.54		17.08	3.61%
5/12/1992	11.87%	7.88%		-2.54		17.08	3.99%
5/12/1992	12.46%	7.88%		-2.54		17.08	4.58%
6/1/1992	12.30%	7.87%		-2.54		17.01	4.43%
6/12/1992	10.90%	7.86%		-2.54		16.96	3.04%
6/26/1992	12.35%	7.85%		-2.54		16.91	4.50%
6/29/1992	11.00%	7.85%		-2.54		16.89	3.15%
6/30/1992	13.00%	7.85%		-2.55		16.87	5.15%
7/13/1992	11.90%	7.84%		-2.55		16.78	4.06%
7/13/1992	13.50%	7.84%		-2.55		16.78	5.66%
7/22/1992	11.20%	7.83%		-2.55		16.66	3.37%
8/3/1992	12.00%	7.81%		-2.55		16.51	4.19%
8/6/1992	12.50%	7.80%		-2.55		16.48	4.70%
9/22/1992	12.00%	7.71%		-2.56		15.90	4.29%
9/28/1992	11.40%	7.71%		-2.56		15.79	3.69%
9/30/1992	11.75%	7.70%		-2.56		15.76	4.05%
10/2/1992	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%
11/3/1992	12.00%	7.71%		-2.56		15.75	4.29%
12/3/1992	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%
1/12/1993	12.00%	7.61%	8.62%	-2.58	1.01%	14.72	4.39%
1/21/1993	11.25%	7.59%	8.61%	-2.58	1.02%	14.55	3.66%
2/2/1993	11.40%	7.56%	8.56%	-2.58	1.00%	14.36	3.84%
2/15/1993	12.30%	7.52%	8.53%	-2.59	1.01%	14.23	4.78%
2/24/1993	11.90%	7.49%	8.48%	-2.59	0.99%	14.19	4.41%
2/26/1993	11.80%	7.48%	8.46%	-2.59	0.98%	14.17	4.32%
2/26/1993	12.20%	7.48%	8.46%	-2.59	0.98%	14.17	4.72%
4/23/1993	11.75%	7.29%	8.29%	-2.62	1.00%	13.85	4.46%
5/11/1993	11.75%	7.25%	8.26%	-2.62	1.02%	13.85	4.50%
5/14/1993	11.50%	7.24%	8.26%	-2.63	1.02%	13.87	4.26%
5/25/1993	11.50%	7.23%	8.26%	-2.63	1.04%	13.88	4.27%
5/28/1993	11.00%	7.22%	8.26%	-2.63	1.04%	13.85	3.78%
6/3/1993	12.00%	7.21%	8.26%	-2.63	1.05%	13.84	4.79%
6/16/1993	11.50%	7.19%	8.24%	-2.63	1.06%	13.77	4.31%
6/18/1993	12.10%	7.18%	8.24%	-2.63	1.06%	13.76	4.92%
6/25/1993	11.67%	7.17%	8.23%	-2.64	1.06%	13.73	4.50%
7/21/1993	11.38%	7.10%	8.20%	-2.65	1.10%	13.46	4.28%
7/23/1993	10.46%	7.09%	8.19%	-2.65	1.10%	13.37	3.37%
8/24/1993	11.50%	6.96%	8.13%	-2.67	1.17%	12.80	4.54%
9/21/1993	10.50%	6.81%	8.05%	-2.69	1.24%	12.72	3.69%
9/29/1993	11.47%	6.77%	8.03%	-2.69	1.26%	12.73	4.70%
9/30/1993	11.60%	6.76%	8.03%	-2.69	1.27%	12.74	4.84%
11/2/1993	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%
1/4/1994	10.07%	6.44%	7.78%	-2.74	1.34%	12.50	3.63%
1/13/1994	11.00%	6.42%	7.77%	-2.75	1.35%	12.46	4.58%
1/21/1994	11.00%	6.40%	7.75%	-2.75	1.35%	12.39	4.60%
1/28/1994	11.35%	6.39%	7.74%	-2.75	1.35%	12.37	4.96%
2/3/1994	11.40%	6.38%	7.73%	-2.75	1.35%	12.34	5.02%
2/17/1994	10.60%	6.36%	7.71%	-2.76	1.35%	12.38	4.24%
2/25/1994	11.25%	6.35%	7.71%	-2.76	1.35%	12.40	4.90%
2/25/1994	12.00%	6.35%	7.71%	-2.76	1.35%	12.40	5.65%
3/1/1994	11.00%	6.35%	7.70%	-2.76	1.36%	12.41	4.65%
3/4/1994	11.00%	6.35%	7.70%	-2.76	1.36%	12.44	4.65%
4/25/1994	11.00%	6.41%	7.74%	-2.75	1.33%	13.02	4.59%
5/10/1994	11.75%	6.45%	7.77%	-2.74	1.32%	13.19	5.30%
5/13/1994	10.50%	6.46%	7.78%	-2.74	1.32%	13.24	4.04%
6/3/1994	11.00%	6.54%	7.84%	-2.73	1.30%	13.31	4.46%
6/27/1994	11.40%	6.65%	7.94%	-2.71	1.29%	13.42	4.75%
8/5/1994	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%
11/9/1994	10.85%	7.39%	8.60%	-2.61	1.21%	13.92	3.46%
11/9/1994	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
12/8/1994	11.50%	7.54%	8.75%	-2.58	1.21%	14.30	3.96%
12/8/1994	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	3.99%
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%
1/9/1995	12.28%	7.64%	8.86%	-2.57	1.22%	14.14	4.64%
1/31/1995	11.00%	7.69%	8.93%	-2.57	1.24%	13.72	3.31%
2/10/1995	12.60%	7.70%	8.95%	-2.56	1.25%	13.56	4.90%
2/17/1995	11.90%	7.70%	8.96%	-2.56	1.26%	13.50	4.20%
3/9/1995	11.50%	7.71%	8.98%	-2.56	1.26%	13.36	3.79%
3/20/1995	12.00%	7.72%	8.98%	-2.56	1.26%	13.34	4.28%
3/23/1995	12.81%	7.72%	8.98%	-2.56	1.26%	13.32	5.09%
3/29/1995	11.60%	7.72%	8.99%	-2.56	1.27%	13.31	3.88%
4/6/1995	11.10%	7.71%	8.99%	-2.56	1.28%	13.31	3.39%
4/7/1995	11.00%	7.71%	8.99%	-2.56	1.28%	13.30	3.29%
4/19/1995	11.00%	7.70%	8.99%	-2.56	1.29%	13.21	3.30%
5/12/1995	11.63%	7.68%	8.96%	-2.57	1.29%	13.20	3.95%
5/25/1995	11.20%	7.65%	8.94%	-2.57	1.30%	13.21	3.55%
6/9/1995	11.25%	7.60%	8.91%	-2.58	1.31%	13.25	3.65%
6/21/1995	12.25%	7.56%	8.88%	-2.58	1.32%	13.23	4.69%
6/30/1995	11.10%	7.52%	8.85%	-2.59	1.33%	13.19	3.58%
9/11/1995	11.30%	7.20%	8.58%	-2.63	1.38%	12.51	4.10%
9/27/1995	11.30%	7.12%	8.51%	-2.64	1.38%	12.25	4.18%
9/27/1995	11.50%	7.12%	8.51%	-2.64	1.38%	12.25	4.38%
9/27/1995	11.75%	7.12%	8.51%	-2.64	1.38%	12.25	4.63%
9/29/1995	11.00%	7.11%	8.49%	-2.64	1.38%	12.24	3.89%
11/9/1995	11.38%	6.90%	8.30%	-2.67	1.40%	12.46	4.48%
11/9/1995	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%
12/4/1995	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%
2/5/1996	12.25%	6.48%	7.98%	-2.74	1.50%	12.63	5.77%
3/29/1996	10.67%	6.42%	7.92%	-2.75	1.50%	13.47	4.25%
4/8/1996	11.00%	6.42%	7.92%	-2.75	1.50%	13.62	4.58%
4/11/1996	12.59%	6.43%	7.93%	-2.74	1.51%	13.73	6.16%
4/11/1996	12.59%	6.43%	7.93%	-2.74	1.51%	13.73	6.16%
4/24/1996	11.25%	6.43%	7.95%	-2.74	1.51%	13.92	4.82%
4/30/1996	11.00%	6.43%	7.95%	-2.74	1.52%	13.98	4.57%
5/13/1996	11.00%	6.44%	7.97%	-2.74	1.53%	14.14	4.56%
5/23/1996	11.25%	6.43%	7.98%	-2.74	1.54%	14.23	4.82%
6/25/1996	11.25%	6.48%	8.01%	-2.74	1.53%	14.71	4.77%
6/27/1996	11.20%	6.48%	8.01%	-2.74	1.53%	14.75	4.72%
8/12/1996	10.40%	6.57%	8.09%	-2.72	1.51%	15.35	3.83%
9/27/1996	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%
11/5/1996	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%
1/3/1997	10.70%	6.83%	8.27%	-2.68	1.43%	16.86	3.87%
2/13/1997	11.80%	6.82%	8.24%	-2.68	1.42%	17.23	4.98%
2/20/1997	11.80%	6.82%	8.24%	-2.69	1.42%	17.29	4.98%
3/31/1997	10.02%	6.80%	8.21%	-2.69	1.40%	17.83	3.22%
4/2/1997	11.65%	6.80%	8.21%	-2.69	1.40%	17.86	4.85%
4/28/1997	11.50%	6.81%	8.20%	-2.69	1.39%	18.20	4.69%
4/29/1997	11.70%	6.81%	8.20%	-2.69	1.39%	18.21	4.89%
7/17/1997	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%
2/2/1998	12.75%	6.39%	7.81%	-2.75	1.42%	23.43	6.36%
3/2/1998	11.25%	6.29%	7.71%	-2.77	1.42%	23.40	4.96%
3/6/1998	10.75%	6.27%	7.70%	-2.77	1.43%	23.37	4.48%
3/20/1998	10.50%	6.22%	7.65%	-2.78	1.42%	23.35	4.28%
4/30/1998	12.20%	6.12%	7.55%	-2.79	1.42%	23.66	6.08%
7/10/1998	11.40%	5.94%	7.40%	-2.82	1.46%	23.13	5.46%
9/15/1998	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%
2/5/1999	10.30%	5.38%	7.24%	-2.92	1.86%	27.50	4.92%
3/4/1999	10.50%	5.34%	7.25%	-2.93	1.91%	28.15	5.16%
4/6/1999	10.94%	5.32%	7.28%	-2.93	1.96%	28.43	5.62%
7/29/1999	10.75%	5.52%	7.54%	-2.90	2.02%	25.84	5.23%
9/23/1999	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%
1/7/2000	11.50%	6.05%	8.03%	-2.81	1.98%	23.49	5.45%
1/7/2000	11.50%	6.05%	8.03%	-2.81	1.98%	23.49	5.45%
2/17/2000	10.60%	6.17%	8.15%	-2.78	1.98%	23.37	4.43%
3/28/2000	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
5/24/2000	11.00%	6.18%	8.34%	-2.78	2.16%	23.85	4.82%
7/18/2000	12.20%	6.16%	8.40%	-2.79	2.24%	23.37	6.04%
9/29/2000	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%
1/23/2001	11.25%	5.79%	8.33%	-2.85	2.54%	23.50	5.46%
2/8/2001	11.50%	5.77%	8.31%	-2.85	2.54%	23.17	5.73%
5/8/2001	10.75%	5.62%	8.12%	-2.88	2.50%	24.37	5.13%
6/26/2001	11.00%	5.62%	8.09%	-2.88	2.46%	24.90	5.38%
7/25/2001	11.02%	5.60%	8.06%	-2.88	2.46%	25.06	5.42%
7/25/2001	11.02%	5.60%	8.06%	-2.88	2.46%	25.06	5.42%
7/31/2001	11.00%	5.59%	8.05%	-2.88	2.46%	24.98	5.41%
8/31/2001	10.50%	5.56%	8.01%	-2.89	2.46%	24.50	4.94%
9/7/2001	10.75%	5.55%	8.01%	-2.89	2.45%	24.54	5.20%
9/10/2001	11.00%	5.55%	8.01%	-2.89	2.45%	24.57	5.45%
9/20/2001	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%
12/3/2001	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%
1/22/2002	10.00%	5.50%	8.06%	-2.90	2.56%	25.52	4.50%
3/27/2002	10.10%	5.45%	8.09%	-2.91	2.65%	24.63	4.65%
4/22/2002	11.80%	5.45%	8.12%	-2.91	2.67%	24.46	6.35%
5/28/2002	10.17%	5.46%	8.15%	-2.91	2.68%	24.27	4.71%
6/10/2002	12.00%	5.47%	8.16%	-2.91	2.69%	24.33	6.53%
6/18/2002	11.16%	5.48%	8.17%	-2.90	2.70%	24.40	5.68%
6/20/2002	11.00%	5.48%	8.18%	-2.90	2.70%	24.45	5.52%
6/20/2002	12.30%	5.48%	8.18%	-2.90	2.70%	24.45	6.82%
7/15/2002	11.00%	5.48%	8.19%	-2.90	2.72%	24.13	5.52%
9/12/2002	12.30%	5.45%	8.14%	-2.91	2.69%	25.14	6.85%
9/26/2002	10.45%	5.41%	8.12%	-2.92	2.71%	25.82	5.04%
12/4/2002	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%
1/8/2003	11.10%	5.19%	7.96%	-2.96	2.77%	28.87	5.91%
1/31/2003	12.45%	5.13%	7.89%	-2.97	2.76%	29.61	7.32%
2/28/2003	12.30%	5.05%	7.79%	-2.99	2.75%	30.69	7.25%
3/6/2003	10.75%	5.03%	7.77%	-2.99	2.74%	30.93	5.72%
3/7/2003	9.96%	5.02%	7.76%	-2.99	2.74%	30.99	4.94%
3/20/2003	12.00%	4.98%	7.70%	-3.00	2.71%	31.50	7.02%
4/3/2003	12.00%	4.96%	7.64%	-3.00	2.68%	31.71	7.04%
4/15/2003	11.15%	4.94%	7.59%	-3.01	2.65%	31.67	6.21%
6/25/2003	10.75%	4.79%	7.24%	-3.04	2.45%	28.30	5.96%
6/26/2003	10.75%	4.79%	7.23%	-3.04	2.44%	28.22	5.96%
7/9/2003	9.75%	4.79%	7.19%	-3.04	2.40%	27.50	4.96%
7/16/2003	9.75%	4.79%	7.16%	-3.04	2.37%	27.03	4.96%
7/25/2003	9.50%	4.80%	7.13%	-3.04	2.33%	26.35	4.70%
8/26/2003	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%
1/13/2004	12.00%	4.95%	6.71%	-3.01	1.77%	19.36	7.05%
3/2/2004	10.75%	4.99%	6.62%	-3.00	1.64%	18.18	5.76%
3/26/2004	10.25%	5.02%	6.60%	-2.99	1.58%	17.98	5.23%
4/5/2004	11.25%	5.03%	6.60%	-2.99	1.57%	17.86	6.22%
5/18/2004	10.50%	5.07%	6.61%	-2.98	1.54%	17.45	5.43%
5/25/2004	10.25%	5.08%	6.60%	-2.98	1.53%	17.37	5.17%
5/27/2004	10.25%	5.08%	6.60%	-2.98	1.52%	17.34	5.17%
6/2/2004	11.22%	5.08%	6.60%	-2.98	1.52%	17.30	6.14%
6/30/2004	10.50%	5.10%	6.57%	-2.98	1.47%	16.97	5.40%
6/30/2004	10.50%	5.10%	6.57%	-2.98	1.47%	16.97	5.40%
7/16/2004	11.60%	5.11%	6.56%	-2.97	1.45%	16.72	6.49%
8/25/2004	10.25%	5.10%	6.53%	-2.98	1.43%	16.53	5.15%
9/9/2004	10.40%	5.10%	6.51%	-2.98	1.42%	16.36	5.30%
11/9/2004	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%
1/6/2005	10.70%	5.08%	6.41%	-2.98	1.33%	15.14	5.62%
2/18/2005	10.30%	4.98%	6.33%	-3.00	1.35%	14.60	5.32%
2/25/2005	10.50%	4.96%	6.31%	-3.00	1.35%	14.48	5.54%
3/10/2005	11.00%	4.93%	6.27%	-3.01	1.34%	14.19	6.07%
3/24/2005	10.30%	4.90%	6.23%	-3.02	1.34%	14.06	5.40%
4/4/2005	10.00%	4.88%	6.21%	-3.02	1.33%	14.02	5.12%
4/7/2005	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
5/18/2005	10.25%	4.78%	6.08%	-3.04	1.30%	13.90	5.47%
5/25/2005	10.75%	4.76%	6.07%	-3.04	1.30%	13.77	5.99%
5/26/2005	9.75%	4.76%	6.06%	-3.04	1.30%	13.74	4.99%
6/1/2005	9.75%	4.75%	6.05%	-3.05	1.30%	13.66	5.00%
7/19/2005	11.50%	4.64%	5.95%	-3.07	1.31%	13.17	6.86%
8/5/2005	11.75%	4.62%	5.93%	-3.07	1.31%	12.95	7.13%
8/15/2005	10.13%	4.61%	5.92%	-3.08	1.31%	12.85	5.52%
9/28/2005	10.00%	4.54%	5.87%	-3.09	1.32%	12.77	5.46%
10/4/2005	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%
1/5/2006	11.00%	4.53%	5.94%	-3.09	1.41%	12.82	6.47%
1/27/2006	9.75%	4.52%	5.94%	-3.10	1.42%	12.73	5.23%
3/3/2006	10.39%	4.53%	5.96%	-3.09	1.43%	12.40	5.86%
4/17/2006	10.20%	4.61%	6.05%	-3.08	1.44%	12.34	5.59%
4/26/2006	10.60%	4.64%	6.08%	-3.07	1.44%	12.34	5.96%
5/17/2006	11.60%	4.69%	6.14%	-3.06	1.45%	12.47	6.91%
6/6/2006	10.00%	4.74%	6.19%	-3.05	1.44%	12.72	5.26%
6/27/2006	10.75%	4.80%	6.25%	-3.04	1.45%	13.07	5.95%
7/6/2006	10.20%	4.83%	6.28%	-3.03	1.45%	13.12	5.37%
7/24/2006	9.60%	4.86%	6.32%	-3.02	1.46%	13.30	4.74%
7/26/2006	10.50%	4.86%	6.33%	-3.02	1.47%	13.30	5.64%
7/28/2006	10.05%	4.86%	6.33%	-3.02	1.47%	13.29	5.19%
8/23/2006	9.55%	4.89%	6.36%	-3.02	1.47%	13.19	4.66%
9/1/2006	10.54%	4.90%	6.36%	-3.02	1.47%	13.19	5.64%
9/14/2006	10.00%	4.91%	6.37%	-3.01	1.47%	13.24	5.09%
10/6/2006	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%
12/1/2006	10.25%	4.95%	6.38%	-3.00	1.43%	13.06	5.30%
12/1/2006	10.50%	4.95%	6.38%	-3.00	1.43%	13.06	5.55%
12/7/2006	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%
1/5/2007	10.00%	4.95%	6.37%	-3.01	1.42%	12.97	5.05%
1/11/2007	10.10%	4.95%	6.37%	-3.01	1.42%	12.98	5.15%
1/11/2007	10.10%	4.95%	6.37%	-3.01	1.42%	12.98	5.15%
1/11/2007	10.90%	4.95%	6.37%	-3.01	1.42%	12.98	5.95%
1/12/2007	10.10%	4.95%	6.37%	-3.01	1.42%	12.97	5.15%
1/13/2007	10.40%	4.95%	6.37%	-3.01	1.42%	12.97	5.45%
1/19/2007	10.80%	4.94%	6.36%	-3.01	1.42%	12.95	5.86%
3/21/2007	11.35%	4.87%	6.26%	-3.02	1.40%	12.82	6.48%
3/22/2007	9.75%	4.86%	6.26%	-3.02	1.40%	12.81	4.89%
5/15/2007	10.00%	4.81%	6.19%	-3.03	1.38%	12.23	5.19%
5/17/2007	10.25%	4.81%	6.18%	-3.04	1.38%	12.22	5.44%
5/17/2007	10.25%	4.81%	6.18%	-3.04	1.38%	12.22	5.44%
5/22/2007	10.20%	4.80%	6.18%	-3.04	1.37%	12.20	5.40%
5/22/2007	10.50%	4.80%	6.18%	-3.04	1.37%	12.20	5.70%
5/23/2007	10.70%	4.80%	6.18%	-3.04	1.37%	12.19	5.90%
5/25/2007	9.67%	4.80%	6.18%	-3.04	1.37%	12.18	4.87%
6/15/2007	9.90%	4.82%	6.18%	-3.03	1.36%	12.27	5.08%
6/21/2007	10.20%	4.83%	6.19%	-3.03	1.36%	12.30	5.37%
6/22/2007	10.50%	4.83%	6.19%	-3.03	1.36%	12.31	5.67%
6/28/2007	10.75%	4.84%	6.19%	-3.03	1.36%	12.38	5.91%
7/12/2007	9.67%	4.86%	6.21%	-3.02	1.35%	12.56	4.81%
7/19/2007	10.00%	4.87%	6.21%	-3.02	1.35%	12.65	5.13%
7/19/2007	10.00%	4.87%	6.21%	-3.02	1.35%	12.65	5.13%
8/15/2007	10.40%	4.88%	6.23%	-3.02	1.36%	13.75	5.52%
10/9/2007	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%
12/6/2007	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%
1/8/2008	10.75%	4.83%	6.39%	-3.03	1.56%	19.13	5.92%
1/17/2008	10.75%	4.81%	6.40%	-3.03	1.58%	19.48	5.94%
1/28/2008	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
1/30/2008	10.00%	4.79%	6.40%	-3.04	1.61%	20.10	5.21%
1/31/2008	10.71%	4.79%	6.40%	-3.04	1.61%	20.17	5.92%
2/29/2008	10.25%	4.75%	6.44%	-3.05	1.69%	21.41	5.50%
3/12/2008	10.25%	4.73%	6.46%	-3.05	1.73%	21.95	5.52%
3/25/2008	9.10%	4.68%	6.47%	-3.06	1.79%	22.51	4.42%
4/22/2008	10.25%	4.60%	6.49%	-3.08	1.89%	23.28	5.65%
4/24/2008	10.10%	4.60%	6.50%	-3.08	1.90%	23.32	5.50%
5/1/2008	10.70%	4.59%	6.50%	-3.08	1.92%	23.42	6.11%
5/19/2008	11.00%	4.56%	6.52%	-3.09	1.96%	23.33	6.44%
5/27/2008	10.00%	4.55%	6.53%	-3.09	1.98%	23.21	5.45%
6/10/2008	10.70%	4.54%	6.55%	-3.09	2.01%	22.88	6.16%
6/27/2008	10.50%	4.54%	6.58%	-3.09	2.04%	22.74	5.96%
6/27/2008	11.04%	4.54%	6.58%	-3.09	2.04%	22.74	6.50%
7/10/2008	10.43%	4.52%	6.60%	-3.10	2.07%	22.86	5.91%
7/16/2008	9.40%	4.52%	6.60%	-3.10	2.09%	23.05	4.88%
7/30/2008	10.80%	4.51%	6.64%	-3.10	2.13%	23.31	6.29%
7/31/2008	10.70%	4.51%	6.64%	-3.10	2.13%	23.32	6.19%
8/11/2008	10.25%	4.51%	6.66%	-3.10	2.16%	23.36	5.74%
8/26/2008	10.18%	4.50%	6.70%	-3.10	2.20%	23.26	5.68%
9/10/2008	10.30%	4.50%	6.73%	-3.10	2.23%	23.04	5.80%
9/24/2008	10.65%	4.48%	6.77%	-3.11	2.29%	23.44	6.17%
9/24/2008	10.65%	4.48%	6.77%	-3.11	2.29%	23.44	6.17%
9/24/2008	10.65%	4.48%	6.77%	-3.11	2.29%	23.44	6.17%
9/30/2008	10.20%	4.48%	6.79%	-3.11	2.32%	23.77	5.72%
10/8/2008	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%
12/1/2008	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%
1/14/2009	10.50%	4.15%	7.47%	-3.18	3.32%	35.20	6.35%
1/21/2009	10.50%	4.12%	7.49%	-3.19	3.38%	35.74	6.38%
1/21/2009	10.50%	4.12%	7.49%	-3.19	3.38%	35.74	6.38%
1/21/2009	10.50%	4.12%	7.49%	-3.19	3.38%	35.74	6.38%
1/27/2009	10.76%	4.09%	7.52%	-3.20	3.43%	36.20	6.67%
1/30/2009	10.50%	4.08%	7.53%	-3.20	3.46%	36.50	6.42%
2/4/2009	8.75%	4.06%	7.55%	-3.20	3.49%	36.86	4.69%
3/4/2009	10.50%	3.96%	7.64%	-3.23	3.68%	39.48	6.54%
3/12/2009	11.50%	3.93%	7.67%	-3.24	3.74%	40.32	7.57%
4/2/2009	11.10%	3.85%	7.76%	-3.26	3.91%	41.94	7.25%
4/21/2009	10.61%	3.80%	7.83%	-3.27	4.03%	42.82	6.81%
4/24/2009	10.00%	3.79%	7.85%	-3.27	4.06%	43.01	6.21%
4/30/2009	11.25%	3.78%	7.87%	-3.28	4.09%	43.20	7.47%
5/4/2009	10.74%	3.77%	7.88%	-3.28	4.11%	43.30	6.97%
5/20/2009	10.25%	3.74%	7.92%	-3.29	4.17%	43.85	6.51%
5/28/2009	10.50%	3.74%	7.94%	-3.29	4.20%	44.13	6.76%
6/22/2009	10.00%	3.76%	7.98%	-3.28	4.21%	44.90	6.24%
6/24/2009	10.80%	3.77%	7.98%	-3.28	4.21%	44.97	7.03%
7/8/2009	10.63%	3.77%	7.98%	-3.28	4.21%	44.89	6.86%
7/17/2009	10.50%	3.78%	7.96%	-3.28	4.19%	44.53	6.72%
8/31/2009	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%
11/2/2009	10.70%	4.09%	7.17%	-3.20	3.08%	32.69	6.61%
11/3/2009	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%
12/3/2009	10.50%	4.18%	7.00%	-3.18	2.82%	30.27	6.32%
12/7/2009	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%
1/4/2010	10.80%	4.28%	6.84%	-3.15	2.57%	27.77	6.52%
1/11/2010	11.00%	4.30%	6.80%	-3.15	2.50%	27.16	6.70%
1/26/2010	10.13%	4.35%	6.70%	-3.13	2.35%	26.14	5.78%
1/27/2010	10.40%	4.35%	6.69%	-3.13	2.33%	26.06	6.05%
1/27/2010	10.40%	4.35%	6.69%	-3.13	2.33%	26.06	6.05%
1/27/2010	10.70%	4.35%	6.69%	-3.13	2.33%	26.06	6.35%
2/9/2010	9.80%	4.38%	6.60%	-3.13	2.22%	25.50	5.42%
2/18/2010	10.60%	4.40%	6.55%	-3.12	2.16%	25.09	6.20%
2/24/2010	10.18%	4.41%	6.52%	-3.12	2.12%	24.84	5.77%
3/2/2010	9.63%	4.41%	6.49%	-3.12	2.08%	24.58	5.22%
3/4/2010	10.50%	4.41%	6.48%	-3.12	2.07%	24.45	6.09%
3/5/2010	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
3/11/2010	11.90%	4.42%	6.44%	-3.12	2.03%	24.14	7.48%
3/17/2010	10.00%	4.41%	6.41%	-3.12	1.99%	23.87	5.59%
3/25/2010	10.15%	4.42%	6.37%	-3.12	1.95%	23.50	5.73%
4/2/2010	10.10%	4.43%	6.33%	-3.12	1.90%	23.19	5.67%
4/27/2010	10.00%	4.46%	6.26%	-3.11	1.81%	22.18	5.54%
4/29/2010	9.90%	4.46%	6.25%	-3.11	1.80%	22.13	5.44%
4/29/2010	10.06%	4.46%	6.25%	-3.11	1.80%	22.13	5.60%
4/29/2010	10.26%	4.46%	6.25%	-3.11	1.80%	22.13	5.80%
5/12/2010	10.30%	4.45%	6.21%	-3.11	1.76%	22.27	5.85%
5/12/2010	10.30%	4.45%	6.21%	-3.11	1.76%	22.27	5.85%
5/28/2010	10.10%	4.44%	6.17%	-3.11	1.73%	22.82	5.66%
5/28/2010	10.20%	4.44%	6.17%	-3.11	1.73%	22.82	5.76%
6/7/2010	10.30%	4.44%	6.17%	-3.11	1.73%	23.01	5.86%
6/16/2010	10.00%	4.44%	6.17%	-3.11	1.73%	23.17	5.56%
6/28/2010	9.67%	4.43%	6.17%	-3.12	1.73%	23.20	5.24%
6/28/2010	10.50%	4.43%	6.17%	-3.12	1.73%	23.20	6.07%
6/30/2010	9.40%	4.43%	6.17%	-3.12	1.74%	23.30	4.97%
7/1/2010	10.25%	4.43%	6.17%	-3.12	1.74%	23.35	5.82%
7/15/2010	10.53%	4.43%	6.16%	-3.12	1.74%	23.44	6.10%
7/15/2010	10.70%	4.43%	6.16%	-3.12	1.74%	23.44	6.27%
7/30/2010	10.70%	4.41%	6.16%	-3.12	1.74%	23.39	6.29%
8/4/2010	10.50%	4.41%	6.15%	-3.12	1.74%	23.39	6.09%
8/6/2010	9.83%	4.41%	6.15%	-3.12	1.74%	23.40	5.42%
8/25/2010	9.90%	4.37%	6.10%	-3.13	1.73%	23.38	5.53%
9/3/2010	10.60%	4.35%	6.07%	-3.14	1.73%	23.43	6.25%
9/14/2010	10.70%	4.33%	6.06%	-3.14	1.73%	23.46	6.37%
9/16/2010	10.00%	4.33%	6.05%	-3.14	1.73%	23.44	5.67%
9/16/2010	10.00%	4.33%	6.05%	-3.14	1.73%	23.44	5.67%
9/30/2010	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%
11/2/2010	10.38%	4.20%	5.95%	-3.17	1.75%	23.57	6.18%
11/4/2010	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%
12/1/2010	10.13%	4.16%	5.92%	-3.18	1.76%	23.19	5.97%
12/6/2010	9.86%	4.15%	5.91%	-3.18	1.76%	23.17	5.71%
12/9/2010	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%
1/5/2011	10.15%	4.13%	5.90%	-3.19	1.76%	23.06	6.02%
1/12/2011	10.30%	4.12%	5.89%	-3.19	1.77%	23.04	6.18%
1/13/2011	10.30%	4.12%	5.89%	-3.19	1.77%	23.03	6.18%
1/18/2011	10.00%	4.12%	5.89%	-3.19	1.77%	23.02	5.88%
1/20/2011	9.30%	4.12%	5.88%	-3.19	1.76%	23.03	5.18%
1/20/2011	10.13%	4.12%	5.88%	-3.19	1.76%	23.03	6.01%
1/31/2011	9.60%	4.12%	5.88%	-3.19	1.76%	23.09	5.48%
2/3/2011	10.00%	4.12%	5.88%	-3.19	1.76%	23.10	5.88%
2/25/2011	10.00%	4.14%	5.89%	-3.18	1.74%	22.61	5.86%
3/25/2011	9.80%	4.18%	5.88%	-3.18	1.70%	21.32	5.62%
3/30/2011	10.00%	4.18%	5.87%	-3.17	1.69%	21.18	5.82%
4/12/2011	10.00%	4.21%	5.86%	-3.17	1.65%	20.76	5.79%
4/25/2011	10.74%	4.23%	5.86%	-3.16	1.63%	20.20	6.51%
4/26/2011	9.67%	4.23%	5.86%	-3.16	1.63%	20.15	5.44%
4/27/2011	10.40%	4.24%	5.86%	-3.16	1.62%	20.11	6.16%
5/4/2011	10.00%	4.24%	5.85%	-3.16	1.61%	19.87	5.76%
5/4/2011	10.00%	4.24%	5.85%	-3.16	1.61%	19.87	5.76%
5/24/2011	10.50%	4.27%	5.85%	-3.15	1.58%	19.45	6.23%
6/8/2011	10.75%	4.30%	5.85%	-3.15	1.55%	19.06	6.45%
6/16/2011	9.20%	4.32%	5.86%	-3.14	1.55%	18.86	4.88%
6/17/2011	9.95%	4.32%	5.86%	-3.14	1.55%	18.85	5.63%
7/13/2011	10.20%	4.36%	5.88%	-3.13	1.51%	18.50	5.84%
8/1/2011	9.20%	4.39%	5.89%	-3.13	1.50%	18.46	4.81%
8/8/2011	10.00%	4.38%	5.88%	-3.13	1.49%	18.77	5.62%
8/11/2011	10.00%	4.38%	5.87%	-3.13	1.49%	19.06	5.62%
8/12/2011	10.35%	4.37%	5.87%	-3.13	1.49%	19.14	5.98%
8/19/2011	10.25%	4.36%	5.85%	-3.13	1.49%	19.52	5.89%
9/2/2011	12.88%	4.32%	5.82%	-3.14	1.50%	20.30	8.56%
9/22/2011	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%
1/25/2012	10.50%	3.57%	5.37%	-3.33	1.80%	25.85	6.93%
1/27/2012	10.50%	3.56%	5.36%	-3.34	1.80%	25.86	6.94%
2/15/2012	10.20%	3.47%	5.30%	-3.36	1.82%	26.07	6.73%
2/23/2012	9.90%	3.44%	5.28%	-3.37	1.84%	26.09	6.46%
2/27/2012	10.25%	3.43%	5.27%	-3.37	1.84%	26.10	6.82%
2/29/2012	10.40%	3.41%	5.26%	-3.38	1.85%	26.12	6.99%
3/29/2012	10.37%	3.32%	5.20%	-3.41	1.89%	25.97	7.05%
4/4/2012	10.00%	3.30%	5.19%	-3.41	1.90%	25.86	6.70%
4/26/2012	10.00%	3.21%	5.14%	-3.44	1.94%	25.88	6.79%
5/2/2012	10.00%	3.18%	5.13%	-3.45	1.95%	25.81	6.82%
5/7/2012	9.80%	3.17%	5.12%	-3.45	1.95%	25.81	6.63%
5/15/2012	10.00%	3.14%	5.10%	-3.46	1.95%	25.77	6.86%
5/29/2012	10.05%	3.11%	5.08%	-3.47	1.98%	25.29	6.94%
6/7/2012	10.30%	3.08%	5.07%	-3.48	2.00%	24.83	7.22%
6/14/2012	9.40%	3.06%	5.07%	-3.49	2.01%	24.50	6.34%
6/15/2012	10.40%	3.06%	5.06%	-3.49	2.01%	24.44	7.34%
6/18/2012	9.60%	3.06%	5.06%	-3.49	2.01%	24.37	6.54%
6/19/2012	9.25%	3.05%	5.06%	-3.49	2.01%	24.30	6.20%
6/26/2012	10.10%	3.04%	5.06%	-3.49	2.02%	23.90	7.06%
6/29/2012	10.00%	3.04%	5.05%	-3.49	2.02%	23.63	6.96%
7/9/2012	10.20%	3.03%	5.05%	-3.50	2.02%	23.23	7.17%
7/16/2012	9.80%	3.02%	5.04%	-3.50	2.02%	22.67	6.78%
7/20/2012	9.31%	3.01%	5.04%	-3.50	2.03%	22.15	6.30%
7/20/2012	9.81%	3.01%	5.04%	-3.50	2.03%	22.15	6.80%
9/13/2012	9.80%	2.94%	4.99%	-3.53	2.05%	19.17	6.86%
9/19/2012	9.80%	2.94%	4.99%	-3.53	2.05%	18.89	6.86%
9/19/2012	10.05%	2.94%	4.99%	-3.53	2.05%	18.89	7.11%
9/26/2012	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%
11/9/2012	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%
12/5/2012	9.71%	2.89%	4.85%	-3.54	1.96%	17.53	6.82%
12/5/2012	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%
1/9/2013	9.70%	2.85%	4.79%	-3.56	1.95%	17.48	6.85%
1/9/2013	9.70%	2.85%	4.79%	-3.56	1.95%	17.48	6.85%
1/9/2013	9.70%	2.85%	4.79%	-3.56	1.95%	17.48	6.85%
1/16/2013	9.60%	2.84%	4.78%	-3.56	1.94%	17.44	6.76%
1/16/2013	9.60%	2.84%	4.78%	-3.56	1.94%	17.44	6.76%
2/13/2013	10.20%	2.84%	4.74%	-3.56	1.90%	17.01	7.36%
2/22/2013	9.75%	2.85%	4.73%	-3.56	1.88%	16.90	6.90%
2/27/2013	10.00%	2.86%	4.73%	-3.56	1.87%	16.86	7.14%
3/14/2013	9.30%	2.88%	4.72%	-3.55	1.84%	16.37	6.42%
3/27/2013	9.80%	2.90%	4.71%	-3.54	1.81%	15.90	6.90%
5/1/2013	9.84%	2.94%	4.66%	-3.53	1.72%	15.26	6.90%
5/15/2013	10.30%	2.96%	4.64%	-3.52	1.68%	15.03	7.34%
5/30/2013	10.20%	2.98%	4.64%	-3.51	1.66%	14.87	7.22%
5/31/2013	9.00%	2.98%	4.64%	-3.51	1.66%	14.88	6.02%
6/11/2013	10.00%	3.00%	4.64%	-3.51	1.64%	14.95	7.00%
6/21/2013	9.75%	3.02%	4.65%	-3.50	1.62%	15.00	6.73%
6/25/2013	9.80%	3.03%	4.65%	-3.50	1.62%	15.02	6.77%
7/12/2013	9.36%	3.07%	4.68%	-3.48	1.60%	15.06	6.29%
8/8/2013	9.83%	3.14%	4.73%	-3.46	1.59%	14.83	6.69%
8/14/2013	9.15%	3.16%	4.75%	-3.45	1.59%	14.73	5.99%
9/11/2013	10.20%	3.26%	4.83%	-3.42	1.57%	14.57	6.94%
9/11/2013	10.25%	3.26%	4.83%	-3.42	1.57%	14.57	6.99%
9/24/2013	10.20%	3.31%	4.87%	-3.41	1.57%	14.47	6.89%
10/3/2013	9.65%	3.33%	4.89%	-3.40	1.56%	14.45	6.32%
11/6/2013	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%
12/3/2013	10.25%	3.47%	5.00%	-3.36	1.53%	14.38	6.78%
12/4/2013	9.50%	3.47%	5.00%	-3.36	1.53%	14.38	6.03%
12/5/2013	10.20%	3.48%	5.01%	-3.36	1.53%	14.38	6.72%
12/9/2013	8.72%	3.48%	5.01%	-3.36	1.53%	14.35	5.24%
12/9/2013	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%
2/20/2014	9.20%	3.68%	5.14%	-3.30	1.46%	14.61	5.52%
2/26/2014	9.75%	3.69%	5.15%	-3.30	1.46%	14.64	6.06%
3/17/2014	9.55%	3.72%	5.17%	-3.29	1.45%	14.72	5.83%
3/26/2014	9.40%	3.73%	5.17%	-3.29	1.45%	14.67	5.67%
3/26/2014	9.96%	3.73%	5.17%	-3.29	1.45%	14.67	6.23%
4/2/2014	9.70%	3.73%	5.17%	-3.29	1.45%	14.59	5.97%
5/16/2014	9.80%	3.70%	5.11%	-3.30	1.40%	14.38	6.10%
5/30/2014	9.70%	3.68%	5.08%	-3.30	1.40%	14.34	6.02%
6/6/2014	10.40%	3.67%	5.07%	-3.30	1.40%	14.27	6.73%
6/30/2014	9.55%	3.64%	5.02%	-3.31	1.38%	13.95	5.91%
7/2/2014	9.62%	3.64%	5.02%	-3.31	1.38%	13.91	5.98%
7/10/2014	9.95%	3.63%	5.00%	-3.32	1.37%	13.86	6.32%
7/23/2014	9.75%	3.61%	4.97%	-3.32	1.36%	13.71	6.14%
7/29/2014	9.45%	3.60%	4.96%	-3.32	1.36%	13.58	5.85%
7/31/2014	9.90%	3.60%	4.95%	-3.32	1.35%	13.57	6.30%
8/20/2014	9.75%	3.57%	4.92%	-3.33	1.36%	13.61	6.18%
8/25/2014	9.60%	3.56%	4.91%	-3.34	1.36%	13.59	6.04%
8/29/2014	9.80%	3.54%	4.90%	-3.34	1.36%	13.57	6.26%
9/11/2014	9.60%	3.51%	4.88%	-3.35	1.37%	13.56	6.09%
9/15/2014	10.25%	3.51%	4.88%	-3.35	1.37%	13.57	6.74%
10/9/2014	9.80%	3.45%	4.83%	-3.37	1.39%	13.61	6.35%
11/6/2014	9.56%	3.37%	4.79%	-3.39	1.41%	14.11	6.19%
11/6/2014	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%
12/4/2014	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%
1/23/2015	9.50%	3.14%	4.69%	-3.46	1.55%	14.37	6.36%
2/24/2015	9.83%	3.04%	4.65%	-3.49	1.61%	14.67	6.79%
3/18/2015	9.75%	2.98%	4.64%	-3.51	1.66%	14.88	6.77%
3/25/2015	9.50%	2.96%	4.63%	-3.52	1.67%	14.94	6.54%
3/26/2015	9.72%	2.95%	4.63%	-3.52	1.68%	14.97	6.77%
4/23/2015	10.20%	2.87%	4.61%	-3.55	1.74%	15.19	7.33%
4/29/2015	9.53%	2.86%	4.60%	-3.56	1.75%	15.20	6.67%
5/1/2015	9.60%	2.85%	4.60%	-3.56	1.75%	15.23	6.75%
5/26/2015	9.75%	2.83%	4.63%	-3.56	1.80%	15.16	6.92%
6/17/2015	9.00%	2.82%	4.66%	-3.57	1.84%	15.29	6.18%
6/17/2015	9.00%	2.82%	4.66%	-3.57	1.84%	15.29	6.18%
9/2/2015	9.50%	2.79%	4.79%	-3.58	2.00%	15.67	6.71%
9/10/2015	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%
12/3/2015	10.00%	2.90%	5.08%	-3.54	2.19%	16.27	7.10%
12/9/2015	9.14%	2.90%	5.10%	-3.54	2.20%	16.32	6.24%
12/9/2015	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%
1/6/2016	9.50%	2.94%	5.20%	-3.53	2.26%	16.71	6.56%
2/23/2016	9.75%	2.94%	5.33%	-3.53	2.40%	18.29	6.81%
3/16/2016	9.85%	2.91%	5.36%	-3.54	2.45%	18.67	6.94%
4/29/2016	9.80%	2.83%	5.31%	-3.56	2.47%	18.56	6.97%
6/3/2016	9.75%	2.80%	5.24%	-3.57	2.43%	18.78	6.95%
6/8/2016	9.48%	2.80%	5.23%	-3.58	2.43%	18.67	6.68%
6/15/2016	9.00%	2.78%	5.20%	-3.58	2.42%	18.34	6.22%
6/15/2016	9.00%	2.78%	5.20%	-3.58	2.42%	18.34	6.22%
7/18/2016	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
8/9/2016	9.85%	2.66%	4.98%	-3.63	2.32%	17.06	7.19%
8/18/2016	9.50%	2.63%	4.94%	-3.64	2.30%	16.96	6.87%
8/24/2016	9.75%	2.62%	4.91%	-3.64	2.29%	16.91	7.13%
9/1/2016	9.50%	2.59%	4.87%	-3.65	2.27%	16.79	6.91%
9/8/2016	10.00%	2.58%	4.84%	-3.66	2.26%	16.69	7.42%
9/28/2016	9.58%	2.54%	4.75%	-3.67	2.22%	16.54	7.04%
9/30/2016	9.90%	2.53%	4.74%	-3.68	2.21%	16.46	7.37%
11/9/2016	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%
12/1/2016	10.00%	2.51%	4.55%	-3.68	2.03%	14.90	7.49%
12/6/2016	8.64%	2.52%	4.54%	-3.68	2.02%	14.79	6.12%
12/6/2016	8.64%	2.52%	4.54%	-3.68	2.02%	14.79	6.12%
12/7/2016	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%
1/18/2017	9.45%	2.58%	4.48%	-3.66	1.89%	14.20	6.87%
1/24/2017	9.00%	2.59%	4.47%	-3.65	1.88%	14.13	6.41%
1/31/2017	10.10%	2.60%	4.47%	-3.65	1.87%	14.05	7.50%
2/15/2017	9.60%	2.62%	4.46%	-3.64	1.84%	13.90	6.98%
2/22/2017	9.60%	2.64%	4.46%	-3.64	1.82%	13.82	6.96%
2/24/2017	9.75%	2.64%	4.46%	-3.63	1.82%	13.80	7.11%
2/28/2017	10.10%	2.64%	4.46%	-3.63	1.82%	13.78	7.46%
3/2/2017	9.41%	2.65%	4.46%	-3.63	1.81%	13.75	6.76%
3/20/2017	9.50%	2.68%	4.46%	-3.62	1.78%	13.56	6.82%
4/4/2017	10.25%	2.71%	4.46%	-3.61	1.75%	13.30	7.54%
4/12/2017	9.40%	2.74%	4.47%	-3.60	1.73%	13.09	6.66%
4/20/2017	9.50%	2.76%	4.47%	-3.59	1.71%	13.06	6.74%
5/3/2017	9.50%	2.79%	4.48%	-3.58	1.70%	12.95	6.71%
5/11/2017	9.20%	2.81%	4.50%	-3.57	1.68%	12.88	6.39%
5/18/2017	9.50%	2.83%	4.50%	-3.57	1.68%	12.88	6.67%
5/23/2017	9.70%	2.84%	4.51%	-3.56	1.67%	12.86	6.86%
6/16/2017	9.65%	2.89%	4.52%	-3.54	1.63%	12.69	6.76%
6/22/2017	9.70%	2.90%	4.52%	-3.54	1.63%	12.65	6.80%
6/22/2017	9.70%	2.90%	4.52%	-3.54	1.63%	12.65	6.80%
7/24/2017	9.50%	2.95%	4.53%	-3.52	1.59%	12.24	6.55%
8/15/2017	10.00%	2.97%	4.53%	-3.52	1.56%	11.97	7.03%
9/22/2017	9.60%	2.93%	4.48%	-3.53	1.55%	11.47	6.67%
9/28/2017	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%
11/6/2017	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%
12/5/2017	9.50%	2.88%	4.36%	-3.55	1.48%	11.11	6.62%
12/6/2017	8.40%	2.87%	4.36%	-3.55	1.48%	11.10	5.53%
12/6/2017	8.40%	2.87%	4.36%	-3.55	1.48%	11.10	5.53%
12/7/2017	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%
1/18/2018	9.70%	2.84%	4.29%	-3.56	1.46%	10.84	6.86%
1/31/2018	9.30%	2.84%	4.28%	-3.56	1.44%	10.77	6.46%
2/2/2018	9.98%	2.84%	4.28%	-3.56	1.44%	10.77	7.14%
2/23/2018	9.90%	2.85%	4.27%	-3.56	1.42%	11.71	7.05%
3/12/2018	9.25%	2.86%	4.27%	-3.55	1.41%	12.07	6.39%
3/15/2018	9.00%	2.87%	4.27%	-3.55	1.40%	12.17	6.13%
3/29/2018	10.00%	2.88%	4.28%	-3.55	1.40%	12.68	7.12%
4/12/2018	9.90%	2.89%	4.29%	-3.54	1.40%	13.14	7.01%
4/13/2018	9.73%	2.89%	4.29%	-3.54	1.40%	13.17	6.84%
4/18/2018	9.25%	2.89%	4.29%	-3.54	1.40%	13.24	6.36%
4/18/2018	10.00%	2.89%	4.29%	-3.54	1.40%	13.24	7.11%
4/26/2018	9.50%	2.90%	4.30%	-3.54	1.40%	13.41	6.60%
5/30/2018	9.95%	2.94%	4.35%	-3.53	1.41%	13.83	7.01%
5/31/2018	9.50%	2.94%	4.35%	-3.53	1.41%	13.85	6.56%
6/14/2018	8.80%	2.96%	4.37%	-3.52	1.42%	13.84	5.84%
6/22/2018	9.50%	2.97%	4.39%	-3.52	1.42%	13.90	6.53%
6/22/2018	9.90%	2.97%	4.39%	-3.52	1.42%	13.90	6.93%

[5] Date of Electric Rate Case	[6] Return on Equity (%)	[7] 30 Year Treasury (%)	[8] Moody's Utility Baa Yield	[9] LN(30-Year Treasury)	[10] Moody's Utility Baa Credit Spread	[11] VIX	[12] Risk Premium
6/28/2018	9.35%	2.97%	4.40%	-3.52	1.43%	14.02	6.38%
6/29/2018	9.50%	2.97%	4.40%	-3.52	1.43%	14.04	6.53%
8/8/2018	9.53%	2.99%	4.46%	-3.51	1.46%	14.44	6.54%
8/21/2018	9.70%	3.00%	4.48%	-3.51	1.47%	14.56	6.70%
8/24/2018	9.28%	3.01%	4.48%	-3.50	1.48%	14.60	6.27%
9/5/2018	9.56%	3.02%	4.50%	-3.50	1.48%	14.65	6.54%
9/14/2018	10.00%	3.03%	4.52%	-3.50	1.49%	14.77	6.97%
9/20/2018	9.80%	3.04%	4.53%	-3.49	1.49%	14.79	6.76%
9/26/2018	9.77%	3.05%	4.54%	-3.49	1.50%	14.83	6.72%
9/26/2018	10.00%	3.05%	4.54%	-3.49	1.50%	14.83	6.95%
9/27/2018	9.30%	3.05%	4.55%	-3.49	1.50%	14.84	6.25%
10/4/2018	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%
11/1/2018	8.69%	3.11%	4.64%	-3.47	1.53%	15.96	5.58%
12/4/2018	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%
1/9/2019	10.00%	3.14%	4.76%	-3.46	1.62%	16.68	6.86%
2/27/2019	9.75%	3.12%	4.80%	-3.47	1.68%	16.51	6.63%
3/13/2019	9.60%	3.12%	4.80%	-3.47	1.68%	16.59	6.48%
3/14/2019	9.00%	3.12%	4.80%	-3.47	1.68%	16.59	5.88%
3/14/2019	9.40%	3.12%	4.80%	-3.47	1.68%	16.59	6.28%
3/22/2019	9.65%	3.12%	4.80%	-3.47	1.68%	16.58	6.53%
4/30/2019	9.73%	3.11%	4.78%	-3.47	1.67%	16.51	6.62%
4/30/2019	9.73%	3.11%	4.78%	-3.47	1.67%	16.51	6.62%
5/1/2019	9.50%	3.11%	4.78%	-3.47	1.67%	16.52	6.39%
5/2/2019	10.00%	3.11%	4.78%	-3.47	1.67%	16.53	6.89%
5/8/2019	9.50%	3.10%	4.77%	-3.47	1.67%	16.61	6.40%
5/14/2019	8.75%	3.10%	4.77%	-3.48	1.67%	16.73	5.65%
5/16/2019	9.50%	3.09%	4.77%	-3.48	1.67%	16.76	6.41%
5/23/2019	9.90%	3.09%	4.76%	-3.48	1.67%	16.85	6.81%
Average:						4.68%	
# of Rate Cases:						1,593	

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 Ratemaking [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	✓			✓	✓	✓									
Superior Water, Light and Power Company	ALE	Wisconsin	✓			✓		✓									
Interstate Power and Light Company	LNT	Iowa	✓			✓	✓	✓									
Wisconsin Power and Light Company	LNT	Wisconsin	✓			✓	✓	✓									
Southwestern Electric Power Company	AEP	Arkansas		P	✓	✓		✓									
Indiana Michigan Power Company	AEP	Indiana	✓	P	✓	✓	✓	✓									
Kentucky Power Company	AEP	Kentucky	✓	P	✓	✓	✓	✓									
Southwestern Electric Power Company	AEP	Louisiana	✓	P	✓	✓	✓	✓									
Indiana Michigan Power Company	AEP	Michigan	✓	P	✓	✓	✓	✓									
Ohio Power Company	AEP	Ohio	✓	P	✓	✓	✓	✓									
Public Service Company of Oklahoma	AEP	Oklahoma	✓	P	✓	✓	✓	✓									
Kingsport Power Company	AEP	Tennessee	✓		✓	✓	✓	✓									
AEP Texas Central Company	AEP	Texas	NA		✓	✓	✓	✓									
AEP Texas North Company	AEP	Texas	NA		✓	✓	✓	✓									
Southwestern Electric Power Company	AEP	Texas	✓		✓	✓	✓	✓									
Appalachian Power Company	AEP	Virginia	✓		✓	✓	✓	✓									
Appalachian Power / Wheeling Power	AEP	West Virginia	✓		✓	✓	✓	✓									
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	CMS	Michigan	✓		✓	✓	✓	✓									
DTE Electric Company	DTE	Michigan	✓		✓	✓	✓	✓									
Duke Energy Florida, LLC	DUK	Florida	✓		✓	✓	✓	✓									
Duke Energy Indiana, LLC	DUK	Indiana	✓	P	✓	✓	✓	✓									
Duke Energy Kentucky, Inc.	DUK	Kentucky	✓	P	✓	✓	✓	✓									
Duke Energy Carolinas, LLC	DUK	North Carolina	✓	P	✓	✓	✓	✓									
Duke Energy Progress, LLC	DUK	North Carolina	✓	P	✓	✓	✓	✓									
Duke Energy Ohio, Inc.	DUK	Ohio	✓	P	✓	✓	✓	✓									
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	✓		✓	✓	✓	✓									
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	✓		✓	✓	✓	✓									
Gulf Power Company	NEE	Florida	✓		✓	✓	✓	✓									
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	✓		✓	✓	✓	✓									
Otter Tail Power Company	OTTR	North Dakota	✓		✓	✓	✓	✓									
Otter Tail Power Company	OTTR	South Dakota	✓		✓	✓	✓	✓									
Arizona Public Service Company	PNW	Arizona	✓	P	✓	✓	✓	✓									
Public Service Company of New Mexico	PNM	New Mexico	✓		✓	✓	✓	✓									
Texas-New Mexico Power Company	PNM	Texas	NA		✓	✓	✓	✓									
Portland General Electric Company	POR	Oregon	✓	P	✓	✓	✓	✓									
Alabama Power Company	SO	Alabama	✓		✓	✓	✓	✓									
Georgia Power Company	SO	Georgia	✓		✓	✓	✓	✓									
Mississippi Power Company	SO	Mississippi	✓	P	✓	✓	✓	✓									
Upper Michigan Energy Resources Corp	WEC	Michigan	✓		✓	✓	✓	✓									
Wisconsin Electric Power	WEC	Wisconsin	✓		✓	✓	✓	✓									
Wisconsin Public Service Company	WEC	Wisconsin	✓		✓	✓	✓	✓									
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	✓		✓	✓	✓	✓									
Northern States Power Company - MN	XEL	North Dakota	✓		✓	✓	✓	✓									
Northern States Power Company - MN	XEL	South Dakota	✓	P	✓	✓	✓	✓									
Southwestern Public Service Company	XEL	Texas	✓		✓	✓	✓	✓									
Northern States Power Company - WI	XEL	Wisconsin	✓		✓	✓	✓	✓									

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.

